RELEVANCE • READINESS • OPTIMIZATION
May 18, 2001

TO: ________________________________


Editor's Foreword

RELEVANCE. The USUHS Journal - 2000 Edition documents that the Uniformed Services University of the Health Sciences (USUHS), in accordance with its establishing legislation, Department of Defense (DoD) Directives, and its Strategic Plan, continues to ensure its relevance to the Military Health System (MHS). As the University analyzes its relevance, or purpose, continual focus is placed on 1) its establishing mission to provide continuity and leadership and 2) the effectiveness of USUHS’s response to the special needs of today’s rapidly changing Military Health System. Internal curriculum reviews, external program analyses, outcome assessments with supervisors and graduates, and collaborative studies conducted with the USUHS Board of Regents and the Surgeons General are all part of an ongoing, critical assessment process to ensure that USUHS is appropriately responding to its established missions and the special needs of the MHS. On December 11, 2000, the Secretary of Defense awarded the Joint Meritorious Unit Award to the University. This significant award documented DoD’s recognition of the essential mission, exceptional service over the past decade, and the multiple cost-effective programs of the Uniformed Services University of the Health Sciences (USUHS). Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, mandated that the University should meet the special needs of the Military Health System (MHS) through the provision of uniquely trained, career physician officers who would ensure continuity and leadership for the MHS. As validated by the Office of the Secretary of Defense (OSD) in its citation, the University has exceeded the three goals set by the early visionaries who established USUHS:

Representation. Congress envisioned that the USUHS School of Medicine (SOM) graduates would represent ten percent of the total physician force; the 2,567 USUHS physicians on active duty currently represent over 20 percent of the 12,111 physicians on active duty in the Armed Forces (USUHS Journal, Section II);

Retention. Congress envisioned retention rates close to 70 percent; the overall retention rate for USUHS graduates from its first class to the present is 89 percent. In accordance with these extraordinary retention rates, a recent review documented that of the first six classes of the USUHS SOM graduates, 42 percent hold significant operational or leadership positions ensuring continuity and leadership for the MHS (USUHS Journal, Section II); and,
**Special Needs of the MHS.** Having a unique understanding of the delivery of health care under deployed conditions, a significant proportion of USUHS graduates are promoted ahead of their contemporaries. The General Accounting Office has documented that "43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles ..." USUHS' military unique training includes ... "between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship (HPSP) graduates whose training ranges from 50 to 132 hours..." (General Accounting Office Report, "Military Physicians DoD's Medical School and Scholarship Programs," September 29, 1995, pages 55, 41, and 43).

**READINESS.** USUHS is the Nation's only University dedicated to ensure readiness for the MHS. In 1998, the Association of American Medical Colleges recognized USUHS as the "one place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism. USUHS students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures."

The MHS must provide quality health care during humanitarian, civic assistance, or operational contingencies. This critical response requires that physicians in the MHS be provided a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USUHS students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. In addition, the multi-Service environment of USUHS generates an understanding of the cultures and vocabularies of the Army, Navy, Air Force, and Public Health Service, which ensures two of the essential components of readiness: flexibility and continuity during joint service operational contingencies.

As information technology continues to revolutionize the concept of readiness in the MHS, the University, through its unique curricula and programs, continuously addresses the readiness requirements of the MHS which include: keeping large and dispersed populations healthy; training students for disaster and combat trauma; accessing data and expertise from remote locations; and, delivering quality health care under deployed conditions. The following are examples of USUHS' innovative efforts to meet the evolving requirements of medical readiness: the newly established Medical Simulation Center and Patient Simulation Laboratory; the new SOM Department of Biomedical Informatics; the innovative efforts of the USUHS Learning Resource Center; the collaborative Telehealth and Distance Learning Programs of the SOM and the GSN; and, the new interdisciplinary graduate program, Emerging Infectious Diseases (EID). These and many other efforts are documented throughout Sections I, II, and III of the USUHS Journal.

**OPTIMIZATION.** Critical to the University's efforts for optimization, the Commission on Higher Education of the Middle States Association of Colleges and Schools has granted full accreditation to USUHS since 1984. This essential accreditation has enabled the University to support and generate cost avoidance for the MHS through its multiple educational programs, all of which are fully accredited by fourteen independent accrediting entities. This support is IN ADDITION TO the USUHS SOM graduates. The OSD-conducted surveys on streamlining education of 1997 and 1998, the USUHS Board of Regents Reports to the Secretary of Defense, the Surgeons General analyses during 2000, and the OSD Joint Meritorious Unit Award of 2000, all serve to acknowledge the many cost-effective programs of USUHS. The USUHS Journal provides documented information on an estimated total of $22.1 million of annual cost avoidance generated by USUHS for the DoD (see pages 20-21):
The SOM Office of Graduate Medical Education (GME). The SOM Office of GME was established in 1986 to provide DoD-wide consultation and oversight for numerous GME programs (internship, residency, and fellowship training for physicians) in support of the MHS Program Directors and the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). The USUHS Office of GME provides cost-effective support for the MHS in that it: serves as the Administrative Office for the National Capital Consortium (NCC); collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, oversees the integration of DoD GME programs to ensure that accreditation is not jeopardized. As of December 31, 2000, the NCC has sponsored 50 integrated medical training programs (USUHS Journal, Section V);

The USUHS Office of Continuing Education for Health Professionals (CHE). The USUHS Office of CHE plays a significant, cost-effective role in facilitating the continued professional growth of health care professionals in the federal services. Because the USUHS CHE brings medical training to the medical health care professionals, an estimated cost avoidance of $1,502,516 was generated for the DoD by eliminating extensive travel expenses and time away from the hospitals and clinics during 2000: CHE sponsored continuing medical education for 332 programs with an attendance of 3,679 physicians, provided continuing nursing education for 43 activities with an attendance of 2,129 nurses, and approved Category II continuing education credit for 9 programs for 221 members of the American College of Healthcare Executives. In a similar manner, the DoD sites affiliated with the University's Military Training Network (MTN) are approved to conduct self-sustained resuscitative and trauma medicine training. During 2000, approximately 194,044 defense personnel were trained through the MTN with a generated cost avoidance of approximately $9,890,579. The annual cost avoidance generated by CHE/MTN programs during 2000 was $11.4 million (USUHS Journal, Section VI);

The Academic Center for the MHS: The University serves as the Academic Center for academic and research activities for 2,429 active-duty, off-campus USUHS faculty located throughout the MHS. During 2000, the 14th Conference on Military Medicine was sponsored by USUHS: the theme was "A Challenge to Readiness: Injuries in the Military." The 14 Conferences on Military Medicine illustrate the continuing education activities sponsored by USUHS that annually focus on the special needs of the MHS. These activities are attended by uniformed health care providers from across the Services. In addition, military relevant consultation is continuously provided to the MHS and other federal agencies by the internationally recognized experts within the University's multiple centers and departments. USUHS Faculty includes renowned experts in traumatic stress, preventive medicine, and casualty care. For example, the USUHS Center for Disaster and Humanitarian Assistance Medicine was a major contributor at the 10th annual Asia-Pacific Military Medical Conference. Strategic partnerships are flourishing between USUHS and the Departments of State, Veterans Affairs, Justice, and Health and Human Services, the National Aeronautics and Space Administration, and the National Library of Medicine (USUHS Journal, Section I); and,

Advanced Degrees Earned Through Distance Learning: In 1999, the distance learning collaborative efforts of the Graduate School of Nursing (GSN) with the Department of Veterans Affairs (VA) successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critical specialty areas while maintaining their current positions. Twenty-six students, through a "virtual commencement exercise," graduated from the VA/DoD Distance Learning Program on May 18, 1999: all graduates were eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation by either the VA or the DoD. The experience gained by both the GSN and the VA will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month program. The Distance Learning Class of 2001 graduated on May 15, 2001. (USUHS Journal, Section III).
RENEWED DEDICATION. The University community enters the Year 2001 with renewed dedication to public service and with focused attention on: the critical nature of its mission (RELEVANCE); the medical response to humanitarian and operational deployments (READINESS); and, the provision of essential programs in a cost-effective manner (OPTIMIZATION). Sixty activity heads, chairs, faculty, and staff participated in preparing the USUHS Journal - 2000 Edition. Our reporting format provides an inclusive background on the history and development of the University. This report includes the achievements of the past year and any changes that have taken place throughout the educational programs and centers. The USUHS Journal - 2000 Edition will serve as a source document for the University's responses to congressional, executive, and general requests for information.

Mary A. Dix
Vice President for Administration
and Management, and
Editor-in-Chief
USUHS Journal - 2000 Edition
"The Uniformed Services University of the Health Sciences (USUHS) distinguished itself by exceptionally meritorious service from July 1, 1990 to July 1, 2000. The University has graduated 3,000 military physicians with better overall understanding of the military, a greater commitment to the military, and a better preparation for operational assignments and leadership positions. The Uniformed Services University developed a Graduate School of Nursing ... its center for Prostate Disease Research created the first Defense Department prostate cancer database ... In addition, the University accomplished direct service support far exceeding normal duty performance to the Department of Defense; the Departments of the Army, Navy, and Air Force; the Departments of State, Treasury and Interior; and, the Federal Bureau of Investigation ..."

- Excerpts from the Citation of the Joint Meritorious Unit Award awarded to USUHS by William S. Cohen, Secretary of Defense, on December 11, 2000.
UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES JOURNAL

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RELEVANCE  "The Alliance has long recognized the significant difference between the practice of medicine in the military and the civilian sectors. Since its first class in 1980, USUHS has graduated close to 3,000 uniformed officers who are uniquely trained as physicians and some 123 advance practice nurses. With their extraordinary retention rates of 91 percent, the USUHS physician graduates are ensuring continuity and leadership throughout the Military Health System. We know from our membership that the USUHS graduates are tirelessly serving both the active duty and retired uniformed communities with a commitment that can only come from a comprehensive understanding of, and appreciation for, those who are sent into harm's way in defense of our Country." – The National Military And Veterans Alliance, Letter to the Secretary of Defense, dated June 23, 2000.

"The young men and women who are coming out of the Uniformed Services University of the Health Sciences are absolutely superb." (USUHS graduates hold senior operational and leadership positions beyond Congressional expectations. A recent review documented that of the first six classes of USUHS School of Medicine graduates, 42 percent hold operational or leadership positions.) – James B. Peake, Lieutenant General, U.S. Army, Army Surgeon General, Commander, Army Medical Command, Military Medical Technology, "Mission Enabler," Volume 4, Issue 6, page 18

"I am proud of the USUHS. They have not only met, but exceeded all of the goals that Congress set for them.' Congress envisioned that USUHS School of Medicine graduates would represent 10 percent of the total physician force. Currently USUHS physicians on active duty represent over 20 percent of the physicians in the Armed Forces. Congress envisioned retention rates close to 70 percent for USUHS graduates. The actual overall retention rate for USUHS graduates is over 90 percent." – United States Senator Barbara A. Mikulski, Press Release to the Senate, dated February 1, 2001.

"... It is apparent that we are meeting the congressional expectations of providing 'military' physicians to our services. You provide for deployment in times of need but also for day to day care of our most precious resource, our uniformed people and their families. Additionally your advances in training nurses, continuing medical education, and public health are to be commended. As we move forward in this new century, I look forward to the additional contributions of this fine university to our Air Force and our country. Please pass on my congratulations to the entire university staff for your support to the Air Force families and America." – The Honorable F. Whitten Peters, Secretary of the Air Force, Department of Defense, Letter to USUHS dated May 15, 2000.
"USUHS has gone above and beyond every expectation" said Sarbanes. 'This award is a true testament to the importance of USUHS in providing critical medical training for our Nation's military doctors and nurses in different combat and survival situations.'

The award recognizes... since its establishment, USUHS has graduated more than 3,000 military physicians and advanced practice nurses with a better overall understanding of the military, a greater commitment to the military, and a better preparation for operational assignments and leadership positions."


"The Service Chiefs and I continue to work closely with the Secretary of Defense, the Administration, and the Congress to provide Service members, retirees, and their families with the greatest possible Military Health System within the law and available resources. The USUHS Program is an enabler in this important process. Your important efforts, hard work, and fine results are appreciated."


"I want to take a moment to express my appreciation for your dedication, and that of the USUHS community, to providing the best medical care available to our service members and their families. Your efforts make a difference, and I wish all the best for continued success." – James L. Jones, General, U.S. Marine Corps, Commandant of the Marine Corps, Letter to USUHS, dated May 4, 2000.

"The challenges, responsibilities, and the ultimate gratifications involved in training and preparing young men and women for a future of providing healthcare are well known. In its relatively short lifetime, the Uniformed Services University of the Health Sciences is already rich in an abundance of fascinating history and documented successes. Thanks, in large measure, to what you do, the future of Military Medicine is very bright." – K. L. Martin, Rear Admiral, Nurse Corps, U.S. Navy, Letter to USUHS, dated April 17, 2000.
I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

The University community completed the Year 2000 with renewed dedication to public service and with focused attention on: RELEVANCE - the critical nature of its mission to provide continuity, leadership, and responsiveness to the special needs of the Military Health System (MHS); READINESS - the provision of physicians, advanced practice nurses, and graduate degree recipients uniquely skilled in the readiness requirements for humanitarian, civic assistance, or operational contingencies; and, OPTIMIZATION - the cost-effective management of its resources to ensure the generation of annual cost avoidance for the MHS through its multiple, fully accredited programs (estimated cost avoidance during 2000 was $23 million).

ESTABLISHMENT, DEVELOPMENT, AND GOVERNANCE

The Uniformed Services Health Professions Revitalization Act of 1972 Establishes the University. Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, established the University as a separate agency within the Department of Defense (DoD). Planning for the development of USU began with President Richard Nixon's appointment of a Board of Regents and Dr. Anthony R. Curreri as the University's first President in 1974. Initial efforts were focused on establishing the USUHS School of Medicine (SOM) as the University's first academic program.

*****

Collaborative Effort by the Joint Services and Civilian Medical Communities in the Development of the University. The initial development of objectives for the USUHS SOM was accomplished through the combined efforts of the Board of Regents; the Board of Regents Educational Affairs Committee; Dr. Curreri; the USUHS SOM Dean, Dr. Jay Sanford; and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: the Surgeons General of the Army, Navy, and Air Force; Chiefs of the Medical Departments/Services of the Army, Navy, and Air Force; physicians from the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow U.S. Air Force Medical Center at Andrews Air Force Base, the Wilford Hall U.S. Air Force Medical Center, the U.S. Army Academy of Health Sciences, the Sheppard Air Force Base Academy of Health Sciences, the Brooke Army Medical Center, and the Armed Forces Institute of Pathology; the Secretary of the Air Force; the Secretary of the Navy; the Association of American Medical Colleges (AAMC); the American Medical Association (AMA); the Liaison Committee on Medical Education (LCME); the Department of Health, Education, and Welfare; the National Institutes of Health (NIH); George Washington University; Georgetown University; and, Howard University. The fine tradition of the University's identifying and responding to the special needs of the Uniformed Services has been an on-going process since 1974.

*****
**DoD Directive 5105.45.** Significant changes in the USU governance structure resulted from actions taken during 1991. On April 15, 1991, the Secretary of Defense revised the DoD Directive for Health Affairs, 5136.1, to delegate responsibility for the University from his office to the Assistant Secretary of Defense for Health Affairs (ASD/HA). The authority to appoint the President of the University was retained by the Secretary of Defense. On April 19, 1991, the DoD Directive for USU, 5105.45, was updated to reflect those changes and to define in detail the mission, organization, responsibilities, functions, relationships, authorities, and governance of the University. In a memorandum dated May 3, 1991, the ASD/HA re-delegated the USUHS President the authority for the day-to-day management of the University; the current delegation of authority to the USUJS President for the on-going management of the University is also included in DoD Directive 5105.45. (A copy of the current revision of DoD Directive 5105.45, dated March 9, 2000, is at Appendix A.)

*****

**Board of Regents Charter.** Prior to 1991, the USU Board of Regents (BOR) had been an independent policy-making body; it is now an advisory body to the Secretary of Defense. A Charter for the BOR was approved by the Office of the Secretary of Defense (OSD) on April 1, 1991 (the BOR Charter was later revised and approved by OSD on April 4, 1999). The Charter defines the objectives and scope of the BOR to: 1) provide advice and guidance to the Secretary of Defense through the ASD/HA for the operation of USU; and, 2) assure that the University's operation is in compliance with the appropriate accreditation authorities. The USU administration and faculty provided substantial input into the revision of both the USU DoD Directive and the BOR Charter. As a result, the administrative/goverance documents of 1991 reflected the coordinated efforts of the ASD/HA, the BOR, the USU administration and activity heads, SOM department chairpersons, the SOM Faculty Senate, and the Dean's Executive Advisory Committee. In addition, during this process, the Acting Dean of the SOM coordinated with and briefed the LCME and the Commission on Higher Education of the Middle States Association of Colleges and Schools to ensure compliance with the University's accrediting entities on issues regarding governance and administration. Most recently, on February 6, 2001, the Bylaws of the USU BOR, in accordance with the BOR Charter, were approved by **Lonnie R. Bristow, Chair, Board of Regents.** (Copies of the current BOR Charter and Bylaws are at Appendix A.)

*****

**USU - The 1998 Defense Reform Initiative.** In November of 1997, **William Cohen, Secretary of Defense,** substantiated his support of the University by including USU as part of his Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRI and moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense (OSD), to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD ensured manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent for program, budget, and funding execution responsibilities. The PBD also directed that the University's funding would continue to be programmed, budgeted, and executed within the Defense Health Program.

*****
The Establishment of the USU Executive Committee. The administrative process for fiscal matters was defined during 1998 by the ASD/HA, in consultation with the USU BOR, the USU administration, and the Surgeons General. As a result, DoD Directive 5105.45, was updated on May 17, 1999, to include the formal establishment of the USU Executive Committee (to be composed of the three military Surgeons General; current membership includes: Vice Admiral Richard A. Nelson, Surgeon General of the Navy; Lieutenant General Paul K. Carlton, Surgeon General of the Air Force; and, Lieutenant General James B. Peake, Surgeon General of the Army) to provide management oversight for the University. As outlined in DoD Directive 5105.45, the USU President reports through the Executive Committee to the ASD/HA. The Executive Committee, chaired by Vice Admiral Nelson, conducts quarterly meetings that focus on important academic and administrative issues at the University. The USU Executive Committee and the USU Board of Regents have developed a close working relationship in a shared effort to enhance the academic and administrative programs at the University (a copy of the current Charter for the Executive Committee dated December 18, 2000 is at Appendix A).

As the Executive Agent, the Navy Surgeon General's Office provides oversight for the University's budgeting and programming activities. The DoD Directive further clarifies that the USU funding and personnel requirements will not be offset against the Navy Surgeon General's budget or work-year allocations; USU funding remains within the Defense Health Program. Section 7.2.1 of Directive 5105.45 also directs that USU civilian personnel authorizations will be under the purview of the DoD Executive Agent (Navy) and that USU civilian employees should be moved from OSD and carried on the rolls of the Department of the Navy. The USU civilian employees officially converted from OSD to Navy employees with the changing of the University's Subelement and Unit Identification Code at the end of Fiscal Year 1999. All official reporting documents will reflect this change (automatically for the USU government service/wage grade (GS/WG) employees; and, manually for the USU administratively determined (AD) employees pending the revision of computer software scheduled for September 2001). It was agreed that the Human Resource Services Center (HRSC) of Washington Headquarters Services (WHS) will continue to service the University for its personnel requirements. An inclusive review of the USU personnel instructions for compliance with the Navy personnel instructions was completed during 2000.

*****

A Strengthened Relationship Between USU and DoD. The evolving relationship between the USU and DoD from 1991 through 2000 has proven beneficial to the University. This new relationship has clarified and strengthened the position of the University within the entire DoD structure. The expansion of the oversight role of USU by the Executive Committee (the three military Surgeons General) has proven to be quite positive in terms of strategically identifying the ever-changing requirements of the MHS and evaluating how USU is currently meeting the needs of its primary customers, the Surgeons General. Affitting validation to the success of the relationship of USU with the Surgeons General and OSD was evidenced by the presentation of the Joint Meritorious Unit Award by the Secretary of Defense to the University on December 11, 2000.

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"In November of 1999, the USU School of Medicine (SOM) underwent a review by a survey team of the Liaison Committee on Medical Education (LCME). The LCME is the accrediting body for the 125 United States allopathic schools of medicine. The report of the survey team stated that there is ample evidence that a large number of faculty and staff members had taken the self-study seriously and participated fully in the preparation of the report. In April of 2000, the LCME informed the University President and the Dean of the SOM of its decision to give its highest award for full accreditation to the USU SOM for a maximum seven-year term. This is a splendid achievement that fully recognizes the high quality of the SOM."


Membership of the Board of Regents. The USU Board of Regents (BOR) is an advisory committee governed by the Federal Advisory Committee Act, the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5105.45. The nine members of the Board are distinguished academics, educators, health care providers and public servants; they are Presidential appointees confirmed by the United States Senate: Lonnie R. Bristow, M.D., Chair; Robert E. Anderson, M.D., Vice Chair; W. Douglas Skelton, M.D.; Everett Alvarez, Jr., J.D.; John E. Connolly, M.D.; and, Ikram U. Khan, M.D. Three remaining member positions are vacant.

Recently Appointed Vice Chair. Robert E. Anderson, M.D., was appointed as the Vice Chair of the Board of Regents on May 19, 2000. Dr. Anderson replaced Carol J. Johns, M.D., former Vice Chair, following her death in February of 2000. Dr. Anderson has served as a member of the BOR since August 1996. His former positions as Professor, Department of Laboratory Medicine and Pathology, at the University of Minnesota Medical School, Minneapolis, and Vice President, Health Sciences, for the University of Minnesota, have provided him with extensive expertise and experience that have been invaluable to the BOR.

Ex Officio Members of the Board. In addition to the nine White House appointed members, the Board also has six ex officio members. These include 1) the Acting Assistant Secretary of Defense for Health Affairs, J. Jarrett Clinton, M.D., MPH, United States Public Health Service: 2) the Surgeon General of the United States, Admiral David Satcher, United States Public Health Service: 3) the Surgeon General of the Army, Lieutenant General James B. Peake; 4) the Surgeon General of the Navy, Vice Admiral Richard A. Nelson: 5) the Surgeon General of the Air Force, Lieutenant General Paul K. Carlton, Jr.; and, 6) the President of USU, James A. Zimble, M.D., who serves as a non-voting member.

There are eight advisors to the Board: 1) the Dean, School of Medicine; 2) the Dean, Graduate School of Nursing; 3 - 6) the Commanders of the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Wilford Hall Air Force Medical Center: 7) the Director of the Defense Medical Readiness Training Institute in San Antonio, Texas; and, 8) former Assistant
Commandant of the Marine Corps, **General Thomas Morgan**, United States Marine Corps (Retired) who continues to serve as the military advisor to the Board.

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**The Board's Significant Role in Academic Affairs.** The BOR has continuously played a prominent role in academic affairs at the University, to include the final review of candidates for the USU President prior to the Secretary of Defense's selection of the University's Presidents:

**University Presidents:**

- **Anthony R. Curreri, M.D.**, was appointed by **President Nixon** in 1974 and retired in 1976;
- **Mr. David Packard, Acting President**, served from November 1976 until May 29, 1981;
- **Jay P. Sanford, M.D.**, served from May 1981 through 1990; and,
- **James A. Zimble, M.D.**, has served since July of 1991 to present.

The BOR has also reviewed the final selections for the Deans of the SOM and GSN prior to their selection by the USU President:

**School of Medicine Deans:**

- **Jay P. Sanford, M.D.**, was appointed as the first Dean, SOM, in May 1975 and served through 1990;
- **Harry C. Holloway, M.D.** served as the Deputy Dean from 1990 through June 1992;
- **Nancy E. Gary, M.D.** was appointed as Dean on June 28, 1992, and served through mid-1995; and,
- **Val G. Hemming, M.D.** was appointed as Interim Dean on July 2, 1995, and has served as Dean from May 3, 1996 to present.

**Graduate School of Nursing Dean:**

- **Faye G. Abdellah, Ed.D., Sc.D., RN**, served as Acting Dean following the establishment of the GSN in 1993; and was selected as Founding Dean, GSN, serving from May 17, 1996, to the present.

Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well-being of the University are all included in the definition of "academic affairs" provided by DoD 5105.45. The Directive clarifies it is DoD policy that "...consistent with the performance of the DoD mission..."
and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USU Board of Regents in advising the Secretary of Defense. The Assistant Secretary of Defense for Health Affairs, the USU Executive Committee, and the President of the USU will be guided by the advice of the USU Board of Regents on academic affairs."

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The Board's Mission and Responsibilities. The Board's principal mission is to assure compliance with the University's accreditation authorities. The Regents approve academic titles, as appropriate, for military and civilian members of the faculty. Additionally, upon the recommendation of the University's faculty and Deans, the Regents approve the granting of appropriate academic degrees to successful candidates. The BOR recommends the establishment of postdoctoral, postgraduate and technological institutes, and programs in continuing medical education for military members of the health professions; and, the Regents also recommend reciprocal education and research programs with foreign military medical schools. Additionally, the BOR is significantly involved with the University's strategic planning process. On April 4, 1999, the BOR's Charter, which outlines the mission, membership, duties and responsibilities of the BOR, was revised and approved by the Office of the Secretary of Defense (OSD). In addition, on February 6, 2001, the Bylaws of the USU Board of Regents were amended, in accordance with the BOR Charter, and approved by the Chair, Board of Regents. (Copies of BOR Charter and Bylaws are at Appendix A.)

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The Board's Fourth Report to the Secretary of Defense. In its fourth annual report to the Secretary of Defense, the Regents listed five highlights from among the University's many accomplishments during 2000: 1) the University's major strength continues to be the graduation of its 2,955 uniformed physician officers and 123 advanced practice nurses who ensure continuity and leadership for the MHS; the 2,567 USU physicians on active duty currently represent over twenty percent of the 12,111 physicians in the Armed Forces: the overall retention rate for USU SOM graduates from its first graduating class in 1980 to present is 89 percent; and, of the first six classes of USU SOM graduates, 42 percent hold operational or leadership positions: 2) on April 21, 2000, the National Capital Area Military Medical Simulation Center was officially opened. This cutting-edge teaching facility enhances the University's ability to present scenarios applicable to combat casualty care, anesthesia, critical care, trauma, and emergency medicine: the Center is already recognized as the foremost operation of its type. It has been highly acclaimed by both national and international visitors and participants from the Military Health System (MHS): 3) in the rapidly growing distance learning arena, the USU GSN entered into a very imaginative, and highly successful, partnership with the Department of Veterans Affairs (VA) to provide a twenty-month distance learning program for currently employed, master's prepared VA nurses to complete a certificate program as adult nurse practitioners. The students were located at eight VA medical centers across the United States. In May of 1999, the first class of 26 students graduated in a virtual advanced graduation ceremony; all graduates who have taken their certification examinations have passed. A second class will graduate in May of 2001: 4) in addition to excellence in military medicine, USU also serves as an ideal focal point for academic and operational collaboration. In its role as the Academic Center for Military Medicine during 2000, the University
sponsored conferences on military medicine such as "A Challenge to Readiness: Injuries in the Military," and "Military Medical Humanitarian Assistance;" and, 5) the SOM and GSN developed a three-day course to prepare medical residents, junior staff, and advanced practice nurses to work in an environment of limited medications and capabilities, different diseases and considerations, and with colleagues from many nations and non-governmental organizations. (All of these accomplishments are described in detail in Sections I, II and III of this report.)

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Carol J. Johns, M.D. - A Memorial. Carol J. Johns was recognized by the BOR for fifteen years of distinguished service as the Vice Chair of the USU Board of Regents from 1985 until her death on February 24, 2000. Dr. Johns' dedication to the University and her tremendous interest in faculty issues resulted in significant contributions toward the improvement of military medical education at USU. The USU community praised Dr. Johns as a constant, strong, and energetic advocate for the University; she was active in all aspects of USU with a special focus on the well-being of the faculty. Dr. Johns had been a full-time member of the faculty and staff of the Johns Hopkins Hospital and University in Baltimore since 1967 where she had been recently promoted to Professor of Medicine. Dr. Johns had particular interest in inflammatory lung diseases, especially sarcoidosis and tuberculosis, as well as the ambulatory care program at Johns Hopkins. She received a Bachelor's Degree in Chemistry from Wellesley College in 1944; while there, she was elected to Phi Beta Kappa and Sigma Xi and named a Durant Scholar. She earned her medical degree from Johns Hopkins in 1950. A trustee of Wellesley College for 19 years, Dr. Johns returned to the school to serve as Acting President from 1979 to 1980 while on a leave of absence from Johns Hopkins. From 1981 to 1983, she served as Assistant Dean and Director of Continuing Education at Johns Hopkins. Dr. Johns served on the Board of Directors (1978-1988) and as the President of Alpha Omega, the honorary medical society. The Medical College of Pennsylvania named her Medical Woman of the Year in 1974, and the American College of Physicians made her a Master of the College. Dr. Johns served on the Armed Forces Epidemiological Board. She was also the Chair of the Board of the Baltimore City Professional Standards Review Organization from 1975 to 1979. Dr. Johns truly respected and valued the USU mission. For her contributions over fifteen years of service, Dr. Johns was awarded, posthumously, the University's Distinguished Service Medal. She will be missed by the USU community.

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**STRATEGIC PLANNING**

A Perpetual Work-In-Progress. The USU Strategic Plan has been continuously evolving to reflect the changing requirements of the Military Health System Strategic Plan, which, in turn, is also linked with the Strategic Plans of our primary customers, the Surgeons General of the Army, Navy, and Air Force. Beginning with the Strategic Planning Process initiated during 1991, an increasingly systematic approach has been developed for setting the University’s priorities and allocating resources. During 1998, the University updated the basic objectives under each of the goals of its Strategic Plan. Since then, metrics or performance measurements have been established for each objective. Currently, USU activities must show a direct relationship with the overall USU Strategic Plan when submitting their requests for future budgets. Thus, a formal process has evolved for identifying program needs and for submitting increased budget requests. Involvement of USU administration, faculty and staff at both the formal and informal levels of the decision-making process assists in the allocation of resources throughout the University’s wide range of activities. The USU Strategic Plan is also used to develop the annual Program Objective Memorandum (POM) submission for the University. The POM request, covering a five to six year timeframe, is submitted to the Department of Defense, through the Office of the Navy Surgeon General, to gain necessary funds for the USU budget. As already indicated, all issues requiring funding must tie into the USU Strategic Plan. (The USU Strategic Plan is provided at Appendix B.)

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Progress Toward Achieving the University’s Strategic Goals. As the strategic planning process continued during 2000, the University continued to review the effectiveness of its established performance measures for each objective. The following are examples of selected issues and accomplishments reported during 2000 for the University’s six strategic goals (additional information on each of the listed accomplishments is provided throughout the 2000 Edition of the USU Journal):

**GOAL 1: Preeminence in the Academics of Military and Operational Medicine**

"... USUHS has been selected to join 10 other medical schools (Baylor College of Medicine; UCLA School of Medicine; University of California, San Francisco; Duke University School of Medicine; Harvard Medical School; University of Iowa; Mayo Medical School; MCP Hahnemann University School of Medicine; Mount Sinai School of Medicine; and, the University of Rochester School of Medicine) at the Millennium Conference on the Clinical Education of Medical Students co-sponsored by the Shapiro Institute for Education and Research and the Association of American Medical Colleges. In making our selections ... we strived for representation of a spectrum of critical themes in clinical education, including faculty development and reward, assessment of student performance, the fourth-year curriculum, and the use of technology to enhance clinical teaching. The selection committee was impressed by your extensive and innovative uses of technology in the training and evaluation of not only medical students, but also postgraduate trainees and nursing students, by your commitment to using your educational system as a 'laboratory for measuring outcomes for curricular revision and for educational interventions;' and your understanding of the importance of recognizing and rewarding faculty who focus their academic endeavors on medical education. Your current efforts and plans for the near future will contribute
greatly to the work we hope to do together at the Millennium Conference ... on April 28 (through May 1, 2001). ... We are equally pleased with the extraordinary caliber of schools that will be represented at the conference."


The National Capital Area Medical Simulation Center. The National Capital Area Medical Simulation Center, a collaborative project between USU and the Surgeons General, officially began operations with a ribbon-cutting ceremony on April 21, 2000. The Simulation Center, located at the Walter Reed Army Medical Center annex in Forest Glen, Maryland, uses virtual reality technology, life-like mannequins and actor "patients" to support not only the USU programs but the other military medical centers in the Washington, D.C. area. The USU Simulation Center is unique among the limited simulation centers currently found at civilian medical schools because three state-of-the-art components are under one roof - virtual reality technology, computerized mannequin simulators, and patient "actors." The importance of simulation technologies, particularly in training, is that simulators allow "virtual" training before the actual provision of medical treatment; thus, students are able to develop clinical skills without the risk of harming a patient. The Simulation Center will also generate cost-avoidance through the provision of readiness training and distance learning for the MHS as requested by the Surgeons General.

The recent changes in the military healthcare environment such as the redistribution of resources, military down-sizing, the shift to outpatient from inpatient care, and privatization issues with TRICARE have all had an impact on medical education. Most of the clinical faculty at the military "Teaching Hospitals" are requested to accept increased clinical, operational, and administrative responsibilities at their respective clinical sites as well as multiple academic tasks. This directly affects faculty availability for the instruction of medical students. During 1999, the Simulation Center served as the site for the Introduction to Clinical Medicine I, a course that teaches medical interviewing skills; during 2000, the Simulation Center proved to be essential for USU to support the Introduction to Clinical Medicine III Course. During 2000, the Strategic Goal Group focused on current clerkship issues, to include careful analyses of current trends, and the Simulation Center's future role in addressing related areas of concern.

School of Medicine Earns Continued Full Accreditation. The Liaison Committee on Medical Education (LCME), a joint committee of the Association of American Medical Colleges (AAMC) and the Council on Medical Education of the American Medical Association (AMA) informed the USU President in correspondence dated April 13, 2000, that USU was granted "continued full accreditation of the educational program leading to the MD degree for a seven-year term." The accreditation process began with a Self-study submitted to the LCME by the School of Medicine; the Self-study was followed with a site visit at USU by the LCME on November 14-18, 1999.

Academic Center for Military Medicine. During 2000, the University continued to serve as the Academic Center for Military Medicine for some 2,429 active duty, off-campus USU faculty located throughout the MHS. Through its continuing medical education programs and academic centers, the University presented military-relevant conferences and continued, or initiated, collaborative efforts as follows:
1) the Fourteenth Conference on Military Medicine, "A Challenge to Readiness: Injuries in the Military," was presented at USU on May 24-26, 2000; 2) during July 14-16, 2000, the Center for the Study of Traumatic Stress of the USU Department of Psychiatry organized and sponsored a three day conference with the Center for Mental Health Services, Department of Health and Human Services, on "Planning for Bioterrorism: Behavioral and Mental Health Responses to Weapons of Mass Destruction and Mass Disruption:" 3) the USU Casualty Care Research Center conducted the fourth International Conference on Tactical Emergency Medicine, "TEMS 2000: Combating Terrorism," on June 10-11, 2000: an international audience of more than 200 participants attended; 4) the Armed Forces Radiobiology Research Institute (AFRRI) hosted a three-day conference on "The Operational Impact of Psychological Casualties from Weapons of Mass Destruction" at the USUHS campus on July 25-27, 2000: over 300 attended the conference; 5) USU's Center for Disaster and Humanitarian Assistance Medicine was a major contributor at the 10th Annual Asia-Pacific Military Medical Conference held in Singapore during mid-2000: the conference was attended by 400 individuals from 28 Nations: 6) the second DoD Conference on Civilian Education and Professional Development, "Quality Initiative for the 21st Century: Continuing the Dialogue," was presented at USU on August 8-9, 2000: 7) USU furthered its worldwide reputation as a center of excellence for military medical education and research by signing an agreement on academic cooperation for military medical personnel with the Ministry of Defense of Thailand: an increasing number of international military medical institutions, largely from the former Soviet Union, sought affiliations and/or support from USU during 2000: 8) strategic partnerships flourished between USU and the Departments of State, Veterans Affairs, Justice, and Health and Human Services, the National Aeronautics and Space Administration, and the National Library of Medicine: 9) the inauguration of the USU Center for Space Medicine was held on November 21, 2000; the center has been formed to foster interdisciplinary research and education in space science medicine: and, 10) the BOR approved, in principle, the concept of creating a Military Cancer Institute at USU in November of 2000.

GOAL 2: Information Technologies and Resources

Hand-Held Computers for Students. By November of 2000, the Biomedical Informatics Department was formally established and began the implementation of a Hand-Held Computer Program for the SOM students. Hand-held computers were provided by the University during 2000 to the second year medical school class. These computers will provide common paths of communication as School of Medicine (SOM) students enter their rotation cycles.

High-Speed Network Link to Internet-2. Through collaboration with the National Library of Medicine, an ultra, high-speed network link to Internet-2 has been arranged for the main USU campus and the Simulation Center. This network link will enhance the University's teaching programs through the use of virtual reality methodologies and distance learning and should be installed during 2001.

Expanded Library Services to the Military Services. The USU Learning Resources Center (LRC), in collaboration with the USU Executive Committee and the Services, extended its electronic library services to the Service libraries during 2000.
Achievements by the University Information Systems (UIS) Division During 2000. 1) Approximately 80 percent of the University has been converted to the twisted-pair 10/100mb infrastructure; UIS continued its work with the Base Ring Committee Integrated Project Team to move the Base (National Naval Medical Center (NNMC) into a star topology for the Base-Wide Area Network; 2) USU signed an agreement with the Maryland Enterprise Educational Consortium to license the Microsoft Suite (the latest in Microsoft software) for all students, staff, and faculty; UIS manages the distribution and accountability of this software for USU and AFRRI; 3) the UIS Helpdesk closed over 7,000 trouble calls during 2000 ranging from network connectivity to desktop support; 4) Desktop Computer Leasing to support operations and maintenance requirements is in its third round and has led to increased standardization, automatic technology refreshment, and the transfer of funding to the annual base; 5) the UIS Information Engineering Branch is building the new Student Tracking and Registration System (STARSII) which will track USU students from accession through matriculation, graduation, and alumni status; this system will consolidate five legacy systems presently running on the University's VAX Cluster into an Oracle WindowsNT based environment; 6) video teleconferencing (VTC) equipment has been used in the classrooms in support of the Distance Learning Program being conducted by the Graduate School of Nursing and the Department of Veterans Affairs; and, 7) a Firewall system (software and hardware) to establish an appropriate security system for the University and its various customers was funded in the 2001 budget; collaboration is on-going with the USU Security Division to review and implement the revised USU Computer Security Plan.

GOAL 3: Research and Development

USU Research Programs Increase Funding Levels. Growth in research funding has continued to increase over the past few years. For example, in 1998, research funding granted to the USU researchers totalled some $44 million; in 2000, research funding had increased to $76.5 million. Of note, funding from the National Institutes of Health has increased from $7 million in 1998 to $10 million in 2000.

USU Office of Research Administration. There were over 500 active research protocols at USU during 2000. The 12 members of the Office of Research Administration managed all protocols and reporting requirements; they monitored, coordinated, and/or enforced DoD and Federal guidelines to assure that USU is in compliance with all safety requirements issued for the workplace, the researchers, and their subjects. Work was also completed during 2000 to strength all compliance processes through training and expanded committee participation.

Standardized Institutional Review Boards (IRBs). In November of 2000, the Acting Assistant Secretary of Defense offered to initiate a coordination process with the Surgeons General to standardize and simplify the research IRB processes for the metropolitan area. This is an extremely important process and will be placed as a top priority for the USU executive management.

7th Faculty Senate Research Day 2000. On March 22 and 23, 2000, USU held its 7th Research Day/Graduate Student Colloquium. USU faculty, researchers at affiliated institutions, graduate students, and several medical students exchanged information through the presentation of over 175 posters and 45 oral talks. The Graduate Student Colloquium featured oral presentations and posters; the Bullard Lecture,
presented by Dr. Roger Perlmutter, was titled "Protein Kinases and Protein Kinase Inhibitors: Prospects for the Development of Breakthrough Therapeutics."

**GOAL 4: Resource Stewardship**

**Contracting Activities.** During 2000, the Contracting Directorate received $10,666,445 in extramural funds in support of the fifteen major programs managed by the Contracting Directorate. The USU Contracting Directorate administered and managed extramurally funded programs valued at well over $50 million; the medical departments of the Army, Navy, and Air Force and other DoD activities sponsor most of these programs. Examples of the extramural programs are: the Center for Prostate Disease Research; the Center for Casualty Care Research; the Center for Disaster and Humanitarian Assistance Medicine; and, the Center for Ergonomics and Workplace Health. The Directorate also processed 1,300 USU funded requirements totalling $11,612,168 during 2000 in support of USU activities. The most significant included funding for equipment for the Simulation Center; an Automated Physiology Teaching System; an Attofluor Ratio Vision System for scientific research involving digital ratio imaging and photometry; and, a Laser Capture Micro-Dissection System for conducting dermatological research.

**Grants Management Activities.** During 2000, the University established the Grants Management Office and Grants Officer position to provide administrative management for grant agreements awarded by USU. In its first year of operation, the Office awarded 22 new grant agreements, worth more than $25 million and completed 137 grant modifications. Currently, there are 117 active USU awarded grant agreements ranging from $5,000 to $44 million managed by the Office.

**Financial Management Activities.** Due to an aggressive Travel Card Program implemented by the USU Financial Management Division Travel Pay Office, the USU Travel Card Manager, and the USU senior management, the University was the top rated Defense Agency (for prompt payment) for all of DoD in December 2000, and the top rated agency for those with 1,000 cardholders or more for the entire year. Through the use of the Treasury's On-Line Payment and Collection System, the USU Financial Management Division reduced its average collection time by almost 40 days. The Office also completed a space utilization survey that resulted in the identification of 11,293 square feet of additional USU space utilized by Foundation-sponsored research. During 2000, the USU Budget Office successfully coordinated with the USU Executive Committee and the DoD for increased funding required by the USU Simulation Center and the Military Training Network. Also during 2000, funding was identified to complete phases of facility projects such as plaza repairs, elevator upgrades, laboratory rehabilitation, and heating ventilation and air conditioning replacement upgrades.

**Resource Management Information Activities.** During 2000, the University's financial management support services performed by the Defense Finance and Accounting Service (DFAS), were transferred from the Denver Center to the Omaha Operating Location. In addition to site visits to facilitate training and guidance, the Resource Management Information (RMI) Office ensured a smooth transition by establishing user accounts, redirecting printer queues, adjusting report distribution schedules, and converting civilian
payroll and automated disbursement program codes. As a result, the University community did not experience adverse service or support during the relocation process by DFAS.

GOAL 5: Organizational Culture

USU Community Sessions. During March of 2000, the USU Office of Equal Employment Opportunity (EEO) presented a USU Community Session to reinforce the understanding and appreciation for the cultural diversity that exists throughout the University. The format of the session included a panel discussion on the themes addressed during the "Year 2000 Dr. Martin Luther King Birthday Celebration: The Reflection in the Mirror." The panel discussion, held in March, resulted in an energetic exchange of ideas between the panel and a large representation from the USU community. During 2000, the Offices of University Recruitment and Diversity Affairs (ORD), Student Affairs, EEO, Equal Opportunity (EO), the USU Brigade Commander, and the Civilian Human Resources Division collaborated to ensure: 1) the communication of equal opportunity principles throughout the University; 2) the timely sharing of information; 3) and, training in personal development, supervisory skills, and the appreciation of diverse cultures. The Women in Medicine and Science Group, sponsored by ORD, met monthly throughout 2000 to discuss issues affecting women in medicine.

Provision of Formal and Informal Counseling. The USU Offices of Equal Employment Opportunity (EEO), Equal Opportunity (EO), Recruitment and Diversity Affairs (ORD), and Student Affairs (OSA) continued to provide formal and informal counseling throughout 2000. The EO Office provided ten informal counseling sessions to the uniformed members of USU; the EEO Office provided one formal and five informal counseling sessions to the USU civilian staff; and, the Offices of ORD and OSA continuously provided counseling sessions to the USU uniformed students throughout 2000. The success of these counseling sessions is evidenced by the ever increasing appreciation and respect shared among the individual members of the University.

External and Internal Communication. During 2000, the extraordinary efforts of the Center for Informatics in Medicine, the Educational Technology with Computers Special Interest Group, the Office of University Affairs, the Civilian Human Resources Division, the Office of Research Administration, the publication of the USUHS Journal and the USU Quarterly Magazine, and the Office of University Information Systems combined to: facilitate access to current activities of the University; provide electronic programs to enhance computer orientation courses, existing educational programs, and new educational services; and, create web pages for general information (including instructions, procedures, and evaluation processes) for the entire USU community. The sharing of the USUHS Journal with USU customers during 2000, resulted in letters of acknowledgement and accolades from the Deputy Secretary of Defense, the Chairman of the Joint Chiefs of Staff, the Chief of Naval Operations, the Commandant of the Marine Corps, the American Medical Association, and the Secretary of the Air Force.

USU Orientation Program. On October 23, 2000, the senior leadership of USU provided the first formal session of a newly designed USU Orientation Program to 45 new members of the University: 25 civilians; and, 20 uniformed members. The purpose of the program is to present the philosophy, goals, policies,
and leadership principles of the University; orientation packets with key facts and other selected information were provided for review and future reference. The program successfully promoted a positive experience for the new employees and allowed them to meet the senior management of USU. Similar sessions will continue. In February of 2000, the School of Medicine Office of Faculty Affairs issued a faculty handbook on the USU web which describes the organization and functions of the various components of the University; the handbook serves as a quick guide for the delegation of responsibilities at USU and where to seek information, guidance, or other faculty-related requirements. In addition, the USU Environmental Health and Occupational Safety (EHS) Department initiated an intense program to raise the safety consciousness of the USU researchers and the general community.

Development and Recognition Programs. During 2000 extensive efforts were made to present opportunities for the personal development and recognition of the USU community: 1) the USU Institutional Animal Care and Use Committee and Laboratory Animal Management (LAM) developed a Protocol Writing Workshop for investigators utilizing animals in research and education; 2) a renewed emphasis was placed by the Civilian Human Resources (CHR) Division on Individual Development Plans for the civilian workforce; the initial goal of ten percent participation was achieved during 2000 3) CHR also offered ten advanced management classes which were attended by 340 USU faculty, staff, and students; 4) the Department of Family Medicine, in coordination with the SOM Office of Faculty Affairs, offered numerous courses and seminars which strongly supported faculty development throughout the USU community; 5) the University President personally presented service awards to 40 USU employees; during the same time frame, the Brigade Office of Military Personnel approved and processed 82 awards for the uniformed members of USU; and, 6) the University continued its sponsorship of both the USU Toastmasters and the USU Mentoring Programs.

GOAL 6: University Recruitment and Diversity Affairs

Recruitment Strategies. The recruitment strategies implemented during 2000 by the Office of University Recruitment and Diversity Affairs (ORD) in coordination with the Office of University Affairs, the Office of Graduate Education, and the Office of the USU Brigade Commander reflect the University's desire to increase the matriculation of underrepresented minorities. Efforts included attendance at some 36 Recruitment Fairs; approximately 30 staff visits to Reserve Officer Training Corps (ROTC) Units; the placement of numerous published advertisements in selected publications; and, the USU Liaison Program which includes coordination between ORD and the USU Alumni Affairs staff in the formulation and implementation of recruitment action plans.

On-Going and Future Activities. During 2000, redesigned recruiting packages were widely distributed at military installations throughout the MHS; community outreach programs were active and included the Helping Hands Clinic Project and the Youth Science Enrichment Programs; plans were initiated for USU alumni to recruit at institutions near their current duty stations; and, the creation of a "pipeline" from institutions where many USU matriculants have completed their undergraduate work is being formulated.

Post-Baccalaureate Program. This program is modeled after current civilian post-baccalaureate programs while maintaining compliance with federal laws and restrictions and simulating service academy preparatory
schools. The program’s goal is to increase representation at USU of economically or educationally disadvantaged students, to include current active duty enlisted and uniformed officers. During the Fall of 2000, three students entered the program. The two students who completed the program during 1999 were accepted and are currently in their first year of medical school.

**MOU for Biomedical Research.** The USU office of the Dean, SOM, sponsored six minority students from the University of Maryland Eastern Shore (UMES). Six students and one faculty member from UMES performed research by joining various USU laboratories with on-going research projects. The UMES students and faculty made outstanding contributions during the successfully implemented program as a result of successful coordination between ORD and the Office of Graduate Education.

**The Helping Hands Project.** During 2000, approximately 60 USU students provided assistance to the poor and homeless of Takoma Park and the surrounding neighborhoods by participating in the Helping Hands Project. The USU students and participating faculty became acquainted with available community resources and learned about the health care needs of their patients; the patients were treated for chronic problems such as hypertension, depression, arthritis, and diabetes. Depending upon the clinic, students saw from six to fifteen patients during their three-hour shifts. This on-going Project has provided USU students and faculty the opportunity to work with patients from diverse backgrounds who have unique life experiences.

**A Volunteer Program for Diversity.** Throughout 2000, the Youth Science Enrichment Program continued its quarterly, often bi-monthly trips to the local public schools. USU students and faculty interacted with, presented scientific lectures, and served as professional role models for the young, public school students. The USU Youth Science Enrichment Program has been an on-going successful outreach program designed to assist minorities and underprivileged individuals in the Washington, D.C. and surrounding areas.

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RELEVANCE - MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity and Leadership and Ensure Medical Readiness

**The School of Medicine.** The importance of pre-war and wartime knowledge of medical requirements was one of the significant factors that motivated both the Congress and the Executive Office of the President, in 1972, to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for military physicians. Public Law 92-426 established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces, USU was established to provide a cadre of military medical officers who would serve a career as active duty physicians and effectively ensure continuity and leadership for the MHS.

**Continuity.** With the graduation of its 21st School of Medicine (SOM) Class, 2,955 uniformed officers have been granted Medical Degrees. Currently, the 2,567 USU physicians on active duty in the Uniformed Services represent over twenty percent, or one out of every five, of the total MHS force of some 12,111 physicians; the congressional founders envisioned USU representation at ten percent.

**Leadership.** The overall retention rate for USU graduates from its first class to the present is 89 percent; Congress had originally envisioned retention rates close to 70 percent. In accordance with these extraordinary retention rates, a recent review documented that of the first six classes of the USU SOM graduates, 42 percent hold significant operational or leadership positions ensuring continuity and leadership for the MHS.

**Medical Readiness.** USU is the Nation’s only University dedicated to ensure readiness for the MHS. In 1998, the Association of American Medical Colleges recognized USU as the "one place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism. USU students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures." The MHS must provide quality health care during humanitarian, civic assistance, or operational contingencies. This critical response requires that physicians in the MHS be provided a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USU students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. In addition, the multi-Service environment of USU generates an understanding of the cultures and vocabularies of the Army, Navy, Air Force, and the Public Health Service, which ensures two of the essential components of readiness: flexibility and continuity during joint service operational contingencies. And, the USU SOM has implemented innovative efforts to meet the evolving requirements of medical readiness: the newly established Medical Simulation Center and Patient Simulation Laboratory; the SOM Department of Biomedical Informatics; and, the new interdisciplinary graduate program, Emerging Infectious Diseases. (See Section II for a detailed description of the SOM programs.)

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**The Graduate School of Nursing.** In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners to meet the needs of the Uniformed Services. In the short time since its establishment, the USU Graduate School of Nursing (GSN) has 1) recruited a qualified faculty; 2) successfully established curricula for two programs; 3) identified accredited clinical practice sites and completed memoranda of understanding with 17 military treatment facilities; 4) submitted self-studies and received accreditation for its two programs from three professional accrediting entities; 5) received formal approval from Health Affairs, Office of the Secretary of Defense; 6) initiated, implemented, and has continuously reviewed the outcomes evaluation process for both academic programs; and, 7) awarded 123 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its Family Nurse Practitioner and Certified Registered Nurse Anesthesia Programs; all graduates have passed their certification examinations: and, 96 percent, or 118, of the GSN graduates remain on active duty.

Advanced Degrees Earned Though Distance Learning. In 1999, the distance learning collaborative efforts of the Graduate School of Nursing with the Department of Veterans Affairs (VA) successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critical specialty areas while maintaining their current positions. Twenty-six students, through a "virtual commencement exercise," graduated from the VA/DoD Distance Learning Program on May 18, 1999; all graduates were eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation for either the VA or DoD. The experience gained by both the GSN and the VA will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month program.

VA/DoD Distance Learning Program: From Concept to Graduation. A joint report, VA/DoD Post-Master's Adult Nurse Practitioner Distance Learning Program: From Concept to Graduation, was issued by the USU GSN and the VA Nursing Strategic Healthcare Group in November of 2000. The report documents, in chronological order, the formulation of the partnership between the DoD and the VA, the conceptual stages and developmental processes, learning strategies, course evolvement, assessment methodologies, clinical experiences, and the transmission effectiveness (computer technology and video teleconferencing) for the entire program. In short, the report provides an inclusive roadmap for the implementation of a distance learning program - from concept to the matriculation of the second class. (See Section III for a detailed description of the GSN programs.)

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**ACCREDITATION**

The Middle States Association of Colleges and Schools. The University is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools (MSA/CHE). The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received "candidate for accreditation status" from the MSA/CHE in 1977, and has retained accreditation since 1984.

Prior to the site visit by the Middle States Association, a USU Periodic Report was submitted to the MSA/CHE during June of 1998. The Middle States Self-Study was prepared by the Associate Dean for Medical Education through extensive coordination with the Activity Heads of the University. In July of 1998, the MSA/CHE reported that the USU Periodic Report was "to be applauded for its serious and candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993." The MSA correspondence further emphasized that "it is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future ... The move toward distance education is taking hold in education today ... the Graduate School of Nursing is using this strategy to reach out to nurses ... The Dean (SOM) has already begun to integrate duplicate programs, develop new ambulatory care sites and revise the medical curriculum ..." On December 1, 1998, the USUHS President was notified by the Middle States Association that the University had been granted full accreditation, with no follow-up required. The next evaluation visit by the MSA/CHE is scheduled for 2002-2003.

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Fourteen Accrediting Entities Ensure that Educational Standards Are Met by the University. In addition to the MSA/CHE accreditation, the following thirteen professional organizations continue to authorize accreditation for the University's schools and programs:

**SOM:** 1) the Liaison Committee on Medical Education (LCME); 2) the Accreditation Council for Graduate Medical Education (ACGME); 3) the American Psychological Association Committee on Accreditation; 4) the Council on Education for Public Health;

**GSN:** 5) the National League for Nursing (NLN); 6) the Council on Accreditation of Nurse Anesthesia Programs (COA); 7) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (AACN/CCNE);

**University:** 8) the Nuclear Regulatory Commission (NRC); 9) the American Association for the Accreditation of Laboratory Animal Care (AAALAC); 10) the Accreditation Council for Continuing Medical Education (ACCME); 11) the American Nurses Credentialing Center's Commission on Accreditation; 12) the American College of Healthcare Executives (ACHE); and, 13) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners.

Individual discussions on the accreditation for the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided at sections II, III, IV, V, and VI of this report.

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"USUHS is a valuable asset not only to the Department, but also our country ... the current priority for the Defense Health Program is to increase access to health care in the military treatment facilities (MTFs) and TRICARE. We are currently optimizing our MTFs to provide increased health care to all beneficiaries, including retirees and their family members. The graduates from the USUHS will contribute greatly to our optimization efforts.”

- Letter from Dr. Sue Bailey, the Assistant Secretary of Defense for Health Affairs, dated July 12, 2000.

OSD-Conducted Surveys Recognize USU’s Academic Certification and Faculty Credentials. In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an Office of the Chancellor for Education and Professional Development. Throughout 1997 and 1998, USU participated in intensive surveys on streamlining education throughout DoD. The University provided inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; these responses included all of the services/products resourced by USU as part of its operating cost. These OSD-conducted surveys mark the first official OSD recognition of the multiple products of USU in addition to its medical school graduates. As a result of those surveys, and based on the average course length of the continuing education efforts of the University, OSD analysts identified approximately 188 student man years in addition to the 865 (SOM - 660; GSN - 90 Graduate Education - 115) students who are traditionally credited to the University.

During 1998, in response to DoD's Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted for use in the development of a blueprint for the Office of the Chancellor to be established within OSD. The Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU has the strongest academic certification and faculty credentials among all activities surveyed.

The Office of the Chancellor for Education and Professional Development, Jerome F. Smith, Jr., Ph.D., was named as the first Chancellor for Education and Professional Development by the Secretary of Defense; he was sworn in by the Deputy Secretary of Defense on October 2, 1998. In this position, he serves as the principal advocate for the quality and cost effectiveness of education for civilian personnel in the Department of Defense. Since its establishment, the Office of the Chancellor for Education and Professional Development has maintained an open line of communication with the University. The Chancellor participated in DoD’s first virtual graduation ceremonies at USU on May 18, 1999, when the DoD/VA Distance Learning Program celebrated its first virtual graduation. The OSD Office also sponsored the Second Department of Defense Conference on Civilian Education and Professional Development, Quality Initiatives for the 21st Century: Continuing the Dialogue, at the USU complex on August 8-9, 2000. Some 65 DoD organizations were represented. The Third Conference on Civilian Education and Professional Development: Making
Excellence a Standard is scheduled for June 26-27, 2001, at the Joint Military Intelligence College.

As part of an on-going process for sharing information, the following University-wide faculty totals were provided on August 1, 2000, to the Office of the Chancellor of Education and Professional Development:

**Full Time Faculty Assigned to USU - 313**

- 189 civilians and 124 uniformed officers

**Adjunct Faculty - 3,662**

- 1,233 civilians and 2,429 uniformed officers.

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**Joint Meritorious Unit Award.** On December 11, 2000, the Secretary of Defense awarded the Joint Meritorious Unit Award to the University. This significant award documents OSD’s recognition of the essential mission, exceptional service over the past decade, and the multiple cost-effective programs of USU. Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, mandated that the University should meet the special needs of the Military Health System (MHS) through the provision of uniquely trained, career physician officers who would ensure continuity and leadership for the MHS. As validated by the Secretary of Defense in the citation for the award, the University has exceeded the three goals set by the early visionaries who established USU.

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**Multiple Products and Services Generate Cost-Avoidance for the Military Health System.** Critical to the University’s efforts for optimization, the Commission on Higher Education of the Middle States Association of Colleges and Schools has granted full accreditation to USU since 1984. This essential accreditation has enabled the University to support and generate cost avoidance for the MHS through its multiple educational programs, all of which are fully accredited by thirteen independent accrediting entities. In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, USU provides the following services to the Military Health System (MHS): 1) uniquely trained, career-oriented physicians who are well prepared, in a multi-Service environment, in the practice of military medicine; currently, 2,567, out of a total of 2,955, USU School of Medicine (SOM) graduates provide continuity and leadership as uniformed physician officers; 2) the recently established USU Graduate School of Nursing (GSN) has provided 123 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its Family Nurse Practitioner and Certified Registered Nurse Anesthesia Programs, as required by the Federal Nursing Chiefs; 3) in 2000, during their course of teaching, the USU faculty provided over 140,000 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs).
in the National Capital Area; the annual, manpower cost avoidance generated by the USU faculty through this clinical support is estimated at $9.2 million; 4) the SOM Graduate Degree Programs have conferred a total of 616 Basic Science Degrees; the annual cost avoidance generated by the USU SOM Graduate Education Programs for the MHS is estimated at $30,000 for each advanced degree granted to a uniformed officer; 5) the USU Office of Graduate Medical Education (GME) provides cost-effective support for the MHS in that it serves as the Administrative Office for the National Capital Consortium (NCC); collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, oversees the integration of DoD GME programs to ensure that accreditation is not jeopardized. As of December 31, 2000, the NCC has sponsored 50 integrated medical training programs; 6) the USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective support for the MHS by facilitating the continued professional growth of health care professionals throughout the MHS; because CHE brings medical training to the medical health care professionals, an annual, estimated cost-avoidance of $11.4 million is generated for the MHS; 7) USU serves as the Academic Center for academic and research activities for 2,429 active-duty, off-campus USU faculty located throughout the MHS; USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS; in addition, military relevant consultation is continuously provided to the MHS and other federal agencies by the internationally recognized experts within the University’s multiple centers, departments, and the newly established Medical Simulation Center and Patient Simulation Laboratory; and, 8) the USU GSN Distance Learning Program, a collaborative effort with the Department of Veterans Affairs (VA), will graduate its second class on May 15, 2001; the experience gained by both the GSN and the VA, to include their collaborative report, From Concept to Graduation, will allow future, cost-effective DoD projects utilizing distance learning to benefit from the lessons learned and the technologies tested during the twenty-month program. All of these products and services are resourced as part of the operating cost of the University and are discussed throughout this report.

The OSD surveys of 1997 and 1998, mentioned above, the USU Board of Regents Reports to the Secretary of Defense, the Surgeons General analyses during 2000, and the OSD Joint Meritorious Unit Award of 2000, all serve to acknowledge both the strengthened relationship of the University with OSD and OSD's recognition of the numerous cost-effective programs of USU.

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"The Service Chiefs and I continue to work closely with the Secretary of Defense, the Administration, and the Congress to provide Service members, retirees, and their families with the greatest possible Military Health System within the law and available resources. The USUHS program is an enabler in this important process."

- Letter from General Henry H. Shelton, Chairman of the Joint Chiefs of Staff, to the University, dated May 8, 2000.

Active-Duty, Off-Campus USU Faculty Total 2,429. Multiple USU academic and research activities contribute to the medical knowledge and technology base available to the MHS. 2,429 active-duty, off-campus USU faculty members throughout the MHS collaborate in academic and research efforts with the University. Through these collaborative efforts, USU serves as the Academic Center for those military medical officers and health care providers who seek to advance their military careers and their knowledge of uniformed health care. For their valuable service to the University, these active duty, off-campus faculty members are awarded appropriate academic rank. This section provides selected examples of military relevant conferences or academic activities sponsored by, or collaborated with, the USU faculty; all of which serve to earn USU the title of Academic Center for Military Medicine.

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Fourteenth Conference on Military Medicine - "A Challenge to Readiness: Injuries in the Military, May 24-26, 2000, USU Campus. The University continued to serve as the Academic Center for Military Medicine through the planning and presentation of the Fourteenth Conference on Military Medicine - "A Challenge to Readiness: Injuries in the Military," which was held on the USU campus from May 24-26, 2000, with 171 attendees. The military medicine conferences are annual continuing education activities that focus specifically on current challenges facing military medicine. The 2000 Conference on Military Medicine addressed a relevant and most significant area of concern for military readiness. Of the 171 participants who attended the 14th Conference on Military Medicine, specialty groups largely included physicians and nurses, although nurse practitioners, medical service corps, biological scientists, psychologists, and social workers were also in attendance. One of the keynote speakers on May 26th, was Mr. Rudy DeLeon, the Deputy Secretary of Defense.

Continuing Medical and Nursing Education. USU is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The USU Office of Continuing Education for Health Professionals (CHE) took responsibility for the content, quality, and scientific integrity of the 14th Conference on Military Medicine. USU CHE designated this educational activity for a maximum of 17 hours in Category 1 credit towards the American Medical Association Physicians Recognition Award. USU is also accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. The 2000 Conference on Military Medicine was recognized for 20.4 contact hours by the USU Office of CHE.
Background. An injury is defined as any intentional or unintentional damage to the body resulting from acute or chronic exposure to mechanical, thermal, electrical, or chemical energy or from the absence of such essentials as heat or oxygen. In the past 20 years, injuries in the Armed Forces have been responsible for more deaths, disabilities, hospitalizations, and outpatient visits than any other cause. Injuries are the single, most significant medical impediment to readiness for the military. Not only do injuries impact the strength and ability of our Armed Forces to effectively respond to their mission, they levy tremendous annual costs in the hundreds of millions against the operating budgets of all the Services:

- Deaths due to injuries were responsible for 75 percent of military personnel deaths from 1980 through 1993; 50 percent of all deaths were due to unintentional injuries, primarily caused by motor vehicles; and, another 25 percent were caused by intentional injuries (suicides, homicides, and hostile actions);

- Disabilities due to musculoskeletal (orthopedic) conditions were the leading cause of disabilities for all military services in both 1994 and 1995. During December of 1994, injuries accounted for nearly half of all disabilities compensated by the Veterans Administration and the resulting compensation costs of $347 million:

- Hospitalizations due to injuries and injury-related musculoskeletal disorders were the leading cause of hospitalization for the Army, Navy, and Marine Corps, and the second leading cause of hospitalization for the Air Force in 1994. During Operations Desert Shield and Storm, nonbattle injuries were the leading cause of hospitalization for Army personnel; and,

- Outpatient visits due to injuries are generally the result of injuries and musculoskeletal disorders associated with physical training and vigorous operational activities. These injuries have a significant impact on readiness. A fracture can account for over 100 lost duty days, and a simple sprain can result in several weeks of limited duty; either would restrict deployability.

Discussion Topics. Discussion topics included accidents, suicide, homicide, domestic violence, occupational hazards, injury treatment, prevention strategies, disabilities, injury rehabilitation and training injuries. There were 23 individual sessions that began with the keynote address: "Meeting the Challenge - Surveillance, Research, and Prevention of Injuries in the Military." The address 1) provided evidence that injuries are the leading health problem of the U.S. Military Services; 2) described the steps of the public health approach to injury prevention; 3) discussed key known risk factors for injuries in military populations and what prevention strategies have been shown to work; and, 4) discussed key injury surveillance, research, and prevention priorities and recommendations.

The conference attendees were provided with indepth information and discussions on topics such as: 1) parachute injuries which included the parachute injury surveillance at Fort Bragg during the 1990s; 2) the Army Safety Program accident prevention activities and how closer partnering between the Medical and Safety communities can further soldier injury prevention; 3) the impact of the unfit service member on each branch of Service, including the cost to the Service: 4) the leading causes for hospital admission of active duty service members since 1990; injuries of the back and lower extremities were identified as the leading injury types for DoD; 5) the surgical care of injuries; 6) DoD related program and policy developments directed at reducing workplace injuries from the perspective of ergonomics; 7) behavioral and psychosocial responses to injuries; 8) the basic concepts of Force Health Protection; 9) the scope of injuries in the U.S.
Naval Forces and the impact injuries have on readiness; and, 10) command and policy issues dealing with new recruits who reflect the general population trend of being less fit and less able to manage stress.

The 171 participants were, overall, quite satisfied with the Conference because it provided relevant and practical information that impacts both readiness and optimization efforts throughout the Military Health System.

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Planning for Bioterrorism, Behavioral and Mental Health Responses to Weapons of Mass Destruction and Mass Disruption. The Center for the Study of Traumatic Stress, USU SOM Department of Psychiatry and the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services, sponsored a three-day conference on "Planning for Bioterrorism: Behavioral and Mental Health Responses to Weapons of Mass Destruction and Mass Disruption." Attendees included internationally known scientists, risk communicators, and terrorism experts as well as representatives from local agencies. Joshua Lederberg, Ph.D., Professor Emeritus, Laboratory of Molecular Genetics and Information, Rockefeller University, Nobel Laureate and Member of the DoD Science Board was among the featured presenters.

Background. Biological agents are the "atomic concern" for the New Millennium. Agents such as bacteria, viruses, and prions can create chaos and national disruption. Future management of bioterrorism requires a multidisciplinary approach to understanding the effects of these agents on nations, communities, families, and individuals. This conference was organized to: describe the history, nature, and threat of biological agents; recognize community and individual responses to weapons of mass destruction; and, discuss future approaches to management and treatment following exposure to biological agents.

Conference Topics. The conference included three major presentations: 1) Let's Make New Mistakes: Reflections on Mass Casualties and Civil Defense; 2) Agents of Bioterrorism; and, 3) Psyche at Risk, Psyche as Armor in Biodefense. There were three panel discussions: 1) Community Responses, Services and Activities; 2) Disaster Responses: Nuclear, Natural and Human-Made; and, 3) a Summary Discussion with Final Recommendations.

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Background. The USU Casualty Care Research Center (CCRC) was created in 1989. Since that time, the CCRC has become a national center for research on all aspects of injury control and combat casualty care. It is staffed by military and civilian physicians, prehospital care experts, and scientists within the USU SOM Department of Military and Emergency Medicine. On June 26-27, 2000, the CCRC conducted a training program on hospital operations for weapons of mass destruction incidents at the Washington Hospital Center. The program, which was attended by senior administrators, department chairs, physicians, nurses, architects and planners, included both didactic and practical instruction on the clinical and management impacts of Weapons of Mass Destruction (WMD) events.

The Operational Impact of Psychological Casualties from Weapons of Mass Destruction. The Armed Forces Radiobiology Research Institute (AFRRI) hosted a three-day conference on "The Operational Impact of Psychological Casualties from Weapons of Mass Destruction at the USU campus on July 25-27, 2000. Over 300 individuals attended the conference which took place on the USU campus. Keynote speakers included: J. Jarrett Clinton, MD, MPH, Assistant Secretary of Defense, Health Affairs; Dr. Michael E. Kilpatrick, Medical Outreach and Issues, Special Assistant for Gulf War Illnesses; James A. Zimble, M.D., President, USUHS; RADM Robert F. Knouss, Office of Emergency Preparedness, Public Health and Science, Department of Health and Human Services; MG Marianne Mathewson-Chapman, Deputy Surgeon General and Special Assistant, Army National Guard; Mr. Thomas M. Antush, Senior Policy Officer, Office of the Director, Federal Emergency Management Agency; Dr. Kelley Ann Brix, Assistant Chief, Research & Development Officer, Department of Veterans Affairs; Dr. John Clizbe, Vice President, Disaster Services, American Red Cross; and, Mr. A. James Woodward, Office of Emergency Management, District of Columbia were among the nationally and internationally recognized subject matter experts who presented at the conference. AFRRI will be publishing the proceedings of the conference in a special edition of Military Medicine, during 2001.

USU Center for Disaster and Humanitarian Assistance Medicine. The USU Center for Disaster and Humanitarian Assistance Medicine was a major contributor at the 10th Annual Asia-Pacific Military Medical Conference. The conference, held in mid-2000, in Singapore, was attended by more than 400 people from 28 nations.

Background. The Asia-Pacific Conference was established to foster medical military-to-military relationships in the Asia-Pacific Region some ten years ago. A free exchange of ideas and experiences is
encouraged as a way to preserve regional peace and security. For example, Jeff Drifmeyer, Ph.D., Deputy Director for the USU Center for Disaster and Humanitarian Assistance Medicine, discussed with representatives from Nepal, that country's interest in establishing a military medical school much like USU.

Conference Topics Presented by USU. The Center's Director, Craig Llewellyn, M.D., Professor and Chair, USU SOM Department of Military and Emergency Medicine, chaired one of the conference sessions where he introduced the USU Center for Disaster and Humanitarian Assistance Medicine and delivered papers on the application of new technologies to medicine and the development of advanced medical training at USU that is specific to disasters and humanitarian relief. David Richards, Ph.D., an epidemiologist with the USU center, delivered dual papers on his extensive investigation of land mine victims. In addition, Jeff Drifmeyer, Ph.D., Deputy Director for the Center, presented preliminary results of the Center’s ongoing study to determine measures of effectiveness for the evaluation of military medical humanitarian assistance.

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Association of Military Surgeons of the United States (AMSUS) Annual Meeting.

Background. AMSUS was established in 1891, and incorporated by an Act of Congress in 1903, as the Society of the Federal Health Agencies. As such, it contributes to the improvement of all phases of the federal health services. The constituent services of AMSUS include the medical departments of the U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service, and the Department of Veterans Affairs. Since the 99th Annual Meeting of AMSUS in 1992, the USU Office of Continuing Education for Health Professionals (CHE) has worked with AMSUS to provide continuing education credit for their Annual Meetings.

Conference Agenda. The U.S. Navy hosted the 106th Annual Meeting, Health Professions Education: An Investment in Our Future. The conference was held on November 7-12, 1999, in Anaheim, California. The agenda emphasized federal medicine and took full advantage of the unique forum offered by the meeting and the 5,588 attendees. For the Fiscal Year 2000 AMSUS Conference, the USU Office of CHE offered 218 sessions for continuing education credit in five disciplines (a tremendous increase since the first USU CHE sponsored conference in 1992 which offered 47 sessions in two disciplines).

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ORGANIZATIONAL CULTURE

"This goal deals with organizational culture, which has a responsibility for sensitivity to all social patterns of work, interaction and thought typical for our community in contemporary time. This leads to thinking of processes like opportunity, personal growth, atmosphere, image, engagement, bonding, sense of worthfulness, and the final common pathway of this goal - interdependency. No matter what is assigned to this goal, it must pass through the kind of window just described. If it does not have meaning for the community of the whole, then it is not organizational culture."

- Philosophy of Goal 5, USU Strategic Plan

Continuous Efforts to Ensure a Diverse Community. A common challenge for most educational institutions is the goal to recruit and retain qualified underrepresented minority students and faculty who reflect America's diversity. The addition of a sixth goal to the USU Strategic Plan, University Recruitment and Diversity Affairs, substantiates the University's commitment to a diverse community. In addition, notable efforts continued throughout the University's Equal Opportunity Programs during 2000. The six Offices of Recruitment and Diversity Affairs (ORD), Student Affairs (OSA), Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), the Brigade Command (BDE), and Civilian Human Resources (CHR) collaborated to ensure that the University continued to promote the appreciation and understanding of diverse values and concerns. The University focus during 2000 was to encourage cooperation, respect, and collegiality among all members of the USU community through 1) the communication of equal opportunity principles; 2) the timely sharing of information; and, 3) the offering of training in personal development, retention, and supervisory skills.

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Communicating Equal Opportunity Principles and Appreciation of Diversity.

450 USU Personnel Attend Two Community Sessions. The January 2000, Dr. Martin Luther King Birthday Celebration: "The Reflection in the Mirror," featured Mr. Claiborne Haughton, Principal Director for Civilian Equal Employment Opportunity, Office of the Secretary of Defense. The USU Office of EEO coordinated the event which was attended by over 250 USU faculty, staff, and students. Due to an overwhelmingly positive response from the USU community, the USU Director of EEO recommended that the agenda for the Year 2000 Community Session should include a panel discussion on the themes that Mr. Haughton addressed during his presentation. The USU Community Session, conducted in March of 2000 by the USU Office of EEO, resulted in an energetic exchange of ideas between the panel and a large representation of the USU community which included the senior USU leadership, faculty, staff, and students.

Student Professional Activities and Meetings. Through the coordinating efforts of the Office of Recruitment and Diversity Affairs, members of the USU Student National Medical Association (SNMA) Chapter and Women in Medicine and Science WIMS) sponsored numerous meetings and activities throughout 2000 to support current USU students. Dinner socials provided SNMA and WIMS members with an
opportunity to socialize and network with faculty and physicians in a relaxed atmosphere; in addition, the opportunity was provided for discussing important issues such as residency selections, physician and patient expectations, professional demands in the military setting, effective time management, and societal minority and gender issues. Throughout 2000, the USU medical students continued weekly and/or monthly trips to public schools to discuss medicine and the medical profession with young students through a community outreach program entitled the Youth Science Enrichment Program, which is designed to motivate America’s youth toward medical, scientific, and military careers. The objective of the visits to the local public schools is to strengthen the educational pipeline between public schools and advanced education, and to especially encourage careers in medicine. The USU students familiarized the young students with such areas as the human skeleton, first aid care with bandaging and braces, and medical triage based on the severity of injuries and potential scenarios. Additionally, the Youth Science Enrichment Program (YSEP) Committee, under the leadership of the USU SNMA, is coordinating on-going community support for the Washington, D.C., public schools through visits and seminar presentations.

**Provision of Formal and Informal Counseling.** The USU Offices of Equal Employment Opportunity and Equal Opportunity, Recruitment and Diversity Affairs, and Student Affairs continued to provide formal and informal counseling throughout the Year 2000. The Equal Opportunity Office provided 10 informal counseling sessions to USU uniformed personnel; the Equal Employment Opportunity Office provided one formal and five informal counseling sessions to the civilian staff. Beginning in September of each year, the Office of Student Affairs conducted well over 300 formal interview and counseling sessions for the first and third year medical students. The Office of Recruitment and Diversity Affairs also provided individual counseling sessions for well over 200 uniformed students during the Year 2000.

**Faculty Senate Outreach Program for Working Mothers.** In response to recommendations of the USU faculty and the President of the Faculty Senate, the Office of Administration and Management coordinated the construction and establishment of a Mother's Lactation Room to assist working mothers who wish to continue breast-feeding their babies after returning to work. The room provides for privacy and is equipped with appropriate furniture, electrical outlets, and a refrigerator for the storage of expressed milk. As of May 2000, USU was the only DoD entity that had established such a facility.

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Timely Sharing of Information.

The USU Web Is Used to Provide Information Throughout the USU Community. During 2000, the Center for Informatics in Medicine continued to provide computer orientation courses for faculty and students. The Educational Technology with Computers Special Interest Group, monitored by the Office of the Vice President for Teaching and Research Support, provided electronic programs to enhance existing educational programs and new educational services. Web pages were created and updated to facilitate access to information, including instructions, procedures, and evaluation processes. Regularly scheduled meetings between faculty representatives, staff, and executive management included electronic distribution of meeting summaries.

The 1999 Edition of the USU Journal. To ensure that information was shared with both internal and external customers, the University published and distributed more than 800 copies of the 1999 Edition of the USU Journal, entitled "Readiness, Retention, and Response." The publication, which highlighted and documented the University's programs, activities, and accomplishments, was well received. Letters of acknowledgment and accolades were received from the Deputy Secretary of Defense, the Secretary of the Air Force, the Chairman of the Joint Chiefs of Staff, the Chief of Naval Operations, the Commandant of the Marine Corps, the American Medical Association, and the current Secretary of State.

USU Orientation Program. The senior leadership at USU introduced the USU Faculty and Staff Orientation Program during 2000. Coordinated by the USU Office of Civilian Human Resources, the Military Personnel Office, and the Associate Dean of the Graduate School of Nursing, the purpose of the on-going program is to present the newly hired members of the USU community with the philosophy, goals, policies, and leadership principles of USU. Orientation packets with key facts and other selected information are provided for review and future reference. The orientation process is intended to promote a positive initial employment experience and to initiate the socialization of new employees with the USU organizational culture. The first session of the USU Orientation Program was offered on October 23, 2000. There were 45 new members in attendance; 25 civilians and 20 military personnel. All attendees strongly endorsed the new program.

USU Web Presents Faculty Handbook. In February of 2000, the SOM Office of Faculty Affairs issued a faculty handbook through the USU Web; the handbook describes the organization and functions of the various components of the University. It is also designed to orient the new USU faculty members to the structure and history of the University, the School of Medicine, and the Graduate School of Nursing; and, the handbook serves as a quick guide for the delegation of responsibilities at the University and where to seek information, guidance, or other faculty-related requirements.

USU Development Program. The Vice President for Executive Affairs presented the newly established USU Development Program to the USU Board of Regents during the BOR meeting in August of 1999. Consultants at the Mayo Clinic and Harvard University are mentoring the new program; they have demonstrated how their own programs have been successful in marketing their products. The USU Development Program was established to be compliant with federal law, which prohibits USU from soliciting funding. The program is being developed in cooperation with the Henry M. Jackson Foundation where
nonfederal funding has been identified to be used in hiring the initial staff for the program. A marketing video and CD-ROM were completed during 1999. Since the establishment of the program, the Packard Foundation has notified the University that it has approved $1 million for a Packard Chair in the Department of Surgery; the USU Development Program has set a goal which includes 12 academic chairs. During the past year, Ms. Helaine C. Ahern, was hired by the Henry M. Jackson Foundation to serve as the Assistant Vice President for Development. Ms. Ahern continued and expanded the existing development programs, to include the addition of a short-term business plan which outlines the resources and activities required to address the current list of priorities defined by the University. For example, one such priority is the procurement of endowments for interdepartmental programs or institutes. During 2000, Ms. Ahern, through the Henry M. Jackson Foundation, successfully inaugurated the first annual appeal to the USU Alumni which resulted in numerous positive responses. Ms. Ahern visited the Naval Academy and West Point to observe growth, structure, resources and to make contacts for potential strategy sessions; at this time, the new office is working to establish a small board of committed volunteers who will provide critical support to sustain the activities of the USU Development Program.

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Personal Development and Retention.

Individual Recognition. Throughout 2000, the USU community worked to build and strengthen cooperation, integrity, trust, and collegiality as well as to reward individual members for their contributions. An on-going performance evaluation process developed by the Civilian Human Resources Division (CHR) and the Brigade Command ensured that each employee received an annual rating and appropriate recognition for his/her accomplishments. During 2000, CHR enhanced its procedures for tracking individual employee’s years of service. The University President personally presented service awards to designated employees at their work sites. To date, 40 service awards have been presented; the program has been well received. At the same time, the Office of Military Personnel approved, processed, and presented 82 awards for the USU military personnel: 24 Joint Service Achievement Medals; 28 Joint Service Commendation Medals; 26 Defense Meritorious Service Medals; and, 4 Military Outstanding Volunteer Service Medals.

USU also participated in the Department of Defense 20th Annual Awards Ceremony for the National Disability Employment Awareness Month through the nomination of Ms. Anita Springs for the Outstanding DoD Employee with a Disability. Ms. Springs, a Cataloging Specialist, was subsequently selected by OSD for recognition as an outstanding employee who brings skills and creativity to the USU workforce. Presentations of accomplishments by individuals, teams, and departments were also scheduled throughout the year. For example, the University faculty supporting the Advanced Technology Training Telepresence Surgery System, the Anesthesia Patient Simulator, and Military and Emergency Telemedicine Training gave demonstrations for the general University community as well as for the media and external contacts of the University.
340 USU Personnel Attend Advanced Management Classes. During 2000, the USU Offices of Civilian Human Resources (CHR), Medical Education (MEE), Faculty Affairs (ADF), Research Administration (REA), the Brigade Command (BDE), Recruitment and Diversity Affairs (ORD), Equal Employment Opportunity (EEO), and Equal Opportunity (EO) provided programs and support to assist the University community in its self-development and training requirements. Civilian Human Resources (CHR) continued to expand the USU Mentor Program by some 26 percent: participants and their mentors received on-going training on a variety of skills. CHR also sponsored the establishment of a University Toastmasters International Club in 1999, and increased its membership during 2000 from 20 to 32 members. Also during 2000, 10 percent of the USU civilian workforce received training through Individual Development Plans coordinated by CHR with USU supervisors. The USU Office of CHR offered 10 advanced management classes attended by 340 participants from the USU faculty, staff and students. The topics ranged from "How to be a Better Communicator" to "How to Manage, Motivate, and Lead a Team," with other topical areas such as: Speed Reading; Resume Preparation; Retirement Planning; Mega Memory for Business Professionals; and, Speed Reading and Reading Comprehension. In addition, USU faculty and staff have been provided opportunities to attend computer classes through CompUSA and New Horizons. They have also been provided an on-line computer training option through a USU contract with ElementK University. This on-line training allows the student to complete assignments through the internet while at home or at work.

USU Faculty Attend Development Courses and Seminars. The Department of Family Medicine, in coordination with the SOM Office of Faculty Affairs, offered numerous courses and seminars which strongly supported faculty development at the University. Following are selected examples of the successful efforts during 2000 which led to the enhancement of the professional skills of the USU faculty members: Negotiating Across Cultures: Developing a Curriculum; Teaching Portfolios: Development and Use in Academic Health Centers, Part 1 and 2; and, Evaluation of Learners in the Clinical Setting. In addition, the USU Institutional Animal Care and Use Committee, in coordination with the USU Offices of Research Administration and Laboratory and Animal Management, developed a Protocol Writing Workshop for investigators utilizing animals in research and education. This workshop assists investigators in completing animal study proposal forms. In addition, on June 28, 2000, 100 participants from the USU research community attended a one-day training seminar on the fundamentals of Institutional Review Board (IRB) review and regulations. The course featured discussions on the development of the IRB system, participatory discussions on the ethical principles underlying the conduct of research involving human subjects, and an overview of the federal regulations governing IRB operations, including specific case studies.

OSD Confirmation of USU Title 10 Authority. During Fiscal Years 1997 and 1998, there had been a one year suspension on the inclusion of allowances in the calculation of retirement benefits for the USU Administratively Determined (AD) employees (faculty and staff) who are covered under TIAA-CREF, Fidelity, or any other retirement system not established under Title 5 U.S.C. This issue, which involved USU's Title 10 authority, was resolved with OSD through the coordinated efforts of the OSD Office of the Deputy Assistant Secretary for Civilian Personnel Policy, Washington Headquarters Services, the USU President, and the USU Vice President for Administration and Management. As a result, the inclusion of allowances in the calculations of benefits for USU AD employees was reinstated by OSD for Fiscal Year 1999 and was continued throughout Fiscal Year 2000.
Legislative Language Removes the Limits of Executive Level IV for the Annual Rate of Basic Pay. Previously, the annual rate of basic pay for USU AD employees was limited to be no more than the rate set for Executive Level IV. In many cases, this limitation resulted in the need for allowances to bring the total pay up to the limits established by OSD in the USU salary schedules. During the last quarter of Fiscal Year 1998, the OSD Office of the General Counsel, at the request of the Deputy Assistant Secretary for Civilian Personnel Policy, recommended the legislative change contained in Section 1 108 of the Conference Report for the National Defense Authorization Act for Fiscal Year 2000. As a result, when the Authorization Bill for Fiscal Year 2000 was signed by President Clinton, it effectively removed the limitations of Level IV for the USU AD employees. Implementation actions for the reduction of allowances were initiated and implemented during 2000 by the USU Office of Civilian and Human Resources.

USU Administratively Determined Salary Schedules Are Approved. The Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USUHS AD employees on August 25, 1999. An increase in base pay was automatically provided for any AD employees whose base pay was lower than the minimum limits of the new salary scales. Updated salary schedules were approved during 1998, 1999 and 2000; previously, the salary schedules had remained the same from 1993 through 1997. A Memorandum of Understanding signed by the OSD Office of Civilian Personnel Management Services (CPMS), the Navy Bureau of Medicine, and, the USU President has resulted in the implementation of annual comparability studies by CPMS as a critical component of the on-going review process for the USU AD salary schedules.

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Recruitment and Diversity Affairs.

"Implement a comprehensive plan for the recruitment, retention, and advancement of qualified citizens to become USU students, faculty, and staff, with diversity comparable to the ethnic and gender-based diversity that comprises this great nation."

- Mission Statement for the Office of Recruitment and Diversity Affairs, developed during 1999.

Office of Recruitment and Diversity Affairs. The USU Office of Minority Affairs was established in 1991 with a mission to increase the participation and advancement of traditionally underrepresented minority and women students, faculty, and staff at the University. The Office of Minority Affairs established numerous programs to especially increase the recruitment and retention of underrepresented minorities at the University. Examples of such activities, to include newly established programs by the current Office of Recruitment and Diversity Affairs, are included in the following: 1) monthly recruitment trips to career fairs at undergraduate institutions and to national and regional meetings while emphasizing liaison with the Military Academies and Reserve Officers Training Corps (ROTC) Units; 2) the continuous expansion of the mentorship program which serves all USU students (medical, nursing, and graduate education): 3) on-going liaison with the USU Offices of EEO and EO (civilian and military) to formalize coordinated efforts for promoting and maintaining
a diverse, interdependent USU community; 4) sponsorship of the National Native American Youth and the National Hispanic Youth Initiatives; and, the National Youth Leadership Forum; 5) a newly implemented Memorandum of Understanding (MOU) with the Historically Black College and University (HBCU) University of Maryland, Eastern Shores (UMES) students and faculty to perform summer research; 6) the USU Post-Baccalaureate Test Program; 7) continuous community involvement and contributions; and 8) student support programs from recruitment to retention with the primary goal of ensuring timely graduation.

Following extensive briefings and communication with the USU President and Board of Regents, a sixth goal was added to the University’s Strategic Plan during 1999: University Recruitment and Diversity Affairs. Subsequently, during 1999, the Office of Minority Affairs was renamed as the Office of University Recruitment and Minority Affairs. During 2000, strategy sessions to enhance the recruitment efforts of the University resulted in a final decision to modify the office title to the Office of Recruitment and Diversity Affairs (ORD).

**Recruitment Strategies.** Through indirect strategies designed during 2000, the Office of Recruitment and Diversity Affairs, the newly centralized office for USU recruitment efforts, continued to contact, or replenish USU materials, through more than 6,000 packets of recruiting materials which were mailed during 1999 to: Reserve Officer Training Corps (ROTC) Units; military bases (installations and hospital commanders, chief enlisted advisors and education offices); and, pre-medical advisors at the military Service Academies and undergraduate institutions nationwide. During 2000, ORD placed advertisements in programs at recruitment fairs at the University of North Carolina at Chapel Hill, Hampton University, Vanderbilt University, Florida A & M, SUNY/Stony Brook, Middle Tennessee State University, and Case Western Reserve University in Cleveland, Ohio. During 2000, ORD created a large display, ten feet in height: the display was initially presented at the Association of Military Surgeons of the United States (AMSUS) Conference in Las Vegas during November 7-12, 2000. USU personnel received numerous inquiries about the University and student requirements from attendees at all of the recruitment fairs and conferences where USU displays were provided.

Upon request, members of the USU community (e.g., alumni, faculty, staff, the Board of Regents, external contacts, etc.) were provided with recruitment packets (USU recruitment video, CD-ROM, and USU brochures) for presentations at their hometown educational institutions or professional society meetings or at various geographical sites while on travel. A current initiative being launched includes the USU alumni serving as USU liaisons at universities, colleges, or military installations near their current duty locations. At the most recent Graduate Medical Education Selection Board meeting in Arlington, Virginia, more than 60 USU Alumni were presented a briefing on the ORD Liaison Program (which they have agreed to be part of) and were provided with recruitment packets for use during their recruitment presentations.

**Post-Baccalaureate Test Program.** The University began a Post-Baccalaureate Program on August 9, 1999 for the Academic Year 1999-2000. The University Post-Baccalaureate Program completed its second year during 2000. This program is modeled after current civilian post-baccalaureate programs, while maintaining compliance with federal laws and restrictions. The program is much like those presented in the Service Academy Preparatory Schools. To further diversify the student body, the goal of the program is to increase representation at USU of economically or educationally disadvantaged students. to include current active duty enlisted and commissioned officers. Two students who completed the program during 1999 were fully accepted by the USU SOM and are now in their first year of Medical School; both are
performing quite well academically. The two 1999 students were also the first U.S. Public Health Service students to enter the USU SOM since 1995; they are expected to graduate in 2004. During the Fall of 2000, three new students entered the program. During 2001, the Office of ORD will prepare documentation to justify the program's becoming a permanent USU program, to include manpower billets and funding; the documentation will be submitted to the USU Executive Committee for review and approval.

**Biomedical Research by Minority Students.** During 1999, USU and the University of Maryland Eastern Shore (UMES) began a collaborative effort to increase participation by minority students in biomedical research. USU and UMES have agreed to undertake initiatives to increase the number of UMES undergraduate honor students enrolled in programs that lead to a doctorate in the biomedical sciences; aid in the development of a research training infrastructure at UMES; foster the exchange of visiting faculties to conduct graduate seminars at each institution; and, increase the number of minority students enrolled in the graduate programs at USU. The USU Office of the Dean sponsored six students from UMES during the Summer of 2000. Those six students and one faculty member from UMES were able to participate in on-going research projects in various USU laboratories; the experience was a positive one for both the UMES personnel and USU.

**Community Involvement and Student Support Programs.** Members of the USU Student National Medical Association (SNMA) Chapter and Women in Medicine and Science (WIMS) sponsored meetings and activities throughout 2000. Dinner socials provided SNMA and WIMS members with an opportunity to socialize and network with faculty and physicians in a relaxed atmosphere and to discuss significant issues such as residency selections, physician and patient expectations, professional demands in the military setting, effective time management, stress management, and societal minority and gender issues. The USU medical students continued weekly and/or monthly trips to public schools to discuss medicine and the medical profession with the public school students through a community outreach program entitled the Youth Science Enrichment Program which is designed to motivate American youth toward medical, scientific, and military careers. The objective of the visits by the USU students is to strengthen the educational pipeline between public schools and advanced education, and to especially encourage careers in medicine. The USU students familiarized the public school students with such areas as the human skeleton, first aid care, to include bandaging and braces, and medical triage based on the severity of injuries and potential scenarios. Additionally, the Youth Science Enrichment Program (YSEP) Committee, under the leadership of the USU SNMA, is coordinating community support for the Washington, D.C. public schools through visits and seminar presentations.

USU medical students visited numerous schools in the District of Columbia and Maryland, during 2000, to include the Harmony Hills Elementary School and the Fairmont Heights High School. Some 20 USU medical students presented various aspects of science and medicine during those visits. This year's activities centered on establishing a continued relationship with the Parkland Middle School and its "feeder" school, the Harmony Hills Elementary School. The goal of this on-going relationship is to provide a lasting and positive impact on the young, public school students within the neighboring communities.
The Helping Hands Project.

"Twice a week, USU medical students and USU physicians continue to find time to provide family health care to low-income families in the Washington metropolitan area who would not otherwise have access to medical treatment."

- Office of Recruitment and Diversity Affairs update on community support activities. dated October 2000.

Each week, USU medical students, USU physicians, and USU Graduate School of Nursing students find time to serve in the free clinics and to help provide medical care to low-income families in the Washington metropolitan area who would not otherwise have access to treatment. This occurs through the student led "Helping Hands Project" volunteer program which includes three clinics located in Maryland and run by the Mobile Medical Care, Inc. The clinics are located at the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring; and, the Adventist Community Center in Takoma Park. The three clinics provide services such as physical examinations, laboratory analysis, the management of acute and chronic diseases, mental health problems, general health concerns, and referrals for X-ray examinations, specialty care and secondary care.

The mission of the project is to ensure that people receive stable family health care when they would otherwise be unable to afford it. No one is turned away. The USU students become acquainted with available community resources and learn of the health care needs of a diverse population of patients. USU students take patient histories and present them to physicians; they give examinations and, in general, observe the attending doctors. The patients are treated for chronic problems such as hypertension, depression, arthritis, and diabetes: the students also observe the care provided to acute-care patients. Depending on the clinic, students assist with six to fifteen patients during their three-hour shifts. Student volunteers are exposed to people from different backgrounds who have varying requirements, with limited ability to pay for services. Helping Hands developed into the current program largely due to the vision of a student organizer, Raymond J. Legenza, a 1996 USU SOM graduate, who is currently a Major in the U.S. Air Force stationed at the Wright Patterson Air Force Base in Dayton, Ohio. The Office of Recruitment and Diversity Affairs takes great pride in sponsoring this program: the essential physician support is volunteered by the exceptional faculty of the USU SOM Department of Family Medicine. Helping Hands has become a significant USU program: it encourages a meaningful contribution of essential health care by USU faculty and students to their neighboring communities; and, it provides a tremendous experience for the USU students.

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The Office of the Brigade Commander. The USU Brigade Commander is recognized as the "senior active duty officer" of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent services. In addition, the Brigade Commander assures that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Programs, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The USU Brigade provides a clear chain of command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. The Brigade Command structure includes a Commandant for both the SOM and the GSN. The SOM also has three company commanders representing the Army, Navy, and the Air Force: they are specifically assigned to USU to provide for military training in officership and leadership. A United States Public Health Service officer is also responsible for providing this special training to the Public Health Service students. The company commanders are mentors for the students and they deploy with them during each of the University's field training exercises. The USU uniformed faculty and staff also conduct service-unique and combined inspections and military formations. Similar to the Service Academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and "command" roles.

Establishment of the Office of the USU Chaplain. In July of 1999, the Navy Surgeon General approved the resourcing of billets for a Navy chaplain and an enlisted assistant at the DoD joint command of USU. The arrival of the chaplain and his assistant as the first permanently assigned ministry team at USU has filled a void in pastoral care that has existed since the foundation of the University. Following the establishment of the Office of the USU Chaplain within the Brigade Command, essential counseling and guidance is now available and provided to the USU students and assigned staff.

Development of International Relationships. During 2000, the USU Brigade Commander initiated a dialogue with the Commander, German Armed Forces Command USA and Canada, which resulted in the USU students and faculty being provided the opportunity to compete for the prestigious German Troop Duty Proficiency Badge. Upon completion of the demanding psychological and physical requirements that must be met in order to earn the Proficiency Badge, USU students will be authorized to wear this award on their service dress uniforms. Approximately 80 USU service members are currently competing for the German Troop Duty Proficiency Badge.

Assurance of Operational Skills. The Brigade's Operations Department provides the planning, coordination, and logistical support for the major military field training exercises for the first and fourth year
medical students. The development of plans continued during 2000 to include the GSN students in the major exercises at the University: 1) January 23-28, 2000 - Operation Bushmaster I-00 at Camp Bullis, Texas; 2) June 19-27,2000 - Operation Kirkesner at Quantico, Virginia; and, 3) September 17-22, 2000 - Operation Bushmaster II-00 at Camp Bullis, Texas. Through training such as Operations Kirkesner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to earn a leadership position in military medicine (these events are further described in Section II, Student Affairs).

During the Summer of 2000, the USU Brigade Commander reported that the second year medical students had participated in the following activities: Army - U.S. Army Airborne School: Mountain Warfare School; clerkships at the Army Surgeon General's Office: Operational Emergency Medical Skills Course: Expert Field Medical Badge; and, USA Operational Units (e.g., Fort Bragg, Fort McCoy, Fort Carson, Fort Riley, and Vicenza, Italy): Navy - Diving School: Aerospace Medicine (USS Roosevelt); USN SEALS; Top Gun: Mountain Warfare Training; Amphibious Warfare School: Neuroanatomy Computing; USNS Mercy Hospital Ship; the USN Special Warfare Detachment; Tropical Medicine Course, Brazil and Sigonella, Italy: Air Force - Operational Emergency Medical Skills: Top Knife: Expert Field Medical Badge: Mountain Warfare School: and, USAF Hospitals and Research. From qualifying for the Expert Field Medical Badge to conducting undersea medical research with the U.S. Navy SEALS, USU students are developing and maintaining the special skills required to assume leadership positions in uniformed medicine. Additionally, the diverse and exciting training USU students complete during summer training helps the University to accomplish Strategy 5.2 of the USU Strategic Plan: "to establish development programs that will make study, employment, and collaboration at USU attractive and rewarding." The Brigade Headquarters Company is the enlisted Brigade Command support element for USU. In addition to the performance of their military occupation specialties during normal duty hours, the enlisted members of the Headquarters Company ensure that equipment, supplies, transportation, and personnel are positioned to accomplish four major field exercises per year. The Brigade is responsible for ensuring that the enlisted personnel at USU are proficient in their operational support skills which enables them to remain competitive for promotion.

Orientation Responsibilities. Another responsibility of the Brigade, during the first quarter of each Academic Year, includes the in-processing requirements for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs in the SOM. In the case of the 165 first year medical students for Academic Year 2000, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the USU were stressed during the first week, as well as the students' responsibilities in their primary role as military officers.

Minority Recruitment Efforts. The Brigade continued to reach out to the ROTC and underrepresented communities during 2000. The Brigade Commander's membership on the Medical Advisory Selection Committee at West Point continues to give USU exposure to some of the top military academy students in the country. The Brigade's recruiting efforts at the University of Arkansas also contributed to those USU recruitment efforts during 2000 which were targeted on underrepresented communities.
USU Color Guard. Formal ceremonies have continued to be an important element of military tradition since the earliest armies and navies entered combat. Whether at a retirement, change of command, or a unit stand-up, the military goes to great lengths to showcase its command, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies, and USU is carrying on that tradition, forming its own color guard in 1997. The USU Color Guard is comprised of enlisted members (E-5 and below) from the Army, Navy, and the Air Force. The first major performance of the USU Color Guard occurred at the 1997 USU Graduation; the colors were also presented during the USU Brigade Change of Commander Ceremony in 1998. During the May graduations from 1998 through 2000, the USU Color Guard brought the colors on stage during the commencement ceremonies which were held at the National Society of the Daughters of the American Revolution Constitution Hall in Washington, D.C. Also, during 2000, the Color Guard performed at the annual USU Dining-Out; their performance preceded the Key Note Speaker of the formal event, Mr. Rudy DeLeon, Deputy Secretary of Defense.

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Goal 5, Strategy 5.1 calls for the University to "establish an enhanced sense of intramural community." The CFC Campaign is one event that crosses all boundaries within the University and unifies the entire USU community through a common goal of sharing with those who are in need, either in our own community or on a global scale.

USU Exceeds Established Goals for the Combined Federal Campaign. The University reached its Combined Federal Campaign (CFC) goal for 2000 due to the tremendous efforts of the Office of the USU Brigade Commander. Under the leadership of the USU Campaign Managers, the total contributions reached almost $171,000. Approximately 790, or 81.3 percent, of the USU staff members, students, and faculty contributed to the Year 2000 Campaign for worthy community, national, and world charities. The Year 2000 marks the fourth consecutive year in which the University exceeded its goal. The amount raised during the 2000 Campaign was nearly $7,150, or 104 percent, over the established goal.

The most significant accomplishment of the University was achieving an 81.3 percent participation rate, which was significantly higher than the overall DoD average of 67 percent. Because of this, the University CFC Campaign was awarded the President's Award, the Nation's most prestigious CFC award. The President's Award has been earned by USU for three consecutive years.

The University earned two additional awards in the Year 2000 CFC Communications Contest: 1) the Best Photographic Coverage for its use of photography in one of the stories presented in the special CFC Edition of the USU Quarterly; and, 2) the Best Feature Article showcasing a charitable organization that receives CFC funds.

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The Year 2000 Curreri Award.

Background. Following his retirement as the University President in November of 1976, Anthony R. Curreri, M.D. was awarded the Department of Defense (DoD) Distinguished Public Service Award. The DoD award, presented in 1977, cited Dr. Curreri for "collaborating with the military departments and for the development of the overall objectives and goals of the University to develop and implement an educational system of the highest quality to serve the physician manpower needs of the military services." The 1996 Graduating Class of the School of Medicine established the Curreri Award to both recognize exceptional contributions to the continuation and well being of the University and to memorialize the leadership of Dr. Curreri as USU's first President. Since the initial award in 1996, all of the graduating classes (SOM, GSN, and Graduate Education) have participated in selecting the recipients of this award.

Recipients of the Curreri Award:

1996 - Vorley M. (Mike) Rexroad, BG, U.S. Air Force, (Retired);

1997 - John Dressendorfer;

1998 - Lorraine B. Sanford;

1999 - Colonel Charles C. Partridge, USA, (Retired);

2000 - Enrique Mendez, Jr., M.D.

Enrique Mendez, Jr., M.D. Receives the 2000 Curreri Award. On May 12, 2000, the USU graduating classes awarded the 2000 Curreri Award to Enrique Mendez, Jr., M.D. The award recognized Dr. Mendez for his extraordinary career in military medicine. Dr. Mendez served in the U.S. Army Medical Corps for 28 years and retired at the permanent rank of Major General in 1983. Dr. Mendez returned to his native Puerto Rico to become the Dean and President of the Ponce School of Medicine; he then served as the Secretary of Health for the Commonwealth of Puerto Rico. Following his nomination by the President of the United States and confirmation by the United States Senate, Dr. Mendez served as the Assistant Secretary of Defense for Health Affairs from March 1990 until January 1993. The 2000 Curreri Award specifically recognized the long-term relationship between Dr. Mendez and the University, especially the significant and consistent support he provided USU during his prestigious assignment at Health Affairs. Dr. Mendez's untiring support, essential guidance, and tremendous friendship were acknowledged by the students, faculty and staff of the University.

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The 2000 Packard Lecture.

Background. The Packard Lecture Series was named in honor of Mr. David Packard (September 7, 1912 - March 26, 1996), distinguished friend and supporter of the University. Mr. Packard was the Deputy Secretary of Defense when USU was created in 1972. He served as the first Chairman of the USU Board of Regents; and, he was the Acting President of the University from 1976 to 1981. Mr. Packard also served...
as the first Chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine for over six years. The USU Faculty Senate established the Packard Lecture in 1985 to annually honor individuals who have made significant contributions to the military medical community; it is considered among the greatest honors bestowed by the USU faculty.

The 2000 David Packard Lecture Features David P. Stevens, M.D. The President of the USU Faculty Senate, Merrily Poth, M.D., reported that one of the significant highlights of the Faculty Senate during 2000 was its sponsorship of the 2000 Packard Lecture which featured David P. Stevens, M.D., Vice President for Medical School Standards for the Association of American Medical Colleges (AAMC) and the AAMC Secretary for the Liaison Committee on Medical Education (LCME). On March 27, 2000, Dr. Stevens, a general internist, board certified in both Internal Medicine and Gastroenterology, delivered the Year 2000 Packard Lecture, "The Future of Medical Education: Bytes, Ticks, and Finding Your Way." The lecture provided relevant insight into the impact of, and the flexibility required by, the changing world of medical education. The 2000 Packard Lecture was well received by the USU community; reporters from U.S. Medicine were present to cover the lecture.

The 2000 USU Faculty Senate Research Day and Graduate Student Colloquium - Biomedicine in the Information Age. On March 22 and 23, 2000, the University celebrated its 7th Faculty Senate Research Day and Graduate Student Colloquium. These significant events were coordinated by the Faculty Senate Research Committee, co-chaired by Major Ajay Verma, MC, USA, Department of Neurology, and Florence Rollwagen, Ph.D., Department of Pathology. The Committee received significant assistance from the Vice President for Research and the Associate Dean for Graduate Education. These research events successfully included participation by all departments of both the SOM and the GSN, and USU's affiliated teaching institutions (the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Medical Center, and their associated research centers). The chosen theme for the events was Biomedicine in the Information Age. The research events included 45 oral presentations in the Sanford Auditorium and 175 poster presentations in temporarily sheltered areas in the University courtyard. Twenty-three of the posters were selected for the introduction of a new session entitled, Special Featured Poster Sessions (SPFs). Within a collegial atmosphere, the SPFs involved short, informal oral presentations and dialogue between the presenters and the audience. Over 200 participants found that the two days of research events substantiated both the abundance and the quality of completed and on-going investigative activities at the University.

Roger M. Perlmutter, Ph.D., Executive Vice President, Worldwide Basic Research and Preclinical Department, Merck Research Laboratories and Philip K. Russell, M.D., Johns Hopkins Center for Civilian Biodefense Studies Participate in the Activities. The Graduate Student Colloquium consisted of oral presentations by six graduate students from Departments and Programs within the University. Following the platform portion of the Graduate Student Colloquium, Roger M. Perlmutter, Ph.D., Executive Vice President, Worldwide Basic Research and Preclinical Department, Merck Research Laboratories, presented the John W. Bullard Colloquium Lecture entitled "Protein Kinases and Protein Kinase Inhibitors: Prospects for the Development of Breakthrough Therapeutics. A formal dinner reception was then held in the USU dining hall during which awards were presented. The evening activities closed following an
address by Philip K. Russell, M.D., Johns Hopkins Center for Civilian Biodefense Studies. Dr. Russell's presentation, entitled "Vaccines for the Protection of U.S. Forces," was presented to approximately 200 participants.

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TEACHING AND RESEARCH SUPPORT

Renovation and Upgrades in Support of the Teaching Mission.

Background. By 1996, the USU Multidisciplinary Laboratories (MDL), the USU Faculty Senate, the Offices of the Deans of the SOM and GSN, and the USU President were quite aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty, and staff, an engineering design was commissioned to upgrade the equipment; the project was then expanded to include the replacement of both carpeting and seating. The Office of Teaching and Research Support successfully coordinated a major renovation of the Sanford Auditorium and the USU lecture halls during 1998 and 1999. The upgrades of the teaching facilities were in compliance with Goal 1 of the USU Strategic Plan; by upgrading the lecture halls and the auditorium, USU enhanced its ability to 1) provide a quality education to its students, faculty, and staff; 2) conduct continuing medical education; and, 3) sponsor military medical conferences for the MHS.

Conformity of Design. All of the lecture halls were designed with the same equipment and controls so that instructors and students could learn one system and move from one lecture room to the next without readjusting to unfamiliar teaching tools. The new equipment now provides the faculty with a broader range of teaching tools to present their material. The project includes 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and Internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing in additional rooms throughout the campus; and, 4) "smart" classroom capabilities in Lecture Room C, to include video-teleconferencing and a state-of-the-art audience response system. A major portion of the construction took place during the summer of 1998; equipment installation occurred around class schedules throughout 1998 and 1999. Future plans include similar upgrades to the Board of Regents Conference Room, selected conference rooms throughout the campus, Multidisciplinary Laboratories, and the Anatomical Teaching Laboratory; all of which will increase interactive instruction.

In September of 2000, resources were identified to obtain computer and video projector equipment to upgrade the major USU conference rooms with systems similar to those available in the lecture halls. In addition, funding was identified for a computer-based, physiology teaching system to replace the twenty-five-year-old oscilloscope system that had been used to teach physical functions. The purchase of this system has stimulated several academic departments to develop computer simulation and demonstration teaching modules for their subject matter.

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The Learning Resource Center - Globally Available.

"A trip through the Learning Resource Center is likely to reveal an MS-I student reviewing Anatomic-Radiological correlation, an MS-II studying Pathology images or perusing the HyperPharm program, and an MS-III clerk accessing clinical information via university-provided 'MDConsult' or Medline search. SOM students are well-prepared to enter the new age of medical informatics."

-School of Medicine Self-study, Section IV, page 5, submitted during 1999.
World-Wide Access for Health Sciences Information. The USU Learning Resource Center (LRC) continued, throughout the Year 2000, to ensure that its electronic resources were globally accessible over the Internet. The LRC assisted thousands of customers in making the best use of current, medically-related information. Unique gateway software enabled users to access the University from Kosovo, Japan, Korea, Iceland, Bosnia, Germany, Italy, Spain, the United Kingdom, Turkey, Greece, Saudi Arabia, on board ships traveling around the world, and sites located throughout the United States. Over 2,450 registered users, which included 912 physicians, 584 medical students, 508 residents, 96 nurse practitioners, and 55 registered nurses, accessed the MD Consult System. During the Year 2000, over 600,000 "hits" were registered by the LRC's continually expanding customer base. The LRC home page with its numerous information services is available over the Internet 24 hours a day, every day of the year.

Reliability and User-Friendly Access.

"A variety of space is available for student study at the school. The LRC is a favored site because many different types of study space/equipment are convenient to the students. There are 10 study rooms for individual or group study in the LRC. In the Spring and Fall, students can also study at tables/benches located on the second and third floor patios of the LRC. Since the last LCME self-study and site visit, the number of private study carrels in the LRC has been increased from 18 to 64... At least 55 PC and Macintosh computers are now accessible in the LRC for students to learn, review and self-test information, utilizing computer-based educational software programs developed commercially and on-site. In addition, the LRC has extended its hours during the weekends before exam weeks and on the majority of federal holidays. A training classroom in the LRC with 11 computers can be reserved for student testing and/or review."

-School of Medicine Self-study, Section VI, page 6, submitted during 1999.

Since its establishment, the LRC continues to diversify and update its resources to meet its customers' changing requirements. For example before a new information resource is moved to the production Internet servers for customer access, thorough validation reviews are conducted to ensure reliability and user-friendly access. The LRC has continuously succeeded in providing an outstanding learning environment and state-of-the-art educational tools for the USU students and faculty.

The LRC Offers Its Services to the Surgeons General. The LRC's ability to provide reference/information assistance through the Internet initiated discussions with the Surgeons General in their capacity as the USU Executive Committee. A steering committee was appointed during 1999 to consider the future use and the resulting cost avoidance of providing the on-line services of the USU medical library throughout the Military Health System (MHS). As recommended by the Chair of the USU Executive Committee, the steering committee membership includes representation from the Armed Forces Medical Library and the Walter Reed Army Institute of Research (WRAIR), as well as from the Offices of the Surgeons General. The steering committee began its deliberations during 1999 by using Group Vine, an electronic discussion software system, available through the Internet; coordination continued throughout the Year 2000.
Internet Information Resources Added During 1999-2000. During the past two years, the scope of the LRC Internet services was expanded to ensure the equivalent of a major medical library. Customers now have access to a one-stop information center, particularly those alumni located at remote sites where first-line patient care must be provided. The following additions were made during Fiscal Years 1999-2000:

1) **Books.** Electronic editions of standard textbooks were added as soon as they became available. Currently, there are more than 90 full-text books available through the LRC. These include such familiar titles as Harrison's Principles of Internal Medicine, Scientific American Medicine, Cecil's Textbook of Medicine, Current Medical Diagnosis and Treatment, Sabiston's Textbook of Surgery, Conn's Current Therapy, Nelson's Textbook of Pediatrics, Merritts Textbook of Neurology, Griffith's 5 Minute Clinical Consult, the Washington University Manual of Medical Therapeutics, the Harriet Lane Handbook, Campbell's Urology, and Danforth's Obstetrics and Gynecology. During 2000, book titles from Ovid and Merck were added: these included the Textbook of Internal Medicine, Oski's Pediatrics, the 5 Minute Emergency Medicine Consult, the Yamada Textbook of Gastroenterology, the Merck Manual of Geriatrics, the Merck Manual of Diagnosis and Therapy, and the Merck Manual of Medical Information. Books are also available which cover all of the major medical specialties such as: allergy, cardiology, dermatology, emergency medicine, endocrinology & metabolism, family medicine, general medicine, gastroenterology, geriatrics, infectious diseases, internal medicine, nephrology, neurology, neurosurgery, obstetrics & gynecology, oncology, orthopedic surgery, pathology, pediatrics, pharmacology, psychiatry, pulmonary medicine, rheumatology, surgery, toxicology, and urology. All of these electronic editions are constantly updated and provide current information for the practice of contemporary health care:

2) **Journals.** Conversion to the electronic editions of health-related journals or periodicals continued throughout 1999 and 2000. The LRC currently has 4,600 journal titles available on-line in full-text to assist its users. Numerous titles are continuously being added to the Internet production server for the LRC customers. Some examples of these additions include the following: more than 600 titles were added from the Kluwer Collection of on-line, full-text journals: all of the 130 titles published by Academic Press: 50 of the titles published through Highwire Press: the Ovid Journals collections which include 100 titles; journal titles from Adonis, Synergy, Catchword, Ingenta, and Karger publishers; and, the MD Consult which includes 48 titles. Specific titles include the *American Heart Journal, Pediatrics, Journal of Clinical Investigation, EMBO Journal, Blood, American Journal of Physiology, Proceedings of the National Academy of Sciences, Circulation, Circulation Research, American Journal of Emergency Medicine, Neurology, Medicine, American Journal of Obstetrics and Gynecology, Annuals of Surgery, Chest, and Critical Care Medicine, and Medical Clinics of North America, Pediatric Clinics, Cardiology Clinics, Infectious Disease Clinics, Neurologic Clinics, and Surgical Clinics.* All of the Yearbooks covering the various medical specialties were also made available:

3) **Practice Guidelines.** With the addition of MD Consult, over 500 Clinical Practice Guidelines contributed by more than 50 medical societies and government agencies are now available through the LRC; during 2000, plans were coordinated for access to the new MD Consult Cardiology Program;

4) **Patient Education.** More than 2,500 patient education handouts, which can be personalized to include special instructions provided by the attending physician or staff, are available:

5) **Continuing Medical Education.** There are more than 300 Continuing Medical Education (CME) Modules: each offers 1.5 Category I credits, for a total of 450 hours of Category I credits, which can be applied toward the American Medical Association Physicians' Recognition Award. The collection provides
practical topical updates across eleven specialties of medicine. Each CME test is enhanced with links to related information contained in the electronic books, journals, practice guidelines, and drug information as well as to other web sites with relevant information;

6) **Clinical Topic Tours.** A new Tour is provided each week which allows the user to explore current thought and accepted wisdom on consequential topics in medicine. Establishing a path through a focused collection of information from journal articles, books, drug information, practice guidelines, educational materials, and useful web sites allows the user to refresh his/her medical knowledge;

7) **Today in Medicine.** This module allows the health care professional to stay informed about the newest developments in medicine. The module provides current developments from all of the major journals, government agencies, and medical conferences. Also provided are concise clinical summaries and links to additional sources of information on the Internet; and,

8) **In This Weeks Journals.** The health care practitioner can keep up with all of the major weekly journals through this module. Key contents of the major clinical journals (Journal of the American Medical Association, the New England Journal of Medicine, the Archives of Internal Medicine, Lancet, etc.) are presented each week in an easy-to-scan format which includes concise article summaries.

**Supplementing the Internet Resources.** The registered number of users for the LRC remote Internet services continued to expand during 2000. A Reference Services Section is posted on the Internet production servers and currently contains an electronic request form for a mediated literature search as well as an electronic request form for an interlibrary loan for materials not owned by the LRC. During 1998, the LRC installed a flat-bed scanner fax machine to facilitate the transmission of any critical information needs from its printed sources. To facilitate color copying and printing, a full-color imaging system became fully operational during 1998 and was available for use throughout 1999-2000. The LRC continuously works to incorporate the recommendations of its customers in its efforts to provide quality and timely service for the USU community.

**Partnership for Peace Information Management Systems.** The success of the global use of the LRC initiated a cooperative venture with the Partnership for Peace Information Management Systems (PIMS) during August of 1999. This test project enables access via the Internet to specific medical care information systems for the medical community in the Republic of Georgia; it officially opened for registered users on December 15, 1999. Health care professionals in the Republic of Georgia had access to a selection of clinical medicine journals, books, and databases such as Micromedex and MD Consult throughout 2000. The exchange of health care information is expected to be relevant to the unique preparation of the USU students for operational assignments; outcome assessments will be used in determining the future expansion of this project as resources are identified.

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Informatics - An Expanding and Essential Component of Education in the Health Sciences.

Background. Efforts in computer-assisted instruction as a study aid for USU students have been ongoing since 1979 when a series of medical students developed, in Apple Pascal, the first drill and practice question bank within the SOM. Course directors provided questions entered into the University Board Review System. In succeeding years several departments (Biochemistry, Pathology, Pharmacology, and Physiology) developed their own on-line examination archives or examination item databases. Over time, this type of material was delivered to students first on stand-alone computers, then on networked computers (HyperPharm, HyperRenal, and others) and most recently as world-wide web (WWW) based sites accessible both inside and outside of the SOM by the Departments of Biochemistry, Pathology, Pharmacology, and Physiology. Perhaps the most ambitious of these recent efforts is the Biochemistry question database of examination questions for testing between 1991 and 1996. This archive is available at <http://bob.usuhs.mil/biochem/exams/exams-f.html>.

Image-based study aids have also been developed by the USU faculty. The earliest of these efforts were Radiologic Anatomy, Neuroanatomy, and Chest Film Review laser disc programs developed and deployed between 1985 to 1995 by the Department of Radiology and Nuclear Medicine. In 1996 and 1997, this material was also made available to students as CD-ROMs; and, in 1997, the material was migrated on the WWW at <http://rad.usuhs.mil>. The Department of Radiology and Nuclear Medicine has established collaborative efforts with faculty at the Mayo Clinic Foundation and Emory University that provide USU medical students access to the Visible Human data set. Both SOM and GSN students utilize this resource. Another current effort encourages the students to draw correlates between anatomy, physical diagnosis, clinical neurology, and radiology.

Compact Disc Provides Cost-Effective Assistance. The Department of Pathology has digitized its entire 2x2 slide collection, some 1,300 images, used in the MS-II Pathology Course; the images are available to students via the WWW. The Pathology Department has developed a compact disc of approximately 1,000 photographic images of pathological specimens. Directed to second-year medical students, the compact disc provides assistance for preparing for pathology laboratories and examinations; the disc provides a comprehensive collection of images covering all major organ systems. The department finds that the compact disc increases the accessibility of images to students and results in significant financial savings because duplication costs for lost or damaged 2x2 slides are eliminated. In addition to the image databank, this WWW site archives old examinations and the SOM Pathology Laboratory Manual, and administers 14 quizzes to students during the course. Each year, USU students access the 14 online quizzes which use photographic images, answer the quiz questions in an open book format, and submit their answers electronically to the department. Adatabank of questions written by USU faculty are archived by computers and used in testing medical students. The use of archived questions allows the department to compare class performance from year to year and to evaluate the quality of the questions, which has reduced ambiguity in examinations. The Department of Pathology also uses Internet technology to provide a web page independent of the University's website. This page enables students to access information regarding pathology educational activities, links them with other medical schools and pathology websites, informs the public of USU departmental personnel and research activities, and advertises the department's Ph.D. Program in Pathology. In recognition of the need for the deployed military physician to have access to Continuing Medical Education (CME), the Pathology Department also uses computer technology to provide CME credit to this group. Through the web page, uniformed physicians can review cases written by the pathology faculty, answer a series of questions based on the case, and receive CME credit. More than 300 CME certificates have been issued by USU for this activity.
Telegenetics Web Site Assists with Genetics Education and Services for the DoD. Computer assisted simulations are used as an integral part of several SOM courses. For several years, the Biochemistry Course (MS-I) has used a human genetics tutorial, developed by SOM faculty. This is supplemented in the clinical years by the internationally used Telegenetics web site (http://www.usuhs.mil/genetics/). In response to the recognized need for genetic services, USU designed an Internet solution to assist with genetics education and services for the DoD. The Telegenetics web site was initially developed in 1996 with the assistance of the U.S. Navy Telemedicine Department and the Applied Physics Laboratory (APL) at Johns Hopkins University. The Telegenetics site was moved to USU in 1997 to focus on educational goals and to provide consultations in genetics to the DoD’s deployed forces. The mission of the Telegenetics web site is to provide information and education about genetics to DoD primary care providers, specialist physicians, USU medical students, graduate students and researchers, and interns, residents, and fellows within the DoD Graduate Medical Education Programs. The web site acts as an invaluable centralized knowledge resource, providing its recipients with online genetics lectures, written information, instructional aids like On-line Mendelian Inheritance in Man (OMIM), and links to articles, laboratory services, and patient support groups. Through store and forward technology, the Telegenetics web site also enables consultations about genetic disorders. Health care providers have accessed this site from within the continental United States as well as from international locations, including Yokota, Misawa, and Okinawa in Japan. Costs for transporting patients to consultants in genetics may be decreased by providing information about genetics to patients and health care providers in remote locations via the World Wide Web. In the future, the USU team responsible for maintaining the Telegenetics web site will aim to fulfill these tasks: 1) incorporate video-teleconferencing capability to allow real-time consultations; 2) integrate online the Family Pedigree drawing program to improve genetic history intake; 3) integrate Tele-Maternal Fetal Medicine (Tele-MFM) capability to allow store and forward examination of ultrasound, MRI, and CT images from remote locations and to enhance diagnostic capabilities in all DoD medical facilities; 4) develop continuing medical education (CME) on the Web to enhance ongoing learning in genetics; 5) use the Simulation Center to provide computer-assisted education for USU medical students in genetics, including cases, dysmorphology, cancer genetics, and adult genetics; 6) use the Simulation Center to enhance learning in Obstetrical Ultrasound; and, 7) assist in the development of Critical Pathways for clinical services in genetics.

Innovative Web-Based Teleconferencing Sessions and Exercises. USU uses interactive, real-time video teleconferencing to link five different sites for its six week clerkship in Obstetrics and Gynecology. In sessions that last from 60 to 150 minutes, site coordinators meet with the clerkship directors and administrative personnel to discuss such crucial issues as cumcula, student problems and evaluation, and faculty development. Since the sessions began in May of 1998, USU has found that the sessions enable the standardization of curricula, facilitate the sharing of ideas, reduce administrative tasks through centralized support, and improve the meaning, consistency, and level of detail in student evaluations. The Physiology Course provides an acid/base game in which students diagnose an acid/base disorder from patient data on a Davenport diagram, treat it, and see what the treatment does to the patient. Other exercises include body fluid compartments and Yannet-Darrow diagrams, and the control of glomerular filtration. These exercises are treated as a regular laboratory in the course. The Pharmacology Course has included a computer-based pharmacokinetic simulation exercise and a computer-based drug information exercise, available to SOM and GSN students as integral parts of its course, for the last ten and five years respectively (both were designed by USU faculty).
The USU Clinical Simulator and Patient Simulator Laboratories Present Scenarios Applicable to Combat Casualty Care, Anesthesia, Critical Care, Trauma, and Emergency Medicine. During 1997, the USU Departments of Anesthesiology, Anatomy and Cell Biology, and Physiology, in collaboration with the National Naval Medical Center's Department of Anesthesiology, developed the Clinical Simulator and Patient Simulator Laboratory (PSL) located in the USU Department of Anesthesiology. The PSL has evolved into a fully interactive clinical training laboratory, equipped as an operating room with standard monitoring equipment, instruments, life support system, defibrillator, and complete audio/video recording equipment. Numerous groups of students and medical personnel make regular use of the PSL both as a training facility and as a research resource: 1) USU First Year Medical Students - Cardiovascular Physiology. For these students, the simulator is used to complement a teaching animal laboratory that demonstrates the basic interactions of heart rate, blood pressure, cardiac output, stroke volume, and circulatory resistance: 2) USU Third Year Medical Students - Two-Week Anesthesiology Rotation. The simulator helps these students to learn the fundamentals of anesthesia; they practice connecting a patient to external life support. It also helps to ensure that all of the students are presented with a core learning experience: 3) USU Graduate Students in Nurse Anesthesia in the MSN Degree Program. USU Graduate School of Nursing (GSN) students undergo basic and advanced simulator training, during which they must handle unique cases with unexpected complications. Some nurse anesthesia students use the simulator as a laboratory instrument for their required Master's Degree Thesis Project: 4) Walter Reed Army Medical Center (WRAMC) Nurses - ICU Certificate Program. These nurses are exposed to advanced patient care scenarios which include extensive equipment use and critical medical situation training: 5) Uniformed Anesthesia Residents from Military Centers in the National Capital Region. These resident physicians are challenged with complex, specifically tailored medical scenarios, designed to prepare them for dealing with critical, time-sensitive situations. For example, recent, incoming classes of anesthesia residents to WRAMC were given an extensive trauma training/evaluation with the simulator: 6) Collaborative Efforts with the R. Adams Cowley Shock Trauma Center of Baltimore, Maryland. In this area, the simulator is used as a test device to evaluate how experienced Emergency Room personnel make use of alarms during critical medical emergencies: 7) USAF Critical Care Air Transport Teams. Once a month, USU hosts an Air Force Critical Care Air Transport Team (CCATT) session, during which the three-person team treats the simulator as a real case. Practicing nurses, physicians, and respiratory therapists are involved in the CCATT training scenarios. They receive a call that their services are required, gather their gear, leave their hospital (Malcolm Grow Medical Center), travel to the site of the patient (USU PSL), evaluate the patient's condition, and provide sufficient treatment to ensure successful transport of the patient back to a hospital. Once they leave the hospital, they can use only equipment and supplies that they carry with them.

The patient simulator offers many benefits to students and instructors. Without putting a life at risk, students can experience handling rare conditions such as malignant hyperthermia, learn to recognize a wide variety of problems, practice using instruments and equipment, develop decision-making skills, and accumulate first-hand experience with military-specific problems like combat trauma. Instructors can tailor each case to individual students, selecting the type, level of speed, and degree of severity according to the student's level of competence. If the instructor wants to give feedback or additional directions, the lesson can be paused and repeated as many times as necessary. Sessions are recorded and played back, enabling the students, with the instructors, to analyze their performance and to recognize their strengths and weaknesses. Because no life is at stake, instructors can purposely push students beyond their competency levels so they can learn and retain critical lessons. The patient simulator is a valuable addition to the USU curricula, one that will most surely play an expanded role in the future. The SOM will include patient simulators in basic science curricula during the first and second years of its medical program, thus lending a clinical context
to classes in Physiology and Pharmacology. Offering the single simulator in the PSL to teach a class size of more than 165 students requires extraordinarily complex scheduling. During 2000, collaboration between the PSL, the Simulation Center at Forest Glen, and the patient simulation facility at the Naval School of Health Sciences (located on the NNMC base) made three simulators available to better accommodate the larger class sizes. Approximately ten percent of the 125 United States Medical Schools have patient simulators. The USU simulator is featured at the Patient Simulation Laboratory web site (www.usuhs.mil/psl/).

**Virtual Reality Telepresence Surgery System.** The USU virtual reality Telepresence Surgery System (TeSS) has gained recognition as an exciting technology training tool. Two USU Class of 1982 graduates, who are also faculty members in the Department of Surgery, have been working with the system since July of 1997. Wearing three-dimensional glasses, students place their hands on a surgical instrument. Peering into a video screen, the Center's students will be able to "touch, tug, cut, or sew" the tissue displayed on the screen; they will actually "feel" the movement. The reach-in display table issues a report on how well the student performed during the procedure.

**Establishment of a Center for Medical Informatics.** Biomedical data and the field of informatics continue to rapidly expand. Processes of knowledge retrieval and decision making are critical to the future health care provider. In light of technology's role in knowledge development, biomedical informatics has become an essential component of education in the Health Sciences. Following graduation, health care professionals must be able to use biomedical information to define, study, and solve problems.

In 1996, decisions were made to establish a Center for Medical Informatics to be placed under the Vice President for Teaching and Research Support (TRS) as an interim step toward the creation of an academic Department of Biomedical Informatics. Since that time, the Center for Informatics in Medicine (CIM) has enhanced USU informatics research and education through introductory computer courses, a workshop on Internet applications in diagnostic pathology, and the development of such diverse areas as websites on educational technology, military graduate education, and HIV in the military.

From 1997 through 1999, a coalition of CIM, the LRC, and the appropriate Dean's Office (SOM or GSN), initiated steps to prepare incoming USU students for the expanded role of informatics in their studies and professional careers. It is recognized that if students are to fulfill the five key roles of health care providers - lifelong learner, clinician, educator/communicator, researcher, and manager - they must have the benefits of a dedicated biomedical informatics program. In June of 1998, the Dean, SOM, appointed a committee to assist in creating the Department of Biomedical Informatics: during 1999, the USU Board of Regents approved the creation of the new academic department.

"Informatics Education. The doctor is the most highly trained individual in the health care system, and as such it is the doctor who should be the final judge of the data entered into the electronic medical record. If the medical record is also a research tool, then this gives a new responsibility and value added to the physician. Educating medical students to do this well is a major challenge. Students who are not exposed to this type of thinking and practical training in medical school will be at a disadvantage when it becomes the norm, as it surely will."

The Department of Biomedical Informatics. The SOM's Department of Biomedical Informatics, approved by the Board of Regents during 1999, and provided space through the restructuring of the USU Logistics Division's Self Service Store, is recognized as a basic science department with three areas of specialization: bioinformatics, medical informatics, and education. It is conceived as a resource center to extend and enhance already strong curricula through departmental and interdisciplinary courses that will integrate basic sciences with clinical experiences, offer simulated clinical training experiences, continue current teaching efforts in introductory computing, and focus on student-centered learning with case-based, small-group sessions. It will also serve as a clearinghouse for USU informatics applications, and provide a testing facility for informatics research. The new department, will help to ensure that all USU graduates have a foundation in informatics that will support them, as career professionals, in the Military Health System. Specifically, the charter for the new department includes the following: 1) support for the curricula through educational technology; 2) extension of the curricula through biomedical informatics; and, 3) identification and research of innovative informatics applications for military health care.

During 2000, the Department of Biomedical Informatics was charged to act as a resource center to support and extend the USU medical curriculum and to act as a focus for developmental and research activities in informatics. The current, university-wide CIM operations will be retained as the new department's service-based component. Research computing will eventually be reassigned to the Department of Biomedical Informatics and it will no longer be considered a part of University Information Systems (UIS). The Department of Biomedical Informatics will serve as the center for USU's academic computing support, spear-heading such activities as sequence analysis, statistical computing, and the student web page pilot project. It will also solve problems associated the University's widely dispersed informatics initiatives. In the past, attempts to incorporate informatics into USU curricula have been handled by individual departments, leaving the efforts vulnerable to collapse if a key member of the department left or was reassigned. The Department of Biomedical Informatics will serve as a central resource into which all departmental informatics endeavors can be incorporated. The department will be gradually resourced over the next four years in accordance with the requirements of the Military Health System.

Two projects supported by the Department of Biomedical Informatics (BID) during 2000 involved innovative education applications for military health care. A collaboration with the University of California at San Diego (UCSD) brought the National Library of Medicine's Visual Human to the USU campus as part of an application developed at UCSD - Anatomic VisualizR. This 3-D visualization tool for the Visible Human data set uses a high end Silicon Graphics workstation for stereoscopic rendering of the data set. Currently, this collaboration has developed five lessons specifically for the SOM and the GSN Anatomy Courses.

In August of 2000, the Dean of the SOM charged BID to implement a USU Medical Portable Digital Assistant (PDA) Initiative. A working group of students, staff, and faculty devised a staged working plan to deploy the PDA to include: distribution and introduction of the PDA to the SOM students; usage training; communication deployment at USU; communication deployment to the Military Treatment Facilities (MTFs); and, evaluation and refinement of the initiative. The PDA devices were provided to the USU second year medical students in December of 2000. The use of the PDA has recently accelerated; approximately 50 percent of physicians surveyed at one hospital already own a PDA (Ho W.L., Forman J., Kannry J., Portable Digital Assistant Use in a Medicine Teaching Program, Proc AMIA Symp 2000;:1031). In this study, two significant uses for these devices were to track outpatients and for use as a drug reference. Studies have confirmed that physicians and medical students are able to successfully incorporate PDAs into their
patient care workflow. With the use of a drug information database, clinicians save time, improve knowledge for themselves and their patients, and possibly decrease preventable adverse drug effects. The goal of the USU Medical PDA Initiative is the integration of this technology into the clinical setting. The objectives of the USU PDA Initiative follow: 1) communication while students are at clinical sites (HandDBase and associated data bases); 2) clinical encounter log collection (CWebLog developed within the USU Departments of Biomedical Informatics and Medicine); 3) clinical reference material access (qRx(ePocrates) and 5-Minute Clinical Consult; and, 4) clinical calculator availability (MedMath). USU students are responsible for installing five applications and the CWebLog channel on their PDAs. During their clerkships, each student is expected to operationally maintain his or her PDA. The PDA serves as a significant option that the USU students have for maintaining a log of their clinical encounters.

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National Capital Area Military Medical Simulation and Readiness Center Initiative.

"The Uniformed Services University of the Health Sciences (USUHS) pushed the edge of the virtual-reality envelope with the April 21, 2000, opening of the National Capital Area Medical Simulation Center. ... The facility ... is the FIRST single location to bring together virtual-reality technology, life-like mannequins (computerized simulators), and actors or standardized "patients."


Background. In response to new technologies, a requirement for standardization in assessment, and also the rapid downsizing of the inpatient teaching base, U.S. medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer based testing (CBT), distance learning, virtual reality applications, and clinical simulations using "standardized patient" actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are being incorporated as new quality standards for medical education and testing. For example, the National Board of Medical Examiners scheduled the implementation of CBT in the U.S. Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients will be implemented as part of the USMLE Step 2 sometime between 2001 and 2003. Similar requirements are being discussed by the accrediting entities for advanced practice nurses.

These innovations in medical education conform with the 1995 DoD Medical Readiness Strategic Plan which states: "The use of modern technological advances such as computer simulations and virtual reality has the potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training." In July of 1995, the Dean of the USU School of Medicine, and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the 1) development and use of military medicine databases for education and training; 2) simulation, teaching and measurement of patient interviewing, physical examinations and diagnostic skills; 3) instruction, assessment and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs, SOM, was appointed chair of the planning committee and designated to coordinate the project for the University.
Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC annex at Forest Glen, Maryland, was identified and approved by the Commander of WRAMC as the location for the center. An initial design study, funded jointly by USU and WRAMC, was completed in September of 1996. Two subcommittees subsequently prepared recommendations on technology and annual cost estimates. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs and the Surgeons General during a meeting of the TRICARE Readiness Executive Committee (TREC), who referred it to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen space and the purchase of equipment. The one hundred percent design was completed on August 12, 1998. Funds for the renovation, furniture, and security were obligated on September 30, 1998. Program development and hiring of staff began late in Fiscal Year 1998 and continued throughout Fiscal Years 1999 and 2000. The construction for renovation was completed during 1999; in September of 1999, the Center began training and testing military physicians, nurses, and medical students. On April 21, 2000, the 11,000 square foot National Capital Area Medical Simulation Center (MSC) was officially opened at the Walter Reed Army Medical Center annex in Forest Glen, Maryland. The center is the first single location to integrate the use of virtual-reality technology, computer-controlled mannequins, and human simulated patients under one roof.

Multi-Simulation Techniques Under One Roof. While an increasing amount of professional health care training uses simulation techniques, the National Capital Area Medical Simulation Center is very likely the only place in the United States that combines multi-simulation techniques under one roof. Following final coordination for funding with the USU Executive Committee (the military Surgeons General), the Center became fully functional during FY2000. This state-of-the-art teaching facility allows health professionals to augment their skills through patient simulations, virtual reality applications, and training with mannequin simulators. It will use technology and actors posing as patients to teach students about situations that they may encounter as practitioners but might not otherwise experience while training in hospital wards. It also allows for the "safe transition" between the classroom and the clinic for learning procedural and surgical skills, and for interacting with "patients" in sensitive or difficult situations. Another use of the Center is the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions.

The Center is divided into four functional areas: the Administrative Area: the Clinical Assessment Laboratory; the Computer Laboratory; and, the Surgical Simulation Laboratory. Each distinct area can sustain educational activities on its own; and, when necessary, integrate the operations of the entire Center for a more comprehensive approach. All of the functional areas have been designed to maximize students' access to clinical experience in a state-of-the-art learning environment.

The Administrative Area. The Administrative Area of the National Capital Area Medical Simulation Center serves as the hub of the Center; the area includes both the administrative offices as well as the Video Teleconference (VTC) Room. In addition to the daily operational activities such as personnel, budgeting, and resource allocation, the Administrative Area houses the offices of the Center's Director, Deputy Director, and Standardized Patient Trainer. The VTC Room is the Simulation Center's audio/video entry and exit point to the outside world. Equipped with state-of-the-art video teleconferencing equipment, any of the video signals throughout the Center can be routed through the VTC Room and sent to any connected
site in the world. This capability allows individuals at remote sites to participate and to review many of the exercises which take place in the Center. The VTC Room is equipped with a "telecommuting" conference table, which allows up to twelve students, faculty, or visitors to connect their computer laptops to twelve local area network ports for high-speed Internet access. The table is also outfitted with sixteen headphone ports, allowing various audio exercises that permit instructors and students to simultaneously utilize the same audio files for review and discussion. As a standard conference room, it is also equipped with a slide-to-video converter, document camera, and VCR.

The Clinical Assessment Laboratory. The Clinical Assessment Laboratory is designed for teaching and evaluating students in the basic clinical skills of history taking, physical examination, communication, and interpersonal skills. Here, encounters with simulated patients provide an ideal transition from the classroom to real patient contact. The Clinical Assessment Laboratory also prepares medical students for the U.S. Medical Licensing Examination. The area consists of four sub-sections: the Orientation Room; the Clinical Examination Room area; the Monitoring Area; and, the Standardized Patient Lounge. The Orientation Room is used to brief the students. A ceiling-mounted, drop screen and LCD projector are used to display PowerPoint and/or video presentations for orientation, registration, and briefing students on specific event protocols. The students are registered for clinical events through a log-in process which tracks the students throughout their activities at the Center.

The Clinical Examination Room Area consists of 12 examination rooms which serve as the simulated clinical environment for the Center. There are ten typical (120 square feet) examination rooms and two large (220 square feet) rooms with hospital beds that can be used for inpatient and/or critical care simulation. The large rooms are also suited for trauma simulation and small group teaching events. In the Clinical Examination Area, students have the opportunity for encounters with live patients who simulate specific challenges in outpatient, inpatient, or critical care settings. Specifically, individuals, referred to as standardized patients, are hired and trained to simulate scripted clinical cases. These clinical cases may be simulated using performance, make-up, real conditions, or a combination of all three. Each Clinical Examination Room is equipped with two video cameras and microphones which permit encounters to be recorded for subsequent analysis. Each room is equipped with a computer for the patient; a wall-mounted computer is also located outside of each room for students to use for documentation before and after the encounter. Typically, clinical examinations are designed following a directive to achieve specific educational goals. The Standardized Patient Trainers and the Medical Director collaborate with faculty members to create projects that meet stated educational goals.

The Monitoring Area is located at the center of the Clinical Examination Area and allows the Standardized Patient Trainer and faculty instructors to monitor the progress of the clinical examinations. A specialized video router controls 24 videotape decks which track the students as they move from room to room. A touch screen control panel permits cameras to be positioned for optimal imaging. Faculty and students are able to view recorded tapes as if they were in the room, allowing for more detailed observation and more dynamic feedback. The Monitoring Area is also used for training simulated patients.

The Standardized Patient Lounge is a staging area for simulated and standardized patients to prepare for, and to relax following, activities at the Center. This area is required as "patients" often use theatrical make-up to simulate traumatic injuries or other conditions.

The Computer Laboratory. The Computer Laboratory has two sections: the Computer Laboratory itself and an adjacent Control Room. The Computer Laboratory has two primary functions. The first is to
identify, develop, and/or use medical education software that contributes towards clinical or medical readiness skills. The second is to provide an environment in which computer-based, interactive clinical examinations can be administered. The Computer Laboratory consists of sixteen Internet accessible workstations that can run a variety of medical educational CD ROMs. Eight overhead cameras and a one-way mirror between the Computer Laboratory and the Computer Control Room ensure that examinations are properly monitored when the Computer Laboratory is being used for testing. Students use the Computer Laboratory to work with interactive software programs that may be linked to activities occurring in other functional areas of the Simulation Center. Additionally, students can prepare for the National Board of Medical Examiners (NBME) Examination by practicing test questions from several test preparatory software packages available in the Center. Currently, the Computer Laboratory meets, or exceeds, the requirements set for an NBME testing site. Students and faculty can also use the computers to conduct independent studies or to view USU mail or class schedules.

The Computer Control Room is adjacent to the Computer Laboratory. It is the nerve center for the Medical Simulation Center. All data, voice, and video signals are fed through the Control Room and can be routed to other areas in the Center accordingly. The Control Room also houses several departmental servers which handle the current requirements of the Center. During testing, the Control Room operates as a monitoring station for instructors, allowing overall viewing of the Computer Laboratory through a one-way, mirrored window or any of the individual workstations from the overhead camera. Plans are currently underway for a high-speed fiber optic link between the Simulation Center and the National Library of Medicine. The Computer Control Room will house one end of this link. The link will provide the Simulation Center with access to Internet 11, which is still in the development stage. Also, the link will be used to test and develop streaming video and other high bandwidth/high reliability applications.

The Surgical Simulation Laboratory. The Surgical Simulation Laboratory uses virtual reality and a full-scale operating room mock-up to provide highly realistic scenarios for surgical training. This area is the first site approved to investigate teaching the surgical skills practicum for the Advanced Trauma Life Support Course through the use of computer-based simulators and plastic models rather than anesthetized animals or cadavers. The Operating Room is furnished to look and feel like a typical operating room. In addition to the typical Operating Room equipment, the room holds intravenous catheterization, endoscopy, and diagnostic ultrasound simulators. The Operating Room can be configured to match the conditions of a standard Operating Room, an Emergency Room, or an Intensive Care Unit. Here, a single human patient simulator responds to various drugs and interventions. Driven by two computers, the human patient simulator can be pre-programmed with patient characteristics or variables such as age, anatomy, and physiology factors depending upon the training event. Students are faced with real-life situations as the human simulator breathes out Carbon Dioxide, and breathes in various gases, depending upon the scripted clinical procedure. The simulator has five palpable pulse areas and will exhibit the appropriate physiologic reactions in response to various intravenous inhaled agents. Presently, there is a capability for 80 different drugs to be "virtually" administered by various computer microchips. The simulator responds to the type and amount of these drugs according to instructor-determined, pre-programmed patient variables.

In the Operating Room Control Room, a two-way headset and a one-way mirror into the Operating Room allow instructors to communicate with the Operating Room Coordinator. In the Control Room, the coordinator can change patient variables on the computer and even speak into a hidden microphone feed on the simulated patient in order to bring more realism to the scene.
The Virtual Reality Laboratory, which is funded, in part, by the Association of Military Surgeons of the United States (AMSUS) develops computer-based surgical simulators to meet the educational objectives of the Simulation Center. Two functional directives of the Virtual Reality Laboratory are research that advances simulation procedures and harnessing the capabilities of existing technologies. In the Virtual Reality Laboratory, state-of-the-art computer-based equipment enables students to view medical objects in two or three dimensions. A haptic interface allows the computers to re-create the tactile sense which permits users to touch, feel, manipulate, create, and alter simulated 3D anatomic structures in a virtual environment. Here students can teach themselves, at their own pace, and they can feel comfortable about making mistakes as well as repeating an exercise. The Virtual Reality Laboratory is equipped with simulators for Vascular Anastomosis, Pericardiocentesis, a Diagnostic Peritoneal Lavage Unit, and a hand-immersive environment for on-going research. Both the Pericardiocentesis and Diagnostic Peritoneal Lavage simulators were developed in the Virtual Reality Laboratory. These two simulators are the first of their kind and, they are unique to the National Capital Area Medical Simulation Center.

The Operation and Maintenance costs for the Center are expected to be partially offset through the use of the computer-based testing laboratory by medical and nursing students from USU and the military treatment centers throughout the D.C. area as they prepare for their computer-based testing/certification requirements. The Center should also generate cost-avoidance through the provision of readiness training and distance learning for the Military Health System as requested by the Surgeons General.

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"The University will build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services."

-Goal 3, USU Strategic Plan, October 1999.

Background. The Office of the Vice President for Research was established at USU to facilitate, promote, and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty; following an extensive search, the first USU Vice President for Research, Ruth Ellen Bulger, Ph.D., was appointed during March of 1996; she served in that position until March of 2000, when Dr. Bulger stepped down from the position to fulfill other professional obligations. The second Vice President for Research, Steven Kaminsky, Ph.D., was appointed in the position and arrived at the University in March of 2001. The Office of Research monitors, reviews, and coordinates approvals for all matters dealing with research at the University, to include the following responsibilities: identification of potential funding sources; pre-award administration; post-award administration; grant award and receipt; administration of the human participant research program, including institutional review board (IRB) review and approval; and, the monitoring of all regulatory compliance requirements. The Office of Research also runs the intramural grant program and staffs the SOM Research Merit Review Committee, which provides peer review of applications for intramural funding for research and instructional development.

The Office of Research provides service to three communities: faculty investigators, the University, and the approximately 80 funding organizations which support research at the University. In addition to administering the University's research programs, the Office of Research staffs the Faculty Senate Research Day, which is conducted each year in conjunction with the Graduate Student Colloquium. The two-day event includes faculty and student presentations as well as nationally prominent keynote speakers. Several other symposia are also offered to members of the USU community throughout the year. "Write Winning Grants" (in both lecture and hands-on format) and "IRB 101" (a lecture and small-group workshop for investigators who perform research involving human volunteers) are conducted at least once each year. Additional workshops, panels, and speakers have addressed topics of interest in military research, communicating science, and specific concerns about adequately protecting the human participants in the USU research programs.

During 2000, the USU Intramural Program consisted of 87 militarily relevant protocols, 72 clinical research awards, and seven educational projects. All faculty applications are reviewed by the Research Merit Review Committee. In 2000, standard USU awards for militarily relevant research typically provided 90 percent of the investigator's approved budget request; clinical research was funded at 80 percent. As part of the University's effort to encourage young faculty, assistant professors in both categories received 90 percent of their requests for standard funding. Student research awards supported the work of six medical students, 47 Ph.D. candidates, and 39 students in graduate nursing. These applications are reviewed by faculty in the student's area of study and the appropriate Dean.

Approximately 600 active research protocols at USU cover a variety of scientific areas, including basic biomedical areas central to the mission of the Military Health System: the mechanisms and control of a
wide range of infectious diseases; the treatment of sepsis: topics in combat casualty care, operational medicine, and health education and promotion; Defense women's health issues; projects funded through the TriService Nursing Research Program; warfighter performance factors: and, responses to the various stresses of military life. (See Appendix C for examples of the achievements and recognition given to individual USU researchers.)

**USU Researchers Analyze Diseases Relevant to the Military.** Many Research protocols at USU concern diseases of high military relevance for troop deployment and sustainment. For example, malaria is endemic in many areas where the military deploys its fighting forces; recent technological advances conducted by USU researchers have made it possible to predict mosquito population levels and transmission risk for a range of mosquito-borne diseases such as malaria, even within precise areas and time frames. By using satellite imaging and remote sensing devices, USU researchers assist in predicting high-risk locations for the occurrence of malaria and similar diseases. These predictions focus disease control operations and conserve scarce finances as well as human resources. Infectious diseases studied at USU include the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; E. coli, H. pylori; and, bartonellosis. Examples of additional disease-related research have included: determination of the most appropriate site for effective immunization against a variety of microbial agents; identification of previously unknown bacterial virulence genes; and, analysis of the genesis and pathology of various types of virus.

**USU Research Enhances Combat Casualty Care.** Research contributed by USU faculty in the area of combat casualty care continues to provide rapid diagnostic methods and treatments which ensure military readiness, excellent care for deployed warfighters, and the rapid return of the injured and sick to active duty. Protocols that deal with combat casualty care have focused on five general subject areas: 1) blood preservation and delivery (e.g., the effects of cross-linked hemoglobin in traumatic brain injury, global and local responses to profound hemodilution, and the effect of environmental hazards on heme regulation); 2) treatment of nerve injury and neural healing (e.g., low-power laser irradiation on in vivo nerve regeneration and the role of neurocytokines and plasticity in sensory nerve injury); 3) understanding, preventing, and treating endotoxic shock; 4) wound healing and sepsis (e.g., characterization of inflammation and its intercellular mediators, and the use of prophylactic intravenous antibiotics for penetrating eye injuries); and, 5) the effective treatment of traumatic injuries.

**USU Research Augments Military Operational Medicine.** Most of the research protocols in the area of military operational medicine fall under three general categories: 1) factors that enhance military readiness (e.g., human performance models for exercise, reduction in acute and chronic injuries, and understanding of endocrine factors that affect performance); 2) factors that decrement human performance (e.g., acute and chronic Post Traumatic Stress Disorder (PTSD), neurological stress and dysfunction, and hyper- or hyperthermia); and, 3) endocrine control and its effect on performance (e.g., endocrine and immune interactions with exercise, and the relations between trauma and human stress).

**Enhancement of Administrative Services.** During 2000, as part of a continuing effort to reduce the administrative burden on the USU investigators, the Office of Research streamlined the intramural submission process. As part of the semiannual call for applications for standard funding, all of the relevant application forms are distributed to likely applicants on a single diskette. When the applicant returns the diskette with completed forms to the Office of Research Administration (REA), the REA specialist will immediately make any small corrections, thereby eliminating the need to return paper forms for correction and recopying by the Principal Investigator (PI). (The forms can also be downloaded from REA’S home page.)
The number of forms required for the application and the administration of intramural funds has been reduced, and the primary application form has been reworked to more clearly indicate the issues that the Merit Review Committee expects an applicant to address for peer review. USU Instruction 3200 governs the duties and functions of REA, the intramural research program, the University investigators, and the University’s extramural funding sources; the Instruction is currently under revision with emphasis on clarity and simplification of use.

Coeus, the Grants Management Database, underwent a major upgrade during 2000, to improve the functionality of the database and the appearance of the printed reports. Coeus stores detailed pre- and post-award information on each of the research protocols submitted or conducted by the USU investigators. Its records now include a complete history of every change or action from the award notice through the closeout (e.g., award amounts, assurance status, modifications, and reporting requirements). The upgrade also enables the REA staff to download information from the database into an Excel spreadsheet, which, in turn, provides greater speed and flexibility in gathering detailed and accurate grant information for the programmatic reports and the administration of the individual projects. The REA staff has also developed several standard, but USU-specific, award reports. REA staff can now easily provide USU faculty members, departments, and administrators with information concerning the status of all USU research projects, reporting and assurance deadlines, and the total amount, or percent, of effort that is assigned to each research project.

The USU Research Home Page <www.usuhs.mil/research> was expanded and updated during 2000. The site provides pertinent, up-to-date, user friendly information on both intramural and extramural grant opportunities. It also provides the ability to download a wide range of application and assurance forms.

Institutional Review Board. The Program for the Protection of Human Participants in Research is of great importance to the USU research environment. In 2000, the IRB Program staff reviewed and approved 206 new research protocols involving human participants and provided the ongoing review of 100 additional protocols. A review of the USU IRB Program was conducted during July of 1997, by the Director, Scientific Activities, Office of the Assistant Secretary of Defense for Health Affairs. Although the review found no significant deficiencies, the REA staff was expanded to accommodate the growing number of protocols requiring IRB review. An Institutional Review Board (IRB) Coordinator was added to the REA staff during 1999. In addition to the annual "IRB 101" seminars offered by REA, the Director of Research Programs, who serves as the Executive Secretary to the IRB, provides training sessions for departments on request. USU investigators who plan to do research with human participants are encouraged to have pre-application discussions with the staff of the IRB Program. Program staff and new members of the IRB Program attend national conferences in order to remain current with the latest human-participant issues and regulations.

The Food and Drug Administration (FDA) has cognizance over Federal IRB Programs where research is conducted with investigational new drugs and devices. Because some USU research falls into this category, the FDA has the authority to audit the entire USU program. On March 22 and 23, 1999, an FDA inspector conducted a two-day audit of the USU Human Use Program and the USU IRB. The audit included a review of IRB minutes from 1997, 1998, and 1999, plus a random sampling of the IRB files on protocols with a greater than minimal risk to human subjects. The USU IRB Program was found to be in full compliance with the governing regulations (Title 21, Code of Federal Regulations, Parts 50 and 56) with no need of corrective action by the Division of Scientific Investigations, Office of Medical Policy, Center for Drug Evaluation and Research of the FDA. Both the audit conducted by the Director of Scientific Activities
for the Office of Health Affairs in July of 1997 and the audit conducted by the FDA in March of 1999 have demonstrated that the support rendered by the Program for the Protection of Human Participants in Research to the University, its research environment, and its community is absolutely outstanding.

Facilitation of Institutional Review Board Review of Multi-Center Trials in the National Capital Area. Clinical investigators who wish to conduct multi-center trials throughout the National Capital Area usually meet with multiple administrative problems, including the need to: 1) complete more than one set of required IRB approval request forms; 2) adhere to different required formats for the composition of the document used to obtain informed consent from participants; and, 3) meet numerous recommendations from the various IRBs with oversight responsibility for the conduct of the research. To simplify the process for meeting multi-IRB approvals, REA has coordinated efforts to standardize procedures with counterparts in human research participant protection offices at the National Naval Medical Center, the Walter Reed Army Medical Center, and the Malcolm Grow USAF Medical Center. During 2000, two of these affiliates completed the development of common application forms and informed consent formats. USU has recently received the newly implemented Federal Wide Assurance (FWA); the Bylaws and Memoranda of Agreement with its clinical affiliates allow USU to accept their primary review of human subject research while retaining the option for second-level institutional review. The Walter Reed Army Medical Center and the National Naval Medical Center are currently reviewing their Multiple Project Assurances (an earlier version of the FWA) and working toward obtaining concurrence from their Service Secretaries for FWAs of their own and the newly coordinated, multi-site approval process.

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USU Veterinary Surgery Division. On November 4, 1999, the USU Department of Laboratory Animal Medicine received confirmation of continued full accreditation from the Council on Accreditation of the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC International). "The Council on Accreditation of the AAALAC has reviewed the report of the most recent site visit to USUHS... Council commends the staff and administrative personnel for continued development of alternatives to animal use in surgical protocols. The Council is pleased to inform you that the program conforms with AAALAC International standards as set forth by the Guide for the Care and Use of Laboratory Animals (Guide), NRC, 1996. Therefore, considering the provision stated below, the criteria for maintaining FULL ACCREDITATION have been assured."

Background. The USU Veterinary Surgery Division (VSD) of the Department of Laboratory Animal Medicine provides full surgical training support to qualified USU faculty supporting both teaching and research protocols. VSD is composed of two large teaching laboratories and two operating rooms used chiefly for research protocols involving non-rodent species. These areas are equipped with modern surgical and surgical support equipment which allow comprehensive care and monitoring. Support areas include separate instrument cleaning and sterilization rooms, a surgeon's scrub area, and a large multi-purpose room used for both pre-operative procedures and post-operative recovery. There is a third operating room utilized by a LASER research team for special procedures during 2000.

Current Activities. A variety of significant teaching laboratories were conducted during 2000 by VSD. These laboratories provided students with invaluable experience working with biological tissue; also, the
laboratories were frequently reported by the medical students to be one of their most valuable learning experiences. The teaching laboratories provide the students with the opportunity to gain experience in basic surgical skills and the proper handling of tissue among other critical techniques. These skills help students to more effectively function during their future residencies and in the practice of medicine. Also, in the event that as military physicians they will be thrust into battlefield conditions, the familiarity and heightened skill level afforded by the teaching laboratories could prove to be of significant value. Students are exposed to a combination of training techniques prior to specific training on the use of animals. The use of computer simulation and mechanical surgical simulation devices complements the students' surgical training experiences and also reduces the number of animals required to provide the necessary training. Navy corpsmen staff the VSD; all are trained human surgical technicians, which enables a solid professional relationship between veterinary surgery staff members, surgeons, and students. The corpsmen also contribute significant preoperative and monitoring skills to all of the teaching laboratories of the Multidiscipline Laboratories. An assignment to USU has been found to tremendously broaden the experience of the corpsmen and to afford a unique training opportunity through the combination of human surgical skills with current veterinary technology. Also, co-located with the surgical section, and operated by Navy corpsmen, are radiology support services which include a human hospital GE Advantx X-ray unit equipped with fluoroscopy. This equipment allows advanced diagnostic capabilities for the central animal facility and serves as a tremendous resource for USU investigators.

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**USU Barrier Facility.** A rodent barrier facility occupying approximately 2,558 square feet within the USU Central Animal Facility and capable of housing 6,000 mice was opened during 1999. This resource was conceived and developed by the Vice President for Teaching and Research Support and veterinarians from the Department of Laboratory Animal Management, along with input from the USU Institutional Animal Care and Use Committee, and interested USU investigators. The facility is equipped to accommodate the needs of USU investigators whose research requires that research animals (rodents) be kept under ultra clean conditions. Ultra clean conditions are necessary to reduce the chance of pathogen exposure, which could have devastating effects on research goals and potentially result in the waste of animal lives, investigators' time, and related resources. The facility is also intended for the housing of transgenic mice (mice which have been altered genetically to simulate disease states or modified biochemical conditions). While USU investigators have first option for using the available space, it is anticipated that the University will share its barrier facility with investigators from other military institutions.

The Barrier Facility has a staff composed of one full-time technician who is specifically trained in transgenic techniques and is capable of producing transgenic animals; in addition, an animal husbandry caretaker also supports the barrier facility. The technician daily monitors animals housed within the barrier and is responsible for: 1) the administration of the cost structure covering the various services of the facility; 2) written entry procedures (which include the use of personal protective equipment) and restrictions of non-essential personnel; and, 3) the conduction of training on barrier-housed animal handling procedures. Recent equipment acquisitions in support of the barrier include additional ventilated cage racks and a controlled rate freezer for the cryopreservation of crucial reproductive elements (embryos, eggs, and sperm). The controlled-rate freezer is a state-of-the-art piece of equipment that allows the long-term storage of frozen mouse embryos. Once a transgenic or other valuable mouse line is developed, the cryopreservation technique keeps that line viable without having to house large numbers of breeding animals to maintain the line. When a particular mouse line is required, the embryos are thawed, implanted, and normal breeding of the line
continues. This saves a tremendous amount of space and resources that would normally be required for maintaining a breeding colony. **The capability to produce transgenic animals for investigators is a research tool that is not available at other Department of Defense research facilities in the National Capital Region.**

The barrier is equipped with a limited access card key system and consists of four sections: an autoclave area with two physically separate rooms; five clean animal holding rooms; one procedure room; a laboratory for transgenic surgical and manipulative procedures; and, a storage area. One of the animal holding rooms can be used as a quarantine room for animals awaiting final clearance of health status. All barrier mice are housed in specially ventilated cage racks, such that the animals are only exposed to highly filtered (sterile) air. All supplies (caging, bedding, food, and water) are sterilized prior to entry or use in the barrier. The transfer of mice from soiled caging to clean cages is performed in a positive pressure laminar flow cabinet, which further ensures protection from pathogenic agents. The USU barrier has the distinction of being free of rodent diseases due to the essential efforts of the USU staff.

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**Implementation of Safety Strategies.** The overall mission of the USU Environmental Health and Occupational Safety (EHS) Department is to protect the USU community from harm during their employment at the University. To accomplish this mission, during 2000, EHS developed and implemented the following three strategies:

**Safety Consciousness.** EHS will raise the "safety consciousness" of the USU community. This will be accomplished by: 1) focusing EHS efforts on laboratory safety inspections versus reviewing protocols; 2) establishing a USU Safety Committee; 3) prominently displaying safety concepts in highly visible areas; 4) rewarding researchers who achieve outstanding laboratory safety inspection results; 5) ensuring that researchers are held accountable for unsatisfactory laboratory safety inspection results; 6) making EHS team members' efforts and accomplishments more visible to the USU community; 7) providing limited items for researchers' use without cost; 8) strengthening surveillance and compliance procedures for controlled substances and ethanol products; 9) becoming a mercury-free work environment by August of 2002; 10) collaborating with the Henry M. Jackson Foundation regarding safety approval for hazardous orders; and, 11) increasing the USU community's knowledge of wellness programs.

**Recognition of Low Risk Areas.** EHS will reduce its oversight and approval processes in low-risk areas. This will be accomplished by: 1) reducing the restrictions for ordering chemicals using a government purchase card; 2) decreasing the number of ancillary CUFS approvals performed by safety; and, 3) limiting the paperwork required to submit a proposal through various committees concerned with safety.

**Presentation of an Image of Assistance.** EHS will strive to project an image of assistance versus one of enforcement or monitoring; however, EHS will not threaten the safety of the USU community by accepting noncompliance with procedures and processes. Finally, EHS will provide a benchmark for safety at the University that will establish future standards for the USU faculty, staff, researchers, and students as they continue their careers throughout the Military Health System.

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USU's Collaborative Relationship with the Stanley Laboratory of Brain Research.

Background. In February of 1999, during a ribbon-cutting ceremony, the University President welcomed the Stanley Laboratory of Brain Research to the SOM Department of Psychiatry. Through a collaborative arrangement with the University, the School of Medicine, and the Stanley Foundation, the USU community will now have access to the Stanley Laboratory's brain specimens from individuals who suffered from diseases such as schizophrenia, bipolar disorder, and severe depression - the largest of such collections in the world. The Stanley Foundation Brain Bank and Neuropathology Consortium is made possible through funding from the Theodore and Vada Stanley Foundation. Its purpose is to collect postmortem brain tissue and to distribute it, without charge, to research groups working on schizophrenia and bipolar disorder (manic-depressive illness).

Current Activities. E. Fuller Torrey, M.D., and his research group continued to provide outstanding expertise to the University throughout 2000. By mid-Summer of 2000, the Stanley Foundation postmortem brain collection for research on schizophrenia and bipolar disorder had over 360 specimens. Some 52 large freezers contain the collection located at the Brain Research Laboratory in the USU SOM Department of Psychiatry. The specimens are approximately evenly divided among individuals who were diagnosed with schizophrenia, bipolar disorder (manic-depressive illness), severe depression, and normal controls. Most of the specimens are provided to researchers doing research on schizophrenia, bipolar disorder or depression. During 2000, one specimen, in which the individual had suffered from Tourette's Syndrome, was donated to a research group studying this disease. In another instance, the Stanley Foundation donated a normal control specimen to a World Health Organization project that is working to establish worldwide standards for brain tissue for comparison with prion-caused diseases such as Creutzfeldt-Jakob syndrome.

When the Stanley Foundation initially assumed responsibility for the Neuropathology Consortium, it looked forward to the day when it would have hundreds of measurements on the same parts of the brain from many different laboratories. That task is being addressed through the work of Dr. Michael Knable who has examined 69 separate data sets from 14 laboratories on the prefrontal cortex. A total of 17 abnormal markers were identified that pertained to a variety of neural systems. Schizophrenia was associated with the largest number of abnormalities, many of which were also present in bipolar disorder. Neuropathologically, bipolar disorder was more similar to schizophrenia than it was to severe depression. Major depression was found to be associated with relatively few abnormalities. The majority of abnormal findings represented a decline in function and could not be easily explained by exposure to psychotropic or illicit drugs. A paper on these findings was accepted during 2000 for publication in a special issue of Brain Research Bulletin.

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Information Technology.

Background. During 1994, committees were formed at the University by the School of Medicine and the Faculty Senate to address USU's future use of computers and technology in general. With the future development of Information Technology and Medical Informatics at USU in mind, the University President sent a delegation of seven USU representatives to the American Association of Medical Colleges (AAMC)
Information Technology Conference. The conference served to reinforce the University's inclusion of computer assisted communication and technology within its strategic planning process. With total support from the leadership at USU, strategic goals were developed so that Medical Informatics would be utilized to emphasize distance learning, continuing medical education, computer assisted medical education, access to medical databases, and other medical information systems. The focus of those efforts, in accordance with the University's mission, would be on the unique educational requirements of military and disaster medicine. In October of 1997, a number of USU information technology-related committees were combined to form the Automated Information Systems Policy Committee (AISPC). This committee, meets twice each month to review guidance objectives, identify resources, develop requirements, and plan information technology policy strategies, and training.

In response to user concerns, available long-range technology refreshment plans, and the USU Strategic Plan, extensive technical improvements were made during 1999: **Servers:** Twenty file servers were upgraded to ten state-of-the-art high performance systems. **E-mail:** Five separate E-mail systems were converted to Novell Groupwise 5.2 and later upgraded to version 5.5. This action standardized formats, address books, and addresses. It also provided Internet access, a highly desired post office protocol server, and improved the use of attachments and external E-mail. **University Homepage:** the USU Homepage now contains over 2,362 pages of information and some 33,055 links to additional information; the vast majority of USU departments now have active homepages and many are sharing teaching and research information via the Internet on a regular basis. **Mail Gateway:** A mail gateway was created and installed to direct all E-mail to the new Groupwise system. **Network:** The network was upgraded from a 10 mega-bit (MB) coaxial cable to a 100 MB twisted pair system. **Internet Access:** Access was upgraded from a 1.4 MB T-1 line to a 10 MB asynchronous transfer mode connection. **Operating Systems:** All systems were upgraded and were Y2K compatible. **Telephone Modems:** Modems were upgraded from 16 slow systems to 48 V.90 56K systems. **Bulletin Board:** The Bulletin Board was upgraded from a character-based VAX system to a user-friendly and Internet-based program. **Teaching Facilities:** Lecture halls and conference rooms were upgraded with state-of-the-art, automated multimedia teaching systems. One area has an audience response system. **Video Teleconferencing:** Capabilities were established at additional sites at the University. **Oracle Database:** Software was established on a series of servers to support the Enterprise Database. Conversion of legacy systems to the Oracle-based Enterprise system was initiated during 1999.

**Customer Support.** During 2000, the University Information Services (UIS) Center provided support for: almost 3,000 information systems users; over 3,000 e-mail customers; 1,920 telephone systems; and, 1,200 Voice Mail Systems. In addition, as the owner of a Class B Internet Protocol License, USU acts as the Internet Service Provider to the National Naval Medical Center and 12 off-site Department of Defense activities from Groton, Connecticut, to Quantico, Virginia.

**Desktop Computers.** Following Assistant Secretary of Defense, Health Affairs (ASD/HAl), guidance, a plan to lease desktop computers by the University was implemented during 1998,1999, and 2000. The plan calls for all basic office automation and teaching computers to be replaced with leased systems. The UIS Helpdesk is about to oversee the third phase of the University's desktop computer-leasing program. Following the scheduled addition of 198 systems during 2001, almost 800 desktop computer systems will have been placed in a three-year technology refreshment cycle. The process provides standardization, technology refreshment, budget planning, compatibility, and improved user support. During 2000, UIS managed over $500,000 in contracts to support 575 leased computers. Another $256,000 was managed to support software licenses for the central computing facilities.
Helpdesk. A set of desktop tools, also based on ASD/HA guidance and USU requirements, was recommended by the AISPC and approved by the USU President. The selection of a single set of desktop tools greatly simplified user support and improved the Help Desk response during 1999 and 2000. In addition to the implementation of the desktop computer-leasing program, during 2000, the Helpdesk completed over 7,000 requests for assistance. The Helpdesk utilizes a Heat Tracking System to maintain and monitor every request and directed project that enters UIS. The University has signed an agreement under a Maryland State Educational Contract (the Maryland Enterprise Educational Consortium (MEEC) with Microsoft Corporation which provides site licenses at significantly reduced educational rates. This agreement allows the UIS Helpdesk to make the latest Microsoft software available to all faculty, staff, and students. The helpdesk also provides SPSS statistical software, Novell Client software, security systems, and various utility and educational programs to its user population.

Software Development. A team of software developers in the UIS Information Engineering Branch, which had been originally hired to address Y2K concerns, was maintained during 2000 to continue the development of an Oracle-based Enterprise Database. To date, software packages have been developed to assist the operations of the Pharmaceutical Supply Center and the Laboratory Animal Management areas. A major accomplishment for the Year 2000 was the completion and fielding of a new Registrar's Program. This program will eventually allow authorized faculty and staff to track students from their initial application for acceptance through their matriculation, graduation, and eventual activities in the USU Alumni Association. This system will consolidate five legacy systems presently running on the University's VAX Cluster into an Oracle WindowsNT based environment; it will allow students to view their grades via the Web.

Web Page. The UIS Information Engineering Branch also includes the USU Web Masters. These two individuals worked with a faculty committee during 2000 to completely redesign the University's Home Page and to build templates for over 40 departmental and activity web pages that exist within the USU system. A major accomplishment was the installation of new servers and software that allow for a developmental system, an Interim Server, where individual Page Masters can post new or updated pages, and an Operational Web Server where full security can be maintained for the system as it is made available to the Internet-World.

Training Officer. During 2000, the long vacant billet for a USU UIS Training Officer was filled. The incumbent is currently providing on-line and face-to-face training for students, faculty, staff, and specialized users such as the Departmental Information System Coordinators and the USU Page Masters. Working with the Novell System Operators, this individual has made significant strides in updating the filing systems and address book for the 3,000 users of the Novell GroupWise E-Mail System. Throughout 1999, the Vice President for Teaching and Research Support published an electronic monthly information technology newsletter; during 2,000, the Training Officer restarted the monthly electronic publication of the Information System Users Newsletter, which provides essential information and directions for all UIS clients.

Departmental Information System Coordinators. The use of Departmental Information System Coordinators was reactivated during 1999 and continued during 2000, with training sessions held approximately every other month. Self-help training videos and tapes have been made available for newly selected desktop tools. Prepaid vouchers for computer training at a commercial center have been distributed to individual users throughout 1998, 1999, and 2000. University Information Systems personnel have
received training "passports" and other sources of advanced computer training. The Help Desk has maintained a Web Page with useful information and provided a Tip of the Week to every E-mail address.

**Telecommunications.** System operators and network engineers made great strides to improve the reliability of the UIS network systems during 2000. Poorly functioning hardware systems were redesigned and restructured from a ring to a star configuration that has solved numerous long-standing problems and greatly increased reliability. Several new sites were added to the University network. In addition, systems for the down-linking of satellite broadcasts and the up-linking of video-teleconferencing systems, were substantially improved.

**Financial Computing.** A legacy financial management system based on DEC mainframe computers and VAX-VMS operating systems (which must be maintained for the foreseeable future), was greatly improved during 2000. Excess computers and memory storage devices were obtained from the Walter Reed Army Institute of Research as the Institute relocated into new facilities. These devices, although far from new, were still a generation ahead of the devices they replaced at the University. These actions have greatly improved numerous analog telephone lines, and the speed, storage memory, back-up capabilities, and reliability of the essential financial management systems at the University.

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**Technology Transfer.**

**Background.** Recognizing the need to monitor and market the growing patent and intellectual property developed by the University faculty, the USU President determined that the Technology Transfer Program, initially an additional responsibility in the Office of the General Counsel, should be recognized as a formal entity within the University. The USU Technology Transfer Program was formally recognized through several initiatives during 1999. By April of 1999, the USU Technology Transfer Program was officially established; the program staff directly reports to the USU General Counsel, who, in turn, reports to the USU Vice President for Executive Affairs. Following an inventory of existing University and Henry M. Jackson Foundation property, a joint operating policy will be devised to exploit new inventions resulting from the faculty’s ideas through licensing agreements with industry. Educational plans include seminars on disclosing inventions, patent protection, and technology transfer. The Vice President for Executive Affairs also established a web site for Intellectual Property and for the new Technology Transfer Program during 1999. Since its establishment in 1999, the USU Technology Transfer Program has become one of the most successful and top royalty income producers among government agencies; maintaining its leadership position in technology transfer is essential to USU’s continued growth as a first class University.

**Current Activities.** During 2000, the USU Technology Transfer Program continued to develop and utilize effective methods to transfer University-developed, innovative technologies for public use and benefit. The technology transfer process allows USU to share its intellectual properties and resources in a manner which promotes progress in science and also contributes to the improvement of the quality of health in the world community. Significant highlights of eight successful activities during 2000 follow: 1) The establishment of Technology Transfer WebPages. The Technology Transfer WebPages located at <www.USUHS.mil/ogc/ett.htm> provide comprehensive information and guidance to the USU community, the private sector, and other government entities on technology transfer matters. This web site includes
subject matter discussions and/or forms which can be downloaded. Examples include: an invention disclosure form; model agreements for licensing, material transfer, cooperative Research and Development and patent negotiations with the private sector; information on invention rights determinations - invention, evaluation, patents, copyrights, trademarks, and research record keeping; and, royalty payments: 2) Operating Agreement with the Henry M. Jackson Foundation. The USU Technology Transfer Program entered into an operating agreement with the Henry M. Jackson Foundation to provide additional support for the evaluation and transferring of the University's technology; 3) Presentations. The USU Technology Transfer Program staff made presentations to the TriService Nursing Research Program on copyrights; and, shared a Powerpoint presentation of the USU Technology Program with the Board of Regents and the USU SOM Department Chairs: 4) Filed Patent Applications. The USU Technology Transfer Program staff filed patent applications on complex USU inventions in technically sophisticated and scientifically diverse areas to include: Diagnosing Malignant Hypothermia Using B Lymphocytes; Mutant Cholera Holotoxin as an Adjuvant; Spin-Labeled Compounds as Magnetic Resonance Contrast Agents; Cellular Phosphorylation Potential Enhancing Compositions; Rapid Detection and Extraction of Depleted Uranium: Erythropoietin Signaling in Cancer Detection and Treatment: Novel Antioxidant and Anti-Atherogenic Compositions in Human Macrophages and Low Density Lipoprotein; and, the Use of Genistein as an Anti-Radiation Agent; 5) Granted New Patents. The USU Technology Transfer Program granted new patents covering: Pharmaceutical Compositions Comprising a Ligand Complexed with a Soluble Receptor; and, a Uranium-Containing, Metal-Binding Complex and Process for Detecting Natural and Depleted Uranium in Water or Biological Samples (urine, sweat, blood, tears, sputum, cerebrospinal fluid, stool, semen extract, amniotic fluid, saliva, and peritoneal fluids): 6) Patent Royalties. The Technology Transfer Program staff negotiated and received patent royalty payments on technology developed at USU including: Immunogenic Detoxified Mutants of Cholera Toxin Which Exhibits a Residual Toxicity Greater than Ten Thousand Fold Lower than its Naturally Occurring Counterpart: Cellular Phosphorylation Potential Compositions, Preparation and USE Thereof; Anticancer Agent: Transdermal Detection Device; Conjugated Polymeric Medicinal Drug Delivery System; and, Respi Gam and Syagis Vaccine Technology: 7) Payments to USU Departments. The Technology Transfer Program executed appropriate documentation providing research support and upfront payments to the USU Departments of Microbiology and Medicine; and, 8) Granted New Trademarks. A trademark covering multiple areas for using the Emergency Medical Technician Tactical Symbol was granted to the University through the efforts of the USU Technology Transfer Program.

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RESOURCE STEWARDSHIP

"USU will determine suitable space requirements and acquire requisite facilities."

-USU Strategic Plan, Goal 4, Strategy, 4.1.3.

New Construction on the USU Campus.

Background. Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open, as stated in Program Budget Decision 711, the USU Vice President for Administration and Management (VAM) was directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus. The VAM coordinated all efforts with the Vice President for Resource Management and the Deans of the SOM and GSN.

On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU in Fiscal Year 2001 would eliminate leasing costs and would be cost-effective. Following that determination and extensive coordination by the VAM, on March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command with the following directions: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design amount was $15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remained on hold until the USU construction was approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package; and, the Surgeons General would be required to identify funding from their Medical Construction Programs if the USU project were to be included in the DHP MILCON Program. In June of 1998, the Senate Committee for the Military Construction Appropriation Bill for 1999 urged "the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget." In December of 1998, the USU President resubmitted a request to Health Affairs requesting that the construction costs of the USU building be addressed as a separate entity and not be resourced from the limited construction budgets of the Surgeons General.

During 1999, the Military Construction Appropriations Bill for FY2000 included the following: "The Tricare Management Agency is directed to accelerate the design of this project (the construction of a fifth building on the USU campus), and to include the required construction funding in its fiscal year 2001 budget request." In response to the congressional directive, and, in its capacity as the Executive Agent for USU, on October 26, 1999, the Navy Bureau of Medicine (BUMED) Facilities Planning and Programming Division initiated the contracting process for a Project Planning Study. The first phase of the USU Project Planning Study, to develop a quantifiable needs assessment for space, began on December 6, 1999 at the USU campus. To facilitate the verification of the study, the Office of the Surgeon General of the Navy also established a Study Team to discuss and validate the identified requirements with appropriate entities within the MHS; and, the USU President also established an ad hoc committee to assist the VAM.
A contractor was hired by BUMED, using USU funding, to prepare supporting documentation and the planning study. To accommodate the rapid turn-around of the first phase of the study, which was to be provided in draft form to the TriCare Management Agency by late January of 2000, the VAM organized and provided to all concerned parties, inclusive background notebooks which provided documentation, projected space requirements, and mission-related information for the nine entities included in the Planning Study:
1) the Graduate School of Nursing (GSN faculty and staff are housed in leased space in Silver Spring, Maryland; the separation of faculty and students has been identified as a concern by the GSN accrediting entities; the separate locations make student instruction, mentorship, and counselling difficult: the new construction would: unify the GSN faculty, staff, and students; eliminate the leasing of space; and, facilitate the degree-granting GSN distance learning programs); 2) USU-wide small classroom requirements (USU small classrooms and lecture halls are already scheduled at capacity and do not allow flexibility for the SOM or the GSN; the new construction would provide some 10,000 square feet of urgently required small classroom and lecture areas with distance learning/military readiness capabilities); 3) Continuing Education for Health Professionals; 4) the Military Training Network; 5) Graduate Medical Education (to include the Administrative Office for the National Capital Consortium); 6) the Office of Educational Affairs (to include USU readiness and simulation requirements); 7) Preventive Medicine and Biometrics TriService Tropical Medicine and Master of Public Health Programs; 8) the TriService Nursing Research Program; and, 9) requirements of the Office of the USU President, to include the USU Chaplain.

BUMED Study Validates the Proposed Construction. The BUMED Study Team focused on two primary areas of concern: 1) the functional shortfall of current and projected requirements for small, multi-functional, and multi-configuration capable classrooms; and, 2) the cost-effective relocation of the Graduate School of Nursing (GSN), Continuing Education for Health Professionals (CHE), the Military Training Network (MTN), and Preventive Medicine and Biometrics (PMB) staff from leased space to the USU campus. The BUMED Study Team coordinated a justification/validation process with the Services for the requested space. Following the validation process, a memorandum was completed by BUMED and forwarded by the Navy Surgeon General on February 17, 2000, to the Chair of the USU Executive Committee: the memorandum recommended that the Surgeons General pursue a joint decision to program funding for the construction of Building E on the USU campus. On April 12, 2000, USU was informed by BUMED that a consensus had been reached among the Surgeons General on the following factors which represented the position of the USU Executive Committee: 1) the project represents validated space requirements and is needed; 2) the current estimated project cost ($9 million) is appropriate; 3) the project should be programmed by TMA (TRICARE Management Activity) utilizing standard milcon processing milestones (i.e., FY05 or later); and, 4) the project should not impact the existing milcon resources (TOA) of the Services.

Preliminary Studies Required for the USU MILCON Project Are Completed. The coordination process for the proposed USU construction project was developed using the Defense Medical Facilities Office, Office of the Assistant Secretary of Defense for Health Affairs Space and Equipment Planning Systems (SEPS). Since November of 1999, Mr. James Burke, Bureau of Medicine Facilities Division, has provided extraordinary support in the successful management of the entire process. The Bureau of Medicine, the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command, and the TRICARE Management Activity, Health Affairs, directly coordinated in the development of the construction project for USU. The following studies/analyses have been completed and provided in a Project Notebook dated October 2000: the DD Form 1391; the Facility Study (to include graphic materials); the Site Survey Checklist; the Program for Design; the Economic Analysis; the Planning Study (to include validation of
requirements); and, the Statement of Architectural Engineering Services. The next step is the design process at an estimated cost of $900,000.

Funding for the USU Construction. While the Surgeons General and Health Affairs agree that the USU construction project is a cost-effective, validated requirement, the proposed USU construction project has not achieved a firm program year commitment within the overall TRISERVICE Medical MILCON Program. Until the USU project can be placed within the Medical MILCON Program, funding for design ($0.9 million) cannot be identified.

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Navy Base Allocation of Space to USU. Throughout 1998, 1999, and 2000, the Vice President for Administration and Management (VAM), as directed by the USU President, and the USU Facilities Division coordinated with the National Naval Medical Center (NNMC) for the reallocation of space currently occupied by the Naval Medical Research Center (NMRC). NMRC began its relocation from the Naval Base to the Forest Glen community near the Walter Reed Army Medical Center during 1999; the relocation process for NMRC will be completed during July of 2001. Inclusive reviews and cost analyses were conducted by the Vice President for Administration and Management and the USU Facilities Division; all findings were coordinated with the USU President, the Deans of the SOM and the GSN, the USU Vice President for Resource Management, and other appropriate USU management, to ensure that the projected renovation (information systems requirements; telephone, fax and copier equipment; minor construction; furniture; etc.) and maintenance costs (utilities, janitorial, etc.) for the reallocated space could be absorbed within the USU budget. Following agreement over funding sources and a thorough coordination process, the USU President approved moving forward to request the reallocation of space from NNMC to the University.

Memoranda of Understanding with NNMC Are Completed. USU and NNMC have now completed memoranda of understanding to reallocate responsibility (from NNMC to USU) for Buildings 53, 59, 79, 28, and 139 once they are vacated by NMRC. Building 53 will be assumed by USU in July of 2001; Building 59 was turned over to USU during 1999; Buildings 79 and 28 were turned over to the University during 2000; and, Building 139 was allocated to USU in February of 2001.

Building 53. The allocation of Building 53, which includes approximately 32,375 square feet, addresses USU’s urgent requirements for laboratory, administrative, and storage space; these requirements will not be addressed by the proposed construction of a fifth building on the USU campus. Building 53 includes 12 large laboratories and several thousand useable square feet of administrative space. At the request of the USU President, the Dean of the SOM directed his space committee to make recommendations through him to the USU President for the allocation of space on the first floor of Building 53. That process continued throughout 1999 and 2000 with the following results:

-Department of Psychiatry. The USU SOM Department of Psychiatry and the Stanley Foundation moved initially into ground floor space in early 1999. Signed agreements were completed by all parties; the University will be reimbursed by the Stanley Foundation for an appropriate percentage of the costs of operating the building; currently, the Department of Psychiatry and the Stanley Foundation occupy approximately 7,217 square feet of laboratory, administrative and storage space to include hallway areas dedicated to the storage of freezers.
- **Department of Radiology and Nuclear Medicine.** During 2000, the Department of Radiology and Nuclear Medicine moved a Division, largely resourced by a grant, into administrative and storage space on the first floor of Building 53; resourcing was coordinated by the Vice President for Resource Management with the Department of Radiology and Nuclear Medicine for extensive information system requirements and minor renovations; all has been completed and the Division is currently occupying 1,356 square feet.

- **Graduate School of Nursing.** One room, 657 square feet, was allocated to the Graduate School of Nursing for mentoring, counselling, and teaching requirements; minor renovation was completed and the space is currently in use.

- **Department of Neurology.** The Department of Neurology was allocated one large laboratory (746 square feet); renovation plans were coordinated during 2000 and work should be completed during 2001.

- **Department of Medicine.** The Department of Medicine, the Division of Clinical Pharmacology, completed its coordination process and is expected to occupy between 2,400 - 2,700 square feet of laboratory, administrative, and storage space in Building 53.

- **Naval Medical Research Center.** The Naval Medical Research Center, NMRC, through collaborative efforts with the three USU Departments of Military and Emergency Medicine, Psychiatry, and Anatomy, Physiology and Genetics, will be responsible for the maintenance and related costs of the hyperbaric chambers (hyperbaric chambers - 7,216 square feet) located on the ground floor of Building 53. The Office of Naval Research has indicated its interest in the establishment of a graduate program in applied physiology at USU during 2001; the three USU departments and NMRC will share the related building costs from resources allocated for their research.

- **USU Multidiscipline Laboratories - Common Area.** A large conference room with 676 square feet was renovated during 2000 and is currently available for use by the USU community.

- **University Information Systems.** University Information Systems (UIS) was allocated two rooms (approximately 3 17 square feet) for the storage requirements of the support equipment for the information systems in Building 53.

- **Remaining Space for Allocation.** Approximately 3,000 square feet located on the first floor remains for allocation by the SOM space committee. The annual utility bill (based on FY2000) for Building 53 (32,375 square feet) is estimated at $247,588 or $7.65 per square foot; the estimated custodial requirements for one year is approximately $263,160 or $8.12 per square foot. The VAM will continue coordination efforts with the Dean of the SOM, the Vice President for Resource and Management and all entities allocated space within Building 53.

**Building 59.** Building 59 has 2,800 square feet of useable space which includes an immersion pool/tank, a physiology lab, an instrumentation lab, and divers’ lockers. Following minor renovations completed during 1999, investigators from the Department of Military and Emergency Medicine moved into Building 59. Building 59 receives its information systems support through equipment located in Building 53.
In addition to two research grants administered by the Department of Military and Emergency Medicine (Ergogenics in Special Operations and Tyrosine Effects on Performance), the immersion pool will also facilitate collaborative efforts between three University Departments: Military and Emergency Medicine; Psychiatry; Anatomy, Physiology, and Genetics and the Naval Medical Research Center. In addition, the course work presented in the Military Applied Physiology Course, Operational Emergency Medicine Skills, and the proposed graduate education program in applied physiology would be significantly enhanced by directly exposing students to ongoing applied research. Building 59 will support collaborative research for the above mentioned USU Departments and NMRC. The annual utility bill for Building 59 (2,800 square feet) is estimated at $21,420 or $7.65 per square foot; the estimated cost of annual custodial requirements for 1,800 square feet is approximately $14,616 or $8.12 per square foot. NMRC will pay for the maintenance of the immersion pool and all related expenses, to include the additional utility costs generated by the cooling and warming of the immersion pool. Coordination will take place to allocate the annual cost of utilities and custodial requirements.

Building 79. Building 79, adjacent to Building 59, offers 1,194 square feet that would be used for the proposed USU graduate education program in applied physiology. The annual utility bill for this building is estimated at $9,134 or $7.65 per square foot; the annual custodial requirements are estimated at $9,695 or $8.12 per square foot. NMRC will fund the annual costs for Building 79.

Building 28. Building 28 has two floors with a total of 5,125 square feet and will be used by two USU activities: the Graduate School of Nursing and the SOM Department of Medical and Clinical Psychology. The two departments will be located on the first floor of the building in some 2,565 square feet. The Logistics Division will use the ground floor space (unheated/no custodial service) for the storage of large research/medical equipment, etc. Utility costs for the first floor are estimated at $19,622 or $7.65 per square foot; the annual custodial costs for the first floor are estimated at $20,828 or $8.12 per square foot.

Building 139. Building 139 has approximately 5,922 square feet which will be available for the USU SOM Department of Surgery and the USUHS/Windber Medical Center/Walter Reed Army Medical Center/Department of Navy Clinical Breast Care Project. This research project will utilize a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. The multidisciplinary model integrates prevention, screening, diagnosis, treatment, and continuing care; the project is further unique in the proposed incorporation of advances in risk reduction, informatics, tissue banking, and research. The Clinical Breast Care Project will pay for the required renovations; it will also pay all costs associated with the building to include utility, maintenance, and custodial requirements.

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Renovation of Research Laboratories. During 2000, with the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Vice President for Administration and the USU Facilities Division provided oversight for the renovation of 2,310 square feet of laboratory space throughout the USU complex. Laboratory renovation was completed, through the Dean, SOM, for four Departments: Biochemistry; Obstetrics & Gynecology; Radiology and Nuclear Medicine; and, Anatomy, Physiology and Genetics. With the 30,817 square feet of renovated laboratory space that took place from 1993 through 2000, the sum of renovated laboratory space now totals approximately 33,127
square feet. This amounts to 38 percent of the 86,926 square feet of laboratory space in the USU complex; the USU laboratories were constructed approximately twenty-five years ago.

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Management Programs. The areas of responsibility described below are under the oversight of the USU Vice President for Resource Management. Mr. John E. Dexter was selected as the first USU Vice President for Resource Management in June of 1990; he served in that capacity until his retirement in January of 2001. Following an extensive search, the second USU Vice President for Resource Management, Mr. Stephen C. Rice, was selected and assumed the position in January of 2001.

Financial & Manpower Management. With DoD’s mandated implementation of the Travel and Transportation Reform Act in April 2000, Defense Agencies were required to furnish every official traveler with a Government Travel Charge Card. The expectations were that by the sheer volume of travel cards within DoD (over one million), delinquencies in payments would rise. Due to an aggressive Travel Card Program at USU by the Financial & Manpower Management (FMG) Travel Pay Office, the FMG Travel Card Manager, and the senior management of USU, the University was the top rated Defense Agency for all of DoD for prompt payment in December of 2000; and, the top rated Agency for prompt payment for those with 1,000 cardholders or more for the entire year.

Departmental use of the Government Purchase Card at the University increased dramatically during 2000. The dollar value of purchases exceeded $10 million for the first time; the number of chargeable accounting lines grew from 250 to almost 400. The challenge for the USU Financial Services Office was to make certain that the Billing Official Statements were correct and that funds were available prior to forwarding the invoices for payment by the Defense Finance and Accounting System (DFAS) under the terms of the Prompt Payment Act; and, then accurately reallocate the costs to the numerous accounting lines. The USU technicians were so diligent that not one penny of any interest paid was caused by FMG’s Financial Services Office. Every reallocation was posted in sufficient time to ensure that principal investigators, and resource managers had accurate fund balances throughout the year.

The Year 2000 also gave the Financial Services Office the opportunity to expand its use of the Treasury’s On-Line Payment and Collection (OPAC) System. Previously, the majority of collections for reimbursable work and certain payments against the University’s various appropriations were processed through a tedious cross-disbursing system. To reduce the use of this archaic system, the Financial Services Office entered into OPAC agreements with every Federal Agency supported by USU. As a result, FMG reduced its average collection time by 40 days (from 68 to 28); and, the posting time for payments on wired money transactions was reduced from more than 120 days to only 40 days.

Grants Management Office. In January of 2000, the Office of Resource Management was delegated responsibility for the fiscal and administrative management of USU-awarded grant agreements. The Vice President for Resource Management established the Grants Management Office and the position of Grants Officer to ensure effective and efficient administrative management for USU-awarded grant agreements. In its first year of operation, the Grants Management Office awarded 22 new grant agreements, worth more than $25,000,000; and, it completed 137 grant modifications. Currently, there are 117 active USU awarded
grant agreements ranging from $5,000 to $44,000,000 that are managed by the Grants Office. The total
award value is approximately $230,000,000.

The Grants Office serves as a business advisor to approximately 78 principal investigators and to 14
grant recipients. A majority of the awards go to the Henry M. Jackson Foundation, and the remaining
awards go to other non-profit organizations including universities, private foundations, and institutions.
Financial management is a major duty of the Grants Office; it requires substantial effort and time because
such management involves working with numerous federal, commercial, and non-profit organizations that
provide or receive grant funding. Currently, there are 35 Agencies providing funding support. The Grants
Office processes an average of 48 invoices a month for payment. The Grants Office also provides oversight
for the TriService Nursing Research Program, a $4,000,000 annual program with more than 50 grants.

Contracting Activity. During 2000, the USU Contracting Directorate provided significant support to the
many unique programs of the School of Medicine, the Graduate School of Nursing, University Activities,
the Armed Forces Radiobiology Research Institute, and numerous DoD initiatives and programs. The
Directorate received approximately $10,666,445 in extramural funds in support of fifteen major programs.
This amount included funding for programs such as: the Deployment Health Center located at the Walter
Reed Army Medical Center, which in addition to research on Gulf War Illness, also has expanded to include
a variety of diseases encountered during deployments; the Center for Prostate Disease Research and
Endowment which has grown to well over $25,000,000 the Center for Casualty Care Research which provides
support services to several Federal Agencies, to include the FBI and the U.S. Marshals Service; the Center
for Disaster and Humanitarian Assistance Medicine which is providing training, education, equipment, and
humanitarian assistance to Mexico and other Central and South American countries; the Center for Ergonomics
and Workplace Health which is studying ways to make the Federal workplace a healthier and more productive
environment; and, the Virtual Reality Anatomical Teaching Project, a joint venture between the University
of California at San Diego, the Henry M. Jackson Foundation, and USU. The Directorate now administers
and manages extramurally funded programs valued at well over $50,000,000.

In addition to the extramural support described above, the Directorate also processed over 1,300 O&M
funded requirements totaling approximately $11,612,168 in support of USU Departments and Activities.
The most significant requirements processed during 2000 included: funding for equipment for the Medical
Simulation Center at Forest Glen; an Automated Physiology Teaching System; an Attofluor Ratio Vision
System for scientific research involving digital ratio imaging and photometry; and, a Laser Capture Micro-
Dissection System for conducting dermatological research. During 2000, the Directorate continued to
coordinate with the Office of University Information Systems in its participation in the Maryland Educational
Enterprise Consortium sponsored by the University System of Maryland. This effort resulted in significant
savings for the University in the purchases of Microsoft software licenses and products.

Resource Management Information. During 2000, the Resource Management Information Office created
and implemented a program to facilitate the recording and verification of VISA Convenience Check
expenditures and to ensure the timely and accurate submission of 1099 Miscellaneous Tax Information to
the Defense Finance and Accounting Service (DFAS), as mandated by the Internal Revenue Service (IRS).
The program provided the following: tracking of vendors whose accumulated payouts totaled $600 or
more; alerting if required vendor information was omitted by the end user; identifying errors of duplication
such as a check number entered twice, or an identical vendor name reflecting different social security or tax
identification numbers; and, verifying that each flagged vendor meets the requirements set against the
Card Holder’s records. Since the implementation of this program, USU has not experienced any IRS tax penalties resulting from either missing or incorrect information, or from late submission.

During 2000, financial support provided by Defense Finance and Accounting Services (DFAS) to the University was transferred from the Denver Center to the Omaha Operating Location. In addition to site visits to facilitate training and guidance, the Resource Management Information Office provided the necessary program and procedural modifications to the University’s accounting system, the College and University Financial Systems (CUFS), for the unique operation setting at the Omaha Operating Location. These included the establishment of user accounts, redirection of printer queues, adjustment of report distribution schedules, and the conversion of civilian payroll and automated disbursement program codes. Due to the excellent monitoring of the entire process, and the assistance of all points of contacts throughout the University’s Activities and Departments, the transfer of support services proved to be a smooth process for the USU community.

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"We view the medical readiness mission as three-fold: humanitarian and civic assistance, medical response to disasters, and support of traditional wartime operations." (In December of 1998, USUHS was recognized by the Association of American Medical Colleges (AAMC) Reporter, Volume 8, pages 1 and 6 as the "one place where the physicians of tomorrow do get thorough preparation to deal with many contingencies, including the medical aspects of chemical and biological terrorism. This "West Point for doctors' offers a unique grounding in military medicine, which prepares its graduates to handle real-world scenarios that most civilian doctors are ill-equipped to face... USUHS students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure.") — Paul K. Carlton, Lieutenant General, USAF, MC, Surgeon General of the Air Force, U.S. Medicine, January 2001 page 20.

"43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles... (USUHS military unique training includes)... approximately between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship (HPSP) graduates whose training ranges from 50 to 132 hours." — General Accounting Office, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, pages 55, 41, and 43.

"Major Mark Koeniger, a 1992 USUHS graduate, was selected as the Air Force Flight Surgeon of the Year for 1998. Doctor Koeniger cited several factors for his selection. 'My experience at USUHS gave me a strong background in tropical and deployment medicine, which served me well on numerous deployments to Africa.' According to the nomination submitted by the 37th Airlift Squadron at Ramstein Air Base, Germany, Doctor Koeniger single-handedly ensured the health and readiness of 444 active duty members and 711 family members assigned to the squadron. His leadership and dedication permitted the 37th to complete 4,724 sorties, logging 9,843 flight hours. Throughout the year, he ensured support for 36 real-world deployments to 58 different countries." (The practice of medicine in the military requires a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. The USUHS provides its medical students with approximately 130 hours of study in these areas compared to about 13 hours found in the typical civilian medical school curriculum.) — USUHS Quarterly, March 2000, page 28.
"I just returned from a 'fantastic' morning at Quantico observing Operation Kerkesner (a field exercise on readiness and deployment; Operation Kerkesner's focus is on small unit operations in a field environment). I had no idea that the training had reached such a high state of sophistication... Some of my observations included the following: how integrated and well thought out the sequence and content of the training was; how those students with prior military time helped the uninitiated ones so well; how professional and competent the Marine Non-Commissioned Officer (NCO) cadre was. What a powerful lesson for those students to see how the NCO Corps truly is the backbone of the force; how impressed the two Thai Army officers and Japanese Naval officer were as they observed the training. USUHS no doubt is the global benchmark model; how the students praised this experience. Not one I spoke with had a negative thing to say..." - Frederick J. Erdtmann, Colonel, MC, U.S. Army, Hospital Commander, Walter Reed Army Medical Center, Letter to USUHS dated June 25, 1999.

"To summarize the impact of the 4-year immersion in military medicine at USUHS on my preparation for war, I appreciated the operational mission of my unit and how I, as a medical officer, fit into the process of planning and executing that mission. This went well beyond treating patients. It involved analyzing the tactical situation, advising the Commander, and integrating with other Services. USUHS graduates were well prepared." — Testimony by Lieutenant Colonel Charles Beadling, USAF, (USUHS Class of 1984, currently an O-6) Hearings before the Senate Appropriations Subcommittee on Defense, April 14, 1994, page 95.

"This overview of military and disaster psychiatry begins with an examination of the consequences of disasters and wars for communities, and the evolution of medical responses to these traumatic experiences...The potential stressors in all disaster environments include exposure to the dead and grotesque, threat to life, loss of loved ones, loss of property, and physical injury." (The USUHS curricula directly address the stress-related threats to military readiness; USUHS students are provided a solid understanding of the psychologic stress of combat and trauma which is essential to the uniformed physician's ability to properly support his/her military commander's responsibility for readiness.) — The International Encyclopedia of the Social and Behavioral Sciences, "Military and Disaster Psychiatry," prepared by Faculty, USUHS Department of Psychiatry, pages 4 and 5.

"The Uniformed Services University of the Health Sciences celebrated the official opening of the National Capital Area Medical Simulation Center on April 21, 2000. The center, located at the Walter Reed Army Medical Center annex in Forest Glen, Maryland, uses virtual reality technology, life-like mannequins and actor 'patients' to support not only USUHS programs but other military medical centers in the Washington, D.C. area. The goal is to have students practice their skills and learn about situations they may face as military physicians but might not encounter while training in hospital wards. The center is a product of DoD's efforts to provide realistic instruction in medical education, battlefield medical techniques and procedures to enhance readiness training." — USUHS News Release, Office of University Affairs, dated April 13, 2000.
II. THE F. EDWARD HEBERT SCHOOL OF MEDICINE

"The Uniformed Services University of the Health Sciences (USUHS) ... has graduated 3000 military physicians with better overall understanding of the military, a greater commitment to the military, and a better preparation for operational assignments and leadership positions ..."

-William S. Cohen, Secretary of Defense, Citation to Accompany the Joint Meritorious Unit Award, dated December 11, 2000.

ESTABLISHMENT

Background. From 1945 to 1950, there was an acute deficit of medical experience resulting from the rapid downsizing after World War II. The loss of physicians was so acute, and retention so poor, that the Army and Navy medical departments began residency programs as a recruitment and retention device. In 1950, the physician shortages forced the involuntary recall of reservists and also forced the retention of those eligible to retire.

After the Korean War, the United States, for the first time in peacetime, maintained large, active-duty military forces through conscription, and allocated significant resources to build and maintain a world-wide military presence. The medical departments of the Army, Navy, and Air Force participated in this expansion and relied on conscription. During this time, over 90 percent of all graduating physicians and dentists served on active duty for an average of two years.

During the conflict in Vietnam, from 1964 to 1972, medical support of a sophisticated nature was deployed in fixed facility hospitals with staff and equipment equal to those of academic medical centers in America. The helicopter essentially replaced the motor ambulance for evacuation; and, air evacuation to the United States became routine. Capitalizing on the lessons learned in past wars, preventive medicine kept the infectious disease and non-effectiveness (inability of the forces to participate in combat activities) rates at the lowest levels of any war, while rapid evacuation and advanced surgery reduced the died-of-wounds rate.

The conscription of physicians, which began in 1950, ended in 1973 when the draft law was repealed. In anticipation of this, a military medical school (USUHS) and a scholarship program (HPSP) in civilian medical schools were established by Congress in 1972 to provide physicians for the Armed Forces. The Uniformed Services Health Professions Revitalization Act of 1972, Public Law 92-426, established the HPSP Program to be a flexible source for the quantity of physicians required by the Armed Forces; USUHS was established to provide a cadre of military medical officers who would serve as career officers, providing continuity and leadership for the Military Health System.

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USU's First Academic Program. The F. Edward Hebert School of Medicine was established by Congress as part of Public Law 92-426 in 1972, with its first class graduating in 1980. The early development of the University concentrated on USU's first academic program, the School of Medicine. Anthony R. Curreri, M.D. was appointed as the University's first President in 1974; Jay P. Sanford, M.D. joined Dr. Curreri, at the USU President's request, and was later appointed as Dean, SOM, in May of 1975. He served as Dean
through 1990. The initial development of objectives for the SOM was accomplished through the combined efforts of the Board of Regents (BOR), the BOR Educational Affairs Committee, Dr. Curreri, Dr. Sanford, and special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: the Surgeons General of the Army, Navy and Air Force; Chiefs of the Medical Departments/Services of the Army, Navy, and Air Force; physicians from the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow Air Force Medical Center at Andrews Air Force Base, the Wilford Hall U.S. Air Force Medical Center, the U.S. Army Academy of Health Sciences, Sheppard Air Force Base Academy of Health Sciences, Brooke Army Medical Center, and the Armed Forces Institute of Pathology; the Secretary of the Air Force: the Secretary of the Navy; the Association of American Medical Colleges (AAMC); the American Medical Association (AMA); the Liaison Committee on Medical Education (LCME); the Department of Health, Education, and Welfare; the National Institutes of Health (NIH); George Washington University; Georgetown University; and, Howard University.

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MISSION

"The USUHS shall: 4.1. Educate and train competent medical personnel qualified to serve the needs of the Uniformed Services through providing the highest quality education programs in the health sciences; 4.2. Place high priority on educating and training personnel to meet the combat and peacetime medical needs of the Armed Forces; and, 4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services."


Consistent Mission Direction Focused on Readiness. USU has a twenty-nine year history of guiding statements, mission direction, goals and tasking documents from the Congress, the Executive Office of the President, and the Department of Defense. From the words of the School of Medicine's "Founding Father," Congressman F. Edward Hebert,... as he described how he first envisioned the University during the 1947 timeframe:

"The mission of USUHS is to produce ... dedicated young officers who ... will be able to mobilize and deploy rapidly ... to meet military and civilian crises ... The University will provide opportunities for aspiring young military officers to attain academic recognition ..." (the Life and Times of Congressman F. Edward Hebert, 1976, page 408)

to the 1999 mission statement quoted above from the Department of Defense ... the goals of the USU SOM have remained consistent; the SOM must provide: 1) a cadre of career-oriented physician officers who
will provide leadership and continuity for Uniformed medicine; 2) unique training in combat medical care, trauma, mass casualties, medical logistics, and rapid deployment; 3) joint training in a Multiservice environment; and, 4) the opportunity for health care professionals throughout the MHS to attain academic recognition.

**Strategic Planning.** A formal process of strategic planning was initiated in 1991 to set priorities for the University. The process was conducted by an executive steering committee chaired by the USU President and included representation from the entire USU community. Mission and vision statements and guiding principles were completed in early 1992. Since that time, specific goals, strategies, and objectives have been established for the University, to include metrics for achieving those goals.

The SOM community has been actively involved in the development of the USU Strategic Plan, participating in the initial strategic planning training sessions during 1991 through the finalization of objectives and metrics during 1999. This multi-year process has included institutional retreats, town meetings, departmental briefings, and printed and electronic updates as a means of communicating with the SOM faculty and staff.

To ensure that the SOM's future direction is consistent with the Military Health System, the strategic planning process is guided by the current strategies and goals of the Military Health System, strategic planning policies and guidance established by the Office of the Assistant Secretary of Defense for Health Affairs. The SOM Departments must show a direct relationship with USU’s overall Strategic Plan when submitting their requests for future budgets. A formal process for identifying program needs and for submitting increased budget requests tied to the Strategic Plan has been established. A School of Medicine Strategic Plan has been written and has undergone review by the Basic Science Chairs Committee, the Clinical Science Chairs Committee, and the Faculty Senate.

**Internal and External Departmental Review Process.** A program was adopted by the School of Medicine in 1998 which mandated each department to conduct a "self-study" every five years or at the time of the appointment of a new chairperson. The self-study would be followed with a review of the self-study by a group of "peers" from outside of the University. Since 1999, self-studies and reviews have been completed by the Departments of Surgery, Neurology, and Military and Emergency Medicine. Other departmental reviews pending completion include: Anesthesiology; Radiology and Nuclear Medicine; and, Anatomy, Physiology and Genetics. The results of these studies will be used to chart future courses for these departments in education, research, and community service.

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Mission Accomplishment ... SOM Graduates Provide Continuity and Leadership for Military Medicine.

Retention of SOM Alumni and Unique Training Ensure Continuity for Lessons Learned in Military Medicine.

"I believe our opponents don't understand our business... they say medical care, and they envision peace time medical care as the only business we are in. In fact, we have two broad categories of business. One is called readiness. The other is called the peace time benefit.

"USUHS is the best investment in readiness medicine that we can make, (it) provides a tremendous baseline for us. We train our uniformed services graduates in the benefit missions through residencies, but they (USUHS graduates) have a foundation in readiness that we cannot get anywhere else. We don't practice medicine in the military. We practice military medicine ..."


"In Vietnam ... I had no military training prior to coming in. It was a very challenging, difficult experience ... when I got there I learned how to take care of Marines myself. I was alone. There was no place to med-evac patients, so through the night I had to keep casualties alive until we could move them during the daylight ...

The emotional experience of a young doctor who does not have the right kind of training in these kind of things has driven me to where I am today.

My whole life since that time has been dedicated to try to prepare people for combat, and USUHS has been able to train these young physicians to be far more ready than I was. They are superb in medicine. The training that they provide is far more than just the medical training. What we have here is the ability to train Army, Navy and Air Force and Public Health Service physicians from day one to work together in a joint environment. They go and they jump out of airplanes with the Army, they go with us to the Marine Corps, they go with us aboard ships at sea, and they go to the air. They do all these things together. ... from day one ... so they develop a joint mentality that has a value of which you cannot quantify the cost of. So, when the time came for me to select a doctor who was going to go on the Joint Task Force for Somalia, I chose a USUHS teacher, ... one who had been there, who spoke the language, who was able to do joint planning and to effectively bring the troops to Somalia. You cannot cost that out. ... the value of having people with this kind of training is really irreplaceable. There are many, many, many courses and experiences at USUHS that are just not duplicatable. It is a national resource. They come as leaders ... they are dedicated to stay with us for a long time ... We want experienced people to stay in the military ... Now that we have USUHS, we cannot give that up."

-Testimony by the Surgeon General of the Navy, Vice Admiral Donald F. Hagen, before the Senate Armed Services Committee, March 2, 1994, pages 35-37.

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USU SOM Graduates represent over 20 Percent of the 12,111 physicians on active duty in the MHS. During the complicated era following "right-sizing," USU has steadily provided an excellent source of career-minded physicians who are uniquely skilled in the practice of military medicine. Where Congress had envisioned a retention rate close to 70 percent, the overall retention rate for USU graduates, to include the Class of 1980, is 89 percent; of which, some 84 percent remain on active duty after having completed their service obligation. This retention rate becomes even more significant in light of the recruitment and retention concerns currently reported by the Armed Forces. The SOM graduates 97.3 percent of those who matriculate. Since its first graduation in 1980, USU has granted 2,955 medical degrees; 2,567 of those graduates remain on active duty. The active duty physician force currently totals approximately 12,111 physicians (Army - 4,347; Navy - 4,050; Air Force - 3,714). The early founders had hoped that the USU graduates would equal at least 10 percent of the total physician force; currently, the USU graduates on active duty represent one out of every five physicians in the Armed Forces.

SOM Graduates Present Clinical Skills Required for MHS Residency Programs.

"Senator, the three of us (Surgeons General) make up the Executive Board for the Uniformed Services University of the Health Sciences (USUHS), and we have a direct impact on the university ... over the last eight years, as I have commanded a major medical center and also as the Surgeon General, I have learned of the quality of the product of USUHS and the focus that USUHS has on military medicine and the importance (of USUHS) to the Surgeons General. I would be hard put to be without the graduates of USUHS."


"USUHS is a dramatic difference in depth and degree and experience and exposure and immersion in what we call military medicine, that is not available in the civilian community. My experience has been we have uniformly superior products in the (USUHS graduates). I happened to be stationed on an Army post before I came here, with a small clinic run by a young doctor. I saw the difference between his predecessor and himself, the USUHS graduate. He hit the ground running and turned the clinic around in just a few short weeks. It made a lasting impression on me.... From the clinics to the largest Air Force hospital in this country, Wilford Hall, USUHS graduates excel... A third of the USUHS graduates at Wilford Hall are in positions of high responsibility for their grade ... I like what I see."


Evidence of the high quality of training that SOM students have received comes from many sources. The 1999 SOM Self-Study documented that "compared to students from all medical schools, a higher
percentage of SOM students report they have acquired the clinical skills to begin a residency program. SOM graduates are highly recruited by military program directors. Traditionally, more than 75 percent of USU graduates receive their first choice of specialty and location for their first year of residency training (in January of 2001, the Office of Student Affairs reported that more than 81 percent of USU graduates from the Classes of 1997 through 2001 received their first choice of specialty and location for their first year of residency); the most recent Class of 1999 received a match rate of 96 percent for their choice of specialty (the Class of 2000 also achieved 96 percent for their first choice of specialty). Feedback obtained from residency program directors indicates that SOM graduates are consistently recognized as well-prepared to complete graduate medical training. USU students consistently pass the United States Medical Licensing Examination (USMLE) Steps 1 and 2 at rates higher than the national average; in the most recent year reported, 152 of 157 first-time takers from the Class of 2000 passed Step 1 (in August of 2000, the Office of Student Affairs reported that 94 percent of the first-time takers from the Class of 2002 passed Step 1); and, 163 of 164 first-time takers from the Class of 1999 passed Step 2." (SOM Self-Study, Section IV, pages 2 and 10, submitted to the LCME in 1999).

Operational Assignments, Leadership Positions, and Unique Understanding of Military Medicine Are Substantiated.

"As for recruiting, we have some of the best programs in the world. The young men and women who are coming out of the Uniformed Services University of the Health Sciences are absolutely superb!"

-Surgeon General of the Army, Lieutenant General James B. Peake,

"...Do I value USUHS? ... I value it a great deal and (consider that) it is a major asset to this country. I do value the output. I can tell you that in the Army we have a deficit of training in the type of individuals who can go into combat with a battalion ... and I do get complaints from line officers that we very frequently have physicians in there who are not ready for that. That is never the case when a USUHS graduate fills that bill..."


The highly dedicated USU graduates are earning promotions at above average rates: they have become well-respected in their medical specialties, and hold significant positions of leadership in areas of military medicine ranging from special operations and hospitals, to the White House, to Kosovo deployments, and to assignments aboard ships at sea and the Blue Angels. SOM alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty members, retirees, and their family members. These military physicians and the thousands of other health professionals who have taken advantage of the numerous graduate and continuing education programs provided by the SOM, are living testimony to USU's mission as the Nation's Federal Health Sciences University.
Following an inclusive review in 1995, the General Accounting Office (GAO) confirmed that "**43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles.**" The GAO reviewers also pointed out that they "**perceive that University graduates have a better appreciation of and greater satisfaction with the physician's role within the military**" than other accession sources (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, page 43).

A review completed in January of 1998, documented that of the approximately 1,431 USU graduates on active duty who were eligible to hold leadership positions, and were not in a post graduate educational status, 292 were serving as chairs, chiefs or heads of departments, directors of services, or program directors in military hospitals, clinics or centers. An additional 60 USU alumni were serving in operational assignments for the three military services. These 352 USU physician alumni were holding significant leadership and/or operational positions throughout the Military Health System (MHS).

A recent review conducted in February of 1999, documented that of the first six classes of USU graduates, from 1980 through 1985, 408 alumni remain on active duty; 170 of whom (approximately 42 percent) hold senior operational or leadership positions.

**The USU SOM Selection Process Ensures Exemplary Retention Rates.**

"**High ethical standards, the candidate's own 'internal moral compass,' compassion, honesty, and integrity should be emphasized in the selection process for candidates to become the nation's physicians ... Selection should employ MCAT scores and GPAs not as predictors of success in medical school, but as threshold measures to indicate only that applicants possess the intellectual endowment and scholastic aptitude needed to meet the academic rigors. Once candidates have satisfied those threshold requirements, we should give no further weight to academic credentials but make selections on the basis of character traits and aptitude for serving others.**"

-Jordon Cohen, M.D., President, Association of American Medical Colleges (AAMC), in his opening speech at the 108th annual meeting of the AAMC, on November 6, 1997.

The USU SOM selection process has been identified as one of the major factors in the success of the overall retention rates of the USU alumni. There are between 13 to 19 applicants each year for each of the 165 positions in the first year class which allows an intensive selection process. All candidates are carefully screened during the interview process to determine the following: 1) already recognized sensitivity for national, public, and/or community service, that clearly has the potential for enhancement in federal service: 2) the presence of natural and adaptable leadership skills already documented in a variety of organizations and circumstances: 3) an enthusiasm for supportive care-giving directed at individuals and groups, forming the basis for evolvement as a physician in the broad areas of medicine, and military medicine in particular; and, 4) a documented record of academic success that extends beyond the boundaries of any standard curriculum, as demonstrated through individual creativity, service, and/or research. A recent Matriculating Student Survey conducted by the Association of American Medical Colleges (AAMC) showed that compared to the national group of matriculants, USU SOM candidates were more likely to select medicine as a career
because of the opportunity to serve the community and to lead, and less likely to seek a medical career for purposes of prestige or high income.

The SOM Committee on Admissions, faculty and student interviewers, and the SOM Office of Admissions work together to manage and implement the SOM Selection Process. The Committee on Admissions is comprised of men, women, active duty, civilian, clinical science, basic science, minority, and community representation for a total of 23 individuals. The applicant review process operates at subcommittee and full committee levels, with the initial review focusing on Medical College Admission Test (MCAT) scores and grade point averages (GPAs). The secondary review process is designed to enhance the opportunity for inviting applicants to interview. Candidates with academic records that ordinarily preclude regular review at the subcommittee level and those not invited for interview initially are reviewed by the Committee Chairman. This allows the identification of candidates who may have been overlooked and supports the SOM effort to recruit disadvantaged individuals and underrepresented minorities. Folders of all interviewed applicants are reviewed by three separate subcommittee members and are presented for full committee review if ranked above the minimum threshold. However, special consideration is extended to underrepresented minority and active duty military applicants ranked at lower levels, and these candidates are also presented to the full committee. In addition, individual committee members may bring the application of any interviewed candidate to the attention of the full committee independent of the subcommittee ranking.

The "interview day" is consistently reported as a positive experience by applicants: during the interview process, the applicants take part in various activities, to include: organized briefings; two formal interviews; lunch: a tour of the campus with students: and, informal visits with the Associate Dean for Student Affairs, the Director of Admissions, the Assistant Dean for Admissions and Academic Records, the Vice President for Recruitment and Diversity Affairs, the Assistant Dean for Clinical Sciences, faculty members, and the Commandant. Applicants are also given the opportunity to stay overnight with a student host. The selection process has continuously brought to the SOM a group of students who are academically qualified and well-motivated to practice medicine. In the history of the medical school, only two percent of the student body has had to be disenrolled for academic reasons: this is about one-third of the national average. The excellent percentage of students graduating (over 97 percent) is due to 1) a good selection process; 2) a solid educational program; and, 3) genuine concern for those students who require academic or personal assistance during their time at USU.

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ACCREDITATION

"At its meeting on April 12-13, 2000, the LCME reviewed and carefully considered the report of the survey team and took the following action: Continued full accreditation of the educational program leading to the MD degree at the Uniformed Services University, F. Edward Hebert School of Medicine for a seven-year term. The next full survey will take place during the 2006-07 academic year."

-Letter from the Liaison Committee on Medical Education to the USU President, dated April 13, 2000.

Early Coordination with the Liaison Committee on Medical Education. The developmental process for establishing the initial objectives of the SOM were accomplished through the combined efforts of the founding USU President, Anthony R. Curreri, M.D., the Board of Regents (BOR), the Dean, Jay P. Sanford, M.D., and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Significant among those coordinating entities was the Liaison Committee on Medical Education (LCME).

SOM Program Accreditation.

Background. The LCME accreditation process is designed to certify that a medical program meets prescribed standards; and, by awarding accreditation, the LCME indicates confidence in the quality of the medical school program. The SOM received provisional accreditation from the LCME, a joint activity of the Association of American Colleges (AAMC) and the Council on Medical Education of the American Medical Association (AMA) in 1976. The SOM was fully accredited by the LCME in 1979, and has continuously maintained that status.

The SOM prepared a Self-Study during 1992 and was visited by an LCME survey team during January 11-14, 1993. On April 7, 1993, the LCME voted to continue full accreditation for seven years. The Dean was asked to submit a report to the LCME by January 1, 1995, addressing: 1) progress in curriculum reform, including decompression in the first two years; 2) the empowerment and role of the curriculum committee to review, evaluate, design, and manage the curriculum; 3) the status of filling chairs of academic departments, with special reference to the availability of space and financial resources to do so and to the energizing of education and research; and, 4) the appropriateness of enrollment size and the adequacy of clinical resources. Following the LCME request, an ongoing curriculum renewal process was initiated in June of 1993. In November of 1993, the Dean's Policy Memorandum regarding the structure and function of the curriculum committee was updated to assign responsibility to the curriculum committee in accordance with the LCME's guidance as described in Functions and Structure of a Medical School. Search committees were appointed to fill the open department chair positions. And, plans were initiated to develop third-year clerkship rotations at two additional sites. A report, submitted in December of 1994, detailed the status of progress in the four areas identified by the 1993 LCME response. The LCME accepted the report in February of 1995; and,
reform; and, 4) the system and results of monitoring the equivalency of educational quality and the evaluation of students across sites of clinical education. The response, dated August 16, 1996, indicated that the class size had not been affected by the downsizing of the Uniformed Services; and that federal funding was sufficient to support the University's programs. Also, for the 1996-97 Academic Year, an additional ten percent reduction in contact hours for first and second year students was implemented, resulting in an additional afternoon per week of student study time. In September of 1996, the LCME accepted that report: and, no further information was requested prior to the full accreditation survey scheduled for the 1999-2000 Academic Year.

LCME Self-study and Site Visit - 1999. Following accreditation by the LCME in April of 1993, the LCME scheduled its next review of the SOM Program for reaccreditation in November of 1999. As a precursor to that review, the Associate Dean for Medical Education coordinated an institutional Self-study. Self-study Committees were established during 1998, assigned topic areas, and charged to review and analyze portions of the Medical Education Database as well as other information considered relevant to their topic areas. Reports were then submitted to the Steering Committee on February 1, 1999; all reports were reviewed by both the Steering Committee and a larger LCME Task Force. All data, Self-study reports, and the Executive Summary were submitted to the Dean during the Summer of 1999. Following the Dean’s review, those materials were submitted for review to the LCME and the Survey Team Members some months prior to the Survey Team Visit. The Site Visit took place between November 14-18, 1999. Exit briefings and follow-up correspondence from the LCME suggested a very successful visit and continued accreditation. Official notice from the LCME was provided during April of 2000: "The School of Medicine received continued full accreditation of the educational program leading to the MD degree for a seven-year term. The next full survey will take place during the 2006-2007 academic year" (Letter from the LCME to the USU President, dated April 13, 2000).

Excerpts from the Summary of the LCME Full Accreditation Report as Provided in the USU Board of Regents 2000 Report to the Secretary of Defense.

There is ample evidence that a large number of faculty and staff members had taken the self-study seriously and participated fully in the preparation of the report, which was thorough and showed meticulous attention to detail. In reaching its decision to continue full accreditation of the medical school, the LCME identified numerous institutional strengths:

1. The School of Medicine is very successful in meeting its mission in graduating physicians who are well prepared and committed to military medicine:

2. **Dean Val Hemming** holds a deep commitment to the values and success of the School of Medicine. He is a strong, capable leader who has been critically important in helping the school fulfill its mission;

3. The clinical curriculum is delivered in excellent military medical facilities, both locally and nationally;

4. The Department of Internal Medicine is to be commended for its success in creating a uniformly excellent clinical clerkship, comparable in quality across multiple educational sites;
5. The students are bright, academically talented, and uniformly dedicated to careers in military public service. They are consistently positive in their views toward their school and its faculty;

6. The support services provided by the Student Affairs Office are exceptional and appreciated by the students;

7. The faculty is available, interested and committed to student instruction and supervision. They work in a collegial fashion on behalf of the School of Medicine and the students; and,

8. The library, computer services, and the new simulation center are state-of-the-art, meeting the educational demands of the students for the future.

As with the LCME’s request for the submission of written progress reports following the April 1993 reaccreditation, the LCME has requested that the Dean of the SOM submit a progress report by March 1, 2002, addressing the following items:

1. Documentation of the comparability of clinical experiences across clerkship sites:

2. Planning and documentation of resources to support ongoing curriculum design and oversight and enhanced centralized faculty control and management of the curriculum: and,

3. Planning for facility improvements for research and education, including progress in addressing the limitations in research laboratory space, office space, and adequate space for small group instruction in the first two years.

The Dean of the SOM has begun initiatives which will enable a timely response to the LCME’s request for a progress report. In late April of 2000, the Dean met with the Curriculum Committee and charged its members to develop a plan to further enhance the process of curriculum oversight and management. This new plan will be implemented at the beginning of the 2000-2001 academic year. The Associate Dean for Clinical Affairs has been directed to develop a plan for documenting comparability of clinical experiences across clerkship sites. This task will be accomplished in conjunction with SOM clinical department chairs and hospital-based faculty. The SOM Space Review Committee has developed and implemented processes for review and assessment of space utilization. Baseline data are being reviewed and recommendations are soon forthcoming to improve assignment and utilization of existing space. This process, together with the additional use of Building 53 (discussed in Section I of this Edition of the USU Journal) on the grounds of the National Naval Medical Center, will demonstrate the SOM's progress in addressing space utilization concerns.

Additional Accrediting Entities Provide Quality Assurance. In addition to the LCME accreditation, the following professional organizations continue to authorize accreditation for the various programs and activities of the SOM: 1) the Accreditation Council for Graduate Medical Education; 2) the Council on Education for Public Health; and, 3) the American Psychological Association Committee on Accreditation. Also, SOM Steering Committees are actively involved with the accreditation process for two additional areas of responsibility reviewed by: 4) the American Association for the Accreditation of Laboratory Animal Care; and, 5) the Nuclear Regulatory Commission.

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"One place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism is at the Uniformed Services University of the Health Sciences...This 'West Point for doctors' offers a unique grounding in military medicine, which prepares its graduates to handle real-world scenarios that most civilian doctors are ill-equipped to face, like the 1995 sarin gas attack on the Tokyo subway system...From basic studies integrated into the pharmacology and microbiology curricula, to the extensive field operations known as 'Operation Kerkesner' and 'Operation Bushmaster,' USUHS students learn how nuclear, biological, and chemical ('NBC' for short) agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures....the June 1998 issue of Military Medicine reported that only 19 percent of military physicians were confident about providing care in 'NBC' situations. The majority of those confident few - 53 percent - were USUHS graduates."

-Association of American Medical Colleges, Reporter, Volume 8, Number 3, December 1998, pages 1 and 6.

General Overview. The School of Medicine is a fully accredited medical institution which provides a year-round, four-year curriculum. This curriculum is 174 weeks in length, approximately 20 weeks longer than the average curriculum of U.S. medical schools. This expanded curriculum focuses on epidemiology, health promotion, disease prevention, tropical medicine, leadership, officership, and combat casualty field exercises. Woven throughout the students' entire course of study, these and other subjects focus directly on the unique requirements of career-oriented military physicians. The USU SOM military unique training includes "approximately between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship graduates whose training ranges from 50 to 132 hours, depending on the Service" (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, page 41).

USU represents a total military medical educational environment and acculturation process. The USU SOM provides the Military Health System (MHS) with career-oriented medical officers who possess the knowledge, skills, and attitudes essential for effective deployment during joint service operations. The SOM's principal focus is on military medicine, which involves the prevention of disease and injury; health promotion; and, diagnosis and treatment by medical personnel who are integral to the military operations they support. This focus also involves the syndromes and injuries that are either rare or unknown among non-military populations. The practice of medicine in the military requires a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. The SOM, for example, provides its medical students with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. Additional knowledge in such areas as military medical intelligence, psychologic stresses of combat and trauma, the medical effects of nuclear, chemical, and biological weapons, and the medical effects of extreme environments - aerospace, undersea, tropical or desert conditions - is essential to a physician's ability to properly support his/her military commander's responsibility for troop fitness. Also critical to a military physician's focus is his or her ability to provide disease prevention and health promotion under austere conditions.

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First Year Curriculum.

Background. Four SOM Departments, Military and Emergency Medicine, Preventive Medicine and Biometrics, Medical History, and Psychiatry share the major responsibility at USU for teaching the military unique course material ... material that is not found in the curriculum of any other U.S. medical school. In addition to the usual first-year medical school courses, such as anatomy, physiology, biochemistry and human behavior, students at the SOM have required courses in military studies, military medical history, tropical medicine (diagnostic parasitology and medical zoology), as well as biostatistics and epidemiology, all of which utilize military data and case studies. This provides an introduction to the scope and content of military medicine and exposes each student to all of the medical systems within the Uniformed Services. Students are focused on the delivery of preventive and treatment services in the "field" or in a deployed environment.

Overview of Military Medicine. The Basic Sciences Division of the Department of Military and Emergency Medicine is responsible for teaching the military studies curriculum during the first and second years of medical school. The first course occurs during the Fall of the first year and is entitled, "Overview of Military Medicine;" it introduces the students to military medicine through lectures and small group discussions. The content of the course includes the expectations which line officers have placed on the medical corps, the distribution and classification of combat casualties, the impact of disease and nonbattle injuries on readiness, and the career patterns of the military medical officer. The remainder of this course deals with the echelon system of battlefield health care and an introduction to the subjects of nuclear, biological, and chemical (NBC) warfare. During the second instructional period (Winter) of the first year, the students are certified in basic life support and learn the skills of prehospital care at the basic emergency medical technician level in a course entitled, "Combat Medical Skills." This portion of the curriculum exposes the students to the level of medical training of the basic medic and introduces, at an early time, those skills which must be built upon and expanded during subsequent medical training. "Military Applied Physiology" is presented during the third instructional period (Spring) of the first year. While this course parallels the traditional physiology course, it also reinforces the concept that was introduced during the Fall, that military medicine is a form of occupational/environmental medicine. The physiologic responses to stressors common to the military environment such as cold, heat, radiation, dysbarism, altitude sickness, and exercise are presented in the context of their impact upon readiness.

By the end of the first academic year, each student has completed course work and experiences considerably greater than those required by the Basic Medical Officer Course for any of the Uniformed Services. The first academic year spans 40 weeks of instruction within the SOM, one week of operational medicine, and five weeks of military medical field studies.

Operation Kerkesner.

"I just returned from a 'fantastic' morning at Quantico observing Operation Kerkesner. I had no idea that the training had reached such a high state of sophistication... Some of my observations included the following: how integrated and well thought out the sequence and content of the training was; how those students with prior military time helped the uninitiated ones so well; how professional and competent the Marine NCO cadre was. What a powerful lesson for those students to see how the NCO Corps truly is the backbone of the force; how impressed the
two Thai Army officers and Japanese Naval officer were as they observed the training. USUHS no doubt is the global benchmark model; how the students praised this experience. Not one I spoke with had a negative thing to say...

-From a Letter to the USU President dated June 25, 1999, from Colonel Frederick J. Erdtmann, MC, USA, Hospital Commander, Walter Reed Army Medical Center.

Between the first and second year, all students participate in the required five-week course, "Military Medical Field Studies (MMFS)." The MMFS course begins with instruction in military field skills: operating a radio, navigating the land in daylight and at night, using preventive medicine principles, and protecting oneself against NBC attacks. The knowledge from this block of instruction prepares the students to successfully complete a one-week leadership laboratory exercise at the Quantico Marine Corps Base. This exercise, Operation Kerkesner (named after a former Marine faculty member of USU), challenges the students' ability to overcome field problems through their own initiative and team work. The field exercise focuses on small unit operations in a field environment. The class of 165 students is divided into four platoons which are further divided into eight person squads. Evaluators from the Department of Military and Emergency Medicine and platoon advisors from USUHS and Quantico live with the students and accompany them in all scenarios. Student leadership is rotated to place each student in a leadership position at squad or platoon level with all attendant responsibilities. The schedule includes operational scenarios that emphasize virtually all major points covered in the Military Studies I Course. Student leaders must know the medical threats (e.g., dehydration, insect-borne disease, sanitation, injury prevention, NBC avoidance and decontamination, physical and psychological stress) they may face and demonstrate how they would control these medical problems in their units. This course initiates the student to the field skills and small unit leadership experience required for the successful completion of Operation Bushmaster during the Military Contingency Medicine Course in the fourth year. Operation Kerkesner has been visited by a variety of active and reserve U.S. military medical personnel and has served as a model for the Navy's Rapid Deployment Medical Force (RADMF) training program. Elements of the course have been used in Public Health Service Disaster Medical Assistance Team (DMAT) training. Foreign military medical personnel have also attended the course to gain material to enhance their own training programs (e.g., the United Kingdom, France, Israel, Japan, Singapore, Thailand, and Mexico).

Non-Medical Operational Assignments. The field exercise is followed by the final portion of Military Medical Field Studies. During this time, prior service students may elect to participate in research or to enroll in an Operational and Emergency Medicine Course that is offered by the SOM Department of Military and Emergency Medicine. Those students without prior service experience are required to spend four weeks with an operational unit in their parent Service. Students may be afloat on a Navy ship, with a Marine Battalion, with noncommissioned officers (NCOs), or with other junior officers learning the military occupational environment and developing a non-medical perspective on military medicine. Coordinators at each site report on the students' performance to the Department of Military and Emergency Medicine; and, each student produces a daily log and a written report detailing his/her experience and lessons learned. During this same period, twenty-five to thirty-five percent of each class will elect and successfully complete, one of the following military qualification schools: Basic Airborne Training; Basic Air Assault School; Survival, Evasion, Resistance, and Escape (SERE) School Training; Underwater Operations (SCUBA); or, Expert Field Medical Badge (EFMB).
Special Programs in Operational Medicine Offered by the Casualty Care Research Center. The Casualty Care Research Center (CCRC) is a division of the SOM Department of Military and Emergency Medicine. The CCRC, created in July of 1989, is staffed by military and civilian physicians and scientists. The center provides USU medical students and other medical personnel disciplined training and research experiences in combat casualty care, medical counterterrorism, injury epidemiology, trauma management and other related areas. USU’s medical students attend the CCRC programs either as an elective during their fourth year or as part of their summer experience between the first and second years of medical school.

During 2000, students between their first and second year of medical school, selected an area of interest and worked with CCRC faculty members on individualized courses of research and study. The students were also divided into groups: each group was responsible for completing a research effort and for a presentation of findings. Students attended one or more of the following CCRC training opportunities:

1. Emergency Medical Technician-Tactical (EMT-T) Course. The EMT-T course was developed to provide relevant training to medical providers who work within the law enforcement special operations community. Topics in the EMT-T program include: clandestine drug laboratory raids; emergency medical care in barricade situations; care under fire; forensic science during patient care; medical operations, planning and medical intelligence; wounding effects of weapons and booby traps; special medical gear for tactical operations; personal protective gear; special needs for extended operations; preventive medicine; and, injury control:

2. Emergency Medical Technician - Tactical Advanced Course. The Tactical Advanced Course includes the following topics: advanced technology applications in the remote assessment methodology; legal concepts and moot court; individual health care concepts; concepts in crisis intervention; sleep/wake cycle management; emerging issues in chemical restraint; operational dermatology; management of training injuries; nutrition and fitness for tactical teams; and, less lethal weapons systems;

3. Weapons of Mass Destruction (WMD) Training Program. The Center offers a variety of training programs in the area of WMD to include: Out-of-Hospital Response Training; and, a Health Care Facilities Course. Topics of instruction include: identifying potential Chemical-Biological-Radiological-Nuclear (CBRN) devices; threat recognition and evaluation; formulating a building response/evacuation plan; the role of quarantine and isolating exposed individuals; psychological effects of a WMD incident; and, principles of hasty decontamination; and,

4. Combat Resuscitation, Enhanced Skills and Techniques (CREST) Course. The CREST Course (currently undergoing development) is designed to provide the military special operations medical community with training in resuscitation techniques and life saving procedures, with emphasis on the adaptation of skills and equipment to meet the needs of special operations, prolonged-evacuation, and a resource-scarce environment.
U.S. Army Expert Field Medical Badge. During the Summer of 2000, 14 SOM students competed for the U.S. Army's Expert Field Medical Badge at Fort Drum, New York. USU students joined non-USU military medical soldiers for the two-week course which included intensive written and field examinations, physical fitness, survival, and emergency medical treatment tests. Other areas of the exercise evaluated were the evacuation of the sick and wounded, a litter obstacle course, CPR, and a 12-mile road march carrying full field gear weighing some 30 pounds. The overall USU pass rate for the course was 57 percent compared to the overall pass rate of 16 percent for the total class.

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Second Year Curriculum.

Extensive Hours of Preventive Medicine Training. During the second year, besides pathology, microbiology, pharmacology, ethics, human behavior, introduction to clinical medicine and physical diagnosis, students have additional hours of preventive medicine, including an introduction to operational (field) preventive medicine; health promotion in the military; physical fitness programs, policies, and implementation strategies; environmental and occupational health; and, health services administration.

The Science Base for the Practice of Medicine in the Military and Command and Staff Functions in Joint Commands. The second year course in military studies focuses on two general areas: the science base for the practice of military medicine (wound ballistics, extensive background on conventional and unconventional weapons effects, toxic hazards, and psychological stress) and the command and staff functions of military medicine in Joint Commands (medical planning, medical logistics, medical evacuation systems, and blood programs).

The second academic year spans 35 weeks of instruction within the SOM. After final examinations, students prepare for the U.S. Medical Licensing Examination (USMLE) Step 1, which is the first of three examinations in the process of becoming a licensed physician. The current second year class completed the computer-based testing (CBT) for the USMLE, Step 1, between May and June of 2000, prior to beginning their first rotation of their third year. Ninety-four percent of the USU students in the Class of 2002 passed the examination on their first attempt.

Second Year Medical Ethics Course. The second year, Medical Ethics Course: Ethical, Legal and Social Issues in Medicine was initiated during the Summer of 1977. The course, taken by all medical students, was also presented during 2000 to the Nursing Anesthesia students from the USU Graduate School of Nursing. The course includes extensive material directly related to military medicine including the special concerns with sending soldiers back to combat, treatment of prisoners and civilians, and limitations imposed by the Geneva Conventions. Other material stresses the resolution of hospital based ethical problems in federal institutions. A wide range of speakers was provided during the course: Gordon Livingston, a local psychiatrist and West Point Graduate, shared lessons learned during the Vietnam Conflict: Robert Leitch, a British nurse with extensive combat experience, described future conflicts such as those already faced by military health care providers in regard to the extent of medical resources that should be offered when providing humanitarian care; Craig Llewellyn, Professor and Chair, Department of Military and Emergency Medicine, summarizes the discussions by suggesting what the students should retain from the differing views presented during the course. There are four issues which all USU students address: 1) Military Medical Triage. The students learn that the practice of military medical triage sometimes departs from traditional civilian medical procedures; rather, the top priority may be to further the military mission. The students discuss how the varying priorities may be necessary to save extensive lives, both military and civilian; 2) Captured Enemy Service Persons. The USU students learn that if the captured enemy is ill or injured, he/she is to be regarded as a patient. There is no option for physicians or any service persons to mistreat prisoners or to treat them "less equally" for revenge or military gain: 3) Exploitation of Vulnerable Patients. In this session, the students learn that in medicine, physicians should never exploit vulnerable patients for military gain; and, 4) Self-Incriminating Information. In this final area, students are instructed that the two primary tasks of military physicians are to keep their patients healthy and to provide commanders
with accurate information regarding the health of their patients. Over 150 faculty from USUHS, NNMC, and WRAMC led discussions on these and other issues with small groups of students. The final lecture, during both 1999 and 2000, was given by Patricia Heberer, an historian at the Holocaust Museum; the students learn that all physicians are susceptible to immoral behavior and that they must avoid the mistakes of the past.
Third Year Curriculum.

Overview. The third year curriculum consists of clerkships in the principal specialties of medicine. Much of the instruction is provided by uniformed clinical faculty with an emphasis on teaching the special military relevance of the various clinical experiences. Of special note are the military clinical settings for instruction (military tertiary medical centers, military community hospitals, military outpatient ambulatory care clinics, and troop dispensaries on active military bases) and the patient population which includes active duty personnel presenting diseases and injuries incurred during both training and combat deployments.

As a part of their training and work during their clerkships, USU SOM third (and fourth year students) provide hundreds of thousands of hours of patient care related services in the MHS hospitals during each calendar year. Such services include: examination of patients; providing post-operative care; organization and maintenance of the completion of the medical history and physical examinations of patients; assistance at surgery and the delivery of newborns; and, updating progress notes in patient records. These services, performed by USU medical students in a supervised setting, provide necessary and important support in the provision of quality medical care to the men, women, and children receiving treatment throughout the MHS.

All SOM departments are providing a clinical experience within the ambulatory setting. The ambulatory services of all departments have grown significantly within the past seven years. The Department of Medicine has taken the lead and devoted extensive resources to the planning, development, and implementation of a comprehensive ambulatory teaching experience. The department's program and its faculty have become nationally recognized for accomplishments in this area: a number of publications in peer-reviewed journals and presentations have resulted.

Clerkships Represent the Entire Spectrum of the MHS. USU medical students complete their third and fourth year clinical clerkships at 20 military hospitals, representing the entire spectrum of the Military Health System (MHS). The third year class of approximately 165 students has eight required clinical clerkship rotations of six weeks each, for a total of 1,320 third year rotations: Family Practice (six weeks): Obstetrics/Gynecology (six weeks): Pediatrics (six weeks): Psychiatry (six weeks): Internal Medicine (two, six-week sessions): and, Surgery (two, six-week sessions). Five of the USU SOM academic departments - Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, and Psychiatry - use the Walter Reed Army Medical Center and the National Naval Medical Center as major clinical instructional sites.

The University has reevaluated and updated all of the affiliation agreements with its major teaching affiliates. This has further defined the relationship between the SOM and its 20 clinical sites to ensure that clear routes of communication exist and areas of mutual interest are appropriately defined and addressed. The Associate Dean for Clinical Affairs provides oversight for relationships and interactions between the SOM and its clinical teaching sites. Issues of concern from all parties can now be readily addressed as changes in the military health care delivery system are put into place.

The following teaching hospitals have established major affiliation agreements with the USU SOM: 1) U.S. Army - (9) Walter Reed Army Medical Center, Washington, D.C.: Brooke Army Medical Center, San Antonio, Texas: Tripler Army Medical Center, Hawaii: Madigan Army Medical Center, Tacoma, Washington; Dewitt Army Community Hospital, Fort Belvoir, Virginia; Martin Army Community Hospital, Fort
The Department of Obstetrics and Gynecology Successfully Utilizes Video-Teleconferencing for Clinical Clerkship Evaluation and Management. A novel program utilizing video-teleconferencing for clerkship management across distant sites was piloted in 1998, became a formalized tool in the clerkship evaluation and management processes during 1999, and was continued throughout 2000. While a number of programs in the United States have used this technology with varying degrees of success for direct education purposes, this is the first time an academic department of Obstetrics and Gynecology has used this technology for clinical clerkship management. The very positive impact of this program was recently published in the peer-reviewed premier journal in the specialty, Obstetrics and Gynecology, and was showcased in the 2000 Faculty Development Workshop of the Association of Professors of Gynecology and Obstetrics. By utilizing video-teleconferencing three weeks after the completion of a core third year clinical clerkship, the director works face to face, simultaneously, with the on-site coordinators at the Tripler Army Medical Center in Hawaii; the Brooke Army Medical Center in San Antonio, Texas; the Wilford Hall U.S. Air Force Medical Center in Lackland, Texas; the Army Hospital in Fort Belvoir, Virginia; the Washington Hospital Center in Washington, D.C.; the National Naval Medical Center in Bethesda, Maryland; and, the Walter Reed Army Medical Center, in Washington, D.C. Clinical academic performances are assessed and final clerkship grades are developed for each of the students at each site to assure consistency, completeness, and fairness in the evaluation process for all students at all of the sites. The turn-around time for the assignment of the final grades has been shortened by 60 percent; and, the process has ensured uniformity across all clerkship sites.

Mid-course progress of all students currently in their clerkship experience is also reviewed. Additionally, this process has served to markedly enhance the level of communication among all of the on-site coordinators together with the clerkship director and the Department Chair.

An Innovative Clinical Clerkship Management Tool Utilizing Palm-Type, Hand-Held Computer Devices. The Department of Obstetrics and Gynecology has also initiated the development and implementation of an innovative clinical clerkship management tool utilizing palm-type, hand-held computer devices for medical student performance evaluations. During 2000, the residents in the USU, NNMC, and WRAMC-sponsored Uniformed Services Residency in Obstetrics and Gynecology Program have been utilizing a hand-held device operating system application which was developed by faculty in the USU Department to establish a cumulative data base encompassing the residents' individual patient care management experiences. On a weekly basis, each resident downloads his or her data to the main department computer through a "HotSync" function. This allows the program director to have timely, on-going access to the experiences of all of the residents. The positive impact of this program was recently published in the peer-reviewed premier journal, Obstetrics and Gynecology, and was showcased in a special session at the Annual Meeting of the Council on Resident Education in Obstetrics and Gynecology in March of 2001. Since the residents are the primary teaching interface with the USU medical students, a new program has been developed in the SOM Department so that the residents can enter their assessments of the performance of the USU medical students who are rotating on their respective services. When the residents download their own patient care experiences on a weekly basis, their evaluations of the USU medical
USU medical students are automatically downloaded as well. The Clinical Clerkship Director then has ready access to the progress of all of the medical students in a format that is automatically updated each week. The results of this pilot project were reported at the National Faculty Development Workshop conducted by the Association of Professors of Gynecology and Obstetrics in January of 2001. As the program is further developed, it will be implemented at all clerkship sites (Brooke Army Medical Center, Fort Belvoir Army Hospital, the National Naval Medical Center, Tripler Army Medical Center, the Walter Reed Army Medical Center, and the Wilford Hall USAF Medical Center). Data for all students in the Department of Obstetrics and Gynecology will be downloaded weekly through a secure Internet site so that the Clerkship Coordinator can monitor the progress of all students at all sites. This process, together with the on-going Video-Teleconferencing Program described above, will help USU to meet the LCME requirements for uniform experience and assessment for all USU medical students across all sites.

**Pediatric Clinical Rotation - Exceptional Family Member Program.** Third year medical students on their pediatric clinical rotation receive a new perspective on family care; the rotation sends the students directly into the homes of parents who have children with special needs or disabilities. Every six weeks, a new group of USU students visit homes on an individual basis, integrating into the family for about two hours and learning about life with a special-needs child. The parents are the teachers in the non-clinical, interactive environment. USU works with the Bethesda-based Institute for Family-Centered Care to provide the training. The Institute recruits, trains, and supports parents to serve as faculty and advisors for the project. The parents develop a list of capabilities and behaviors for the students that goes beyond their basic medical knowledge. These include self-awareness, good communication, decision-making skills, and a professional attitude ... competencies that the parents feel characterize outstanding physicians. Medical conditions of the children include seizure disorders, Downs Syndrome, cerebral palsy, cystic fibrosis, leukemia, juvenile rheumatoid arthritis, and severe multiple disabilities. The children range in age from pre-school to adolescence. Prior to their visit, the students are assisted in forming self-directed learning goals; afterward, the students write a one-page paper about the strengths that they saw in the child and family and their own emotional reaction to the visit. The USU students are provided essential lessons about the capacity of families and the role of the physician.

**Pediatric Cardiology Module - Cardiac Auscultation at the Simulation Center.** During 2000, an innovative case-based, interactive scenario in pediatric cardiology was introduced into the third-year medical student pediatric clerkship through the advanced technologies of the National Capital Area Military Simulation Center. This teaching module is an interactive session between the instructor and medical students with discussions on the events of the cardiac cycle and their relationship to heart sounds and murmurs in the normal child as compared to the child with congenital heart disease. Interactive discussion is facilitated by the instructor and covers the following topics: 1) the electrical and mechanical events in the cardiac cycle; 2) the four common functional murmurs; 3) a short overview of congenital heart disease; 4) the normal cardiac auscultation of the child; and, 5) the abnormal clinical findings as illustrated by the more common congenital cardiac defects. The instructor's presentation is supported by slide presentations and the use of computer software. The demonstration of heart sounds and murmurs is based on a CD-ROM which contains audio files of actual pediatric cardiac sounds as well as other visual resources that are available to the instructor and to each of the students at his/her individual work station. The teaching objective is for the student to recognize the normal clinical findings in the cardiovascular examination of the child and to differentiate between physiologic and pathologic sounds and murmurs. A pre-test is given at the beginning of the session; each student is tested on the heart sounds and murmurs provided by the computer software program. The teaching module is expected to complement the clinical experience during the clerkship.
and to help develop physical diagnosis skills; a post-test is given at the end of the six week clerkship to evaluate the progress of the individual student.

**Patient Simulator - A Collaborative Effort.** A collaborative project between the National Naval Medical Center's Department of Anesthesiology and USU's three Departments of Anesthesiology, Anatomy and Cell Biology, and Physiology led to the development of a fully interactive medical training laboratory at USU.

The patient simulator, located in the SOM Department of Anesthesiology, is being used to train three primary groups at USU: medical students, graduate nurses, and anesthesia residents. **USU's medical students, during their third year anesthesia rotation, are instructed in the basic fundamentals of anesthesia and the role of the anesthesiologist in surgery.** They learn to connect a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation. For the first time, USU medical students combine the lessons learned about the physiology of gas exchange and physiologic and pharmacologic responses while actually performing the procedures and administering anesthesia, without putting a patient, or themselves, at risk.

The simulator is designed with more than 20 patient profiles, each with unique characteristics, including cardiovascular, pulmonary, and metabolic attributes. There are more than 35 customizable "events" ranging from anaphylaxis to ventricular fibrillation which can be assigned to the simulated "patients." Instructors are able to select the type, severity, and speed of a case and tailor it to match the ability of the student; the instructor can then assess the clinical judgment, decision making, and performance levels of the student. A lesson can be "paused" to provide the instructor the opportunity to give the student feedback; and, clinical situations can be repeated until the desired level of performance is achieved.

The mannequin (simulator) can present a number of various medical problems and altered physiological states. A certain scenario may incorporate any number of characteristics and complications including difficult airway management, cardiovascular conditions, allergic reactions, problems with equipment set-up, and equipment failure. **The simulator presents scenarios applicable to combat casualty care, anesthesia, critical care, trauma, and emergency medicine.** The simulator is designed with an automatic drug recognition system, which creates a realistic response to model drug compounds administered to the mannequin. Each syringe is equipped with a unique computer chip which represents a specific drug. Drug models include intravenous and inhaled anesthetics, neuromuscular blockers, cardiovascular agents, and a wide range of infusion pharmaceuticals which affect the simulator as they would a human patient.

The SOM is now reviewing the extensive physiologic and pharmacokinetic models of the patient simulator for possible inclusion in the basic science curriculum during the first and second years of the medical program. If determined to be appropriate, the use of the simulated patient would add a clinical context to some of the physiology and pharmacology principles presented to the medical students.

**Simulation Center Introduction to Surgery Rotation.** The advanced technologies of the National Capital Area Military Simulation Center are being used in simultaneous fashion every six weeks to introduce the third year medical students to their surgery rotation. The students are provided both an introductory discussion and a lecture regarding an abdominal surgery laboratory to be held the following day. The patient actors are used to provide an hour-long, three-patient opportunity to elicit, from the medical students, a medical history; and, the patient actors enable the medical students to perform a focused physical examination for a variety of acute abdominal diseases (e.g., appendicitis, pancreatitis, gallbladder disease, ectopic pregnancy, and others).
These encounters are videotaped and the tapes are reviewed with the teaching surgeon during the subsequent hour. A suturing and knot-tying laboratory is held in the computer laboratory using both web-based and senior surgeon instruction. Plastic mechanical models (Laerdal/NPL) are used to teach such skills as endotracheal intubation, chest tube insertion, and surgical airway. The human patient simulator (MEDSIM) is used to teach the best approach to simple clinical problems such as hypotension or hypoxemia. The virtual reality laboratory experience includes starting an IV (HT Medical), creating an anastomosis (BDI), and performing bronchoscopy (HT Medical). Two additional simulators are used to teach emergency trauma procedures: pericardiocentesis and diagnostic peritoneal lavage. These last two trauma skills simulator technologies were developed at the National Capital Area Military Simulation Center (NCAMSC).

Through the use of this multimodality facility, the NCAMSC, the experience of medical students can be enhanced so that the first time some of the above-described problems or procedures are encountered, it will not be with a live patient, but rather with the most appropriate simulator. Approaches such as those provided by the advanced technologies of the Simulation Center are expected to minimize the possibility of medical errors.
Fourth Year Curriculum.

"Yours is the only medical school in America that trains physicians to be ready for duty on the bottom of the ocean or on the surface of the Moon, and any place in between... As students, you went through one of the most rigorous programs in the country... You prepared yourself to treat patients anywhere in the world, under any circumstances."

-President Ronald Reagan, Commencement Address, SOM Class of 1987.

Overview. The fourth academic year begins with a one week Military Preventive Medicine Course. Early in the fourth year, approximately 165 students also take the USMLE Step 2. The 165 fourth year students have ten four-week blocks for 1,650 rotations. Students must complete an eight week subinternship as well as the following four-week clerkships: Military Contingency Medicine, Military Emergency Medicine, and Neurology. The senior year concludes with a one-week Transition to Residency Course.

Operation Bushmaster. In the fourth year, the Military Medicine Course places students in a simulated Joint Task Force where they participate as the medical staff for each of the component commands (Army, Navy, Air Force, and Marine Corps). This scenario is carried into the four-week Military Contingency Medicine Course which focuses on medical support at first and second echelon levels (prehospital) for military forces, deployed on combat, peacekeeping, or humanitarian assistance operations. Included is a five-day, continuous operations field exercise, Operation Bushmaster, where students operate battalion aid stations and a medical company under simulated combat conditions while receiving multiple evaluations of medical unit leadership, preventive medicine and patient care, medical planning, and administrative and logistical skills.

Implementation of Deployable Telemedicine at Bushmaster and the Casualty Care Research Center. During the September 1998 offering of Operation Bushmaster, the course curriculum incorporated deployable telemedicine for the first time; this was continued during 1999 and 2000. All fourth-year medical students are now fully trained in the use of deployable telemedicine. The four-day course (geared toward currently deployed telemedicine system users, fixed-site consultants, the telemedicine industry, and more recently, Army Surgeon General-mandated Medical Center Special Response Teams) teaches system design, equipment options, and hands-on training, in addition to clinical applications, clinical techniques case studies, and tissue laboratories.

One technique included in the practice of telemedicine involves obtaining a digital image of a wound, lesion, or other suspicious medical condition and down-loading the still digital image, through a "store and forward" concept. The image is then sent to the appropriate medical care provider via E-mail. In a matter of minutes, a specialist can make a diagnosis and send back the recommended treatment, which can then be provided before evacuating the person from the remote location (and, in some cases, eliminate the need for evacuation).

The Casualty Care Research Center (CCRC), a division of the School of Medicine's Department of Military and Emergency Medicine, has taken significant strides in the field of telemedicine. Four years ago, prior to the deployment of American Forces to Bosnia, telemedicine became a significant part of Army Medicine. Personnel from CCRC and Fort Dietrick, Maryland, developed the concept of deployable telemedicine for the United Nations' missions in Macedonia. Soldiers from Fort Dietrick expanded the
effort by going into Bosnia with NATO forces to lay the groundwork for communication between the 212th MASH, the primary medical treatment facility for the American sector in Bosnia, and the combat support hospital in Hungary. At the same time, the staff of CCRC was at USU instructing all units that would be deployed to Bosnia and Macedonia. USU CCRC staff taught the clinical applications, techniques, and the medical and legal aspects of telemedicine practice issues. The USU CCRC serves as an essential clinical and technical telemedicine training organization within the Department of Defense; and, the fourth year medical students receive unique readiness training and experience as a result.

Telemedicine was introduced aboard the USS George Washington by the CCRC staff. As a result, the Navy has significantly increased its use of the telemedicine equipment. In conjunction with the National Naval Medical Center (NNMC), the CCRC, and other DoD agencies, the dermatology field has seen a significant number of cases; more the 90 teledermatology cases have come from the USS George Washington. During early 1998, CCRC staff diagnosed four cases of melanoma through the use of telemedicine. In one case, they were able to diagnose and recommend a simple curative surgery on board; the patient received immediate care and was saved from unnecessary testing. In addition, the Navy was saved the expense of evacuation and the loss of a crucial member of the shipboard team. A region-wide telemedicine system ties in the NNMC, the Walter Reed Army Medical Center (WRAMC), and USU's Department of Dermatology; the system is open to accept consults from all three locations.

To date, the USU CCRC staff has trained more than 400 personnel in the usage of telemedicine. They have taken the technology to Belize, Germany, Macedonia, Croatia, Bosnia, Saudi Arabia, and Ethiopia, where the Department of Defense was able to develop less costly and more portable systems through funding from the private industry. Telemedicine, in conjunction with NNMC and WRAMC, supports 11 medical treatment facilities and 32 outlying clinics, as well as the MHS forces deployed around the world.

USU SOM Requires an Emergency Medicine Clerkship. The Department of Military and Emergency Medicine's Military Emergency Medicine Clerkship is one of the few required four-week emergency medicine clerkships found in all American medical schools. The clerkship provides opportunities to utilize the skills in Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), and Advanced Trauma Life Support (ATLS) developed in the USU SOM Military Contingency Medicine Course. The USU SOM is the only U.S. medical school which requires these courses for all of its students.

A recent addition to the American Heart Association and Red Cross BLS curricula is the automated external defibrillator. Advances in computer software and hardware have enabled the defibrillator industry to construct totally automated defibrillation capabilities for use during deployment. ACLS involves the identification of cardiac rhythm abnormalities, with guidelines for pharmacological and electrical interventions. ACLS training emphasizes the leadership skills needed to successfully perform resuscitation. The USU student must coordinate a team of individuals, provide cardiac rhythm interpretation, oversee BLS, administer the correct dose of medications, and provide shocks at appropriate energy levels. Another training technology available to the USU medical students is the Actronic Machine. This resource is available in the USU Learning Resource Center and provides real-time, hands-on training and testing for BLS, including mannequins directly linked to a computer. The machine also provides training and practice for such ACLS disciplines as megacode (during which the student manages the first ten minutes of a cardiac resuscitation), rhythm recognition, heart and lung sounds recognition, and pharmacology and algorithm for ACLS reviews. Operated through a personal computer, this integrated system uses both laser disk and CD-ROM resources to provide real-time scenarios with realistic feedback.
During 2000, the Department of Military and Emergency Medicine (MIM) expanded the clinical rotation sites as well as the didactic educational opportunities available during the required fourth year Military Emergency Medicine Rotation. To this effect, MIM expanded the most utilized location, Charity Hospital in New Orleans, Louisiana, from four students to six. In addition, MIM arranged for two new military sites, the Naval Hospital at Jacksonville, Florida, and the Eglin Air Force Medical Center also in Florida. In addition, a new civilian site, the Medical College of Virginia, Richmond, Virginia, was also added to the list of Level I trauma centers for student rotations. These additions have enhanced the exposure of the USU students to the broad scope of emergency medicine practice, within both the military and civilian communities.

Within the fourth year elective program, there are numerous opportunities for international experiences in both civilian and military institutions, attendance at U.S. Army and U.S. Air Force aviation medicine courses, and assignments to operational military units or military medical research activities in Asia, South America and Africa as well as with medical services of other countries such as Australia and New Zealand. The Associate Dean for Clinical Affairs coordinates the international relationships.

USU SOM Curriculum Stresses a Military Focus. In addition to the military unique curriculum described above, the USU SOM academic departments and faculty have structured all of their courses to include: topics specific to military medicine and not covered in the traditional medical school curriculum; and, teaching examples and cases drawn from military medicine. This content focus is reinforced by the fact that many of the faculty (one third of the billeted basic science faculty and two-thirds of the clinical faculty) are uniformed officers representing the Army, Navy, Air Force, and the Public Health Service; these uniformed instructors provide experience and contextual correlations during their teaching of traditional topics. The unique practice of military medicine is woven throughout the four years of medical school.
Curriculum Renewal.

Background. The SOM curriculum utilizes a variety of educational experiences and learning formats, including lecture, laboratory, clinical correlation, small group discussion, computer and web-based experiences, patient simulator, standardized patients, and experiential exercises. The SOM vision for the undergraduate curriculum is that the science of today is taught in an environment that will foster increased long-term, self-directed learning tomorrow. Toward this end, the SOM Curriculum Committee has completed an exhaustive study of the undergraduate curriculum and revisions are underway to minimize the traditional curricular "stovepipes" through course integration and the increased use of clinical material. In both the first and second years, there is a heavy emphasis on small group learning. In the first year, this takes the form of laboratories in Anatomy and Physiology and discussion groups in Human Context. Additionally, the Introduction to Clinical Medicine Course starts in the first year and begins to develop history-taking and physical diagnosis skills. In the second year, laboratories continue in Pathology and Microbiology, while there is increased use of a small group problem-based learning educational format. In both Pathology and Clinical Concepts, groups of 8 to 12 students team with a faculty member to review clinical scenarios. The format of these encounters is designed to flow seamlessly into the second year portion of the Introduction to Clinical Medicine Course and the clerkships during the third year.

The Renewal Process. As the Chief Academic Officer of the SOM, the Dean is responsible for institutionalized curriculum management. Policy issues are reviewed and considered by a standing Curriculum Committee which guides the current renewal process and reports to the Dean. Institutionalized curriculum renewal in the SOM has been a high priority in recent years. The formalized process began with Phase I (1993-1995) of curriculum renewal. During Phase I, a steering committee with four subcommittees was developed to cover the following areas: 1) the history of medical education in the United States; 2) current experiments in curriculum reform; 3) curriculum at the USU SOM; and, 4) professional requirements and outcomes. Subcommittee reports and recommendations were produced and reviewed by the faculty. The Dean’s Office and the relevant academic departments then offered recommendations on how to best implement the committee’s recommendations and were subsequently charged to implement those recommendations.

During Phase II (1996-1997), a steering committee and five subcommittees were established to review or complete the following: 1) objectives and/or goals; 2) an organizational template for curriculum management; 3) basic science and intra-departmental and clinical integration; 4) the clinical clerkships, both required and elective; and, 5) outcomes and evaluation. Topic groups were established and the subcommittee and topic group reports and recommendations were reviewed by the steering committee, relevant academic departments, and the Dean. A consensus on the recommendations and plans for implementation was reached; and the recommendations were implemented.

Phase III began in February of 1998 (and continues to the present time). The Dean charged the Curriculum Committee with reviewing the December 1997 Curriculum Review Report produced during Phase II of the curriculum renewal process. The Curriculum Committee was also charged with providing oversight for the planning process and the development of an implementation plan for curriculum renewal. This implementation plan is envisioned as an evolutionary process, with changes in the curriculum occurring in an incremental fashion. The Curriculum Committee completed a draft of SOM educational objectives, which was reviewed by the Dean and distributed to faculty, students, and staff for comment, and finalized in 1998. The current draft of the curriculum renewal implementation plan includes five major areas of focus: 1) the development of educational objectives and the further integration of military medicine topics into the general curriculum;
2) content coordination, integration, and presentation; before the renewal process was initiated, the SOM curriculum was a traditional two years of basic science and two years of clinical science program; now, the basic and clinical science content should be well on the way toward integration across the four year program; 3) the use of computers in academics; 4) outcome measures; and, 5) faculty development. In order to facilitate this intensive process and to diminish the natural anxiety which results from change, the Dean held town meetings, directed the establishment of a web site for the distribution of information and discussion of issues, involved representatives from all academic departments, established topic groups to review curriculum content, and directed student involvement at all levels. As changes to the curriculum occur, the Dean has also directed that his office establish and monitor processes for student, faculty, and TriService evaluation of the curriculum changes.

There are numerous examples of clinical medicine being integrated into the basic science experience. Close collaboration between the Departments of Radiology and Nuclear Medicine and Anatomy led to the development of computer-based learning resources correlating basic anatomy with the radiological representation of normal and pathologic states. The Medical Physiology Course (which is closely integrated with Anatomy) has a long-established tradition of incorporating clinical faculty into the course. Several areas in particular - cardiovascular, renal, and pulmonary - have demonstrated extensive clinical integration for many years. As part of the current phase (Phase III) of curriculum renewal, all course and clerkship directors have been asked to review the current SOM objectives and to establish consistency between objectives at the individual course/clerkship level and the institutional level. A master grid has been developed by the standing Curriculum Committee to facilitate the review of the curriculum for any gaps in content and to determine the adequacy of methods for assessment of student performance. Educational objectives have been used to revise the military medicine portions of the curriculum and to guide the coordination of topics in the Anatomy and Physiology Courses. There were several initiatives considered during 1999-2000 to move more basic science to the clinical years. One example is the proposal placed before the Curriculum Committee to develop a computer or web-based curriculum of key basic science topics for exploration in the fourth year. The paradigm being considered is eight to ten different blocks of instruction which students would complete as self-study during the fourth year. A second curricular change under consideration is moving the Clinical Pharmacology Course to the fourth year - when many students have expressed a view that a clinically oriented pharmacology review would be very beneficial.

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Departmental Review. A program was adopted by the School of Medicine in 1998 which mandated each department to conduct a "self-study" every five years or at the time of the appointment of a new chairperson. The self-study would be followed with a review of the self-study by a group of "peers" from outside of the University. Since 1999, self-studies and reviews have been completed by the Departments of Surgery, Neurology, and Military and Emergency Medicine. Other departments with reviews pending completion include: Anesthesiology; Radiology and Nuclear Medicine; and, Anatomy, Physiology and Genetics. The results of these studies will be used to chart future courses for these departments in education, research, and community service.

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STUDENT AFFAIRS

Class of 2004. During August of 2000, the School of Medicine (SOM) matriculated its twenty-fifth class (the Class of 2004). 2,021 applicants representing all 50 states competed for 167 positions. There were 12 applicants for each position which allowed a diverse and highly qualified selection of candidates with a motivation toward public service. The Class of 2004 includes 63 Army; 51 Navy; 51 Air Force; and, 2 United States Public Health students. The demographics of the class are depicted as follows:

- Ninety-five students (57 percent) were associated in some way with the military before USU matriculation. Of those.

  - Twenty-two students served previously as officers; eleven had previously served as enlisted personnel; four had prior active duty as officers; fourteen had prior active duty as enlisted personnel; seventeen were service academy graduates; twenty-one were direct graduates of ROTC programs; and, six were reservists.

- Thirty-six students (22 percent) are women.

- Thirty-six class members (22 percent) are minority students (including 10 students from groups classified as underrepresented in U.S. Medicine).

- The average age of the entrants at the time of application was 24 years.

The matriculants had a cumulative grade point average of 3.51 and a mean science grade point average of 3.50. The average Medical College Admission Test (MCAT) scores for the USU class were 9.9 as compared to the average national matriculant score of 9.0. The MCAT consists of four sections: verbal reasoning, physical sciences, biological sciences, and a writing sample. All members of the Class of 2004 hold Baccalaureate Degrees; eleven hold Master of Science Degrees. Biology was the most represented undergraduate major of the matriculants (34 percent); eight percent of the class had majors in chemistry; and, nine percent had majors in psychology. Some of the other disciplines in which members of the Class of 2004 hold degrees are math, geology, history, physics, anthropology, microbiology, and physiology.

The Office of Student Affairs. Throughout Fiscal Year 2000, the Office of Student Affairs (OSA) was engaged in personal and/or professional academic counseling and career guidance for the 667 students in the SOM. Beginning in September of each year, OSA conducts well over 300 formal interviews. In 2000, this process formally began with the post-matriculation interviews of all 167 freshmen from the first year class.

Structured Interviews for the First Year Class. The purpose of the MS-I (medical student-first year) interview is to engage each new medical student in a relationship with the OSA and the office staff who will manage their professional development and career guidance. The interview is open with an emphasis on the future partnership (or the individual management and consulting network) that will exist between each
The interview covers five areas: 1) Transition - the move to Washington, e.g., housing, getting settled, family issues; 2) Sense of Membership in the Class, e.g., within and between services, professional, social; 3) Sense of Professional Vision, e.g., vision for what will come after medical school; 4) Adjustment to Student Life, e.g., how are they managing the 24 hour clock; 5) Inquiry about Image, e.g., aside from roles of student, spouse, parent, athlete, what really defines them? Students are free to raise any questions, concerns, or thoughts. The interviews require considerable time, but have definitely proven to be worth the effort for both the students and OSA. These interviews set the stage for an on-going dialogue with each student over the four years of medical school and for establishing a sense of community throughout the student body.

**Sponsor Program.** In January of 2000, OSA allocated sponsor assignments for the newly accepted students in the Class of 2004. Upon acceptance to USU, members of the incoming class are individually matched with members of the current freshman class. First-year students serve as the incoming students’ sponsors; the student sponsor answers questions about housing, moving to Washington, family issues, military summer training, and many other topics. The student-sponsor relationship has proven to be a valuable tool in assisting the incoming students through matriculation.

**USMLE Step 1 Preparation.** During Fiscal Year 2000, OSA prepared the second year students for the United States Medical Licensing Examination (USMLE) Step 1 Board Examination which the students took between May and June 2000, prior to beginning their first of the third-year rotations. In 1999, the USMLE introduced computer-based testing for the Step 1 and 2 examinations. During 2000, OSA provided class-wide presentations covering the fundamentals of the examination process, test preparation strategies, and test taking skills. Students also organized their own informal program which included mini-lectures on broad relevant topics, meetings with select faculty, and group study sessions. OSA was pleased with the first-time pass percentage of 94 percent (the national first-time pass percentage for 1999 was also 94 percent) and with those students who scored exceptionally high. Variability in scores increased, as would be expected when reducing the number of questions by half and introducing a new testing format.

**Third-Year Clerkship Scheduling.** Also during the February timeframe, OSA met with the second-year students to schedule their third-year clerkships. To increase student input into the orchestration of their third-year clerkship schedule, OSA has moved from a system where students were simply given a pre-selected schedule of randomly assigned clerkships. The student now has the ability to place rotations of special interest in the first half of his/her junior year and the opportunity to experience potential career choices at an early point. In addition, the current system allows students to coordinate some of the required travel in their academic third year with personal events that may already be planned or anticipated. The staff of OSA conducted Round 1 clerkship selections for the Class of 2002 using randomly assigned numbers. During the second week of February, students met as a group and picked rotations for the remaining rounds. The students shared equally in opportunities for assignments of choice and expressed their appreciation for the process.

**Graduate Medical Education Planning Interviews.** OSA conducts interviews with the third-year medical students during the fall term. During the first few months of 2000, OSA met individually with the entire junior class to conduct fourth-year planning. The hour-long meetings covered Graduate Medical Education (GME) planning, specialty choice, interviews, and specific sequencing of senior rotations to maximize the selection of their residency of choice; again, available selections for senior-year rotations exceeded the general expectations of the students. OSA arranged program schedules that enhanced student growth, professional experience, and individual preferences. A major product of this process is the Dean’s
Letter, which presents a comprehensive picture of each student’s strengths. Selection for GME positions is competitive: OSA and students worked together to create the best nomination packages possible.

Graduate Medical Education Selection Board. The TriService Selection Board convened during the week of November 29, 1999 through December 3, 1999; and, 160 USUHS seniors (the Class of 2000) were selected for PGY-1 positions: Army - 64; Navy - 46; Air Force - 49; and, the United States Public Health Service - 1. The overall selection rate for FIRST CHOICE in specialties was 96 percent. USU had 132 out of 160 students match for first choice both in specialty and training site. Twenty-two additional students of the Class of 2000 received their first choice in specialty, resulting in 96 percent (154 out of 160) receiving their first choice in specialty. Approximately half of the class (46 percent) was selected for training in a primary care specialty. Seniors began their residency training during the Summer in the following areas: Family Medicine - 35; Internal Medicine - 17; Pediatrics - 15; and, Obstetrics and Gynecology - 2. The directors of the MHS military programs once again demonstrated confidence in the USU graduates as 96 percent were selected for PGY-1 training at their first choice of specialty.

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The USU Military Medical Student Association. The Military Medical Student Association (MMSA), a quad-service, student-run organization, originated at USU more than eleven years ago. MMSA’s goals include developing lines of communication among military medical students nationwide, providing information, and promoting morale and unity among future military medical officers.

Unlike USU medical Students, the Health Professions Scholarship Program (HPSP) students attend universities in the civilian sector, receive free tuition and books, and are paid a monthly stipend while working toward their medical degrees. They receive limited military training and influence while attending the civilian schools. To share their unique military training, MMSA has sponsored conferences where residency directors and medical specialty representatives from around the country, and USU staff and faculty members present lectures and hold discussions on various topics, including service specific issues, military medical history, operational considerations of military medicine, and basic military concerns that affect both USU and HPSP medical students. The USU MMSA has also established the MMSA Journal with a goal to ultimately send copies of the journal to all HPSP students.

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ACHIEVEMENTS OF THE SOM ALUMNI

"...I deployed to the Gulf very early, August 11,1990, as a senior medical officer with the Air Force Special Operations Command. Deployed in this capacity, my responsibilities ranged from flying training and combat support missions to representing my command at theater-level planning conferences ...

"The heat in August was incredible, with temperatures up to 125 degrees. Yet our maintenance personnel had to work around the clock to get our aircraft combat ready. Just sleeping six hours in the heat caused dehydration to the point of dizziness. Our medical team was on the flight line and around our tent-city bringing sunscreen and ice water to the personnel because they could not drink 100 degree water out of a canteen.

"My training at USUHS had prepared me for working in austere conditions without fixed facilities. The tap water in our camp became contaminated by the sewer system, and water tanks had to be provided with chlorine levels monitored daily. Because of the military medical history classes I had at USUHS, I knew that disease and non-battle injuries could make an army ineffective before the battle began. Preventive medicine is an entire department and course of study at USUHS. I had the training and references...to avoid repeating the mistakes of previous wars... Because of the emphasis on tropical medicine at USUHS, I was able to advise the Commander and troops about potential infections and how to protect themselves ... Because we studied the air evacuation system and did practice exercises using it at USUHS, I was able to coordinate a unique mini-mobile aeromedical staging facility at our intermediate operating base. This provided the transition from our helicopter rescue aircraft to the C-130 medical evacuation system.

"...As our troop build-up progressed, hospitals from each Service increased. Because at USUHS I had been taught the organization of medical systems in the other Services, I was able to arrange referrals for our patients much more easily ... We had no logisticians, but were able to obtain supplies through the Army depot system which I also learned about at USUHS.

"Another area of major concern for our personnel was chemical warfare. Because of the thorough preparation and field training I had as a student at USUHS, I was able to develop a training program in unconventional warfare, such as chemical and biological threats, that increased confidence and decreased anxiety in our troops ...

"When we deployed to our forward locations, there were no designated disaster preparedness personnel. The USUHS experience came in handy again, as I assumed those responsibilities. A plan for decontaminating aircraft, vehicles, and personnel was created. Materials were purchased and positioned to maximize readiness.
"To summarize the impact of the 4-year immersion in military medicine at USUHS on my preparation for war, I appreciated the operational mission of my unit and how I, as a medical officer, fit into the process of planning and executing that mission. This went well beyond treating patients. It involved analyzing the tactical situation, advising the Commander, and integrating with other Services. USUHS graduates were well prepared."

-Testimony by Lieutenant Colonel Charles Beadling, USAF (USU Class of 1984, currently at the Rank of O-6), Hearings before the Senate Appropriations Sub-Committee on Defense, April 14, 1994, page 95.

General Overview. The graduating Class of 2000 was the twenty-first class to receive Medical Degrees from USU. Of the total 2,955 medical school graduates, 2,567 remain on active duty in the Uniformed Services and represent over 20 percent of the total physician force in the Department of Defense - some 12,111 physicians. USU graduates have a seven-year obligation that only begins after they complete their three-plus years of residency training. This obligation is exclusive of any other service obligations they may have already incurred, such as graduation from one of the Service Academies. After twenty-one graduations, data is now available to document that the USU SOM graduates are meeting, or surpassing, the goals established by the founders of USU. Since the first graduation in 1980, the overall retention rate for USU graduates is 89 percent (Congress had originally envisioned retention rates close to 70 percent). The retention rate for those USU physician alumni who have completed their initial service obligations and could leave active duty service is 84 percent. The average USU physician graduate serves at least 18.5 years. In just a short timeframe, USU graduates have become well respected in their medical specialties, and have become the core leadership in areas of military medicine ranging from special operations and hospitals, to the White House and Kosovo deployments, and to assignments aboard ships at sea, the NASA Johnson Space Center, with the Blue Angels, and in the Congress. Other alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty officers and enlisted personnel, retirees, and family members. Currently, 14 of the 61 Specialty Consultants to the Army Surgeon General are USU graduates; 9 of the 45 Specialty Consultants to the Navy Surgeon General are USU graduates; and, 18 of the 58 Specialty Consultants to the Air Force Surgeon General are USU graduates. USU graduates are, and continue to provide, a strong cadre of leaders who ensure the continuity of military medicine.

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School of Medicine Recognized by the American Academy of Family Physicians. The USU SOM is one of 37 United States medical schools to receive a Family Practice Percentage Award from the American Academy of Family Physicians. The award recognizes the medical schools for their success in making family practice a top career choice for graduating medical students. The Year 2000 awards recognize the medical schools with the highest three-year average of graduates entering family practice residency training programs from 1997 through 1999. The USU SOM received a Bronze Percentage Award for a three-year average of 21.2 percent.

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First USU Alumni Is Promoted to 0-7. In a White House ceremony held on July 26, 2000, President Clinton promoted Rear Admiral E. Connie Mariano, MC, USN, USU Class of 1981, to her present rank of rear admiral (lower half). Admiral Mariano is the first USU SOM graduate to be promoted to the level of flag or general officer. Admiral Mariano is currently serving as a White House physician; and, in addition to being the first female to serve in that position, she is also the longest serving, having held the position for the past eight years. Admiral Mariano also holds a faculty appointment in the USU SOM Department of Medicine. Admiral Mariano is the daughter of a retired Navy Master Chief; and, she is the first Philippine-American to attain flag rank. Seven other USU alumni who have also served as White House physicians attended the ceremony along with the University President.

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USU Alumni Earn Promotions to 0-6.

USU Army Graduates Selected for Promotion to Colonel - 2000.

Army graduates of the SOM have been selected for promotion to Colonel at twice the rate of their service peers. Twenty-three USU graduates were selected for the 2000 Army Colonel Promotion list. The twenty-three alumni represent USU Classes from 1982 through 1987. Overall, USU alumni had a selection rate of 64 percent (23 of 36) compared to 32 percent (50 of 157) for non-USU graduates. Also, fifty-four graduates of the USU SOM were selected for promotion to lieutenant colonel (0-5) during 2000.

USU Navy Captain Promotion Selectees - 2000.

The Navy released the promotion list for Captain (0-6), Medical Corps in the first quarter of 2000. Again, USU graduates were selected at a rate higher than their peers. Fifty-six percent of the USU graduates considered for promotion to 0-6, in, or above, zone, were selected, compared to 21 percent for non-USU graduates. In all, fifteen USU alumni were selected for promotion to Captain, U.S. Navy, during Fiscal Year 2000. These alumni represent the USU Classes from 1982 through 1988.

Twenty-one graduates of the USU SOM were selected for the Navy Medical Corps' promotion list for commander (0-5). Overall, 148 officers were considered for promotion to commander, in or above the zone; thirty-three were USU graduates. The promotion selection rate for USU graduates at the 0-5 level was 64 percent.

USU Air Force Graduates Selected for Promotion to Colonel - 2000.

Of the USU graduates considered for promotion to U.S. Air Force Colonel, 13 were selected during 2000. The 13 USU alumni selected for promotion to Colonel represent the USU Classes from 1984 through 1988. Two of the selectees were below zone.

U.S. Public Health Service Graduates Selected for Promotion to Captain - 2000.

The U.S. Public Health Service promoted two USU graduates to Captain during Fiscal Year 2000. Both USU alumni represent the Class of 1985.

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USU SOM Graduates Hold Leadership Roles and Earn Special Recognition throughout the Uniformed Services - Selected Examples from the USU SOM Alumni.

Class of 1980.

Colonel John Bauman, MC, USA, is the Chief of Radiology at the Madigan Army Medical Center at Tacoma, Washington; he has held this position for three years. Colonel Bauman is board certified in radiology, his third specialty, following internal medicine and nuclear medicine. He was also named Consultant to the Army Surgeon General for Nuclear Medicine, a position he has held for over eight years.

Colonel Paul Casinelli, MC, USA, served his last active duty position as the Chief of Anesthesiology at Fort Bragg, North Carolina; he subsequently joined the Army National Guard and was later promoted to his current rank of colonel. He currently serves as a flight surgeon with the Guard, and was recently selected for the Naval War College in Newport, Rhode Island, which he entered in August of 2000.

Colonel Benjamin Chacko, MC, USA, is assigned as the Director of the Ophthalmology Residency Program at the Brooke Army Medical Center, Texas.

Colonel Timothy Georgelas, USAF, MC, following his assignment as the Chief of Diagnostic Imaging at Wilford Hall USAF Medical Center, was assigned to the U.S. Air Force Academy in 1997, where he continues on active duty. In 1998, he was also named as the Radiology Consultant to the Air Force Surgeon General.

Colonel John Hagmann, MC, USA, served as an Assistant Professor of Emergency Medicine in the USU SOM Department of Military and Emergency Medicine; he was selected by the USU Class of 1989 as the Outstanding Military Educator, which earned him the William P. Clements Award. Also in 1989, he became the Medical Director for the Casualty Care Research Center at USU where he served until his retirement in late 2000.

Colonel Howard Heiman, MC, USA, assumed the position of Chief of the Neonatal Service at the Wilford Hall Medical Center in late 1999 and continues in that assignment. Among Colonel Heiman's most notable achievements is the development of the first modern aeromedical neonatal transport system for the Department of Defense, for which he set the national standards, and authored a chapter and technical review. He has received the Best Resident Teaching Award two times, the Army Surgeon General's "A" Proficiency Designator, and is currently the Consultant to the Army Surgeon General for Neonatology.

Captain Neil Makela, U.S. Public Health Service, was the Chief of Health Services at the United States Coast Guard Headquarters Support Command in Washington, D.C., when he retired from active duty in late 2000.

Colonel Melissa Rosado-de-Christenson, USAF, MC, is the first woman to join the Radiologic Pathology Department of the Armed Forces Institute of Pathology; in May of 1995, she became the Chairman and the Registrar of her department, the first female and first Air Force officer to hold this position.

Colonel Amy Tsuchida, MC, USA, has been the Chief of the Gastroenterology Service at the Madigan Army Medical Center since 1988. She is also an Associate Professor of Medicine at the USU School of Medicine.
CAPT Sandra Yerkes, MC, USN, was appointed as the Chief of the Walter Reed Army Medical Center Psychiatry Department which she held for four years. During mid-2000, she transferred to the Navy's Bureau of Personnel in Millington, Tennessee, where she is the Senior Medical Corps Detailer.

Class of 1981.

Colonel Naomi Aronson, MC, USA, was named as the Director of the Division of Infectious Diseases in the USU Department of Medicine. Colonel Aronson is responsible for coordinating the new Infectious Diseases Program with the department's existing Infectious Diseases Fellowship and corresponding research activities. She has been on the USU faculty since 1992, first as an Assistant Professor, and then, in 1999, as an Associate Professor. Colonel Aronson is also the Director of Clinical Research and Infectious Diseases at the Walter Reed Army Medical Center.

Lieutenant Colonel George Gibeily, USAFR, MC, received the Barry Goldwater Service Award at the USU SOM Department of Surgery's 20th Annual Surgical Associates/Reserve Components Surgical Day. Named for the late Arizona senator and presidential nominee, the award honors a medical corps reservist who has made significant contributions to the USU Department of Surgery.

Rear Admiral E. Connie Mariano, MC, USN, was the first USU SOM graduate promoted to the grade of rear admiral (lower half). Admiral Mariano has served as a White House physician for the past eight years: she also holds a faculty appointment in the USU SOM Department of Medicine.

Colonel Ann Norwood, MC, USA, Associate Professor and Associate Chair of the USU SOM Department of Psychiatry, was one of the keynote speakers at the Emergency Situations and Mental Health Russia - United States Conference which was held in St. Petersburg, Russia, on June 13 - 15, 2000. The conference was sponsored in part by the Ministry of Public Health of the Russian Federation and the Russian Academy of Sciences. Colonel Norwood also participated in "The Psychological and Social Impacts of Biological Attacks on the American Homeland" sponsored by ANSER, the National War College, and the Johns Hopkins Center for Civilian Biodefense Studies on October 12, 2000. On December 11 - 12, 2000, Colonel Norwood participated in the workshop sponsored by the Defense Threat Agency, the FBI, and the Joint Forces Command on Human Behavior and WMD Crisis/Risk Communication.

Class of 1982.

CAPT Robert Dawson, U.S. Public Health Service, received the 1999 Hildrus A. Poindexter Award from the Black Commissioned Officers Advisory Group of the U.S. Public Health Service. This award, established in 1990, recognizes a PHS officer or civil service employee with a minimum of seven years service within the PHS for outstanding service that enhances access to health care for underserved populations. CAPT Poindexter was the son of a former slave, born into poverty, who went on to become an eminent physician, scientist, academician and exemplary USPHS Commissioned Corps Officer. Captain Dawson works for EXCEL, Inc., a non-profit health care delivery system in New Orleans. As the Medical Director for five community health centers, two school-based clinics and an affiliated homeless clinic, he is responsible for the care of more than 18,000 patients. CAPT Dawson also was recognized for his work while assigned

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Colonel Naomi Aronson, MC, USA, was named as the Director of the Division of Infectious Diseases in the USU Department of Medicine. Colonel Aronson is responsible for coordinating the new Infectious Diseases Program with the department's existing Infectious Diseases Fellowship and corresponding research activities. She has been on the USU faculty since 1992, first as an Assistant Professor, and then, in 1999, as an Associate Professor. Colonel Aronson is also the Director of Clinical Research and Infectious Diseases at the Walter Reed Army Medical Center.

Lieutenant Colonel George Gibeily, USAFR, MC, received the Barry Goldwater Service Award at the USU SOM Department of Surgery's 20th Annual Surgical Associates/Reserve Components Surgical Day. Named for the late Arizona senator and presidential nominee, the award honors a medical corps reservist who has made significant contributions to the USU Department of Surgery.

Rear Admiral E. Connie Mariano, MC, USN, was the first USU SOM graduate promoted to the grade of rear admiral (lower half). Admiral Mariano has served as a White House physician for the past eight years: she also holds a faculty appointment in the USU SOM Department of Medicine.

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to the Indian Health Service, including the completion of the $5 million Minority Male Initiative Grant Program.

Colonel Christoph R. Kaufmann, MC, USA, MPH, FACS, Associate Professor of Surgery and Director at the National Capital Area Medical Simulation Center, received the 2000 Baron Dominque Jean Larrey Award for Excellence in Military Surgery at the USU SOM Department of Surgery's 20th Annual Surgical Associates/Reserve Components Surgical Day. The award recognizes an active duty military surgeon who has made outstanding contributions in military surgery, as exemplified by Baron Dominique Jean Larrey, a 19th Century surgeon who served under Napolean. Colonel Kaufmann received his promotion to his current rank of 0-6 during 2000.

Colonel Karl Kerchief, MC, USA, has been named to the Army Medical Department's Colonel Command List. Colonel Kerchief is the Deputy Commander for Clinical Services at the Martin Army Community Hospital, Fort Benning, Georgia; he will be moving to Fort Sill, Oklahoma, in July to assume command of Reynolds Army Community Hospital.

Colonel Rick Marple, MC, USA, was promoted to his current rank of 0-6 on September 30, 2000. Colonel Marple is the Chief of Primary Care and Assistant Chief of Medicine at Brooke Army Medical Center, Fort Sam Houston, Texas; he also received his Master of Public Health at USU.

Class of 1983.

Colonel James Bruckart, MC, USA, has been named to the Army Medical Department's Colonel Command List. Colonel Bruckart is the Corps Surgeon for the Army's 5th Corps in Heidelberg, Germany.

Lieutenant Colonel Dennis Peppas, MC, USA, is the Assistant Chief, Department of Surgery, and Chief of Urology at the Walter Reed Army Medical Center in Washington, D.C.

Colonel LeonOra Williams Shaw, MC, USA, was promoted to her current rank during 2000; she is serving as Chief, Department of Surgery and Gynecological Services at the Moncrief Army Community Hospital, Fort Jackson, South Carolina.

CAPT John Yao, U.S. Public Health Service, is currently serving in a joint assignment. He is the Director, Office of Managed Health Care, Indian Health Service, with office time split between Phoenix, Arizona, and Rockville, Maryland. He is also the IHS Health Policy and Management Consultant liaison to the Department of Health and Human Services in Washington, D.C.

CAPT Kevin Yeskey, U.S. Public Health Service, recently transferred from the PHS Office of Emergency Preparedness in Rockville, Maryland, to a senior position in the National Center for Environmental Health, Centers for Disease Control and Prevention, in Atlanta, Georgia.
Class of 1984.

Colonel Charles Beadling, USAF, MC, assumed command of the 95th Medical Group, Edwards Air Force Base, California, on July 7, 2000. His previous assignment was as the Deputy Group Commander of the 48th Medical Group, Royal Air Force, Lakenheath, United Kingdom.

Commander David Beardsley, MC, USN, served as the Health Services Officer for the Commander, U.S. Marine Forces Atlantic, in Norfolk, Virginia, before transferring to the Anesthesia Department of the Naval Medical Center, Portsmouth, Virginia.

Commander Jennifer Berg, MC, USN, was featured in Military Medical Technology, Volume 4, Issue 6. An experienced psychiatrist, Commander Berg writes and presents in the 90-second to 2-minute "Health Beat" segments of the Navy's Lifelines Web Site. Commander Berg has served as Aviation Psychiatry Division Officer at the Naval Operational Medicine Institute from 1993 to 1995 before being named Department Head in 1995 (the first woman to serve in this position). Since 1997, she has served as the Outpatient Services Director for Psychiatry at the Naval Medical Center in San Diego, California.

CAPT Forrest Faison III, MC, USN, was the Director, Department of Defense Technology Integration Board of Directors, and the Director, DoD Telemedicine, Naval Medical Information Management Center, National Naval Medical Center, before transferring to Okinawa, Japan, where he now serves as the Group Surgeon for the 3rd Force Service Support Group.

Class of 1985.

Lieutenant Colonel Matrice Browne, MC, USA, Assistant Professor in the USU SOM Department of Obstetrics and Gynecology, is one of twenty individuals who were selected for the Association of Professors of Gynecology and Obstetrics/Solvay Pharmaceuticals Educational Scholars Development Program. The program is designed to help obstetricians and gynecologists to become better teachers and leaders in the field of women's health. She was selected from a group of applicants across the United States based on their credentials and demonstrated commitment to women's health education. She serves as the OB/GYN Student Special Interest Group Advisor and as a USU Minority Student Mentor; she is also a member of Women in Medicine and Science at USU. The APGO/Solvay Program is the first-ever comprehensive educational curriculum designed to improve education in obstetrics and gynecology. It consists of a 15-month curriculum covering four major areas: curriculum and instruction; measurement and evaluation; research and statistics; and, leadership and management.

Lieutenant Colonel Bryan Funke, USAF, MC, is the Deputy Commander of the 325th Medical Group and the Commander of the 325th Aerospace Medicine Squadron at Tyndall Air Force Base (AFB), Florida; he will assume command of the 14th Medical Group, Columbus AFB, Mississippi, this summer.

Lieutenant Colonel Arnyce Pock, USAF, MC, Assistant Professor of Medicine at the USU SOM and Former Consultant for Internal Medicine to the Air Force Surgeon General, has been assigned to the position of Governor for the Air Force Region of the American College of Physicians-American Society of Internal Medicine. ACP-ASIM is the nation's largest medical specialty organization, with more than 115,000 internal medicine physicians and medical students, including more than 550 in the Air Force Region. Appointed to
a four-year term by the Air Force Surgeon General, her responsibilities include planning scientific meetings, credentialing new members, and disseminating college policy. She is the Commander of the 347th Medical Operations Squadron at Moody Air Force Base Base, Georgia.

Class of 1986.

Colonel Rhonda Cornum, MC, USA, assumed command of the 28th Combat Support Hospital at Fort Bragg, North Carolina on July 25, 2000. She is also a staff urologist at the Womack Army Medical Center at Fort Bragg.

Lieutenant Colonel Cliff Porter, MC, USA, is a general surgeon assigned to the 250th Forward Surgical Team at Camp Able Sentry, just outside of Skopje, Macedonia; he is permanently assigned to the Surgery Department at Madigan Army Medical Center.

Lieutenant Colonel Alan Janusziewicz, MC, USA, is the Commander of the 212th Mobile Army Surgical Hospital at Wiesbaden, Germany. LTC Janusziewicz and his unit are deployed to Camp Bondsteel, where he is the Deputy Commander for Task Force Medical Falcon in the Balkans. The unit was scheduled to return to Germany in October of 2000.

Class of 1987.

Commander Thomas Grieger, MC, USN, Associate Professor in the USU SOM Department of Psychiatry, and Director of the National Capital Area Psychiatry Residency Training Program, spoke at the DoD-sponsored meeting, "Leadership and Operational Stress," on June 20 - 21, 2000. The meeting brought together operational commanders, chaplains, and mental health providers to address the requirements for decreasing and mitigating operational stress in 2020.

Lieutenant Colonel Dallas Homas, MC, USA, is assigned to the Department of Plastic Surgery at the Tripler Army Medical Center in Hawaii. He is the Hand Surgeon for the Medical Center.

Commander Peter Rhee, MC, USN, attended the 60th Annual Meeting of the American Association for the Surgery of Trauma on October 12 - 14,2000, in San Antonio, Texas. He presented an abstract titled, "Screening for Lumbar Fractures: Abdominal and Pelvic CT Versus Portable Plain Films." Commander Rhee, an Associate Professor in the USU SOM Department of Surgery, is also serving on the Eastern Association for the Surgery of Trauma Program Committee. Commander Rhee has received grants of over $7 million and led a highly productive research team which had three papers accepted for presentation at the Fluid Resuscitation 2000 and five papers accepted for presentation at the 5th World Congress on Trauma, Shock, Inflammation, and Sepsis in Munich, Germany.

Class of 1988.

Lieutenant Colonel Kent Bradley, MC, USA, was the only medical corps officer selected for the Army Medical Department's Lieutenant Colonel Command List. His most recent assignment was as a preventive medicine physician at Fort Carson in Colorado Springs, Colorado.
Lieutenant Colonel Michael C. Edwards, USAF, MC, FACS, currently holds dual positions as Chief of Surgical Services and Chief of the Professional Staff at the 99th Medical Group/Mike O'Callaghan Federal Hospital, Nellis Air Force Base, Nevada.

Major Darryl Hunter, USAF, MC, is assigned to the Department of Radiation Oncology at the David Grant USAF Medical Center, Travis Air Force Base, California. He was selected for promotion to lieutenant colonel. Major Hunter is qualified in a specialty identified with critical shortages by the MHS.

Lieutenant Colonel Kondi Wong, USAF, MC, received the 2000 John Hill Brinton Award at the Armed Forces Institute of Pathology's 16th Annual James Earle Ash Lecture in Washington, D.C. He won the award as the primary author of the article, "Foamy Cells with Oligodendroglial Phenotype in Childhood Ataxia with Diffuse Cerebral Hypomyelination Syndrome (CACH)." Among his co-authors were Regina Armstrong, Ph.D., USU SOM Department of Anatomy and Cell Biology, and USU alumnus Dr. Alan Morrison. The award, named for the first curator of the Army Medical Museum, is given to a junior staff member selected by the AFIP's Scientific Advisory Board. Lieutenant Colonel Wong is the Chief of AFIP's Division of Neuromuscular Pathology.

Class of 1989.

Lieutenant Colonel Delos Carrier, USAF, MC, was selected as the 1999 Flight Surgeon of the Year by his Air Force major command during 2000.

Class of 1990.

Major Dale Agner, USAF, MC, received the 2nd Place Staff Award (Poster Category) at the annual Uniformed Services Academy of Family Physicians Meeting in Atlanta, Georgia, during 2000. Major Agner is currently assigned to the Offutt Air Force Base in Nebraska.

Major Jamie B. Grimes, MC, USA, received the Captain John Hallenbeck Award, given annually to the graduating neurology resident who is voted the best of the class by the Neurology staff at the Walter Reed Army Medical Center. The award was presented at the 1999 combined graduation ceremony for the National Capital Consortium of Graduate Medical Education Programs.

Christina Manthos, an Army urologist died of breast cancer in 1999. The Society of Government Service Urologists approved an annual competitive research award of $10,000 in the name of Christina Manthos. The award will come under the auspices of the Uniformed Services Urology Research Group. The first award was scheduled for presentation at the 48th Annual James C. Kimbrough Military Urologic Seminar in December of 2000.

Lieutenant Colonel Leon Moores, MC, USA, received the Juan C. D'Avis Award presented at the 1999 combined graduation ceremony for the National Capital Consortium of Graduate Medical Education Programs. He is a Staff Neurosurgeon at the Walter Reed Army Medical Center. This award was presented by the USU SOM Department of Surgery.
Class of 1991.

Major David M. Benedek, MC, USA, received two awards presented by the National Capital Consortium Department of Psychiatry: Outstanding Faculty Member Award - PGY2, and the Outstanding Faculty Member Award - PGY4. Major Benedek is the Program Director for the National Capital Consortium (NCC) Forensic Psychiatry Fellowship. The awards were presented at the 1999 combined graduation ceremony for the NCC of Graduate Medical Education Programs.

Major Eric Helling, MC, USA, is an otolaryngologist at Lundstuhl Regional Medical Center. Major Helling has treated a number of patients from Bosnia and Kosovo and has also provided follow-up care for victims of the embassy bombings in Kenya and Tanzania as well as the terrorist bombing of the USS COLE.


Lieutenant Commander Jerome Enad, MC, USN, completed his orthopedic surgery residency at the Naval Medical Center, Portsmouth, Virginia, in July of 1999. Most recently, he headed the Department of Orthopedic Surgery, Guantanamo Bay, Cuba. Commander Enad began an orthopedic medicine fellowship at the Kerlan-Jobe Clinic in Los Angeles in August of 2000.

Major Mark Koeniger, USAF, MC, was selected as the Air Force Flight Surgeon of the Year for 1998. Major Koeniger was also selected as the U.S. Air Force in Europe Flight Surgeon of the Year while assigned to the 37th Airlift Squadron, Ramstein Air Base, Germany. The nomination submitted by the 37th Airlift Squadron Commander pointed out that Major Koeniger "single-handedly ensured the health and readiness of 444 active duty members and 711 family members assigned to the squadron. His leadership and dedication permitted the 37th to complete 4,724 sorties, logging 9,843 flight hours." Major Koeniger is currently the Commander of Flight Medicine at the 18th Aeromedical Squadron, Kadena Air Base, Japan.

Lieutenant Commander Pat McMahon, MC, USN, received the Navy and Marine Corps Medal for Heroism in a non-combat situation. He helped to save the life of an Air Force second lieutenant who was struck by lightning while windsurfing near Pensacola, Florida. During 2000, he served as the Flight Surgeon for the Navy's Blue Angels.

Lieutenant Commander Maureen O'Hara Padden, MC, USN, received the 1st Place Staff Award (Case Report Category) at the annual Uniformed Services Academy of Family Physicians Meeting in Atlanta, Georgia, during 2000. She was also selected for a Summer 2000 Faculty Development Fellowship at the Madigan Army Medical Center, in Tacoma, Washington.

Major Lee Saltzgaber, USAF, MC, is working on a Master's Degree in Public Health at the University of Texas Health Science Center in San Antonio. The program is the first year of a three-year residency in aerospace medicine. Major Saltzgaber recently left Misawa Air Base, Japan, where he was the Commander of the 35th Aerospace Medicine Squadron, 35th Fighter Wing.
Class of 1994.

Lieutenant Commander Jay Erickson, MC, USN, is serving as the Commandant of the medical students at USU. Formerly a family physician at the Naval Medical Center, San Diego, California, he succeeded Lieutenant Colonel (colonel select) George Fuller, MC, USA, Class of 1981.

Class of 1995.

Major Scott M. Croll, MC, USA, received the Robert D. Dripps Memorial Award at the 1999 combined graduation ceremony for the National Capital Consortium of Graduate Medical Education Programs. This award was presented by the USU SOM Department of Surgery. Major Croll was an anesthesia resident at the Walter Reed Army Medical Center; he is now assigned to the Anesthesia Staff at the DeWitt Army Community Hospital, Fort Belvoir, Virginia.

Major Jamil Malik, MC, USA, was a staff internist at the Wornack Army Medical Center, Fort Bragg, North Carolina. He was selected for a Cardiology Fellowship at the Brooke Army Medical Center in Fort Sam Houston, Texas, during the Summer of 2000.

Class of 1996.

Captain Per Amundson, USAF, MC, was selected by his Air Combat Command during 2000, as the 1999 Flight Surgeon of the Year. Captain Amundson is currently a radiology resident at David Grant Medical Center, Travis Air Force Base, California.

Captain Clinton K. Murray, MC, USA, an internal medicine resident, was a clinical and laboratory research finalist for the 1999 Bailey K. Ashford Award for his research, "CD 56 Expression in Acute Promyelocytic Leukemia: A Possible Indicator of Poor Treatment Outcome?" The Ashford award is presented annually to staff members judged to have accomplished the most outstanding research during training at the Walter Reed Army Medical Center.

Captain Barak Perahia, USAF, MC, received the Surgeon General's Award (Urology Category). The award was presented at the annual meeting of the U.S. Air Force Society of Clinical Surgeons held in Biloxi, Mississippi, in April of 2000. Captain Perahia is assigned to the Wilford Hall U.S. Air Force Medical Center, Lackland Air Force Base, California.

Class of 1997.

Lieutenant Commander Charles Blackadar, MC, USN, received the 2nd Place Resident Award (Clinical Investigations Category) and 1st Place Resident (Poster Category) at the annual Uniformed Services Academy of Family Physicians Meeting in Atlanta, Georgia, during 2000.

Captain Casey Duncan, USAF, MC, received the 2nd Place Resident Award (Case Report Category) at the annual Uniformed Services Academy of Family Physicians Meeting in Atlanta, Georgia, during 2000. Captain Duncan is the Chief Resident at the David Grant Medical Center, Travis Air Force Base, California.
Lieutenant Michael Keith, MC, USN, received the Lieutenant Neil Holland Award, which is presented annually to the National Naval Medical Center house staff member who best exemplifies excellence in teaching and humanitarianism. Lieutenant Keith was recognized with the award at the 1999 combined graduation ceremony for the National Capital Consortium of Graduate Medical Education Programs.

Captain Charles Reilly, USAF, MC, was selected by his Air Mobility Command during 2000, for the 1999 Flight Surgeon of the Year.

Captain E. Matthew Ritter, USAF, MC, received first place for the Clinical Surgeons for Clinical Science Award which included a $1,000 grant. The award was presented at the annual meeting of the U.S. Air Force Society of Clinical Surgeons held in Biloxi, Mississippi in April of 2000. Captain Ritter is assigned to the David Grant U.S. Air Force Medical Center at Travis Air Force Base, California.

Captain Karen Ryan, USAF, MC, received the Val Hemming Pediatric Award as the 2000 Outstanding Pediatric Resident at the David Grant U.S. Air Force Medical Center, Travis Air Force Base, California. The award is named for Val G. Hemming, M.D., Dean, USU School of Medicine. Captain Ryan is assigned to the 39th Medical Group, Incirlik Air Base, Turkey.

Lieutenant Commander William Watson, MC, USN, became the first USU SOM graduate to complete the requirements for both a Doctor of Medicine Degree and a Doctor of Philosophy Degree. Commander Watson finished his Ph.D. in the USU SOM Neuroscience Program. He returned to clinical medicine in June, 2000, at the National Naval Medical Center, to begin his internship in internal medicine.

Captain Dustin Zierold, USAF, MC, received the Surgeon General's Award (Humanitarian Category). The award was presented at the annual meeting of the U.S. Air Force Society of Clinical Surgeons held in Biloxi, Mississippi, in April of 2000. Captain Zierold is assigned to the David Grant U.S. Air Force Medical Center at Travis Air Force Base in California.

Class of 1998.

Captain Peter Sipos, USAF, MC, received first place for the Basic Science Award which also included a $1,000 grant. The award was presented at the annual meeting of the U.S. Air Force Society of Clinical Surgeons held in Biloxi, Mississippi, in April of 2000. Captain Sipos is assigned to the David Grant U.S. Air Force Medical Center at Travis Air Force Base. California.

Captain Chris Walker, USAF, MC, was elected to the Board of Directors of the Uniformed Services Academy of Family Physicians. He is the Chief Resident in the Department of Family Practice, David Grant U.S. Air Force Medical Center, Travis Air Force Base, California.
Selected Profiles of USU School of Medicine Graduates.

The Class of 1980 - USU SOM Charter Class.

Army.

Colonel Cass Conaway, MC, USA, USU SOM Class of 1980. Following his graduation from USU, Colonel Cass Conaway spent five years at the Fitzsimons Army Medical Center in Aurora, Colorado, where he trained in general surgery. He then completed a one-year assignment as a Staff General Surgeon at the 121st Evacuation Hospital in Seoul, Korea, before entering a two-year Peripheral Vascular Surgery Fellowship at the Walter Reed Army Medical Center. He then spent two years as the Chief of Vascular Surgery at the William Beaumont Army Medical Center, El Paso, Texas. The USU graduate next transferred to the Vascular Service at the Brooke Army Medical Center in Texas, where he served for three years.

During Operation Desert Shield/Desert Storm, Colonel Conaway deployed with the 41st Combat Support Hospital in support of the 24th Infantry Division, where he was the Triage Officer for the largest acute mass casualty event of the war: Jalibah Airfield, Iraq.

In November of 1993, Colonel Conaway assumed command of the 274th Medical Detachment (Forward Surgical Team-Airborne) at Fort Bragg, North Carolina, where he played a significant role in developing and finalizing Army Medical Department Forward Surgical Team Doctrine. His unit deployed in support of Operation Uphold Democracy in Haiti; Colonel Conaway commanded the Joint Casualty Collecting Point which would have cared for the initial U.S. casualties in the event of combat operations.

Colonel Conaway left Fort Bragg to attend the Command and General Staff College at Fort Leavenworth, Kansas, and graduated in July of 1996. He then attended the U.S. Army-Baylor University Master's Degree Program in Health Care Administration, where he developed a concept and plan to train military surgical units in civilian trauma centers to improve overall surgical readiness. Upon his completion of the program, Colonel Conaway assumed command of the 41st Combat Support Hospital at Fort Sam Houston, Texas. Shortly thereafter, the 41st Combat Support Hospital conducted the first trauma sustainment training rotation for a military unit through the Ben Taub General Hospital, a civilian trauma center in Houston, Texas. The pilot study was so successful, that the Department of Defense institutionalized the training program initiated by Colonel Conaway. The DoD created the Joint Trauma Training Center at the Ben Taub General Hospital, which is now the "gold standard" for unit surgical readiness training for the Army, Navy, and Air Force. Colonel Conaway is a board-certified general surgeon and a vascular surgeon. He holds an academic appointment as a Clinical Assistant Professor of Surgery at the USU SOM and is a member of numerous professional societies. In June of 2000, Colonel Conaway transferred to the Evans Army Community Hospital at Fort Carson, Colorado, where he assumed the position of Deputy Commander for Clinical Services.

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CAPT Jonathan Clark, MC, USN, USU SOM Class of 1980, is a board-certified neurologist and aerospace medicine specialist with more than 24 years of military service and 12 years in operational medicine and spatial orientation research. CAPT Clark completed his internship in general surgery at the National Naval Medical Center (NNMC). Afterward, he entered a neurosurgery residency at NNMC; he later switched to a neurology residency, which he completed in 1987. He was board-certified in 1988. In February of 1988, CAPT Clark completed flight surgery training and a year later finished Navy Diver/Hyperbaric Medicine Officer Training.

CAPT Clark earned a Master's of Public Health Degree from the University of Alabama at Birmingham in 1990; and, shortly thereafter he deployed in support of Operation Desert Shield/Desert Storm as the Deputy Wing Surgeon and Special Projects Officer for the 3rd Marine Aircraft Wing. CAPT Clark was responsible for the Marine Aircraft Wing Sustained Operations Plan, the Medical Evacuation Plan, and Chemical Warfare Medical Countermeasures for Aircrrew. He flew 50 hours in combat as a Helicopter Medevac Flight Surgeon, primarily during the ground offensive in Kuwait. After several months in the desert, CAPT Clark returned to the United States where he qualified as a Department of Defense Space Shuttle Support Flight Surgeon, covering the first launch of the Space Shuttle Endeavor in May of 1991.

CAPT Clark later served as the Head of the Neurology Division, the Head of the Internal Medicine Department, and as the Chairman, Hyperbaric Medicine, at the Naval Aerospace Medical Institute in Pensacola, Florida, where he was selected for promotion to captain. He was assigned as the first Head of the Aeromedical Department at the prestigious Marine Aviation Weapons and Tactics Squadron One, where he worked on spatial disorientation, night vision goggle human factors, and sustained flight operations. On his last assignment before moving to Houston, CAPT Clark headed the Spatial Orientation Systems Department at the Naval Aerospace Medical Research Laboratory in Pensacola, where he also served as the principal investigator on the Neuro-otologic Assessment Project.

CAPT Clark's current assignment is the Neurologist/Flight Surgeon at the NASA Johnson Space Center Flight Medicine Clinic. He is a certified space shuttle mission flight controller and has worked on Missions STS 95, 96, and 99. CAPT Clark also holds an academic appointment as Clinical Assistant Professor in the Department of Preventive Medicine and Community Health at the University of Texas Medical Branch in Galveston. He is actively involved in clinical research, including protocols on gait and balance assessment in repatriated prisoners of war, cognitive performance assessment during acute hypocapnic and normocapnic hypoxic exposures, and medication effects on the vestibular system. During 2000, CAPT Clark completed a U.S. Navy Space and Naval Warfare Systems Command funded program on the vestibular effects of low frequency sound. CAPT Clark is married to Laurel Blair Salton Clark, who is a NASA astronaut.

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Air Force.

Colonel Fred Conte, USAF, MC, USU SOM Class of 1980, is the Chairman of the Department of Radiology at the David Grant U.S. Air Force Medical Center, Travis Air Force Base, California. After graduating from USU, Colonel Conte moved to San Antonio, Texas, where he completed his internship in internal medicine at Wilford Hall. In 1981, he changed courses and entered a Radiology Residency Program at Wilford Hall Air Force Medical Center, Texas, which he completed in 1984. Immediately afterward, he began a Fellowship in Nuclear Medicine also at Wilford Hall, and completed the fellowship two years later.

In 1986, Colonel Conte transferred to the David Grant Medical Center and became the Assistant Chief of Nuclear Medicine; he became the Chief of Nuclear Medicine during the following year. Two years later, Colonel Conte became the Assistant Chairman of the Radiology Department. In 1993, he was promoted to his current position of Chairman of the Department of Radiology. Colonel Conte also serves as the Deputy Squadron Commander and the Associate Chief of the Medical Staff, as well as the Consultant in Nuclear Medicine to the Air Force Surgeon General.

Under his leadership, the Department of Radiology at the David Grant U.S. Air Force Medical Center has gone to 95 percent "filmless," the Air Force's first Women's Imaging Center was established at the Medical Center, and one of only two Air Force-wide isoshelters with CT scanners is located at the Medical Center. Colonel Conte's department is heavily involved in teleradiology, with all Army, Air Force, and Coast Guard images in the region being sent to the David Grant Medical Center. Additionally, Colonel Conte's department has the Air Force's first operational PET-capable nuclear medicine camera.

Colonel Conte served as the Director of the David Grant Medical Center Radiology Department's Residency Program until 1998, earning a 100 percent board certification rate for its residents. He also has served as a clinical faculty member at the University of California at Davis for some years.

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FACULTY OF THE SCHOOL OF MEDICINE.

Composition. The School of Medicine has 297 full time faculty members: 181 civilians; and, 116 uniformed officers. There are approximately 3,534 non-billeted/off-campus faculty who assist in the USU programs of which 1,156 are civilians and 2,378 are uniformed officers.

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SOM Clinical and Consultative Services Generate an Estimated $9.2 Million in Cost Avoidance for DoD in Fiscal Year 2000. The affiliated Medical Treatment Facilities (MTFs) in the National Capital Region (the National Naval Medical Center (NNMC), the Walter Reed Army Medical Center (WRAMC), and the Malcolm Grow Air Force Medical Center (MGMC) use the services of the USU faculty for the provision of health care.

The USU SOM civilian and military clinical faculty members, as a part of maintaining their credentials and level of proficiency, provide medical services and consultation to the hospital patients and staff and teach and supervise residents. In order to meet national accreditation standards, all teaching hospitals must provide both patient care and teaching/supervision of medical students, interns, and resident physicians. These accreditation standards are not generated by USU; they will continue to exist at the MTFs whether or not USU is operating. Therefore, cost avoidance in the Department of Defense (DoD) is generated by the hours of clinical service and medical expertise provided by the USU civilian and military faculty. Thirteen USU SOM academic departments (Anesthesiology, Dermatology, Family Medicine, Department of Medicine, Military and Emergency Medicine, Neurology, Obstetrics and Gynecology, Pathology, Pediatrics, Preventive Medicine and Biometrics, Psychiatry, Radiology and Nuclear Medicine, and Surgery) provided clinical and consultative support to DoD that totalled some 140,692 hours in 2000, with an estimated cost avoidance of $9.2 million.

Without the patient care and special services provided by the USU SOM faculty throughout the DoD medical facilities, the military hospitals, clinics, and other facilities would find it necessary to increase their staffs by 140,692 work hours or increase the use of commercial sources.

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USU SOM Faculty Achieve National and International Recognition. The SOM faculty members continue to publish at a rate equal to, or greater than, the national averages for their fields. SOM faculty members are regularly selected to serve on various study sections for the National Institutes of Health, and for other research-granting agencies. Many faculty members, due to their national/international reputations are: 1) selected for editorial boards; 2) serve as consultants or advisors to the White House, the Office of the Secretary of Defense, international schools of medicine (eg, China, France, Japan, Mexico, Poland, Russia, Thailand, etc.), and numerous Federal Agencies; 3) give invited lectures; and serve on federal, national, and international committees; and, 4) as senior officers in a wide variety of professional organizations. A number of basic science and clinical faculty hold senior and deputy editor positions on journals representing their disciplines and specialties. Overall, the SOM faculty has clearly achieved recognition with its peers across
disciplines and specialties. USU SOM faculty are routinely chosen to serve on university, military, and federal and professional organization committees in a variety of leadership and service capacities. Due to the unique nature of the USUHS SOM mission and certain of its departments, faculty in the Departments of Military and Emergency Medicine, Preventive Medicine and Biometrics, Psychiatry, and Medical History have achieved national and international recognition (Appendix C Provides Examples of Individual Achievements and Recognition).

The majority of SOM clinical faculty is located at the teaching hospitals. The large number of enthusiastic, well-trained primary care and specialist clinicians, based at the hospitals throughout the Military Health System, is an invaluable resource for teaching medical students. Under the oversight and guidance of clinical clerkship directors, this large faculty does an excellent job of medical student clinical training, based on surveys of both students and department chairs. A number of the hospital-based faculty are also involved in clinical research programs through the active clinical investigation programs based at the teaching hospitals. To further enhance communication and cooperation between the USU SOM and its affiliated teaching facilities, the Office of the Associate Dean for Clinical Affairs has written and completed an updated series of memoranda of understanding between the University and its affiliated teaching and research institutions that clearly define areas of responsibility and accountability. Based upon student-reported satisfaction, student performance on National Board examinations, hospital commanders' overall satisfaction with the performance of USU graduates, and the large percentage of operational and leadership positions held by USU graduates throughout the Military Health System, the SOM faculty is performing a stable and highly satisfactory job of educating medical students for the Uniformed Services.

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Collaborative Efforts.

Teaching. Cooperation in teaching has been systematically developed within the departments, between departments, and within subspecialties, to improve the educational experience of both medical and graduate students (the SOM faculty also provides the instructional base for the Graduate Education Programs at the University). The composite curriculum in behavioral sciences, drawing on Neurology, Psychiatry and Medical Psychology, is a significant example of interdepartmental cooperation in undergraduate medical education.

The graduate programs in Neuroscience, Molecular and Cell Biology, and the newly established Interdisciplinary Graduate Program in Emerging Infectious Diseases illustrate a sound cooperative relationship in research and graduate education. The Tumor Biology Program, an interdepartmental effort between the Departments of Pathology and Surgery, serves as a bridge between basic science and clinical practice in Medical Oncology. The special interest groups in curriculum studies have resulted in basic science input into the hospitals, with collaboration in research, and more importantly, with collaboration in teaching, as the basic scientists provide science instruction to the medical house officers and junior faculty within certain subspecialties of mutual interest. (Information was drawn from the SOM 1999 Self-Study, Section VI, pages 7, 9, 14, and 16.)

New Department of Anatomy, Physiology and Genetics. The Year 2000 brought one of the most significant changes in the academic structure of the USU SOM since the graduation of the Charter Class in 1980.
The Department of Anatomy and Cell Biology and the Department of Physiology were formally merged to create the Department of Anatomy, Physiology and Genetics (APG). The philosophy of the newly formed department conforms with the mission and goals of the USU Strategic Plan. The philosophy is based upon a commitment to the highest level of excellence in teaching, research, and administration. The departmental merger has consolidated the teaching, research, and administrative functions of a substantial component of the University within a single faculty group under the leadership of a single Department Chair. One result of this action is that one half of the first year medical curriculum is now offered by the Department of Anatomy, Physiology and Genetics. Integration of the formerly separate anatomy and physiology curricula is resulting in a single, cohesive and dynamic course that spans the entire first year of medical education. At the same time, the Department Chair and APG Faculty have recommitted to serving the Graduate School of Nursing (GSN) and will continue to provide didactic training for their students in the areas of physiology and neuroscience. As expected, the departmental merger is yielding benefits beyond the immediate outcomes of curriculum integration. One outcome of this process is the evolution of an educational track in "Human Biology and Genetics." The goal of this Ph.D. track is to provide students with a state-of-the-art understanding of technologies in genetics, genomics, proteomics and bioinformatics, and molecular and cell biology, assembled around a fundamental understanding of human anatomy and physiology in both normal and disease states. Another outcome is the creation of a research team and program project grant to support diseases-based multidisciplinary research. Further, the efficiency gained in departmental administration is enabling the Department Chair and APG faculty to play leadership roles in the evolution of vital interdepartmental programs including those in Medical Genetics and Applied Human Biology. Both of these nascent programs are recognized for their intrinsic academic value and for their direct relevance to the needs of the Uniformed Services. While additional time is required to fully realize the total benefits of the departmental merger, it is clear that increased efficiency, functional integration, and enhanced collegiality will be constant hallmarks of the outcomes.

Research. The research and development goal of the USU strategic plan is to build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services. Currently, there are three interdisciplinary research programs: 1) Neuroscience. The Interdisciplinary Program in Neuroscience and its Ph.D. graduate program are supported by 29 faculty members whose primary appointments are in 12 of the SOM departments. It provides a seminar series, and flexible program of courses and research areas for graduate students and postdoctoral fellows. Research areas strongly represented by faculty include neuronal development and plasticity, molecular and cellular neurobiology, neuropharmacology, gene expression, neurotransmitter/neuropeptide processing and function, neural regulation of physiologic functions, and clinical neuroscience; 2) Molecular and Cell Biology. A second Interdisciplinary Program, in Molecular and Cell Biology (including Genetics), has been developed to contribute to cross-disciplinary interactions, to develop critical skills needed for data presentation and analysis, as well as a seminar series and a journal club, all of which supports a Ph.D. program. Research areas include molecular biology of lymphocyte interactions; host-pathogen interactions; cell surface, cytoplasmic and nuclear receptor signaling pathways, exocrine secretory processes, and gene targeting in mice including a transgenic mouse facility for targeted gene disruption using homologous recombination. The program consists of 37 faculty mainly from six SOM departments: and, 3) Emerging Infectious Diseases. The Department of Microbiology and Immunology and the Department of Preventive Medicine and Biometrics are exceptionally strong in the areas of infectious diseases and tropical medicine. A special interest group from these departments, to include faculty from other departments who are interested in infectious diseases, began meeting and subsequently submitted (and was awarded) an NIH training grant in this area. The Emerging Infectious Diseases Graduate Program (EID)
has been developed and is in its second year of operation. The second class of students will begin in August of 2001.

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Selected Profiles of USU School of Medicine Faculty.

USU Faculty Develop New Humanitarian Assistance Courses. Humanitarian missions have been occurring at an accelerating pace over the past decade, and fall largely outside of the realm of traditional medical education. A definite requirement exists for training to prepare non-USU graduates for deployment. The development of the Humanitarian Assistance Courses at USU is supported by a congressional grant through the USU SOM Department of Military and Emergency Medicine.

Department of Pediatrics. The Dean of the School of Medicine and the Department of Pediatrics took the lead in developing and providing interactive training to better prepare military health care providers to care for victims of humanitarian emergencies. The Pediatrics-generated Military Medical Humanitarian Assistance Course is an intensive two-day course. It involves refocusing the health care approach to a population emphasis, specifically concentrating on those populations living in austere environments following natural or man-made disasters. In addition to didactic sessions, instruction is carried out by utilizing case scenarios and simulated case management exercises based on real world experiences previously encountered by military providers. The course climaxes in hands-on skills stations where attendees learn and demonstrate their newly acquired knowledge and skills in dehydration/diarrhea, malnutrition, and infectious diseases. This unique, one of a kind, interactive course has now graduated over 260 health care providers who are better prepared to care for victims of humanitarian emergencies should the need arise. The course is presently developing an instructor cadre that will be able to offer regional courses throughout the world.

Department of Medicine. Major (lieutenant colonel select) Michael Roy, MC, USA, is the USU SOM Department of Medicine Course Coordinator and Director of the Division of Military Internal Medicine. Major Roy's three-day course prepares medical residents and junior staff for deployment on humanitarian assistance missions. Some of the lectures included in the course are already available in Powerpoint slides on the department's website at <http://www.usuhs.mil/med/milmedlect.htm>. Major Roy has coordinated the Department of Medicine's efforts to focus on military relevance through research, faculty development, and curricular reform. The course has two major elements: 1) to prepare participants for working in an environment that may differ greatly from what they are accustomed to - limited medications and capabilities, different diseases and considerations, and colleagues from many nations and non-governmental organizations; and, 2) to refresh internists on the basics of medicine outside of their usual practice (adult primary care), teaching the essentials of field pediatrics, obstetrics and gynecology, orthopedics and dermatology.

Department of Psychiatry. Currently, the Department of Psychiatry is also developing a Military Medical Humanitarian Assistance Course to be given to psychiatry residents in the near future.

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USU President is Honored by the Surgeon General of the United States. U.S. Surgeon General Admiral David Satcher presented the Surgeon General's Medallion to James A. Zimble, M.D., President,
USU, and Associate Professor, Department of Military and Emergency Medicine, on August 17, 2000, during a ceremony that officially welcomed USU's new medical, nursing, and graduate students to the University. The medallion is the highest award presented by the U.S. Surgeon General. The USU President pointed out that "the medallion recognizes the remarkably talented, enthusiastic, and dedicated members of the USU family: faculty, staff, students, and alumni."

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The USUHS SOM Associate Dean Receives Second Recognition from the American Medical Association. Colonel Emmanuel Cassimatis, MC, USA, (Retired), and SOM Associate Dean for Clinical Affairs, was named the 2000 recipient of the American Medical Association (AMA) - Young Physicians Section (YPS) Young at Heart Award. The award is presented annually to an AMA member whose support and guidance have strengthened the AMA-YPS through organizational aid, support of AMA-YPS issues and support of young physician leadership development. Doctor Cassimatis received the award on June 9, 2000, during the AMA-YPS Assembly in Chicago, Illinois. Doctor Cassimatis was recently elected to the AMA's Council on Medical Education. He was the first uniformed member of the AMA Council on Federal and Military Medicine to earn a position on the Council on Medical Education.

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SOM Department Chair Receives Lifetime Achievement Award. Robert Ursano, M.D., Professor and Chair, Department of Psychiatry, and Director of the USU Center for the Study of Traumatic Stress, received the highest award presented by the International Society for the Study of Traumatic Stress. The Lifetime Achievement Award is given for "outstanding and fundamental contributions to understanding traumatic stress." The award cited Dr. Ursano's national and international contributions to the study of traumatic stress. In addition, Dr. Ursano received the Henry P. and Page Laughlin Award for Distinguished Teaching from the American Society of Psychoanalytic Physicians. Ursano is also the new editor of the Washington School of Psychiatry's journal, Psychiatry. Along with Colonel Ann Norwood, MC, USA, Associate Professor, Department of Psychiatry, USU Class of 1981, Dr. Ursano was a keynote speaker at the Emergency Situations and Mental Health Russia-U.S. Conference which was held in St. Petersburg, Russia, from June 13-15, 2000. The Conference was sponsored in part by the Ministry of Public Health of the Russian Federation and the Russian Academy of Sciences.

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Department Chair Addresses Conference of the Rocky Mountain Vascular Surgical Society. Norman M. Rich, M.D., Professor and Chair, Department of Surgery, delivered the W. Sterling Edwards Lecture, "Contributions to Vascular Surgery by Surgeons in the Military," at the 20th Annual Meeting of the Rocky Mountain Vascular Surgical Society in Sante Fe, New Mexico, on August 11, 2000. Dr. Edwards, who attended the lecture, is one of the pioneers in cardiac and vascular surgery. Also, on October 23,2000, Dr. Rich, as a member of the Committee on Trauma of the American College of Surgeons, received the Millennium Trauma Commitment Award of the American College of Surgeons Committee on Trauma. The entire committee was recognized for the exceptional commitment that they made on behalf of their colleagues, their patients, and those patients who were injured.

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Association of Military Surgeons of the United States Recognizes USU Department Chair. Craig H. Llewellyn, M.D., MPH, COL, MC, USA (Ret.), Chair, Department of Military and Emergency Medicine, and Director, Center for Disaster and Humanitarian Assistance Medicine, received the Association of Military Surgeons of the United States (AMSUS) Richard A. Kern Lecture Award at the 107th Annual Meeting of AMSUS held on November 8, 2000. He received this award for his lecture entitled, "Military Medicine in the New Millennium: Will it be Relevant?" The award was given in response to his lecture on topics of relevance to Federal Medicine.

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USU Department Chair Presents Lectures. James Smirniotopoulos, M.D., Professor and Chair, Department of Radiology and Nuclear Medicine, provided a series of lectures during 2000 at the Barrow Neurological Institute in Phoenix, Arizona. The lectures emphasized radiologic-pathologic correlation, and his topics included "The Basal Ganglia" and "The WHO Classification of Astrocytomas." In April of 2000, Dr. Smirniotopoulos was the featured speaker at the Colorado Radiological Society. He was also a visiting professor at the University of Colorado Health Science Center. Also during April, Dr. Smirniotopoulos visited Sao Paolo, Brazil, to participate in the 30th Jornado Paulista de Radiologia. He made nine presentations and hosted a bilingual film interpretation panel, where he presented seven diagnostically challenging cases to a panel of leading Brazilian radiologists.

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Public Health Service Recognizes Department Chair. CAPT William Haffner, USPHS, Professor and Chair, Department of Obstetrics and Gynecology, was presented with the Distinguished Service Medal from the United States Public Health Service on October 20, 2000. This is the highest award that can be presented to a USPHS officer. CAPT Haffner also presented the opening keynote address "Department of Obstetrics and Gynecology: Developing a Learning Organization and its New Teachers," at the Association of Professors of Gynecology and Obstetrics' annual faculty development workshop in Los Angeles. CAPT Haffner was joined in his presentation by Lieutenant Colonel Matrice W. Browne, MC, USA, Assistant Professor and Clinical Clerkship Director for the Department of Obstetrics and Gynecology.

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American Psychological Association Presents Award. David S. Krantz, Ph.D, Professor and Chair, Department of Medical and Clinical Psychology, received the Award for Outstanding Contributions to Health Psychology from the Division of Health Psychology of the American Psychological Association. Presented on August 4, 2000, the award recognized Dr. Krantz for his research contributions in the area of behavioral factors in cardiovascular disorders and for his recently completed service to the Division of Health Psychology as Editor-in-Chief of Health Psychology.

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American College of Physicians Notifies USU Professor Emeritus of Significant Honor. In October of 2000, the Chair of the Awards Committee of the American College of Physicians - American Society of Internal Medicine informed Robert J.T. Joy, M.D., Professor Emeritus of Medical History, that he has been selected to receive the 2002 Nicholas E. Davies Memorial Scholar Award. The Davies award is
presented to an individual for outstanding contributions to humanism in medicine and recognizes the person's scholarly activities in history, literature, philosophy, and ethics. Dr. Joy was one of the University's first faculty members and he participated in establishing the initial curriculum for the School of Medicine. He was Professor and Chair of the Department of Medical History from 1976 until his retirement in 1996. As Professor Emeritus, Dr. Joy continues to lecture the USU medical students on the history of military medicine. Dr. Joy, who retired from the Army in 1981 at the rank of Colonel, served as the SOM's first Commandant from 1976 through 1981.

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News Media Recognizes USU Researcher. Michael Daly, Ph.D., Assistant Professor, Department of Pathology, currently has six active grants totalling over $3.5 million supporting a research program dedicated to understanding and exploiting DNA repair processes in the extremely radiation resistant bacterium "Deinococcus radiodurans." Daly's most recent grant of $1.2 million was awarded by the Department of Energy in September of 2000, supporting the development of radiation resistant bacteria for decontamination (bioremediation) of radioactive wastes. The bioremediating organisms and techniques already developed by his team were accepted for review by the U.S. Patent Office during 2000, with legal expenses carried by the Henry M. Jackson Foundation. In the last two years, Daly has published twelve papers, including two in Science and two in Nature. A review of his progress in the areas of genomic informatics and "Deinococcus" biotechnology will be published in Microbiology and Molecular Biology Reviews in March of 2001. Daly's work in the Department of Pathology has received international attention. He has appeared in interviews on the BBC, ABC's "Nightline," the Discovery Channel, and Oprah Winfrey's new Oxygen Network. In addition, his work has been featured in a myriad of national and international newspapers and magazines, including a profile of Daly and his work as the cover story of U.S. News and World Report during 2000 <http://www.usnews.com/usnews/issue/000103/daly.htm>. According to the article, Daly's work promises to substantially reduce the estimated $150 billion cost for cleaning up toxic wastes such as those found at nuclear waste sites. This media exposure has increasingly placed Daly in demand as an invited speaker as well as a consultant to scientific bodies; for example, Dr. Daly was appointed a Planetary Task Group Member (National Academy of Sciences) to advise NASA on protecting Jupiter's moon Europa from forward contamination during future exploratory missions, and most recently, protecting Earth from back-contamination following NASA's planned 2008 Mars Sample Return Mission. Dr. Daly is also fully engaged in research and teaching activities in the Department of Pathology. He currently has five graduate students: four post-doctoral and one doctoral; and, he has two pending grants requesting further support for training graduate students, in the areas of genetics, bioinformatics, biotechnology, and exobiology (NASA). Most recently, Dr. Daly has begun teaching part of the USU graduate course, "The Emerging Threat of Biological Weapons and Bioterrorism," where he lectures on the emerging impact of genomic informatics on the development of such weaponry.

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National Cancer Institute Honors USU Faculty Member. Commander Brian P. Monahan, MC, USN, SOM Department of Medicine, received the National Cancer Institute's Annual Teacher of the Year Award. It is the first time that a Navy officer has received the award which recognizes excellence in the teaching of Medical Oncology and Hematology Fellows at the National Cancer Institute. The award, an engraved crystal plaque, includes a large research grant and has historically been given to a civilian faculty member of the National Cancer Institute.

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SOM Professor Leads Research on Tobacco Use for the Department of Defense. Neil Grunberg, Ph.D., Professor, Department of Medical and Clinical Psychology, made a presentation on March 15, 2000, to the Department of Health and Human Services on behalf of the Society for Research on Nicotine and Tobacco. Also during 2000, Dr. Grunberg spoke at the seminar "Sex, Science and Drugs: Gender Differences in Addiction and Recovery," at the Smithsonian Institution. The seminar was part of the Smithsonian's continuing education arm, Campus on the Mall, which provides ongoing courses, lectures and seminars in the humanities, arts and sciences. Professor Grunberg is a leader researcher for the Department of Defense on tobacco use and serves as a consultant to each of the Surgeons General on smoking issues.

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Medical Officer Receives Award from the Naval War College. Commander Aileen Marty, MC, USN, Associate Professor, Department of Pathology, earned the McGinnis Family Award for Outstanding Performance in Nonresident Education from the Naval War College. It is the first time a medical officer has received the award, which is given to the top graduate who excelled in academics, professional achievement, and civil affairs. Commander Marty attended the college's non-resident seminars in Washington, D.C., from September 1997 until graduation on June 16, 2000. There were 283 students in the program. The Naval War College also presented Commander Marty with the Director's Award for Academic Excellence, and the Diploma of Graduation with Highest Distinction.

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USU Professor Receives Significant Recognition from the National Institutes of Health. Stefanie Vogel, Ph.D., Professor, Department of Microbiology and Immunology, received a National Institutes of Health Method to Extend Research in Time Award for accomplishments in her grant, "Differentiative Signals for Macrophage Differentiation." Professor Vogel's laboratory focuses on the capacity of Gram negative lipopolysaccharide and other potent inflammatory stimuli to activate macrophages in vitro and in vivo. The MERIT awards provide long-term grant support to investigators whose research competence and efficiency are distinctly superior and who are highly likely to continue to perform exceptionally.

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The Sustaining Membership Lecture Award Recognizes Research Efforts of USU Associate Professor. Lieutenant Colonel (Select) William Patrick Roach, USAF, BSC, Associate Professor, Department of Preventive Medicine and Biometrics, was selected to receive the Sustaining Membership Lecture Award from the Association of Military Surgeons of the United States (AMSUS). The award was established in 1958, by the sustaining members of AMSUS and is awarded annually to an individual in one of the federal medical services who has made an outstanding contribution in the field of medical research. As an Associate Professor in the Department of Preventive Medicine and Biometrics, Lieutenant Colonel Roach provides mentorship and supervision for students in the disciplines of medicine, veterinary medicine, occupational health, environmental health, health physics, and industrial hygiene in the fulfillment of the requirements for the Master of Public Health, Master of Science in Public Health, Doctor of Public Health, and Doctor of Philosophy Programs. Lieutenant Colonel Roach has published twenty-six full-length
articles in peer review journals and proceedings; 36 papers in non-refereed journals and technical reports; and, 43 abstracts resulting from presentations at professional meetings. Eight of his publications have achieved editorial recognition for their contribution to the field of laser physics.

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Association of University Radiologists of North America Presents Award to USU Associate Professor. Lorraine G. Shapeero, M.D., Associate Professor of Radiology, Department of Radiology and Nuclear Medicine, received the First Place Award of the Association of University Radiologists of North America for her scientific exhibit entitled, "Dynamic Contrast-Enhanced MRI for Evaluating Soft Tissue Sarcomas: a Multicenter Study." Her co-investigators in the project are from France, Belgium, and the Netherlands. The abstract will be published in Academic Radiology. Dr. Shapeero was the Guest Editor for two issues on Soft Tissue Sarcomas (210 pp) published in Seminars of Musculoskeletal Radiology and authored six publications in scientific journals. She was elected Secretary Treasurer of the USU Faculty Senate. During 2000, Dr. Shapeero was reappointed as Consultant to the Editor of Radiology by the Board of Directors of the Radiological Society of North America and was elected to the Board of Directors of the Association of University Radiologists of Europe. Dr. Shapeero also serves on the Board of Directors of the Association of University Radiologists of North America, on the Executive Committee of the Association of Medical Student Educators in Radiology, and on the Editorial Boards of Radiology, Seminars in Musculoskeletal Radiology, and as an Editor of Academic Radiology.

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Secret Service Recognizes USU Faculty. Lieutenant Colonel John Hagmann, MC, USA, Department of Military and Emergency Medicine and the Casualty Care Research Center, received an award from the Secret Service for helping to save the life of an individual going through new agent training. Lieutenant Colonel Hagmann was providing operational medical support and consultation as the duty medical officer when the trainee became ill. It was later learned that the person was suffering from kidney failure and was near death when Hagmann began emergency treatment, to include arranging for transportation to the Washington Hospital Center. The patient eventually regained full use of his kidneys.

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Faculty Member Represents USU on a White House Level Task Force. CAPT Richard J. Thomas, MC, USN, MD, MPH, Assistant Professor, Head, Epidemiology & Biostatistics Division, USU SOM Department of Preventive Medicine and Biometrics, represented USU on a White House level task force during 2000. This multi-governmental agency task force was formed to review the current understanding of the health of Department of Energy workers over the last fifty years. This involved in-depth study of epidemiological studies of workers’ health and compensation issues. The work of this task force led to the Congress instituting landmark changes on how the federal government takes financial responsibility for the health and welfare of contractor employees injured in the line of duty. CAPT Thomas was selected
as President-elect of the Virginia College of Occupational and Environmental Medicine in September of 2000. This professional organization represents over 120 Occupational Medicine physicians in Virginia and is a component of the American College of Occupational and Environmental Medicine. CAPT Thomas was invited to give presentations on the health effects of riot control agents at the Navy Occupational Health and Preventive Medicine Workshop in Norfolk, Virginia, in January of 2000, and at the American Occupational Health Conference in Philadelphia during May of 2000. He spoke on the topic, "Travel Medicine Update 2000," at the Virginia Occupational Health Conference in September of 2000. CAPT Thomas serves on the clinical staff of the National Naval Medical Center in Bethesda, Maryland, and the Naval Medical Clinic at Quantico, Virginia, providing Occupational Health and Travel Medicine service and consultation.

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RESEARCH CENTERS AND PROGRAMS.

"...We will develop and augment interdisciplinary programs in Infectious Diseases and Tropical Medicine, Casualty Care and Operational Medicine, Health Maintenance and Diseases Prevention..."

-Strategy 3.1, Goal 3 of the USU Strategic Plan, October 1999.

Research is Directed Toward Military Requirements. As discussed in the "Research Administration" section of Part I of this report, the majority of research programs and projects currently taking place at USU are focused on meeting the needs of the Uniformed Services. Research protocols throughout the SOM study diseases of high military relevance for troop deployment and sustainment. For example, technological advances by USU researchers have made it possible to predict mosquito population levels and transmission risks for a range of mosquito-borne diseases such as malaria, even within precise areas and time frames. By using satellite imaging and remote sensing devices, USU researchers assist in predicting high-risk locations for the occurrence of malaria and similar diseases. These predictions focus disease-control operations and conserve scarce finances as well as human resources. Research contributed by SOM faculty relating to combat casualty care continues to provide rapid diagnostic methods and treatments which ensure military readiness. In addition, the research of SOM faculty is also directed toward military operational medicine. The following SOM Centers, Activities, and individual researchers are provided as selected examples of the research taking place throughout the School of Medicine.
Establishment. Terrorism, hostage events, the poison gas attack on the Tokyo subway, the Oklahoma City and Africa Bombings, and disasters such as Japan's Kobe Earthquake which left 6,000 dead, 30,000 injured, and 300,000 homeless, as well as more common traumatic events such as motor vehicle accidents, hurricanes, tornadoes, and physical assaults are a substantial health risk to those who serve our Nation in the Uniformed Services and to the general population. For example, Hurricane Andrew's impact on the United States left 49 dead and 200,000 homeless. It was estimated that during the Year 2000, over 1,700 deaths would occur in the United States due to major disasters: and, property and income loss would total more than $17 billion.
Traumas and disasters have substantial acute and long-term effects on individual health, creating physical trauma and illness as well as psychiatric disease. The health effects of disaster and traumatic stress are seen in both psychological and physical health at the cellular, behavioral, and community levels. Studies following Three Mile Island have shown increased rates of hypertension among populations most directly exposed to the disaster. Recently, studies have documented acute and long-term changes in immune function as well as changes in brain anatomy. Similarly, recent studies of veterans of combat trauma have highlighted post deployment health concerns to include changes in physiologic tone following combat experiences. A wide range of psychiatric disturbances have been related to traumatic events, in particular, Post-Traumatic Stress Disorder, depression, and alcoholism. The immediate problems of disaster victims include anxiety, depression, anger, guilt, and sleep disturbance. Studies of the Coconut Grove nightclub fire in 1943, the Buffalo Creek Dam Collapse in West Virginia, and the Mount St. Helen's eruption have consistently indicated high rates of psychiatric disturbance following such events. Communities struck by tornadoes, show 20 percent of the population suffering from Post-Traumatic Stress Disorder following the tornado. Similarly, victims of emergencies involving toxic waste, such as Love Canal, appear to experience high levels of stress with long-term consequences. Studies of combat veterans - individuals exposed to the human made disaster of war - from the Vietnam War to the more recent Gulf War, show increased rates of Post-Traumatic Stress Disorder as well as changes in endocrine function.

As the Academic Health Sciences Center for the Uniformed Services, USU is well situated to assist in meeting the needs of the Military Health System and of the Nation in the area of traumatic stress. In 1987, USU scientists, educators, and world-wide collaborators (both uniformed and civilian) established the Uniformed Services University Center for the Study of Traumatic Stress. At present, investigators from the four USU SOM Departments of Psychiatry, Preventive Medicine and Biometrics, Military and Emergency Medicine, and Medical and Clinical Psychology, and the SOM Division of Neuroscience are collaborating on extensive studies of traumatic stress.

National and International Recognition of the Center's Leadership.

Background. Robert Ursano, M.D., Professor and Chair, Department of Psychiatry, Director of the Center for the Study of Traumatic Stress, was appointed a member of the Consequences of Trauma and Terrorism Coordinating Group (CTTCG), which was established during 1999 by the Department of Health and Human Service, Center for Mental Health Services. The CTTCG provides a forum where federal agencies concerned with the psychological and social consequences of trauma can contribute to the rational organization of planning and response activities to traumatic events and benefit from the expertise of other professionals. In addition, during 1999, Dr. Ursano was appointed to the Advisory Board of the International Center for the Study of Terrorism and Crime in the University of Oklahoma's Department of Psychiatry and he participated in the White House Conference on Mental Health with E. Fuller Torrey, M.D., Director of the Department of Psychiatry's collaborative partner, the Stanley Laboratory for Brain Research. At that conference, President Clinton was briefed by the Assistant Secretary of Defense for Health Affairs on the combat stress initiatives already in place throughout the Department of Defense. The USU Center for the Study of Traumatic Stress was also part of the planning group for the Conference on National Terrorism and Mental Health scheduled during the Fall of 1999 in Oklahoma City; the University of Oklahoma and the National Institutes of Health (NIH) hosted the conference.
In March of 1999, Volume 156 of The American Journal of Psychiatry, included a study by Dr. Ursano and his colleagues in the Center for the Study of Traumatic Stress, which presents a focus on how disaster workers' identification with victims puts them at an increased risk for Post-Traumatic Stress Disorder (PTSD). In the same issue of The American Journal of Psychiatry, Dr. Ursano and the staff of the Center for the Study of Traumatic Stress (Carol S. Fullerton, Ph.D.; Richard S. Epstein, Brian Crowley; Tzu-Cheng Kao, Ph.D., Kelley Vance; Karrie J. Craig, Ph.D.; Angela L. Dougall; and, Andrew Baum, Ph.D.) were also recognized with the publication of their article, "Acute and Chronic Posttraumatic Stress Disorder in Motor Vehicle Accident Victims." The May 8, 1999 edition of The Economist included an article entitled "A Surfeit of Disaster;" Dr. Robert Ursano is referenced for citing the percentage of Americans who will annually be exposed to a traumatic event (seven percent). Dr. Ursano was identically referenced by The Wall Street Journal on May 3, 1999, in its article, "Witnesses to Violence Struggle to Overcome Long-Term Effects."

Recognition During 2000. The Year 2000 was one filled with recognition and achievements for the Center. During the first quarter of 2000, Dr. Ursano was a presenter at the World International Traumatic Stress Conference in Australia. He discussed papers by the Australian Defense Forces on their recent peacekeeping missions in Rwanda and East Timor. Dr. Ursano also participated in the Australian Defense Forces Conference on Stress and met with the Australian Chief of Mental Health for discussions on the status of peacekeeping forces and mental health services. Additional meetings took place with the Director of the Veterans Affairs National Traumatic Stress Health Center and the Secretary of Veterans Affairs of the United States. Dr. Ursano was one of two speakers at the international conference on post-traumatic stress syndrome.

On June 13-15, 2000, Dr. Ursano and Colonel Ann Norwood, MC, USA, Associate Professor and Associate Chair of the USU Department of Psychiatry, USU SOM Class of 1981, were the Keynote Speakers at the "Emergency Situations and Mental Health" Russia - United States Conference planned under the Gore-Chemometzin Agreement. The conference was sponsored by EMERCOM of Russia, the Ministry of Public Health of the Russian Federation, the Russian Academy of Sciences, and the Department of Health and Human Services, of the United States of America. The conference was held in St. Petersburg, Russia. Also on June 20-21, 2000, Dr. Ursano and Commander Thomas Grieger, MC, USN, Associate Professor, USU Department of Psychiatry, Director of the National Capital Area Psychiatry Residency Training Program, USU SOM Class of 1987, were speakers at the DoD-sponsored meeting, "Leadership and Operational Stress," which brought together operational commanders, chaplains, and mental health providers to address the needs for decreasing and mitigating operational stress in 2020.

During 2000, on August 25th, Dr. Ursano was interviewed by CNN Reporter, Martina Gigas, reference post-traumatic stress syndrome in auto accident victims. On October 12, 2000, Colonel Norwood and Harry C. Holloway, M.D., Professor, USU Department of Psychiatry, participated in "The Psychological and Social Impacts of Biological Attacks on the American Homeland" sponsored by organizations such as the National War College and the Johns Hopkins Center for Civilian Biodefense Studies. Also during October, Dr. Ursano was the featured speaker at the annual meeting of the Southern Psychiatric Association. His topic of discussion was "Disaster and PTSD: High Risk Groups and Course of Illness." On November 17, 2000, Dr. Ursano received the Lifetime Achievement Award, the highest award given by the International Society for the Study of Traumatic Stress. This award is given for "outstanding and fundamental contributions to understanding traumatic stress." The award made particular note of Dr. Ursano's national and international contributions. Finally, on December 11 - 12, 2000, Dr. Ursano and Colonel Norwood participated as panelists at the Human Behavior and Weapons of Mass Destruction Crisis/Risk
The purpose of the Center is to increase medical knowledge of the consequences of trauma and disaster and to apply this knowledge to real world problems. Functions of the Center are as follows: 1) to develop and carry out research programs to further extend the knowledge of the medical/psychiatric consequences of trauma and disaster stress; 2) to provide consultation: to private and government agencies on the effects of trauma and disaster; on health policies related to the medical care of traumatic stress victims, their families and communities; and, for individual and organizational recovery following traumatic events; 3) to maintain an archive of medical literature on the health consequences of traumatic stress and traumatic events for individuals, families, organizations, communities, and nations; and, 4) to provide opportunities for post-doctoral training of medical scientists to develop research skills in order to better understand the health consequences of the stress produced by trauma and disasters.

Areas of Study. Twelve major projects are currently funded from the following sources: the Department of Defense, the Department of the Army, the National Alliance for Research on Schizophrenia and Depression; the National Alliance for the Mentally Ill Research Institute; the National Institute on Drug Abuse: the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services; the Stanley Foundation; and, the U.S. Marine Corps. Ongoing studies include the following areas: psychological and behavioral responses to weapons of mass destruction; combat stress; the prevention of stress-related disease; shipboard fires and emergencies; relocation stress: prisoners of war; leadership of those suffering from grief; medical personnel in disasters; traumatic stress and the immune function; community responses to disaster; identification of high risk populations; chronic stress; medical treatment following trauma; biomedical responses to stress; family violence; and, others.

Recently funded studies include: combat stress in Bosnian-deployed troops; stress among emergency workers after an air disaster: stress mediators in the U.S. Army; psychological stress in the U.S. military deployed to Desert Storm/Shield; family violence and trauma: stress and women's health; combat, deployment, contingency operations and trauma; basic neurobiology of genetic and second messenger stress responses; stress and arousal symptoms in individuals and groups using the Persian Gulf War symptoms as a paradigm: disaster psychiatry education; natural disasters and health outcome: adult and adolescent responses to Hurricane Andrew; genetic risk for substance abuse and cognitive processing; and, animal models for the study of neurobiology of trauma responses and depression.

Focus of the Center's Eight Laboratories. The Center has eight research laboratories which concentrate on the following areas of study: stress and arousal in individuals and groups; neuroimaging/stress physiology; sleep, stress and arousal; social function in high stress environments; neurobiology of stress; family violence and trauma: human behavioral pharmacology/physiology; and, substance abuse.

Scope of Research/Consultative Efforts. As earlier mentioned, the Center's staff serve as consultants to a large number of federal and nonfederal institutions involved with the understanding of responses to traumatic events and in the development of health policies. The Center's collaborative efforts in education and clinical research respond to the following entities: Federal - the U.S. Army, Navy, Air Force, and the Marine Corps of the Department of Defense; the Department of Veterans Affairs; the Department of State; the Agency for International Development; the National Aeronautics and Space Administration; the National Institute of Mental Health; the National Transportation Safety Board; and, the Peace Corps; Private Sector - the American Medical Association; the American Psychiatric Association; the American Red Cross; the American
Psychological Association; the Montgomery County (Maryland) Schools and Police Systems and the Maryland Offices of Motor Vehicles; the Oklahoma State Department of Health; and, the Los Angeles earthquake areas; International - the World Health Organization (consultation to Yugoslavia); the Armenian Ministry of Health; the Singapore Armed Forces; the Disaster Stress Center of the University of Oslo, Norway; the University of Beirut, Lebanon; and, the Traumatic Stress Center of the Hadassah Medical Center, Jerusalem, Israel. Scientists from the USU Center for the Study of Traumatic Stress and their international collaborators from Norway, Israel, and Russia are performing studies at USU to better understand the individual, community, national, and international responses to traumatic events.

Educational Activities. Another effort of the Center is its sponsorship of trauma and disaster-related programs. During 2000, the Center conducted a conference, "Planning for Mass Destruction and Mass Disruption: The Mental Health Effects of Bioterrorism," from July 14-16, 2000. This conference was co-sponsored by the Center for Mental Health Services Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services. National leaders from many fields attended including Dr. Joshua Lederberg, Nobel Laureate. This seminal conference will generate recommendations for policy, research, education, and training for a national response to a bioterrorist event.

In addition, Colonel Norwood and Dr. Ursano presented major courses on disaster psychiatry at the 2000 American Psychiatric Association Meeting in Washington, D.C. Another effort of the Center is its sponsorship of two trauma and disaster-related programs: the Visiting Scientist Fellowship Program and the Military Psychiatry Fellowship Program. Graduates of these programs serve as catalysts for research, educational, and clinical programs throughout the world. Since October of 1998 through 2000, the Center has hosted a total of eight visiting scientists, to include one each from Japan, Singapore, Greece, and Germany.

Preservation of Lessons Learned. The health implications of traumatic stress are a focused interest immediately following each trauma or disaster, but the data tends to be lost from institutional memory because of the lack of an organized center for the maintenance and development of the resulting information. The USU Center for the Study of Traumatic Stress has served the Military Health System by capturing, organizing, and maintaining relevant information following disasters, terrorist events, and wars. Currently, the Center's basic computer data base (accessible to the Uniformed Services) provides over 15,000 items on traumatic stress.

Accomplishments of the Center's Family Violence and Trauma Project. The Center's Family Violence and Trauma Project (FVTP) recently completed its first five years and has provided a summary of its major accomplishments during that period. These accomplishments are described under two umbrella areas of support to command and scientific research supporting the Army Family Advocacy Program. Support to Command. Support to command includes the Community and Family Support Center Headquarters and Staff; the Headquarters, Department of the Army Family Advocacy Committee: the Family Advocacy Research Subcommittee; and, Family Advocacy Program Managers, Chiefs of Social Work Services, and Army Social Workers. The Center's Project has provided immediate responses, briefings, papers, and staff studies to the Headquarters Department of the Army Family Advocacy Program Managers and the Family Advocacy Research Subcommittee reference issues involving the scientific and medical aspects of child and spouse abuse. Specifically, the Project has responded to approximately 300 requests for Advocacy Research Subcommittee data and research support and distributed briefing books for major commands throughout the world. And, the Project has completed the initial analysis of the child and spouse abuse rates in the Army Central Registry. The analysis includes a written monograph on each case, and the distribution of the
resulting information to the field. **Research.** The following research activities were conducted in support of the Army Family Advocacy Program: 1) conducted studies on the effects of deployment on spouse abuse; 2) produced 17 volumes of scientific literature on topics of interest to the Army Family Advocacy Program to include distribution of such to the members of the Family Advocacy Research Subcommittee; 3) continued to develop a family violence database with over 1,800 scientific articles; 4) published and distributed 16 editions of the *Joining Forces* Newsletter to facilitate education and communication reference related research; and, 5) completed eight scientific papers; two were published during 1999, four during 2000, one has been accepted for publication, and one is under review.

The Center Is Positioned to Respond to Future Requirements of the Military Health System. The USU Center for the Study of Traumatic Stress, with its acknowledged experts and collaborative network of national and international scientists, is positioned to continue in its response to the special needs of the Military Health System as requirements are identified in areas such as 1) adaptation, recovery, and resiliency (for example, the Gulf War Health Center under the leadership of **Lieutenant Colonel Charles Engel, Jr., MC, USA, Assistant Professor, USU Department of Psychiatry**, has been renamed as the Deployment Health Clinical Center; its mission has been broadened. The Center works very closely with the Department of Veterans Affairs to ensure that veterans with post-deployment health concerns are provided with caring assistance); 2) posttraumatic psychiatric illness; 3) neurobiology of stress; 4) medical illnesses developing as a consequence of traumatic stress; and, 5) the impact of traumatic stress on the health of individual family members, family units, and organizational and community functioning.
The USU School of Medicine Department of Preventive Medicine and Biometrics and the Centers for Preventive Medicine and Public Health.

One of Seven Accredited Resources. The USU SOM Department of Preventive Medicine and Biometrics (PMB) has the distinction of being one of only seven accredited resources approved for course work in tropical medicine in the United States. During 2000, PMB continued its collaborative education agreements with the Walter Reed Army Medical Center Internal Medicine Fellowship Program, the Army Program in Health Services Administration, the Army/USPHS Laboratory Animal Medicine Program, the Navy Dental Research Institute, and the Indian Health Service.

Graduate Education in Preventive Medicine. The Department of Preventive Medicine and Biometrics offers graduate programs leading to the Degree of Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), Master of Science in Public Health (MSPH), Doctor of Public Health (DrPH), and Doctor of Philosophy (PhD) in Medical Zoology and Environmental Health Sciences. Since 1983, 371 individuals have graduated from these degree programs.

In 2000, 40 Preventive Medicine and Biometrics students were awarded advanced degrees: three Doctors of Public Health; one Master of Tropical Medicine and Hygiene; 34 Masters of Public Health; and, two Masters of Science in Public Health.

The current Graduate Program in Public Health has 32 students at the Master’s level (MPH, MTM&H, and MSPH). Twenty-nine of these students are in the Uniformed Services and three are civilians. The mix of health professionals includes 20 physicians, six veterinarians, two dentists, and one clinical psychologist. Among the physicians, six are General Preventive Medicine/Public Health residents, four are Occupational and Environmental Medicine residents, two are from the Walter Reed Army Medical Center Programs, and one is an Aerospace Medicine resident. Among the six uniformed veterinarians, four are Laboratory Animal Medicine residents and two are Air Force Public Health Officers. At the doctoral level, 16 are Doctor of Public Health candidates and four are Doctor of Philosophy candidates.

The Graduate Programs in Public Health are fully accredited by the Council on Education for Public Health (CEPH). Following the CEPH accreditation process in 1998, an ad hoc committee was established to articulate the mission, goals, and objectives of the graduate programs, which has since become part of a dynamic process of program review and evaluation for continuous quality improvement. In addition, the recent addition of a CEPH requirement for a field experience in the MPH program led to the establishment of a new practicum. Along with attention to measurable program outcomes, greater emphasis is placed on independent projects and research methodology. Tomoko (Tonic) I. Hooper, MD, MPH, Assistant Professor, Department of Preventive Medicine and Biometrics, is the Practicum Coordinator and also the Deputy Director for Graduate Programs in the Department.

Outstanding Responsiveness to the Continuing Medical Education Requirements of the TriServices. A new Ph.D. program in Environmental Health was recently established in response to identified needs of the Uniformed Services and has admitted its first military student. In addition, the Master of Science in Public Health (MSPH) graduated its first two degree candidates during 2000. The MSPH Program is a two-year program designed for the non-physician practitioner planning a career in preventive medicine and for individuals who desire a more intense, in-depth examination of a specialty track than is accomplished in a one-year Master of Public Health Program. This program has also been expanded from two specialty areas.
Environmental Health and Industrial Hygiene) to four specialty areas by the addition of health physics and medical entomology.

In response to the request of the Military Health System, the TriService Advanced Military Tropical Medicine Course was offered at USU during the Summer starting in 1996 through the Summer of 2000 (the course resulted from a consolidation of the Walter Reed Army Institute of Research's Tropical Medicine Course and the Navy's Medicine in the Tropics Course). Under the auspices of the USUHS-SOM Department of Preventive Medicine and Biometrics, Department of Defense personnel receive education and training in tropical infectious diseases, which is an integral part of medical readiness training for foreign military operations. The 4-7 week Military Tropical Medicine Course is held annually in July. During 2000, 58 military medical officer students and six civilians were trained in operational military medicine, consisting of four weeks of didactic lectures and laboratories in advanced diagnosis and treatment of tropical diseases. Approximately 60 lecturers provided 130 hours of didactic instruction. There were parasitology, bacteriology and virology laboratories; one medical entomology laboratory; and, one outbreak investigation laboratory taught by multiple Ph.D. instructors. Military medical officer students went on numerous field missions at overseas sites with PMB staff members. They were able to observe, examine, diagnose and treat patients with tropical diseases within their endemic environments. To date, 120 students have completed the course.

Training in Tropical Medicine and Travelers' Health is a 12-week course offered during the Spring Quarter of the MPH program. It is a comprehensive lecture, seminar, laboratory and case-based course approved by the American Society of Tropical Medicine and Hygiene as fulfilling the didactic requirements to sit for the qualifying examination in Tropical Medicine and Travelers' Health. To date, six medical officers have completed the course; last year's four students subsequently sat for and passed the examination.

The Diagnostic Parasitology Course is offered as a series of lectures and hands-on laboratory sessions for individuals wishing to study the diagnosis of parasitic infections in humans. Military and civilian medical technologists and physicians from all parts of the world have completed this course. For example, during 2000, there were 14 participants: eight foreign U.S. Embassy personnel from Asian and African countries sent by the U.S. State Department; one other government employee; one medical doctor from the Japan Ground Self Defense Force; and, four civilians from various foreign and domestic health related organizations. Since 1988, over 25 individuals have taken the course.

Medical Executive Training: Clinical and Managerial Decision Support Tools for Managed Care, a five-day training course held four times each year, responds to the Congressional mandate which provides that current and prospective Medical Treatment Facility Commanders receive training in health care management and administration. The program consists of lectures and hands-on computer laboratory exercises. Continuing Medical Education credit has been approved by the Accreditation Council for Continuing Education, the American Nurses Credentialing Center's Commission on Accreditation, the American Academy of Family Physicians Commission on Continuing Medical Education, and the American College of Healthcare Executives. During the most recent iteration, held at the Landstuhl Army Medical Center, there were 25 participants. To date, ten sessions have been held in the TRICARE regions and a total of 217 senior officers have been trained.

The Foreign Area Medical Specialist Program has two components: 1) research; and, 2) training. A five-year National Institutes of Health Fogarty Grant provides support for training in regional emerging diseases, surveillance network development, and language and culture education in Latin America. The
training takes place at a foreign site which enhances the learning experience and supports ongoing research programs. Beginning in December of 1997, approximately 50 trainees have participated in studies on laboratory methods, entomology, and epidemiology.

PMB Laboratory Animal Medicine Residency Program. The Department of Defense (DoD) and the United States Public Health Service (PHS) have a critical need for veterinarians trained and board certified in the field of laboratory animal medicine. The U.S. Army, which is the Executive Agent for Veterinary Services in the DoD, and the PHS both require a constant influx of trained veterinarians to meet their mission requirements. The USU Laboratory Animal Medicine Residency Program (USULAMRP) is the primary mechanism by which the unique training requirements for these specially qualified veterinarians is met. Wherever there are biomedical research programs using animals, there are Federal laws and other regulations and guidelines that require the participation of a veterinarian trained in laboratory animal medicine. The USULAMRP is a 24-month program through which students earn an MPH Degree and also meet the requirements for formal training as required by the American College of Laboratory Animal Medicine (ACLAM). The USULAMRP is approved by the ACLAM Training Program Recognition Committee which allows graduates of this program to apply for board eligibility under the formal training option; this shortens the time required to become eligible to take the ACLAM certifying examination. The MPH Degree is the academic foundation of this residency program and provides students with valuable tools which enhance their ability to effectively administer a wide variety of animal care and use programs. Students in the first year of the residency program participate in both public health and laboratory animal medicine courses. They also gain inclusive experience on both a residency program research project and an MPH independent project. In addition to developing and presenting an MPH independent project at the end of their first year, students are required to be a first author on a scientific publication which contributes to the field of laboratory animal medicine; that publication must also be accepted for publication in a peer reviewed journal by the end of their second year. The primary focus of the second year of the program is to obtain hands-on experience in laboratory animal medicine; this is accomplished through the completion of a preceptorship in an animal care and use program located at a local federal biomedical research facility. When the MPH Degree is obtained and the USULAMRP is completed, the students will have received an inclusive educational experience that prepares them for a challenging career which includes the practice of laboratory animal medicine, developing and managing animal care and use programs, advising Institutional Officials on compliance issues, and supporting animal-based biomedical research. Since its first class in 1996, the USULAMRP has become one of the premier laboratory animal medicine residency programs in the world and has set the standard for academic and practical excellence. The pass rate of the USULAMRP graduates on the ACLAM board certifying examination has consistently been far above the national average. The USULAMRP is a vital link in the continued ability of the U.S. Army and the PHS to meet legal and regulatory requirements for conducting animal-based research.

Centers for Preventive Medicine and Public Health. The Centers for Preventive Medicine and Public Health (CPM/PH) are found within the USU-SOM Department of Preventive Medicine and Biometrics. The eight Centers operate under terms of a Memorandum of Understanding with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPM/PH combines broad expertise in research, consultation, education, training, and clinical preventive medicine and public health; this expertise is used to develop data bases and analytic methodologies, prepare innovative curricula, and evaluate processes and outcomes in clinical practices. The following eight Centers provided consultative and educational services to the TriServices during 2000: 1) the Center for Health Care Quality Assessment; 2) the Center for Application of Remote Sensing and Geographic Information Systems (GIS) in Public Health (Landscape Epidemiology);
Health Policies and Service. The eight Centers serve program managers and policy makers in the Department of Defense, other federal agencies, local governments, and private organizations concerned with health policies and services. The Centers coordinate the resources of multiple separate centers of excellence to ensure that the appropriate collective expertise is applied. The CPM/PH enhances the stability and long-term effectiveness of USU and the Defense Health Program by attracting, retaining, and providing for the professional growth of outstanding faculty and staff, by providing high quality educational experiences to its students, and by promoting excellence in clinical preventive medicine and public health.

Examples of Research/Consultative Efforts.

- The Center for Health Care Quality Assessment. The Center for Health Care Quality Assessment carried out projects that have proven to be significant in the areas of health services management and policy. Center staff provided analytic support to the DoD Tri-Service Quality Assurance Program. This work is leading to the development of empirically based practice guidelines related to health services (such as obstetrics, gallstone disease, asthma, and head trauma) which are of special importance to the DoD.

A major analysis of obstetrics and gynecology workforce resources, conducted with the support of the American College of Obstetrics and Gynecology, looked at obstetric and gynecological practice profiles...
and projected workforce composition and distribution. Current analyses will ultimately lead to reexamining Graduate Medical Education in these specialties. An article has been submitted for publication and has been tentatively accepted pending revisions: "Gender Differences in Obstetrics and Gynecology Practice." The Medical Executive Skills Distance Learning Program continues to be developed and evaluated by distance/distributed learning and cognitive education experts. The Otolaryngologist Workforce Study examined workforce trends and provided supply projections through the year 2050. An article was submitted and accepted for publication: the grant requirements have been fulfilled; and, a final report is pending.

A Center for Evidence-Based Medicine is in the developmental stages; it will be a joint venture between USU, the Walter Reed Center for Deployment Health, and the Navy Bureau of Medicine and Surgery (BUMED). At the present time, it is a virtual center with a website entry. Future plans call for the full implementation and evaluation of the Medical Executive Skills Distance Learning Program to include ten to fourteen online modules. Additional studies that will follow up with ongoing research on workforce modeling and quality assurances are expected. Complete on-line registration and student pre-tests were incorporated into two traditional courses during 2000. It is anticipated that an additional two to three distance learning modules will be operational during 2001.

- The Center for Application of Remote Sensing and Geographic Information Systems in Public Health (Landscape Epidemiology). Remote sensing has an increasingly prominent role in the improvement of public health programs; therefore, graduate students in public health are seeking formal training and experience in remote sensing technology. The Center's previously supported NASA research and equipment, along with equipment provided by a special NASA grant for the purchase of hardware and software, have been used to establish a Center in which remote sensing technology is applied to emerging and reemerging infectious diseases and environmental health. The Center provides faculty expertise and the software and hardware necessary for students and faculty to engage in remote sensing and geographic information systems (GIS) research projects in public health. In addition, the Center offers a four-hour credit course entitled "Remote Sensing and GIS Methods in Public Health," and non-credit training classes in remote sensing and GIS to students and faculty. Both credit and non-credit courses cover the basic elements usually taught in remote sensing and GIS classes: but, they emphasize the areas most likely to be used in the public health field (such as classification, raster GIS modeling, and integrating field maps with remotely sensed images. The Center computers are being used to support research activities for several projects including malaria projects in Belize, Thailand, and Korea; and, for a Bartonellosis project in Peru. The work in Peru has been initiated in conjunction with the research of other investigators within the Division of Tropical Public Health and the Navy researchers in the Navy Research Laboratory in Lima, Peru. The computers are being used to create maps and analyze the spatial data of the project sites: maps created on the computers will be printed and used in the field. A new conceptual model for malaria has evolved from the work in Belize: and, the Center is currently seeking funds to test the efficacy of this model.

- The Center for Foreign Area Medical Studies. A National Institutes of Health/Fogarty Grant, International Training and Research in Emerging Infectious Diseases, amounting to $809,000 over five years, entered its fourth year with an outstanding record for both field and bench training of foreign scientists. The program's objective is to strengthen the capacity of national and international scientists to more effectively identify, understand, and respond to outbreaks of emerging and re-emerging infectious diseases. This program provides training at the foreign sites through workshops in field epidemiology, laboratory diagnosis, and molecular epidemiology; and, post-doctoral training programs in molecular biology and pathogenesis. The Foreign Area Medical Studies-sponsored Tropical Medicine and Travelers' Health Course has been a
resounding success; all members of the class plan to sit for the Certificate of Knowledge Examination. Research areas of focus are Bartonellosis in Peru and malaria in Brazil and Belize. The major thrust of the Malaria Research Program has turned toward DNA vaccine development, in conjunction with major new funding from the Office of Naval Research. A new five-year grant has now been implemented to meet this change in focus.

Bartonellosis is a highly fatal epidemic and endemic infectious disease that occurs throughout the medically underserved communities of the Andes Mountains in South America. A major new expansion effort has been initiated by the Center in the research of emerging diseases, entitled "Epidemiology of Bartonellosis in South America." The objective of this research is to define the mechanisms of disease transmission in endemic and epidemic populations. Knowledge of these mechanisms will support the long-range goal of the development and implementation of feasible community-based disease control programs. A new area of study (epidemic site - Cusco, Peru) has been added in association with an epidemic documented in late 1998; and, preliminary data has been accepted for publication.

- The Center for Force Health Protection Studies. The major focus of the Center for Force Health Protection Studies has shifted from the study of medical events occurring in highly screened, healthy military populations serving in isolated, contained, extreme environments to the enhancement of the knowledge base of humans engaged in space exploration to include the planning, review, and conduct of studies designed to assess health outcomes associated with the conditions and experiences of military deployment and combat.

One NASA-funded study, "Medical Events During Periods of Isolation: The U.S. Navy Submarine Force Experience," is nearing completion. The study population consists of enlisted personnel and officers assigned to U.S. Navy submarines between January 1, 1997 and September 30, 2000. The study period was extended from the original end date of December 31, 1999. Medical encounter data from the Navy's Shipboard Non-Tactical ADP Program Automated Medical System (SAMS) are downloaded onto floppy disk by submarine Independent Duty Corpsmen (IDCs) following each underway period of ten days or greater. Medical and demographic data are extracted from SAMS using a download process designed for health studies. These data along with an official Sailing List are sent to study investigators for processing and analyses. SAMS data collection continued through September of 2000. As of July 23, 2000, data were received from a total of 249 submarine patrols. Four were excluded from the study because patrol dates were outside of the study period and nineteen because of insufficient data. Data from the remaining 226 patrols have been processed and included in the master database. Incidence density rates are calculated for specific medical conditions occurring during underway periods. The total number of person-days underway is used as the denominator for these rates. Preliminary results from the overall study were presented at the USU Research Day in both 1999 and 2000. One paper has been published; and, a second one has been accepted for publication. In addition, two graduate students (one Occupational and Environmental Medicine resident and one General Preventive Medicine resident) have used data from this study for their MPH projects; and, one manuscript is currently in the stage of final revision prior to submission for publication.

Collaborative research and consultative activities also continue under a working agreement with the Naval Health Research Center (NHRC) in San Diego, California. The program, "Epidemiologic Support of Health-Related Research Pertaining to Military, Veteran, and Dependent Populations," is in its fifth year. USU faculty provide administrative and consultative support to the NHRC research program. The original protocol was amended in August of 2000, to reflect the evolution in the scope of the research program from
the initial seven epidemiologic studies of Gulf War veterans to a more broad-based, public health-related research program involving active duty military and veteran populations. New research protocols have been developed in the following areas: 1) emerging illness research; 2) deployment health research; and, 3) research involving military personnel, such as studies of anthrax and pneumococcal vaccines, complementary and alternative therapies, and pregnancy outcomes. There are currently thirty studies in various stages of completion. These studies will add to the scientific knowledge base on a wide range of public health-related topics, including epidemiologic methodology for population-based studies, reproductive outcomes, vaccination policy, predictors of social and family dysfunction, and tobacco cessation programs.

- The Center for Environmental and Occupational Health.

The Center for Environmental and Occupational Health conducted research on seven research protocols during 2000. One example of the Center's focus is the "DoD Environmental Scholarships, Fellowships and Grants," which was initiated during 1994. Approximately two thirds of the appropriation was to be used for the development and implementation of environmental training. This training was to be conducted through 16 geographically representative university-based consortia. A Report to Congress summarizing the accomplishments of the program from 1994 through 1997 was delivered to the Office of the Deputy Under Secretary of Defense for Environmental Security in January of 1998. To date, over 40,000 instructor hours of training have been delivered to more than 3,200 trainees by the various grantee institutions, for a total of 447,000 trainee classroom hours (reflecting from all training the sum of four factors: the duration of the course in weeks; the number of classes; the number of hours per class; and, the number of participants in each class). A number of the grantee institutions have incorporated the training programs into their curriculum. The training delivered through this program has been quite diverse and includes one-day short courses, month-long certification programs, full-year, and degree completion programs. Most of these programs involve hands-on, work-based site learning, and frequently use military installations for fieldwork or the full training.

The remaining funds were to be used to offer degree completion undergraduate scholarships or graduate fellowships, through the same 16 consortia. Through the scholarships and fellowships portion of this program, awards to students were offered starting at the beginning of the 1995-96 Academic Year. All schools have now completed the grants with full funding distributed; and, all closeout reports have been filed. The first recipients to graduate from the Scholarships and Fellowships Program completed their degrees in 1996. Such graduations will continue through 2001. There were 312 fully funded scholarship and fellowship awards made by the schools in environmental fields, ranging from one to four years in duration with wide geographic distribution. Of these, 161 undergraduate scholarships (45 at the associate level; 116 for a Baccalaureate Degree) and 151 graduate fellowships (123 for Master's Degrees and 28 for Doctorates) were available. To date, 299 students have completed degrees with assistance from this program; there are 15 students who remain in the program's education/employment "pipeline." While the numbers of awards granted is precise, the accuracy of completion is more fluid. Many students do not complete degrees as predicted, not necessarily as a result of their negligence. At least half of these students are graduate students who are frequently engaged in research. As with most research, completion is not necessarily amenable to a desired timetable. Furthermore, students must defend dissertations to their committees and are sometimes required to return to their efforts, thus delaying the completion of the degree and their availability for employment to DoD. These students have a "pay back" obligation to DoD through employment upon the completion of their degrees. A continuing effort has been made to develop a coordinated placement program within DoD for the individuals of the Scholarships and Fellowships Programs upon their graduation.
Under the terms of their acceptance of these funds, each student must sign an agreement to accept an offer of DoD employment, with the stipulation that such offers must be received within 90 days of their graduation from the program. A recent analysis indicates that 15 recipients are obligated to accept employment from DoD in their final year. Thirteen of these will earn Baccalaureate Degrees; one will earn a Master's Degree; and, one will earn a Doctoral Degree. Additionally, there are 154 students who have graduated from the program and who are still interested in employment with DoD, even though their period of obligation has passed.

The other research projects carried out by the Center include the following: 1) the Indian Health Service Environmental Assessment Support Grant; 2) the Center for Health Promotion and Preventive Medicine (CHIPPM) Risk, Hazard, and Information Management Grant; 3) the Development of Environmental Organic Contaminant Sampling and Analysis Methods Grant (USUHS funded); 4) the Enhancement of Occupational Health and Safety Programs Grant (funded by the Social Security Administration); 5) the Risk Assessment of the "Eye Safe Laser" Wavelength for Cornea and Skin Grant; and, 6) a Memorandum of Understanding with the U.S. Army Environmental Policy Institute.

- The Center for Oral Health Studies. The Center for Oral Health Studies has continued to be very active in the two major areas of the DoD Dental Patient Satisfaction Survey and the 2000 TriService Recruit Comprehensive Oral Health Survey. The Center is responsible for the administration, analysis, and reporting of data from the DoD Dental Patient Satisfaction Surveys that are administered at 260 Dental Treatment Facilities (DTFs) worldwide. Each DTF returns approximately 100 completed surveys each month; and, over 185,000 surveys have been analyzed since September of 1999. The survey instrument takes advantage of optical scanner (bubble sheet) technology to facilitate data collection and analysis. Each of the 260 DTFs has a designated local survey administrator who is responsible for the distribution and collection of the 100 surveys each month. The Center developed and deployed a PC based software tool for the survey administrators to use to ensure that patients are randomly selected each week to complete the survey immediately following their dental appointment.

The DoD Dental Patient Satisfaction Survey is currently an integral part in the measurement of the overall Military Health System (MHS) performance. The quarterly results for each DTF, regional commands, services, and the MHS are reported on the TRICARE Operational Performance Statement (TOPS). The website is <www.tricare.osd.mil/reptcard/tops/topsrept.html>. TOPS allows for each organizational level to benchmark against other facilities, both military and civilian; TOPS also identifies trends from one quarter to the next. TOPS and the DoD Dental Patient Satisfaction Survey are effective in assisting the MHS in its continual efforts to improve performance in the delivery of dental care and services.

The 2000 TriService Recruit Comprehensive Oral Health Survey was conducted from January through July of 2000. The calibration course for the dental examiners was held in Bethesda, Maryland, during December 1999; and, it was conducted by the USU Center. Over 4,000 Recruits were examined during this time frame at seven different sites. The sites were Lackland Air Force Base, Texas (Air Force); Fort Knox, Kentucky (Army); Fort Leonard Wood, Missouri (Army); Fort Jackson, South Carolina (Army); Great Lakes Naval Training Center, Great Lakes, Michigan (Navy); Marine Corps Recruit Depot, Parris Island, South Carolina (Marines); and, the Marine Corps Recruit Depot, San Diego, California (Marines). This survey allows for a direct comparison of the 1994 Survey of Recruits to determine if there are differences in disease levels, prevalence of tobacco use, level of education, and dental readiness.
- The Center for Military Medical Analysis and Projection. The activities of the Center for Military Medical Analysis and Projection are described in the following four examples. The Exercise-Related Deaths in Military Recruits Project investigators finished a manuscript entitled, "Exercise-Related Deaths During Military Basic Training." The Center's manuscript was co-authored by several Armed Forces Institute of Pathology (AFIP) pathologists and included descriptions of recruit deaths from 1977 to 1981. This paper establishes a strong relationship of exercise-related deaths with exertional heat illness, as well as, the documentation of the inaccuracies of local autopsy reports. The manuscript was submitted to the Journal of the American Medical Association (JAMA) for publication consideration.

Investigators from the Exertional Heat Illness in Marine Corps Basic Training (Parris Island) Project are working on a manuscript entitled, "Threatened or Completed Sudden Death as an Early Complication of Exertional Heat Stroke." A manuscript has been derived from the Parris Island data and will be submitted for publication. Numerous manuscripts are also being worked on related to exertional heat illness in Marine Corps recruit training. The Center investigators have also completed an extensive manuscript chapter, "Clinical Diagnosis, Management, and Surveillance of Exertional Heat Illness," for the Textbook of Military Medicine volume entitled Medical Aspects of Harsh Environments.

The Fracture & Stress Fracture Sentinel Injury Surveillance Project evaluates the validity of radiology surveillance for injuries and is in collaboration with investigators from the USU SOM Department of Military and Emergency Medicine and co-investigators at Fort Bragg. Data collection has been completed and a draft manuscript has also been developed entitles, "A Study of Injuries in an Army Airborne Population." The draft manuscript was presented as a poster at the USU Research Day and the USU Military Medicine Conference on Injuries in the Military. It is being finalized for submission for publication.

The Longitudinal Soldier Surveillance Project was also used to generate a manuscript entitled, "Cigarette Smoking and Exercise-Related Injuries Among Young Men and Women." This manuscript was published in the American Journal of Preventive Medicine. Also developed from this project is the manuscript entitled, "Effectiveness of Rest from Running on Overuse Injuries in Army Basic Training," which was also published in the American Journal of Preventive Medicine.

- The Center for Ergonomics and Workplace Health. The activities of the Center for Ergonomics and Workplace Health are described in the following three examples. The Predictors of Health Care and Limited Duty in U.S. Army Soldiers Project was conducted to identify the differential contribution of a diverse set of risk factors for lost time in duty status by U.S. Army soldiers due to low back pain. A prospective study was conducted on the role of ergonomic and psychosocial stressors on physical exertion, back symptoms, health care utilization, and lost work time/limited duty status in active duty personnel working in jobs associated with increased disability for back-related issues. Results can subsequently lead to the development of empirically based interventions that directly address identified relationships and to the refinement of existing secondary prevention efforts for reducing the impact of low back pain on soldier readiness. The findings reached during 2000, support the importance of early evaluation of ergonomic, workplace, and individual psychosocial variables that can affect the recovery process. Also, the findings suggest that effective interventions should be directed at reducing or eliminating ergonomic stressors, improving the work climate through efforts at supervisor training, as well as providing training to employees targeted at assisting them in reducing or eliminating the sources of both job and life stressors. Such an approach should positively impact a range of outcome measures and reduce the burden of low back pain on both the worker and the employer. Two manuscripts were generated from this research and are presently under review. The first
paper was based on the cross-sectional analyses and reported on the identified risk factors for individuals who had low back pain but were still working. The second paper examined the association between problem solving orientation and physical and mental health outcomes in soldiers reporting a history of low back pain in the past year.

The Ergonomics Demonstration Project seeks to evaluate the effectiveness of an ergonomic intervention for high risk and non-high risk active duty soldiers in reducing the occurrence and severity of self-reported musculoskeletal symptoms, perceived level of physical exertion, clinic utilization, lost work time, limited duty status, and self-reported exposure to ergonomic stressors. The results of the project will provide preliminary data on the feasibility and effectiveness of such interventions among active duty soldiers and provide information regarding the feasibility of a larger scale trial in the future.

The Predictors of Recovery in Occupational Low Back Pain in Primary Care is an on-going investigation designed to develop a screening tool for predicting functional and health outcomes in a military primary care setting. Military personnel and civilians between the ages of 18 and 55 who present with a new onset of back pain (no back pain was presented over the past year) and seeking medical care at the military primary care clinics at Fort Hood and Fort Bliss were invited to participate in the study. Study participants were given a baseline survey that assessed ergonomic exposure, function, general physical health, and general mental health in addition to demographic, individual psychosocial, job stress, work organization, and medical history information. Follow-up data regarding presence of health care visits for low back pain and limited duty status will be collected for three months following the initial clinic visit using the Ambulatory Data System database. A 12-month follow-up may also be obtained. The study will also develop a screening tool to identify those individuals who may be at an increased risk for delayed recovery. This tool should assist primary care practitioners in identifying areas that are likely to impact recovery from low back pain. Health care providers can then directly address specific problem areas through appropriate triage and potentially improve clinical outcomes. This, in turn, should result in improved functional status and reduce the impact of low back pain on military readiness. It is anticipated that this tool, and the results of the research, will be used in a modified version of the Veterans Health Administration/Department of Defense Clinical Practice Guidelines for the Management of Low Back Pain or Sciatica in the Primary Care Setting.

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The USU School of Medicine Department of Military and Emergency Medicine and the Casualty Care Research Center.

"The CCRC Mission is to serve as a unique national resource by providing quality research, education, and expertise in the delivery of good medicine in bad places."

-Mission Statement established by the CCRC staff during March of 2001.

Establishment and Mission. The Casualty Care Research Center (CCRC) was established in July of 1989 under the USU SOM Department of Military and Emergency Medicine as a center of excellence for injury control and casualty care research. In keeping with the overall mission of USU, the CCRC activities include the following: 1) conduction of research and investigations on issues relating to injury control, casualty care, operational, and disaster medicine; 2) provision of a disciplined, educational, research experience in combat casualty care, injury epidemiology, trauma management, and related areas to medical students, graduate physicians, and other uniformed medical personnel; 3) service as a repository of resources and information relating to injury control, injury epidemiology, and operational medicine of the Uniformed Services; and, 5) provision of research, resource and educational support, technical assistance, and other community service to USU, the Uniformed Services, and other federal, state, and local elements. The Center operates entirely on extramural funding. The Center employs 11 full time personnel; the CCRC staff is supplemented by 19 part-time civilian volunteers and military officers loaned on an intermittent basis by their parent commands. Personnel within the USU Department of Military and Emergency Medicine participate in various activities of the CCRC based on their professional interests and as their teaching and clinical responsibilities permit. The Center’s efforts fall into three categories: research, training, and consultative/operational support.

Counter Narcotics Tactical Operations Medical Support (CONTOMS) Program.

"To serve as a Bridge between the Uniformed Services - with a focus on current military medical knowledge and technology bases - and the Civilian Emergency Services Community for sharing Critical experience and expertise in the response to homeland contingencies."

-Mission Statement developed by the CONTOMS staff during February of 2001.

The CONTOMS Program began in 1989 as a cooperative effort between USU, the Department of Defense Office of Drug Enforcement Policy and Support, the Henry M. Jackson Foundation for the Advancement of Military Medicine, and the Department of Interior, U.S. Park Police Special Forces Branch. The Program has been continuously funded from 1990 through 2000, by the Office of Drug Enforcement Policy and Support, which reports through the Assistant Secretary of Defense for Special Operations/Low Intensity Conflict. The CONTOMS Program was created to provide advanced medical training to federal, state, and local SWAT teams. It teaches skills that reduce the risk of death or serious injury during drug raids, hostage situations, and other high risk law enforcement operations. The program is focused on the broad range of law enforcement’s response to: weapons of mass destruction (WMD) crisis management; counterterrorism;
counter narcotics; protective operations; hostage rescue; explosive ordnance disposal; maritime operations; civil disorder; and, major national security events.

To date, the CONTOMS Program has trained over 5,000 civilian emergency personnel from 750 agencies through collaborative support agreements with law enforcement organizations from all 50 States, the District of Columbia, Guam, and Puerto Rico. Forty local, state, and federal law enforcement agencies mandate the CCRC/CONTOMS certification-based training as a condition of employment for their SWAT medics. The CONTOMS Program has received the endorsement of, and/or continuing medical education credit from: The National Tactical Officers Association; the National Association of Emergency Medical Technicians; and, the Continuing Education Coordinating Board for Emergency Medical Service.

The CONTOMS Program is focused on special operations medicine. As part of the USU SOM Department of Military and Emergency Medicine Casualty Care Research Center, it is uniquely qualified to facilitate the adaptation of military medical science and experience for application in the civilian environment. At the same time, the Program’s maturing relationship with the law enforcement community has resulted in the transfer of valuable knowledge, experience, and technology for military medical application. Applications to the Program continue to exceed availability and many agencies require CONTOMS certification for entry level personnel. The CCRC, through the CONTOMS Program maintains the only national database on SWAT injuries. This information is used to guide the educational components of the CONTOMS Program and to explore similarities and differences between the experiences of the civilian law enforcement communities and the military special operations forces. The Department of Defense utilizes the data derived from the CONTOMS Programs to explore the epidemiology of injury and the impact of various medical interventions. For example, during 1996, these collaborative efforts led to a significant change/enhancement in the training programs for the Navy SEALS.

The CONTOMS Program is the CCRC’s largest training effort. The CONTOMS Program offers medical/evidence-based courses: EMT-Tactical; the Advanced School; the Commanders Course; the Medical Directors Course; and, the Instructor Development School. The Program provides a national standard curriculum, certification, and a quality assessment process to meet the needs of emergency medical providers who operate as part of tactical law enforcement teams. Courses receive maximum attendance. For example, the CONTOMS Medical Directors Course, presented at the 2001 Annual Meeting of the National Association of EMS Physicians, received unprecedented attendance. Participants in the CONTOMS courses also include medical students, graduate physicians, special operations medics from all of the Services, and selected federal law enforcement medics. The location of the CONTOMS Program within the University ensures academic oversight and credibility for the Congressionally mandated collaboration between DoD and the civilian emergency personnel community. The CONTOMS policies are governed by a Board of Directors representing military medicine, law enforcement, and prehospital care communities. The CONTOMS Law Enforcement Special Operations Injury Epidemiology Database - the only database of its kind - ensures both effectiveness and relevance through assessment-driven curricula.

The Wound Data and Munitions Effectiveness Team (Vietnam) Database (WDMET) - A Unique Resource. The Wound Data and Munitions Effectiveness Team (Vietnam) database (WDMET) is maintained by the CCRC. It contains information on the tactical engagement, weapons employed, resulting injuries, and treatment in the pre-hospital and hospital environments on approximately 8,000 combat casualties. It is the ONLY collection of its kind in the world. Photographs, medical records, X-rays, recovered bullets and fragments make this a unique resource that has been studied extensively, resulting in approximately 25 scholarly publications since the Center was established in 1989.
CCRC Mission Support Center - Consultative Support. In agreement with the philosophy that teachers and scholars must maintain an active practice in their areas of expertise to ensure competency, the Operational Medical Support Programs of the CCRC provide consultation and support to multiple organizations, including the White House Medical Unit, a considerable majority of the federal law enforcement community and numerous national security contingencies. These activities are carried out under specific Memoranda of Understanding. On the average, the CCRC responds to at least one request for support each day. The CCRC’s Mission Support Center is staffed by specially trained personnel and provides medical consultation, planning, and threat assessment support on a round-the-clock basis. These support-related activities serve as a mechanism for USU faculty, both billeted and off-site, to develop and maintain their expertise in operational medicine - a field where experience is increasingly rare. Participation in actual missions lends important credibility to teaching and research and provides a living laboratory where concepts, techniques, and technology can be evaluated. The Secretary of Defense recently commended the CCRC for its contingency support of the Republican National Convention, the Presidential Inaugural, and the direct service support to the Departments of State, Treasury, Interior, and Justice. There are clear differences between military medicine and civilian law enforcement medical support; however, there are also many similarities. With this understanding and a commitment to continuous study, many lessons can be applied from one to the other. The increasing frequency of military operations other than war, including response to terrorist activities, makes the law enforcement special operations experience more relevant than ever.

CCRC Successful Training Initiatives. The CCRC’s Emergency Medicine Resident Rotation in Operational Medicine Course, initiated in 1992, is a four-week elective for military emergency medicine residents. Seventy-five active duty emergency medicine residents, six active duty staff physicians, and two physician assistants have completed the rotation. It consists of successful performance in the one-week EMT-Tactical school and four weeks of temporary duty at the CCRC. While assigned to the CCRC, residents deploy on actual support missions and also complete a short research project, generating "white papers" on topics such as antibiotic selection, malaria prophylaxis in high risk special operations, and field laboratory diagnostics for chemical, biological, and radiological incidents. In 1998, the three Surgeons General suggested that the elective be made a required rotation for all military emergency medicine residents.

The Military Medical Field Studies Rotation at the CCRC accommodates up to ten first year medical students with prior service for the required military experience between the first and second years of medical school; if designated by the Services, this number could be increased. Up to six fourth year medical students complete an elective rotation in operational medicine research at the CCRC each year; again, the number of students could be increased should the Services require such an action. The operational experiences of the CCRC Medical Support Teams are integrated throughout the medical school curriculum as tangible demonstrations of the medical science being taught. For example, a large part of the USU SOM curriculum on blast injury uses the first hand experiences of the CCRC faculty in responding to the embassy bombings in East Africa.

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Establishment and Mission. The Center for Disaster and Humanitarian Assistance Medicine (CDHAM) was established in September of 1998 under the USU SOM Department of Military and Emergency Medicine to advance the understanding and global delivery of disaster medical care and humanitarian assistance. This uniquely positioned academic center is actively developing relationships between governmental agencies, nongovernmental agencies, and private volunteer organizations; the Center is serving as a catalyst for enhancing relief efforts and medical care while providing humanitarian assistance.

In keeping with the overall mission of USU, CDHAM activities include the following: 1) a support contract with the Office of the Assistant Secretary of Defense, Special Operations and Low Intensity Conflict (SOLIC), Overseas Humanitarian Determining and Civic Assistance (OHDACA) Program to evaluate DoD involvement in the rapid assessment of disaster events; 2) a support contract with SOLIC to develop measures of effectiveness for the planning, execution, and evaluation of medical humanitarian assistance projects under OHDACA; and, 3) a support contract with U.S. Southern Command (SOUTHCOM) to facilitate the donation of medical and disaster preparedness supplies and equipment (excess to the needs of DoD) to select civilian medical and disaster preparedness organizations in Mexico, as well as to host a subject matter expert conference dealing with medical support to disasters and emergency preparedness. Personnel within the USU Department of Military and Emergency Medicine participate in various activities of the CDHAM based on their professional interests and as their teaching and clinical responsibilities permit. The Center's efforts fall into five categories:

1) Research. The Center will assist with the planning, development, and execution of multi-specialty research in the areas of disaster preparedness, assessment, surveillance, medical care, and recovery;

2) Training. The Center will train disaster responders for multiple health professional specialties; curricula are in the areas of disaster administration, field medical care, operational logistics, health assessment, and surveillance. Training can be developed for specific organizations and specialties; currently, CDHAM is working to develop a cadre of courses dealing with disaster relief and humanitarian assistance in several medical areas of subspecialization. When completed, the courses will ensure that DoD first responders have the requisite training to effectively deal with disaster management in support of, as well as in close coordination with, host country governments and the various non-government and private volunteer organizations which provide humanitarian assistance following natural and man-made disasters;

3) Consultation. CDHAM will consult by telephone and through on-site visits with organizations requiring timely expertise in multiple phases of disaster mitigation. Examples include aid with response planning, vulnerability assessment, needs assessment, medical care, and epidemiology surveillance;

4) Informatics. The Center will serve as a clearinghouse for pertinent information related to multiple areas of disaster medicine and humanitarian assistance. CDHAM will maintain access to expertise in the field of telemedicine and medical informatics applications in austere environments; and,

5) Policy Development. CDHAM will assist in the development of institutional policy in the areas of disaster response, medical care, and humanitarian aid.
Significant Activities During 2000. Since its establishment, the CDHAM roster has increased from two employees to six full time personnel; this includes three Ph.D. qualified individuals. The Center's staff conducts various studies to support research and education on the evolving global role of military medicine in shaping the outcomes of complex human emergencies, disaster relief, and humanitarian assistance. The Center is currently conducting four studies under support contracts for the DoD Commanders-In-Chief (CINC's) or other agencies. Several new contracts are currently in coordination. Additional personnel will be added to the CDHAM staff when requirements for specific subject matter expertise has been determined.

During 2000, the CDHAM staff attended the 10th Annual Asia-Pacific Military Medical Conference in Singapore where 400 participants represented 28 nations; CDHAM staff presented a briefing on the Center's mission and function. Also throughout 2000, the CDHAM staff presented courses to the USU Graduate School of Nursing and the USU SOM Department of Military and Emergency Medicine on disaster readiness medicine. The CDHAM training is modeled after a Military Medicine Humanitarian Assistance Course (MMHAC) developed by the USU SOM Department of Pediatrics. This course is preparatory to the Center's development of multiple courses on disaster and humanitarian assistance medicine across a range of medical subspecialty areas; it is intended that the courses will prepare military physicians to better respond to global crises. All CDHAM staff have attended the MMHAC Course. Also during 2000, the CDHAM staff hosted official visits and provided briefings on the Center to the Surgeons General and accompanying staff officers from the Thailand Military and the Japanese Maritime Self Defense Force. In addition, the CDHAM staff presented emergency and disaster readiness medicine lectures to students in the USU undergraduate and graduate programs.

Since the Center's establishment, all CDHAM staff have attended the Combined Humanitarian Assistance Response Training (CHART) Course and the Train the Trainer (T3) Course sponsored by the Center of Excellence (COE) in Disaster Management and Humanitarian Assistance. Following the T3 training, the USU Center will coordinate with the appropriate entities and the Surgeons General to establish a requirement for the Center to serve as a training resource for CHART on the East Coast of the United States. Presentations and briefings on the CDHAM mission and function were also provided at the U.S. Air Force School of Aerospace Medicine (USAFSAM) International Health Specialist (IHS) Conference. CDHAM staff also participated in development sessions and discussions on the IHS, a major new effort by the USAF medical department's Global Engagement Program. During the past year, CDHAM staff initiated a site visit to a Defense Logistics Agency warehouse in Mechanicsburg, Pennsylvania, to assist in the identification of excess DoD medical equipment and supplies that could be earmarked for donation to civilian Mexican organizations which provide post-disaster emergency medical services and humanitarian relief. Additionally, efforts are also underway to coordinate a joint U.S. - Mexico Disaster Medical Conference in support of the Humanitarian Aid Program of the U.S. Joint Forces Command. During 2000, the Center's staff continued to cultivate links with the University of South Florida, the Tulane Center for Disaster Medicine and Humanitarian Assistance (CDMHA); and, CDHAM also established preliminary coordination with the Johns Hopkins University International Center for Emergency Medicine and Refugee Studies. The CDHAM staff also participated in the development of an Operational Telemedicine Laboratory with the USU SOM Department of Obstetrics and Gynecology.

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USU School of Medicine Department of Surgery and the Center for Prostate Disease Research - A TriService Effort.

Background. Cancer molecular biologists in the USU Department of Surgery's Center for Prostate Disease Research (CPDR), in conjunction with the expertise and contributions of urologists at the Walter Reed Army Medical Center, notably, Colonel David G. McLeod, USU Professor of Surgery, and genitourinary pathologists from the Armed Forces Institute of Pathology, are unraveling the mysteries of prostate cancer. Congress established the CPDR in 1991. USU conducts the Department of Defense program in collaboration with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPDR, under the leadership of Colonel Judd W. Moul, MC, USA, Associate Professor of Surgery, focuses on identifying genetic prognostic markers that will help physicians determine the best treatment strategy for individual patients. The CPDR is also developing new molecular treatment strategies for prostate disease and is creating a multicenter database which includes the prostate cancer patients in the Defense Health System. The three main areas of research are genetic alterations/novel gene discovery, androgen regulation of the prostate growth, and preclinical strategies for gene therapy.

Predicting whether or not prostate cancer is likely to recur after radical prostatectomy (surgical removal of the prostate gland) has become more precise due to a new biostatistical model developed by CPDR researchers. Results of their study were published in the March 1998 edition of the Journal of Urology. The model can easily be programmed into commonly used computer-based software, so that the variables can be entered and an automated risk of recurrence can be calculated for the individual patient immediately after the surgical pathological results are known. This allows patients at high risk for recurrence to be identified shortly after surgery. The biostatistical model is currently used at the Walter Reed Army Medical Center (WRAMC). Urologists at WRAMC have access to the equation on the hospital's computer network. A patient's odds of recurrence can be determined by simply entering variables into the computer. WRAMC physicians then use the results to more accurately counsel patients on their treatment options.

In the lead article of the April 1999 edition of the Journal of Urology, CPDR study results were published describing a new, experimental technique to detect prostate cancer cells in the bone marrow of patients. The new technique, RT-PCR (reverse transcriptase polymerase chain reaction), may help predict the early recurrence of prostate cancer. The RT-PCR assay for prostate specific antigen (PSA) is a mechanism to fingerprint cells that are circulating in the blood or bone marrow that have originated in the prostate: it results in either a positive or negative RT-PCR reading. The results of the study are significant; the two-year disease-free survival rate was nearly 97 percent in RT-PCR negative patients compared with only 75 percent in RT-PCR positive patients. The results of this study indicate that with further research and refinement, the RT-PCR technology could have broad implications for the successful monitoring and treatment of men with all stages of prostate cancer.

CPDR Opens New Center in 1999. During mid-1999, the DoD opened its Center for Prostate Disease Research in Rockville, Maryland. The Center will combine the efforts of 13 military prostate cancer sites to advance groundbreaking research and treatments for the disease that kills nearly 40,000 men and afflicts 175,000 annually, according to the American Cancer Society. The center houses basic research and molecular biology labs, is equipped with a prostate research library, has DNA, RNA, cell, serum, and tumor tissue banks, and encompasses a comprehensive prostate cancer patient data base. The unique combination of the clinical center and laboratory research are vital to the overall success of prostate disease research. CPDR centers have increased as the need for more laboratory and research space has grown. None of these
facilities is exclusively dedicated to prostate cancer, however, and their scattered locations make collaboration difficult. Consequently, DoD, the Henry M. Jackson Foundation, and USU established the freestanding center in Rockville, Maryland, to expand the basic and clinical research space and to allow researchers to work collaboratively. On any given day, a urologist, a pathologist, and a molecular biologist can now work on a project side-by-side in a laboratory at the new Center. DoD wanted to build a strong, central core site that would serve as an umbrella to the other CPDRs which house smaller activities. A large research activity of the Center continues to add to the collection of clinical information on men newly diagnosed with prostate cancer; this database is currently composed of nearly 15,000 registries including those gathered retrospectively back to the 1980. The Center has been fitted with state-of-the-art equipment, including a laser capture microscope, the only one in the country that combines a laser beam with a microscope to extract close-to-individual cancer cells from a prostate gland.

Center Activities During 2000. The Department of Defense CPDR, based in the USU SOM Department of Surgery, continued to thrive in 2000. The main event of the year was the opening of the Prostate Clinical Trials and Care Center at the Walter Reed Army Medical Center. This 14,000 square-foot facility is located in newly-renovated space which allows for "one-stop shopping" for the military health care beneficiary with prostate cancer or prostate disease. It serves as the location where the CPDR clinical research activities are consolidated; and, it improves recruitment into the CPDR multicenter prostate cancer research database, the prostate serum bank, and the prostate tissue bank, as well as a multitude of clinical trials for various prostate disease states. As of December of 2000, more than 3,000 men with prostate cancer and disease had visited or had contact with the new clinical center. Already, the state-of-the-art unit has improved CPDR clinical research activities for patient and staff recruitment, data acquisition, specimen handling, and marketing.

In the basic science program of CPDR, 2000 proved to be a "breakthrough year." Following the move to the new laboratory facilities in Rockville, Maryland, and at the USU SOM Department of Surgery in 1999, the basic science program excelled in research productivity during 2000. Highlights include the acquisition of a significant National Institutes of Health grant in prostate cancer by Dr. Shiv Srivastava and the research team, and prominent publications on the MASPIN gene and PCGEM1, a new gene, in prostate cancer. The PCGEM1 findings were reported in the prominent journal, Proceedings of the National Academy of Science. Aside from these highlights, the basic science program is conducting innovative work on androgen signaling in prostate cancer and has developed a "gene chip" to screen tissue samples for over 750 gene abnormalities thought to be important in prostate cancer. In addition, the Prostate Cell Center at USU, under the direction of Dr. Johng Rhim had a breakthrough development of a new primary prostate cancer cell line which is currently under intense study and patent application.

The TriService, Multicenter Prostate Cancer Research Database, under the direction of Dr. Leon Sun and Colonel Judd Moul, continued to grow and mature throughout 2000. The standardized database in place at nine major military medical centers has collected data on over 15,000 men with prostate disease. As 2000 drew to a close, the database was embarking on multiple studies of these patients. Even before the database recruitment goal of 20,000 patients is met, the CPDR TriService Database represents the largest prostate cancer comprehensive database in the world; and, it is already a national treasure according to the CPDR Program External Peer Review conducted in mid-2000.

The CPDR, with over 50 researchers and team members, is currently recognized as one of the most prominent prostate cancer research programs in the country and in the world (as evidenced by the featuring of the CPDR on a CNBC program on prostate cancer which aired on June 4, 2000). With the establishment
of two endowed chairs for prostate research for CPDR in the University, and the overall endowment funding mechanism administered by USU, CPDR will remain as a permanent and significant part of USU's research endeavors.

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The USU School of Medicine Department of Pediatrics and the Center for Pediatric Molecular Medicine.

Background. Translational research has become extremely important to the fields of Pediatrics and Pediatric Research. Translational studies are designed to integrate the molecular basis and clinical aspects of disease into a concurrent, focused investigation. By February of 2000, the renovation of the Department of Pediatric laboratories had been completed. The Center's laboratory can now support all levels of molecular research: the laboratory maintains thermocyclers for polymerase chain reaction. (PCR), "real-time" PCR equipment for quantitative PCR, automated immunostaining equipment, and all of the equipment required for bacterial, viral, and cell culture work, to include small animal studies. The Center for Pediatric Molecular Medicine is available to medical students, house-officers, fellows, and faculty who wish to pursue Pediatric Research.

Current Activities. Since the completion of the Center's laboratory, two USU medical students and four pediatric residents have completed translational projects under the direction of assigned USU pediatric faculty members. One of these studies was accepted for presentation during the Howard Johnson Research Competition of the Uniformed Services Pediatric Section of the American Academy of Pediatrics. This prestigious competition is recognized throughout the Academy as the pre-eminent venue for uniformed pediatric house-staff.

The pediatric subspecialties of endocrinology, gastroenterology, hematology/oncology, infectious diseases, and neonatology maintain robust fellowship training programs which are now increasingly relying on the Center for Pediatric Molecular Medicine. Graduating fellows from these fellowship training programs currently serve as the leaders of military pediatrics; and, they are recognized for their academic accomplishments around the world. The Center's laboratory, equipment, and investigators ensure the continued success of the fellowship training programs in the area of translational research.
The Establishment of the United States Military Cancer Institute at the University.

Background. During 2000, the President of USU requested that a study be conducted reference the desirability and feasibility of establishing a cancer institute at the University. The results of that study were to be reported to the Board of Regents. John F. Potter, MD, former Director of the Lombardi Cancer Center at Georgetown University, undertook responsibility for the study which focused on the implications of such an Institute on the medical and post-graduate nursing schools at USU; and, it made only a peripheral reference to the broader topic of military medicine.

A survey was made of the existence of cancer institutes (centers) at medical schools across the United States. Institutes which met the stringent standards of the National Cancer Institute were found to exist at 45 medical schools (and, they are increasing in number each year). For example, Cancer Institutes have been established at medical schools located at the following Universities: Harvard; Yale; Duke; Stanford; Los Angeles, California; South Carolina; Hopkins; Alabama; Michigan; Minnesota; Wisconsin; Columbia; Georgetown; Chicago; and, Vanderbilt. It was found to be evident that a significant number of the prestigious universities in the United States have established Cancer Institutes due to the significance of these centers for education, research, and patient care.

In-depth interviews were held with 49 individuals who were identified as having an interest in this subject. These multiple interviews included the Deans of the USU Medical and Graduate Nursing Schools, as well as the Commanding Officers of the Army North Atlantic Regional Medical Command (the Walter Reed Army Medical Center), the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Deputy Director of the Armed Forces Institute of Pathology. All USU faculty, both basic and clinical scientists, who were identified as cancer-research oriented, were interviewed extensively about their teaching, research, and clinical care activities. The interviews produced the following results: 1) all of the military hospital and regional commanders strongly supported the idea of establishing a United States Military Cancer Institute (USMCI) at USU; 2) of the 49 USU faculty interviewed, 46 were enthusiastic about the concept of the USMCI; and, three individuals expressed skepticism about the project; 3) the quality of the basic and clinical scientists at USU is superb; they are the equal or superior to the faculty in the best medical schools in the United States; this judgement was based on the significant expertise of Dr. Potter and his extensive experience gained during site visits to prestigious medical schools during the past 20 years; 4) negative findings included: the lack of communication and sharing of mutual fields of interest among the scientists; the decline in cancer patient accessions in some military health centers; and, the existence of three institutional review boards at the three military hospitals in the National Capital Region.

Eight Areas of Benefit. The study identified eight areas of benefit that would result from the establishment of the USMCI at USU: 1) the Institute would enhance the academic prestige of USU and would position the University among the premier universities in the United States; student applications to USU would be increased: 2) medical and nursing students would benefit from their involvement in multi-disciplinary patient care, which is the hallmark of state-of-the-art cancer treatment; 3) an Institute would enhance the collaborative relationships among cancer scientists in both basic science and clinical areas; 4) the increased public awareness of the high quality of care provided to cancer patients in military treatment facilities would improve the patient flow from civilian to military care; a large patient population is also essential for the education of medical school students; 5) post-graduate education must also have large numbers of patients to adequately function. This level is being threatened in some hospitals; a cancer institute will increase patient accessions. Moreover, these cancer patients present extremely challenging surgical and medical conditions. Such
conditions maintain and enhance the skills of staff physicians, residents, and medical students: 6) a Cancer Institute would stimulate the submission of R-01’s to the National Institute of Health and other peer-review entities; an increase of grant awards would be a clear indication of high quality research; 7) a Cancer Institute would improve income levels from patient care revenues, grants, and contributions from the civilian sector; and, 8) the Institute could serve as a model for TriService collaboration.

The inclusive study, submitted on August 24, 2000, found that the establishment of the USMCI at USU is highly desirable and would further enhance the University’s academic reputation. Given the extent and quality of its resources, such an Institute could well become one of the largest and most prestigious Cancer Institutes in the United States. On September 8, 2000, the USU Board of Regents voted to approve, in principle, the concept of creating the USMCI at USU; and requested that the USU President should present a draft business plan at the November 2000, or February 2001 Meeting of the USU Board of Regents.
USU Establishes an Interdepartmental Center for Space Medicine.

**Background.** During the past 50 years, space sciences and exploration have evolved from science fiction into scientific accomplishments. The 21st Century will be marked by extraordinary advances in space sciences and travel. In addition, altered gravity and radiation exposure in space present unique research opportunities to further medical knowledge. The Uniformed Services have, from the inception of space medicine, played an important role in the National Aeronautics and Space Administration (NASA) programs. Information sharing and collaborations among these scientists has continued to depend upon individual relationships and agreements. In conformance with the USU mission which includes the training of physicians, advanced nurses, and scientists for the Nation, USU faculty have been engaged with NASA for many years in space-relevant medical research.

Goals of the New Center. On November 21, 2000, the USU inaugurated the Interdepartmental Center for Space Medicine to foster collaboration and to develop new programs dedicated to the medical aspects of space travel. NASA Astronaut Bonnie J. Dunbar, Ph.D., Assistant Director, University Research and Affairs, Lyndon B. Johnson Space Center, was a featured speaker at the inaugural events for the Center. Her presentation was entitled, "From Apollo to the New Millennium: Human Space Flight Exploration." Also speaking was NASA Flight Surgeon/Neurologist, CAPT Jonathan B. Clark, MC, MPH, USN, USU Class of 1980, Lyndon B. Johnson Space Center; CAPT Clark’s presentation was entitled, "Clinical Aspects of Space Medicine."

The Interdepartmental Center for Space Medicine was established to accomplish the following: 1) to encourage multidisciplinary space medicine research among the USU faculty; 2) to provide information about extramural funding opportunities; 3) to encourage and nurture individual research projects in space medicine at USU (e.g., cardiovascular, endocrine, neurovestibular, and gastrointestinal effects of microgravity); and, 4) to provide a Center to interact with other Federal and DoD space medicine programs.

Information Transfer. Already existing space medicine information projects at USU include Spaceline (an on-line bibliographic data base of space life sciences research) and the Space Life Science Data Archive (data base from NASA-funded research). The Interdepartmental Center for Space Medicine will: 1) communicate within the DoD about space medicine via electronic means and conferences; 2) act as a liaison for space medicine with the DoD, universities, and other research institutions; and, 3) inform the USU community about space medicine electronically and, through seminars and discussion sessions.

Future Educational Activities. The Interdepartmental Center for Space Medicine would: 1) educate USU medical and graduate students, faculty, and staff about space medicine; 2) develop a fellowship in space medicine at USU for physicians in the Armed Forces; 3) develop a USU postdoctoral space medicine fellowship for biomedical and behavioral scientists; 4) provide NASA approved student summer programs; and, 5) provide part-time research opportunities for USU SOM medical students.

Leadership of the New Center. Jay R. Shapiro, M.D., Professor, USU SOM Department of Medicine, and Head of the Bone Team for the National Space Biomedicine Research Institution, a NASA funded consortium of institutions working to prevent or solve health problems related to long-duration space travel, has been designated as the Director of the USU Center. Dr. Shapiro is an internationally recognized scientist in the fields of endocrinology and bone loss due to prolonged exposure to microgravity.
environments. As the Center's Director, he will be responsible for the day-to-day activities and administration of the Center; the communication of those activities to the Dean, SOM, and the USU President; and, the implementation, governance, and review of the Center's programs. In addition, Dr. Shapiro will also represent the Center on appropriate committees and in appropriate settings as designated by the Dean, SOM, and the President of USU. Initially, the new Center will be "housed" within the USU SOM Department of Medicine. Useful and current information on the USU Center is available on its website: <www.usuhs.mil/csm> which is hosted by the Department of Medicine and managed by Solomon Levy, Deputy Chair for Administration.

A Working Committee of over 20 health professionals across several disciplines has been established for the Center. The complete listing of members can be found at <www.usuhs.mil/csm/csmcmtlist.htm>. Some of the initial members include: 1) Andre Dubois, MD, Research Professor, USU SOM Departments of Medicine and Surgery, (Dr. Dubois is currently conducting NASA-funded research regarding gastrointestinal function in space); 2) Joseph McCabe, Ph.D., Professor, USU SOM Department of Anatomy, Physiology, and Genetics; 3) Solomon Levy, MPH, Deputy Chair, Administration, USU SOM Department of Medicine; 4) Gregory P. Mueller, Ph.D., Professor, USU SOM Department of Anatomy, Physiology, and Genetics; 5) CAPT David Johanson, MC, USN, Assistant Professor, USU SOM Department of Preventive Medicine and Biometrics; 6) Patricia A. Deuster, Ph.D., Associate Professor and Director, Human Performance Laboratory, USU SOM Department of Military and Emergency Medicine (Dr. Deuster is currently conducting research on human endocrinological responses to stress that is relevant to space medicine); 7) Terry Thomas, Ph.D., USU SOM Department of Preventive Medicine and Biometrics (Dr. Thomas is currently studying extreme environments); 8) Victor Schneider, MD, Associate Professor, USU SOM Department of Medicine; 9) Neil Grunberg, Ph.D., Professor, Department of Medical and Clinical Psychology (Dr. Grunberg has conducted NASA-funded research on crew selection for ways to optimize performance and minimize stress); 10) Richard Holt, MD; 11) Helen Santiago, Ph.D., Research Associate; and, 12) Roy Clymer, Ph.D.

Eventually, an Executive Committee will be established for assisting and advising the Director of the Center. The Executive Committee will consist of the Director of the Center and four additional members of the Center; members will be appointed by the Director and serve for a three-year term. The Executive Committee should represent as many academic departments within the SOM as possible. The Center's Director and the Executive Committee will review and appoint all members of the Center with the approval of the Dean, SOM.
The TriService Nursing Research Program · A Joint Program Under the Leadership of the Chief of the Army Nurse Corps and the Directors of the Navy and Air Force Nurse Corps.

Background. Nursing research investigates the multiple factors known to affect human health. The TriService Nursing Research Program’s primary objective is to enhance the quality of nursing care for the United States Armed Forces through the advancement of the knowledge and expertise of the Practice of Military Nursing.

Military nursing research addresses many areas: 1) the unique military environmental settings in which care is provided; 2) the mission readiness and development of military personnel; and, 3) the improvement of nursing structure (delivery systems) and those processes which enhance clinical outcomes, health status, and the quality of life for the diverse military populations and their beneficiaries (to include those communities that receive care during humanitarian, peacetime, and wartime missions). The overriding mission of military nursing research is to expand the military nurse’s professional knowledge and to improve his/her capacity to provide appropriate and high-quality nursing care for the Armed Forces.

The TriService Nursing Research Program (TSNRP) is a Congressionally authorized program targeted to support research conducted by military nurses (S.R. 102-154). Funding is available to all Active Duty, Reserve, and National Guard nurses, as well as to the retired nurse corps. The TriService Nursing Research Program has continued to garner wide support, and funding has been generously allocated since its inception. The TSNRP is under the direction of the Chief of the Army Nurse Corps, and the Directors of the Navy and Air Force Nurse Corps. Due to the financial commitment and the dedication to support military nursing research provided by the TSNRP, military nurse investigators have strengthened the scientific foundation of military nursing.

Mission. The mission of the TriService Nursing Research Program is to positively influence health outcomes in peacetime, wartime, and during operations other than war. The primary focus is to expand the body of scientific knowledge upon which the practice of military nursing is based. The TSNRP has designated four areas of research: 1) clinical practice focused on military beneficiary populations; 2) military health care systems; 3) clinical care in military unique environments; and, 4) military personnel deployment and readiness. Each of these areas is a valuable source of clinical outcomes which will enhance the delivery of health care for soldiers, sailors, airmen, and their families.

Center for Military Nursing Excellence. The Center for Military Nursing Excellence was established in 1997, through a grant to support and expand the TSNRP’s outreach into the military nursing research community. This is in alignment with the recommendation of the 1996 Institute of Medicine Report to establish centers of excellence in military nursing research as part of the TSNRP’s organizational structure. The establishment of the Center for Military Nursing Excellence is seen as essential for ensuring the future success of the TriService Nursing Research Program and military nursing research. The goals of the Center are: 1) to invest in military nursing research programs which respond to research imperatives; 2) to intensify the dissemination of research findings; and, 3) to facilitate the integration of research findings within the practice of military nursing.

Investigator Initiated Grant Awards. All proposals submitted to the Center are subject to rigorous, peer-review processes designed to evaluate both scientific and programmatic merit. The scientific review panel consists of scientists who are selected from the health care community; their selection is based on
research experience, publications, and work experience. The panel evaluates the scientific and technical
merit of each proposal.

Programmatic review is conducted by the TSNRP Advisory Council which has one representative from
both the active duty and reserve communities from each of the Military Services. Council members assess
the likelihood that proposed studies will provide scientifically based outcomes that would meet TSNRP
goals and Priorities. Proposals must receive the approval of both the Scientific Peer-Review Panel and the
TSNRP Advisory Council in order to be recommended to the Corps Chief and Directors for final approval.
Since the establishment of the TSNRP in 1992, a total of 193 proposals have been funded. These research
studies have focused on 16 major areas: 1) Human Response; 2) Access to Care; 3) Women’s Health; 4)
Deployment Health; 5) Professional Roles; 6) Systems/Delivery Systems; 7) Competencies; 8) Outcomes;
9) Practice; 10) Operations (Decision Making); 11) Equipment/Technology; 12) Complementary Medicine;
13) Risk Behavior; 14) Family Health; 15) Pain; and, 16) Prevention/Health Promotion. Nearly 75 percent
of the funded proposals included at least three focus areas. The three most frequently cited areas were
complementary medicine, pain, and competencies, which were closely tied with deployment health.

Study areas that have been funded include: burns; breast cancer; wound healing; pain; tobacco use;
definition: Reserve readiness; pregnant soldier intervention programs; informatics; econometrics; managed
care environments; tele-health; and, distance learning. During 2000, 17 investigators were awarded funding;
selected examples of study follow: preventable hospitalization in older military retirees; dietary and exercise
interventions to improve readiness; CNS management of HTN patients in military settings; skin interface
pressure associated with the NATO litter; and, the effects of tele-health medicine.

Special Requests for Applications. Special Requests for Applications are occasionally made available
by the Center. During 1998, a request was made for distance learning assistance to facilitate the successful
competition for research funding. The Research and Proposal Preparation Skills (RAPPS) Distance Learning
Course was designed to improve military nurses’ grant preparation and proposal development skills; the
course was made globally available through the Internet on a biannual basis for Army, Navy, and Air Force
nurses. The course development and initial pilot testing was completed during August of 1999. Formal
enrollment has been completed.

During 1999, a request was made for a project directed toward skills sustainment. The purpose of this
initiative was to assist military nurses in acquiring and/or updating those clinical, technological, or decision-
making skills that are required to provide patient care during deployment operations. Army and Air Force
nurses received funding to: evaluate a virtual reality simulator for sustainment training; identify trauma
skills for nursing personnel; evaluate staff's retention of BCLS and ACLS skills; and, validate mobilization
competencies for clinical nurses. To promote readiness, the Air Force Nurse Corps was awarded funds to
develop, implement, and evaluate a competency-based education program that would define wartime
competencies.

In 2000, a request was made for studies that would lead to the development of methods that promote the
delivery of evidence-based care within the Military Health System. Two projects were awarded funding:
one to investigate in-home urinary incontinence therapy; and, the other to investigate diabetes case
management.

Dissemination of Findings. Dissemination of findings to nurses in a global setting is a specific challenge
being met by the TSNRP. The first dissemination conference held in August of 1997, brought nurse
researchers from military units representing the three Services throughout the world. The conference provided a forum for the exchange of ideas, the discussion of critical issues, and reporting on research findings. TSNRP nurse researchers have disseminated their research findings at various conferences throughout the United States and abroad, to include the American Heart Association, the Aerospace Medical Association, the National Institute of Nursing Research Forum, the International Women’s Health Conference, and the annual conference of the Association of Military Surgeons of the United States (AMSUS). Results of TSNRP funded studies have been reported in refereed nursing and other health journals and by the national news media as well. Recently, STAN, the virtual reality simulator used in skills training at the Lackland Air Force Base in Texas, was featured in an Air Force Times news article. The simulated skills training project is part of the study, "Wartime Competencies and the United States Air Force Nurse: Training for Sustainment," currently being funded through the TSNRP.

Dissemination is imperative for the success of the program. Research findings from final reports are also available in the special interest category of the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database.

**Future Direction.** The future of military nursing research is in the control of the military nursing community. To enjoy success in the future, nurse investigators must have both a vision and a plan. Advancing the practice of military nursing and its response to the requirements of military readiness and deployment, remains both the mission and the priority of nursing research. The TriService Nursing Research Program serves as a catalyst for stimulating synergistic endeavors for the advancement of the science of military nursing throughout the three Military Nursing Services. For the Year 2000 and beyond, the TriService Nursing Research Program is jointly positioned to support those endeavors.

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"USUHS was recently awarded the Joint Meritorious Unit Award from the Department of Defense in recognition of exceptional service, and its multiple cost-effective products. The award, presented to USUHS by the Secretary of Defense, William S. Cohen, recognizes that the University has exceeded its goals as set by Congress." — Press Release Issued by the Office of United States Senator Paul S. Sarbanes, dated February 1, 2001.

"This notable award (Joint Meritorious Unit Award) endorses and recognizes the multiple products and the critical cost effectiveness of the Uniformed Services University of the Health Sciences (USUHS) in maintaining the health and readiness of our nation's Armed Forces." — Letter to the entire United States House of Representatives, the Honorable Constance A. Morella, dated February 1, 2001.

"The USUHS is mandated by Congress to establish programs in continuing medical education for military members of the health professions ... Because the USUHS Office of Continuing Education for Health Professionals (CHE) brings medical training to the medical health care professionals, cost avoidance of $2,210,072 was generated during the past Fiscal Year by eliminating extensive travel expenses and time away from the hospitals and clinics...DoD sites affiliated with the USUHS Military Training Network (MTN) are approved to conduct self-sustained resuscitative and trauma medicine training. This is cost-effective to the MHS because it eliminates the need to pay premium training costs for civilian resuscitative and trauma medicine programs. The cost avoidance generated for the DoD by the MTN during the past Fiscal Year was $10,683,165; the total annual cost avoidance generated by CHE/MTN during the past year was $12,893,237." — FACT Sheet on the Cost Avoidance Generated for DoD by USUHS, dated May 2000.

"USUHS is a valuable asset not only to the Department but also our country....We are currently optimizing our MTFs to provide increased health care to all beneficiaries, including retirees and their family members. The graduates from the USUHS will contribute greatly to our optimization efforts." — Dr. Sue Bailey, Assistant Secretary of Defense, Health Affairs, Letter to the National Military and Veterans Alliance, dated July 12, 2000.
"Thirteen USUHS School of Medicine academic departments are providing clinical and consultative support to DoD that is projected to total over 140,692 hours in Fiscal Year 2000, for a documented total annual cost avoidance of $9,190,315 in manpower costs. Without the patient care and special services provided by the USUHS Faculty throughout the DoD medical facilities, the military hospitals, clinics and other facilities would find it necessary to increase their staffs by 140,692 work hours or increase the use of commercial sources." – FACT Sheet on the Cost Avoidance Generated for DoD by USUHS, dated May 2000.

"The University also makes an important contribution to force health protection through militarily-relevant graduate programs." (In addition to the 2,952 graduates who received Medical Doctorates, the USUHS School of Medicine has conferred 662 Basic Science Degrees: 60 Masters of Science; 360 Masters of Public Health; 2 Masters of Science in Public Health; 25 Masters of Tropical Medicine and Hygiene; 2 Masters of Military Medical History; 5 Doctors of Public Health; and, 208 Doctors of Philosophy. The cost avoidance generated by the USUHS Graduate Education Programs is estimated at an annual total of $1,350,000.) – Board of Regents Report to the Secretary of Defense, dated June 30, 2000, page 2.

"As you know, trusted medical care is one of the most significant quality of life issues for our personnel and their families overseas. A quality medical education program is fundamental to the success of our program. On behalf of all our beneficiaries, I want to thank you for sustaining high quality medical education for the Department of State. The success of this ongoing effort is a shining example of the benefits of interagency cooperation. I hope and trust that this cooperation between federal agencies will continue and expand in the years ahead." – Madeleine K. Albright, The Secretary of State, Letter to USUHS, dated January 19, 2001.

"NASA has recently expanded its Medical Policy Board, for instance, to include representation from other federal organizations, including Health and Human Services, the Department of Defense, and the Uniformed Services University of the Health Sciences (USUHS). The office incorporates the findings and suggestions from this expanded board into Agency health care policy and practice." (On November 21, 2000, the Interdepartmental Center for Space Medicine (ICSM) was established to: encourage multidisciplinary space medicine research among USUHS faculty; provide information about extramural funding opportunities; encourage and nurture individual research projects in space medicine at USUHS (e.g., cardiovascular, endocrine, neurovestibular, and gastrointestinal effects of microgravity); and, provide a center to interact with other Federal and DoD space medicine programs.) – Arnauld E. Nicogossian, Chief Health and Medical Officer, National Aeronautics and Space Administration, U.S. Medicine, January 2001, page 4.
III. THE GRADUATE SCHOOL OF NURSING

"Finally, I would like to express my unqualified support of the Uniformed Services University of the Health Sciences (USUHS). The Graduate School of Nursing has been instrumental in providing trained Certified Registered Nurse Anesthetists and Family Nurse Practitioners. Most importantly, USUHS has become the sole educator of our Family Nurse Practitioners, saving the Army Medical Department in excess of $300,000 annually in Health Education Funds. Graduates of the USUHS programs have excelled masterfully and have enjoyed a 100 percent pass rate on their certification exams. Our continued affiliation with USUHS is a must if we are to maintain sufficient numbers of practitioners necessary to support our primary care mission."


ESTABLISHMENT

Legislative and DoD Direction. The establishing legislation of the University, the Uniformed Services Health Professions Revitalization Act of 1972 (Public Law 92-426), and DoD Directive 5105.45, both direct that USU must meet the requirements of medical readiness and expand to meet the future needs of the Uniformed Services. In accordance with those directives, the Graduate School of Nursing (GSN) was established at USU. During the Fall of 1992, the Department of Defense received the authority, along with an appropriation, to begin planning for the implementation of a nurse practitioner education program at USU. The intent of the legislation was to meet the needs for advanced practice nurses in the Uniformed Services (the Army, Navy, Air Force, and the U.S. Public Health Service). The Federal Nursing Chiefs initially identified the need for advanced practice nurses in two areas: Family Nurse Practitioner and Nurse Anesthesia. The GSN Nursing Board of Advisors was organized in 1993 to provide a means for the easy exchange of information and mutual assistance in the consideration of nursing issues and challenges. (NOTE: The Federal Nursing Chiefs include representatives from the Army, Navy, Air Force, Public Health Service, and the Department of Veterans Affairs. The American Red Cross, although not a federal agency, has an honorary representative on the GSN Nursing Board of Advisors.)

GSN Meets Legislative and DoD Mandates. In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners for the Uniformed Services. In compliance, the GSN Department of Nurse Practitioners (DNP) admitted its first students in August of 1993. The Department of Nurse Anesthesia (DNA), identified as a requirement by the Federal Nursing Chiefs, admitted students in June of 1994. The GSN's two Departments of Nurse Practitioners and Nurse Anesthesia, are designed to alleviate shortages of health care providers in the Uniformed Services, as identified by the Federal Nursing Chiefs. The Federal Nursing Chiefs have determined that these two advanced practice nurse specialties
currently respond to the requirements of the Uniformed Services. On February 26, 1996, the GSN received official approval and recognition from the Office of the Assistant Secretary of Defense for Health Affairs.

Graduates from the GSN receive a Master of Science in Nursing (MSN) Degree and qualify to test for certification in their specialties. The Department of Nurse Practitioners has had six graduating classes from 1995 through 2000, for a total of 53 graduates; the Department of Nurse Anesthesia has had five graduating classes beginning with the Class of 1996 through the Class of 2000 for a total of 70 graduates. Since its first graduation in 1995, a total of 123 advanced practice nurses have graduated from USU; all are certified; and, 118 remain on active duty.

MISSION

"As I begin my graduate studies for the degree of Master of Science in Nursing, I dedicate myself to the scholarly pursuits that will enable me to become an advanced practice nurse. ... As an advanced practice nurse, I will endeavor to create an environment of caring for my patients and clients and at all times provide comprehensive nursing care to them and the families entrusted to me."

-From the Oath taken by each new class of students at the GSN: the oath was developed by the Dean and Faculty of the GSN.

Mission Direction. The Mission Statement for the GSN is derived from the overall Mission Statement of the University and is in compliance with DoD Directive 5105.45. The mission of the GSN includes five major themes: 1) the GSN is dedicated to providing quality education to prepare advanced practice nurses, at the graduate level, in the specialties of Nurse Practitioner and Nurse Anesthesia; 2) the GSN must produce graduates who are both qualified for, and dedicated to, the delivery of primary care (acute and chronic care), including anesthesia services, to active duty members of the Uniformed Services, their families, and all other eligible beneficiaries during peace, war and other contingencies; 3) the GSN is also directed to provide the Nation with graduate nursing professionals who are willing to commit themselves to a career of service in the Department of Defense and the United States Public Health Service; 4) the GSN must serve the Uniformed Services and the Nation as an innovative, responsive program with a world-wide perspective for leadership, education, research, and service; 5) the GSN must develop advanced practice nurses, with unique experience and skills, who can respond to the special requirements of the Uniformed Services for disaster relief, humanitarian intervention, and military readiness.

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Mission Accomplishment. In the short time since 1993, and with the strong cooperation and support of the Federal Nursing Chiefs, the GSN has: 1) recruited a qualified faculty; 2) successfully established curricula for two programs; 3) identified accredited clinical practice sites and completed memoranda of understanding (MOUs) for those relationships with 17 military treatment facilities (MTFs) (five additional MOUs are in coordination with the MTFs; and, there are an additional 41 non-DoD, Federal, and civilian clinical sites); 4) developed and implemented an administrative structure that provides for faculty and student participation in the overall governance of the GSN; 5) submitted self-studies and received accreditation for its two programs from three professional accrediting entities; 6) received approval from Health Affairs, Office of the Secretary of Defense, on February 26, 1996; 7) initiated, implemented, and continuously reviewed the outcomes evaluation process for both academic programs; 8) initiated curricula and governance reviews; 9) collaborated with the Department of Veterans Affairs and utilized new technology to establish distance learning programs which resulted in DoD’s first virtual graduation at the advanced level; and, 10) graduated 123 advanced practice nurses, all of whom have passed their certification examinations, with 118 graduates remaining on active duty.

GSN Nursing Philosophy. The philosophy of the GSN conforms with the mission and goals of the USU Strategic Plan. The philosophy is built on a foundation of nursing theory, research, and advanced practice which fosters critical thinking and a vision for the future health care requirements of the Uniformed Services. The GSN community believes that graduate nursing education builds on the foundation of the undergraduate nursing education already completed by the uniformed students. With that in mind, the GSN must provide the Nation with nurses prepared at the Master's level, who possess learning experiences which will increase the breadth and depth of their knowledge base and enable them to specifically address the special needs of uniformed health care. The GSN prepares its students for collaborative and autonomous advanced practice roles with an emphasis on: health promotion and disease prevention (readiness); management and delivery of primary health care to families and individuals across the life span; case management for the chronically and stable acutely ill; anesthesia service; administration; and, unique expertise in emergency preparedness and military medical/nursing humanitarian assistance. Also, GSN students must be provided with an advanced level of competence to perform and provide leadership as uniformed officers in a joint service environment. And finally, GSN graduates should be prepared to participate in research or studies which will advance the Uniformed Health Profession and improve the practice of nursing as well as the welfare of patients throughout the Uniformed Health Systems.
ACCREDITATION

National League for Nursing Accreditation. In December of 1996, the Board of Review for Baccalaureate and Higher Degree Programs evaluated, for the National League for Nursing (NLN) accreditation, the Master's Degree Program offered by the USU GSN. The NLN Board of Review voted to grant accreditation to the USU GSN Master's Degree Program in Nursing and scheduled its next visit for reaccreditation during 2001. The GSN has begun the preparation for its required Self-Study which has been scheduled during October of 2001.

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Accreditation Granted by the Council on Accreditation of Nurse Anesthesia Educational Programs. Of the two GSN programs, only the Nurse Anesthesia Program requires accreditation by a separate accrediting agency in addition to the National League for Nursing Accrediting Commission. In April of 1994, the GSN Certified Registered Nurse Anesthesia (CRNA) Program was granted initial accreditation by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA), permitting the admission of students to the GSN Department of Nurse Anesthesia. Following an intensive review and site visit by the COA in May of 1997, the GSN Nurse Anesthesia Program received full accreditation through September of 2003.

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Preliminary Accreditation Granted by the American Association of Colleges of Nursing. An accreditation program for nursing programs has recently been implemented by the American Association of Colleges of Nursing (AACN) Commission on Collegiate Nursing Education (CCNE). The GSN prepared and submitted material to meet the CCNE requirements for preliminary accreditation (a special accreditation for programs that have already received recent national accreditation from other organizations such as the NLN). That material was accepted and the AACN/CCNE granted preliminary accreditation on February 27, 1998. A site visit by the AACN is scheduled in November of 2001.

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Sponsorship for the Honor Society of Nursing is Granted. Also during Fiscal Year 1998, the USU Graduate School of Nursing was informed that it has been approved by Sigma Theta Tau to sponsor an Honor Society of Nursing. The Honor Society was formally established during graduation exercises in 1999, and an official charter is expected to be approved in the near future.

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MILITARY UNIQUE CURRICULA

The GSN Curricula Responds to the Special Needs of the Uniformed Services. The USU GSN is unique among the Nation's nursing programs because it must educate students to treat and care for both civilian and military personnel, in peace, war, disaster, or other situations that occur under austere conditions. The GSN curricula are driven by special requirements to meet the missions of the DoD and the USPHS. Common to the GSN academic curricula is subject matter that is relevant to military health care providers; for example, there are operational readiness components to each course. Continuous consultation has taken place with the Federal Nursing Chiefs during the on-going development and review of the GSN curricula in order to ensure that the special needs of the Uniformed Services are being met by the GSN graduates.

In concurrence with the Federal Nursing Chiefs' initial indications that the career advancement of their officers would be enhanced through the completion of a Master's thesis, the GSN examined the feasibility of the completion of a thesis within the time constraints of its programs. Based on the assessment of multiple program components, including an assessment of the graduating students' research projects and faculty expertise, a Master's thesis, which would become an extension of the charter students' research projects, was made a requirement for all graduating students, beginning with the graduating Class of 1996. However, following consultation with the Federal Nursing Chiefs during 1999, this area of responsibility was revised. It was determined that the GSN students may now choose among several types of scholarly projects which include: research culminating in either a written thesis or a publishable paper; a research practicum; and/or a defined project. Whichever option is chosen, any scholarly project may be completed individually or as a group project. A GSN research committee will ensure that each scholarly project meets the Uniformed Services University of the Health Sciences requirements for a Master of Science Degree.

Another example of the GSN's continuous response to the Services occurred when the 1995 GSN graduates and their uniformed-supervisors recommended the inclusion of training in the procedures for such requirements as suturing, basic laboratory testing, and triage. The GSN faculty agreed and those procedures have been incorporated into the appropriate GSN courses. The graduates from the Department of Nurse Practitioners also recommended the addition of Anatomy and Cell Biology into the curriculum; that occurred during 1999. With the recommendation of the GSN students and faculty, during 2000, objective clinical examinations using simulated patients were implemented throughout the core courses for both GSN Departments.

Advanced Nursing Education in a Joint Service Environment. GSN Students are provided military unique education in the joint service environment of the University which includes the Army, Navy, Air Force, and the United States Public Health Service (USPHS). Graduates are prepared to deliver care in a wide variety of settings and communities, both nationally and internationally. GSN graduates are equipped to contribute to the Uniformed Services' peacetime health care delivery systems and to provide military and public health support during combat operations, civil disasters, and humanitarian missions. They may serve in clinics, hospitals, and in the combat zone of a theater of operations under austere and harsh conditions, at sea on ships of war, or in isolated areas of the United States and other countries lacking in health care providers. The major emphasis is on the nursing perspective of health promotion and disease prevention.
within the context of primary care in the uniformed health care systems as determined by the Federal Nursing Chiefs.

The GSN faculty and staff believe that the placement of the GSN within the interdisciplinary boundaries of the University is a distinct strength. **The Quad Service environment of the USU offers a unique blend of interactive didactic and clinical experiences which support the preparation of competent advanced practice nurses for service to the Nation during international conflict, in peacetime, and wherever humanitarian services and support for disaster relief are required.** Clinical practice sites include: 17 military treatment centers (MTFs); five additional MTF sites are currently in coordination; and, 41 non-DoD, Federal, and civilian hospitals and primary care health care clinics located primarily in the Washington, D.C. area.

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**GSN Students Understand the Structure of a Joint Environment.** To meet the Military Health System (MHS) readiness requirements, it is essential that professional health care officers are familiar with the structure of a joint environment. Under the leadership of the USU Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the GSN must participate in all activities and events as they would in any other command of the Uniformed Services. Regular military formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed; and, uniformed personnel in the GSN are trained in the appropriate uniformed programs and customs. **The students of the GSN participate in joint-service educational experiences throughout their Master's Degree Programs and, as a result, become familiar with the regulations, procedures, and vocabularies of the Quad Services' health care programs.**

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**Medical Readiness Training.** The 57 uniformed officers currently enrolled on campus in the GSN (29 in the Department of Nurse Practitioners; 2 in the Post Master's Nurse Practitioners Program; and, 26 in the Department of Nurse Anesthesia) receive operational medicine and military relevant material and training in their academic courses throughout the curriculum. The 57 commissioned officers represent the Services as follows: 19 Army; 5 Navy; 28 Air Force; and, 5 Public Health Service). There is also a one-week, Operational Readiness Course that is totally devoted to readiness-related issues and associated clinical problems. In April of 2000, students completed a two-day course on Humanitarian Assistance; this course will be repeated during May of 2001. The GSN has a Commandant who is rated by the USU Brigade Commander. The GSN Commandant provides mentorship and guidance related to leadership, military customs and traditions, administrative requirements, and protocols to all of the uniformed officers enrolled in the GSN.

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"... I am privileged to attend USUHS as a GSN nurse anesthesia student, Class of 2001. My experience has been so positive ... The caliber of the faculty who are mentoring my class is extraordinary. Without exception, they are excellent educators... They are intelligent, knowledgeable, gifted individuals who have not only provided a challenging and thorough education, but have simultaneously given guidance and support. They have selflessly made themselves available to myself and my classmates as needed, always going above and beyond the call of duty. I appreciated the opportunity to take the integrated medical pharmacology course. It was outstanding, and my classmates and I have found the experience invaluable ... We gained the respect of our colleagues, the medical students. The opportunity to learn anatomy in the cadaver lab ... is just another of the many valuable features of the USUHS nurse anesthesia program. I feel certain that my classmates and I could not have derived as much from a more traditional anatomy course for nurses. Because of the education, encouragement, and support that I have received here during my first year as a nurse anesthesia student, I feel very prepared to continue to meet the challenges of this exceptional nurse anesthesia program."


The Selection Process. A commitment to the Nation must be evidenced in an applicant's decision to attend the GSN. The GSN Admissions Committee makes the final determination regarding student admission to the GSN with the concurrence of the Dean. The membership of the Admissions Committee is different from those at other schools of nursing. In addition to members of the GSN faculty, the Committee has representatives from each of the Uniformed Services and faculty from the School of Medicine. The composition of the Committee reflects two critical principles of the GSN: 1) the nature of health care, particularly within the Uniformed Services, requires an interdisciplinary approach; and, 2) the Services select candidates for promotion and school attendance on the basis of the "whole person" concept.

The applicant pool is unique. The Army, Navy, Air Force, and U.S. Public Health Service pre-select and approve candidates for application to the GSN according to Service-specific criteria. Once applicants have been selected by their specific Service, they may then apply to the GSN. The Admissions Committee of the GSN reviews the applicants' records not only on the basis of academic merit, which shows that the applicants can succeed in a graduate program, but also on the basis of officership and commitment to their particular Uniformed Service. Academic aptitude is balanced against the evidence of future officership and continuing commitment to service in the Uniformed Services. The candidates nominated and selected by the Uniformed Services have had a grade point average of between 3.8 and 4.0 in their Baccalaureate Programs; they have also had an average of between eight to twelve years of experience in the Uniformed Services. Annually, the GSN reviews approximately 75 applicants and admits between 25 to 37 students. The Federal Nursing Chiefs have continued to demonstrate their tremendous support for the GSN by sending exceptional students to the University.
Class of 2002. The USU GSN welcomed the Class of 2002, 25 active duty officers, during June of 2000. Twelve officers were enrolled in the Department of Nurse Practitioners Class of 2002, bringing the enrollment of the two DNP classes, First and Second Year, to a total of 29 students. Thirteen uniformed officers were enrolled in the Department of Nurse Anesthesia Class of 2002, bringing the enrollment of the two DNA classes (First and Second Year) to a total of 26 students.

Of the 25 uniformed officers newly enrolled as First Year GSN students: 13 are members of the Army; 3 are members of the Navy; 7 are members of the Air Force; and, 2 are members of the Public Health Service. The GSN students range in grade from 0-2 to 0-4 with the majority at the 0-3 level. The students will pay back two to three years for each year of education received at the GSN, depending upon their individual Service.

During June of 2000, the GSN also enrolled two commissioned officers into the resident, one-year, Post-Master's Nurse Practitioners Program established to retrain advanced practice nurses in a specialty required by the Services.

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Development and Functions of the Student Advisory Council - A Strong Avenue of Communication.

Background. Beginning in October of 1998 and continuing throughout 2000, the GSN students, faculty, and staff, in coordination with the Federal Nursing Chiefs and the Office of Student Affairs, School of Medicine, worked to develop and implement a Student Advisory Council. The Student Advisory Council was initially established during 1998 to advise the Dean, GSN, on matters of student interest and concern. It provides an active and visible means for the student body to communicate directly with the Dean. The Student Advisory Council (SAC) is an independent entity that exists to represent the GSN student body; it is not considered an element of the military rating chain, nor an extension of the administration. It serves as a line of communication between the student body and the administration of the GSN. The Council is designed to discuss student issues that arise across class boundaries and to provide a student body consensus which may then be communicated to the Dean, GSN, and other responsible school officials. The Council also serves to facilitate the transfer of information on matters or problems common to each student class or group.

Composition. The GSN Student Advisory Council consists of the student president, secretary, one SAC representative from each graduate nursing program class (thus 2 per program), and one SAC representative from the Post-Master's Nurse Practitioners Program. The position of the president of the SAC will ordinarily be held by the second year class president. All members of the SAC are voting members. In addition, the Dean, GSN, may appoint two graduates, one from each program, who will represent the GSN alumni as non-voting members. The Dean also appoints an advisor to guide and assist the Council; however, the advisor may not be in the military rating chain and must hold a relatively neutral faculty or staff position. The faculty advisor may be chosen from the GSN, the School of Medicine, or another area within the University.
Functions of the Council. The Student Advisory Council meets six times during the academic year, or as required. Approval of any issue discussed at a meeting requires a majority vote of the attending members. Matters discussed and decided by vote at the SAC are binding and represent the student position in discussions with the faculty and administrative officials of the GSN. The student president prepares meeting agendas from input provided by other SAC members, conducts the meetings, and coordinates discussions and votes to establish a consensus of the student body. The representatives of each class are the advocates for their student classes and serve as a conduit for class members to bring their issues and concerns to the SAC. SAC representatives are responsible for writing an After Action Report at the conclusion of the academic semester. This report is a summary of student comments and feedback about each course, books, and materials within each program. The SAC Faculty Advisor assists and advises each class on the functions and responsibilities of the SAC, and works with the GSN Commandant to ensure that class elections of officers and academic representatives are completed by July 30th of each academic year.

Accomplishments During 2000. In 2000, the SAC addressed numerous issues which generated improvements in scheduling, communications, book orders, course evaluations, and temporary duty (TDY) assignments. Specific examples include: computer support for TDY students; better use of voice mail and e-mail systems; increased use of pagers to contact faculty; timely distribution of academic schedules; and, coordination of schedule changes with the GSN program directors. A monthly activity schedule was also developed to provide guidance for SAC members regarding their responsibilities which increased the responsiveness of the SAC.

In summary, the SAC has been established to ensure that lines of communication and trust are strengthened throughout the student body, the faculty, and the GSN administration. Based upon its activities during 2000, the Student Advisory Council is serving as an excellent forum to increase faculty/student involvement, communication, and on-going curriculum improvements.
"...It is an honor and a privilege to address you on behalf of the GSN Class of 2000 ... two words come to mind when I think of how we would like the GSN Class of 2000 remembered and those two words are 'ATTITUDE and GRATITUDE.' ... I submit to you that it has been our attitude that makes us so unique. When we arrived most of us had 6, 8, 10, or even more years of active duty experience ... and we knew that this would be one of the best assignments in the military. .. we never lost sight of the big picture and that it was our duty to learn as much as possible to be competent Advanced Practice Nurses, Nurse Anesthetists and Nurse Practitioners ... it was our attitude that not only pulled us through individually, but pulled us through together. Cooperation, not competition has really been the key .... despite the different Services, we still have a common mission and unlike (graduates from) any other civilian university, it is very likely that one day we will be working together again and possibly in a very challenging and austere environment, yet we can be confident in each other as a result of our experiences here. .. We want to thank the staff, faculty and administration ... for developing, orchestrating, and refining a very challenging yet comprehensive program. We also want to thank them for not being afraid to make changes and improvements, and for setting precedence like the new humanitarian course. We know you have our best interest and the welfare of those we will be caring for - the soldiers, sailors, airmen, marines, and their families ... it is their welfare you have in mind. ... We are ready to do our part by providing the best care possible for veterans past, present, and future."

-The Nursing Student Farewell delivered by Captain Virginia A. Garner, USAF, NC, President of the Class of 2000, at the USU Commencement Exercises on May 20, 2000.

**Graduate Profile.** The GSN has 123 uniformed graduates: Army - 24; Navy - 9; Air Force - 81; and, Public Health Service - 9. Fifty-three uniformed officers have graduated from the Department of Nurse Practitioners; seventy uniformed officers have graduated from the Department of Nurse Anesthesia. All graduates receive a Master of Science in Nursing (MSN) Degree from the University. To date, 118 GSN graduates remain on active duty in their individual services. The GSN alumni do not have a formal residency requirement so they go directly into clinical practice, consistent with the credentialing guidelines at the individual health care facilities. The GSN alumni can expect to serve at least one tour as practitioners or anesthetists before being considered for assignments in any other role. 117 GSN graduates are currently practicing as family nurse practitioners or as certified registered nurse anesthetists. All GSN graduates have passed the national certification examination; 97.3 percent have passed on their initial examination at the upper percentile.

The immediate measurable standard of success for the GSN alumni is the passing of the National Certification Examinations. The next short term measure is their successful performance as advanced practice nurses as determined by their immediate supervisors. Members of the GSN Department of Nursing Research, Evaluation Committee and faculty representatives from the Departments of Nurse Practitioners and Nurse Anesthesia were tasked with designing a tool to effectively measure alumni performance and to provide reports on such to the Dean, GSN, and the Federal Nursing Chiefs. That tasking was completed with the publication of the GSN Evaluation Manual, in November of 2000. The GSN Evaluation Committee Policy
and Precedent Statement #95-07 was also amended on November 21, 2000, to reflect that outcomes of the GSN, both short and long range, will be included in the content of all evaluation tools. The GSN Evaluation Manual effectively satisfies this requirement and provides 34 examples of current evaluation and/or survey tools used throughout the GSN (21 - Department of Nurse Practitioners; 1 - Department of Nursing Research; and, 12 - Department of Nurse Anesthesia). Reviews of these reports by the GSN and the Federal Nursing Chiefs will ensure that the GSN curriculum is meeting the requirements of the Uniformed Services.

The GSN alumni have three career tracks: clinical, administrative, and research. There are a number of "nontraditional" and operational assignments available as well; only a limited number of alumni would be expected to pursue those assignments. New avenues for command and staff positions are continuously opening for advanced practice nurses. It is expected that the GSN alumni will continue to be recognized and rewarded for their outstanding performance with career assignments of ever-increasing responsibility.

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The Class of 2000 GSN Outstanding Student Awards.

Department of Nurse Practitioners Outstanding Student Award. Captain Virginia Garner, USAF, NC, distinguished herself as a student in the Nurse Practitioners Program of the Graduate School of Nursing. She employed a sound scientific foundation, an inquiring mind, and a collaborative approach to the comprehensive care of her patients. Captain Gamer demonstrated personal initiative, perseverance, and outstanding character throughout her academic endeavors at USU.

Department of Nurse Practitioners Academic Performance Award. Commander Jodie Massie, NC, USPHS, received the Distinguished Academic Performance Award, Nurse Practitioners Program, which recognizes the graduating student having the most outstanding academic proficiency in a nursing program.

Department of Nurse Practitioners Distinguished Clinical Performance Award. Captain Carol Gilchrist, USAF, NC, received the Distinguished Clinical Performance Award, Nurse Practitioners Program, which recognizes the graduating student having the most outstanding clinical proficiency in a nursing program.

Department of Nurse Practitioners Esprit de Corps Award. Major Timothy Collins, USAF, NC, was selected to receive the Esprit de Corps Award for the Department of Nurse Practitioners. The Esprit de Corps Award recognizes the graduating student from the Department of Nurse Practitioners who by thought, word, action, and deed, demonstrates sensitive humanistic qualities for the well being of all. By example, the recipient has inspired all of his classmates to enjoy their camaraderie, their profession, and their commitment to a life of service to mankind.
Department of Nurse Anesthesia Presents the Agatha Hodgins Award. Captain Flavia Casassola, USAF, NC, was selected by the Department of Nurse Anesthesia to receive the Agatha Hodgins Award. The award established in 1975, recognizes a graduating nurse anesthesia student for outstanding accomplishments in both the classroom and clinical arenas of nurse anesthesia education. The recipient’s dedication to excellence has furthered the art and science of nurse anesthesia. The award was established in honor of Agatha Cobourg Hodgins (1877-1945), founder and first president of the National Association of Nurse Anesthetists. This organization was later renamed the American Association of Nurse Anesthetists. Miss Hodgins and Dr. George Crile pioneered the first known nurse anesthesia school and hospital service at Lakeside Hospital in Cleveland, Ohio. During World War I, Miss Hodgins trained nurse anesthetists for military service. She also assisted with the development of the early anesthesia machines and later with the perfection of anesthesia techniques still in use today.

Department of Nurse Anesthesia Esprit de Corps Award. Captain Flavia Casassola, USAF, NC, was selected to receive the Esprit de Corps Award for the Department of Nurse Anesthesia. The Esprit de Corps Award recognizes the graduating nurse anesthetist student who by thought, word, action, and deed, demonstrates sensitive humanistic qualities for the well being of all. By example, the recipient has inspired all of her classmates to enjoy their camaraderie, their profession, and their commitment to a life of service to mankind.

Dean’s Awards for Research Excellence. Captain Sandra Houlihan, USAF, NC, received the Dean’s Award for Research Excellence, Nurse Practitioners Program. Captain Paul Effertz, USAF, NC, received the Dean’s Award for Research Excellence, Nurse Anesthesia Program. These awards recognized the graduating students demonstrating the most outstanding proficiency in nursing research.

First Year Outstanding Student Awards. The Department of Nurse Practitioners selected Lieutenant Commander Susan Orsega, NC, USPHS, to receive the First Year Outstanding Student Award. The Department of Nurse Anesthesia recognized Captain Geoffrey A. Kuzmish, USAF, NC, as the recipient of the First Year Outstanding Student Award for 2000.

Two GSN Graduates Are Recognized by Who’s Who Among Students in American Universities and Colleges. Major Kathleen Herberger, AN, USA, Department of Nurse Practitioners and Captain Greg Lowe, USAF, NC, Department of Nurse Anesthesia, were recognized by Who’s Who Among Students in American Universities and Colleges upon their graduation from the GSN.

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**FACULTY**

**Composition.** The Graduate School of Nursing has 17 full time faculty: nine civilians and eight uniformed officers. There are 128 off-campus faculty: 77 civilians, and 51 uniformed officers who assist in the programs of the GSN.

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Selected Profiles of Graduate School of Nursing Faculty.

"I would like to take a moment to honor Dr. Faye G. Abdellah, RN, Ed.D., Sc.D., FAAN, ... Dr. Abdellah will be inducted in the National Women’s Hall of Fame this weekend. ... Dr. Abdellah is being recognized and honored for her pioneering work altering nursing theory and practice, for the development of the first tested coronary care unit that saved thousands of lives, and for being the first nurse to hold the rank of Rear Admiral (Upper Half) and the Title of Deputy Surgeon General for the United States ... Dr. Abdellah is the recipient of 79 professional and academic honors. She holds eleven honorary degrees from universities that have recognized her innovative work in nursing research, in the development of the first nurse scientist, as an international expert in health policies, and for making invaluable contributions to the health of our nation. She has authored and co-authored more than 150 publications, some of which have been translated into six languages ... Dr. Abdellah worked with the Surgeon General in the formation of national health policies related to AIDS, drug addiction, violence, smoking, and alcoholism. She developed the first federal training program for health services researchers, health services administrators, and geriatric nurse practitioners ... As part of her international health outreach role as a nurse and health services consultant, she has been a member of official United States delegations on exchange missions to Russia, Yugoslavia, and France. ... I have had the privilege of knowing Dr. Abdellah for many years. Her selfless devotion to duty and extraordinary accomplishments are legendary. It is with pride that I congratulate Dr. Abdellah on her well-deserved induction into the National Women's Hall of Fame. Our nation can be proud of her long and distinguished service to this country."

-"Tribute to Dr. Faye G. Abdellah," The Congressional Record, presented by Daniel K. Inouye, United States Senator from Hawaii, on October 5, 2000.

**Induction of GSN Dean into the National Women's Hall of Fame.** On October 7, 2000, Faye G. Abdellah, RN, Ed.D., Sc.D., FAAN, Professor and Dean, Graduate School of Nursing, was officially inducted into the National Women's Hall of Fame, at Seneca Falls, New York. Her selection was made by a panel of distinguished judges from many leading organizations, educational institutions, and fields of achievement. Dean Abdellah was recognized for her extraordinary accomplishments. She will join the 157 eminent women who have been inducted into the Hall of Fame since its founding in 1969 (e.g., Clara Barton, Mary Cassatt, Emily Dickinson, Dorothea Dix, Amelia Earhart, Helen Keller, Sandra Day O'Connor, Rosa Parks, Eleanor Roosevelt, Harriet Tubman, etc.). The National Women's Hall of Fame
is a national membership organization that honors and celebrates the achievements of individual American women.

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**Outstanding Uniformed Faculty Award. Colonel Martha Turner, USAF, NC,** Associate Dean, was selected by the GSN students to receive the Uniformed Faculty Award at the May 2000 Graduation. The GSN students chose Colonel Turner as the uniformed faculty educator who exemplified the highest qualities of a graduate nursing educator by personal example and performance.

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**Outstanding Civilian Faculty Award. Diane Padden, RN, FNP, Assistant Professor, Department of Nurse Practitioners,** was selected by the GSN students to receive the Civilian Faculty Award at their May 2000 Graduation. The GSN students selected Ms. Padden as the civilian faculty educator who displayed the highest qualities of a graduate nursing educator by personal example and performance.

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**GSN Associate Dean Serves as the Ethics Consultant to the Air Force Surgeon General. Throughout 2000, Colonel Martha Turner, USAF, NC, RN, Ph.D., Associate Dean, Graduate School of Nursing,** continued her activities as the Ethics Consultant to the Air Force Surgeon General. Several projects were completed and others were designed for implementation during 2000. The Ethics E-Mail Network is now fully functional and connects the Air Force Consultant with the key personnel responsible for the Air Force Ethics Programs located in Medical Facilities throughout the world. Information is now posted, questions are addressed, and policies are shared and critiqued. A needs assessment was completed and the findings have been integrated into on-going initiatives for the provision of practical solutions to common challenges found in the areas of clinical and organizational ethics. A model program was established at one facility which has been recognized as exceptional by the Joint Commission on Accreditation of Hospitals (JCAHO) and HSI. The policies and instructions of the model program can be adapted for use in clinics and bedded facilities. Multiple lectures and seminars were presented at the Association of Military Surgeons of the United States (AMSUS), the first International Health Specialist Course, the annual conference of military medical attorneys, the course for newly appointed health care executives, the San Antonio Chapter of the March of Dimes, and the Army Medical Ethics Course. Other recognized accomplishments included serving on the TriService Nursing Program Advisory Council and the Ethics Council of the Minnesota Nurses Association. Colonel Turner also gave a presentation on ethics program development for the National Nursing Staff Development Organization in Orlando, Florida.

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Chair of the GSN Faculty Council Provides Faculty Representation. Diane C. Seibert, MS, CRNP, Assistant Professor and Chair of the Faculty Council, provides representation for the GSN faculty in several ways. During 2000, she acted as a voice for the GSN faculty at many critical meetings held by the Deans Council; the GSN Committee on Appointments, Promotions, and Tenure; and, the Federal Nursing Chiefs and their representatives. She also chaired the Evaluation Committee which has the responsibility for implementing and coordinating all program assessments/reviews within the GSN. In addition to her consistent support throughout the entire Academic Year, Ms. Seibert found time to publish an article on Hormone Replacement Therapy for Nurse Practitioner Forum; and, she published an "on-line" case study article for Medscape <www.medscape.com>. In addition, Ms. Seibert has served as a member of the National Nurse Practitioner Conference Program Planning Committee since 1995.

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GSN Faculty Completes Successful Collaborative Efforts. Faculty from the Department of Nurse Practitioners and the Department of Veterans Affairs provided all of the articles for both the September 2000 and the December 2000 issues of Nurse Practitioner Forum. Both issues of the Nurse Practitioner Forum focused on "Issues on Women's Health." Articles addressed such topics as Urinary Incontinence in Women, Assessing Breast Pain, Hormone Replacement Therapies, Heart Disease in Women, Depression in Women, Patient Satisfaction with Prenatal Care in Military Settings, and the First Pelvic Examination. Participating faculty included: Angela Martin, CRNP, Department of Veterans Affairs; Kathleen Burkhart, MSN, CRNP, Department of Veterans Affairs; Diane Padden, MSN, CRNP, Assistant Professor, GSN Department of Nurse Practitioners; Diane C. Seibert, MS, CRNP, Assistant Professor, GSN Department of Nurse Practitioners; Susanne Gibbons, MS, CRNP, Assistant Professor, GSN Department of Nurse Practitioners; Barbara M. Sylvia, Ph.D., RN, Associate Professor and Chair, GSN Department of Nursing Research; Lieutenant Colonel Richard Ricciardi, USA, MSN, CRNP, Assistant Professor, GSN Department of Nurse Practitioners; and, Patricia C. McMullen, J.D., MS, CNS, CRNP, Associate Professor and Acting Chair, GSN Department of Nurse Practitioners. Patricia McMullen served as guest editor for both of the issues.

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GSN Faculty Member Recognized by the National Association of Pediatric Nurse Associates & Practitioners. Lieutenant Colonel Richard Ricciardi, USA, NC, Assistant Professor, USU GSN Department of Nurse Practitioners, was selected as treasurer of the National Association of Pediatric Nurse Associates & Practitioners for the 2000-2001 Fiscal Year. The association has more than 5,800 pediatric nurse practitioners and nurses in advance practice who provide primary health care to children.

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THE DEPARTMENT OF NURSE PRACTITIONERS

Background. The first formal training program was established in 1960 to prepare advanced practice pediatric nurses. In 1967, public health nurses received advanced training to care for patients in their homes. Nurses were initially taught to take a full medical history, conduct a comprehensive physical examination, and oversee the use of medications. Eventually, nurse practitioners were performing those activities in the offices of the physicians with whom they worked. In 1977, the Medicare statute was amended to allow nurse practitioners to provide primary care independently in underserved rural areas. Nurse practitioner programs grew quickly; and, the advanced practice nurses found work in hospital-based clinics, providing care to underserved patients. In 1994, the National Advisory Council on Nurse Education and Practice for the Health Resources & Services Administration of the Department of Health and Human Services identified the need to upgrade the knowledge, skills, and abilities of the existing registered nurse work force to match the practice requirements within today's health care systems. Currently, every state gives nurse practitioners some level of pharmaceutical prescribing authority. In 1995, the Institute of Medicine engaged in an inclusive study, "Primary Care: America's Health in a New Era." The study provided the following definition: primary care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community. Today, through advanced education and training in the science of disease prevention, health promotion, health education, and community and home-based care, the advanced nurse practitioner is recognized as an essential member of the health care team. During 1999, the American Association of Colleges of Nursing also reported that the demand for advanced practice nurses continues to increase. Current demands across the country are for advanced practice nurses who can deliver a high complexity of care across the projected life-span of their patients within an integrated health care system. The significant role of the advanced nurse practitioner within the health care community is recognized. And, the current shortage of advanced practice nurses who are qualified to assess, diagnose, and manage patients in primary care settings has also been confirmed. In light of this, the nursing community is dedicated to ensuring that the existing nurse practitioner programs are of the highest quality and that they meet or exceed all educational standards and credentialing safeguards established by the National Organization of Nurse Practitioner Faculties and the credentialing entities of the National League for Nursing.

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Composition of the Department of Nurse Practitioners. Under the leadership of the Acting Chair, Department of Nurse Practitioners, the department has grown in numbers of students, faculty, and clinical practice sites. The Department of Nurse Practitioners (DNP) has a total of 29 students; the DNP Program is currently 24 months in length. (In June of 1999, the DNP Program was increased from 21 to 24 months to allow for the integration of women's health competencies as recommended by the Federal Nursing Chiefs.) The Program includes 58 academic credits with 945 hours of clinical experience (the initial 21 month program included 720 hours of clinical experience).

There are also two uniformed officers enrolled in a resident, one-year Post-Master's DNP Program that retraining advanced practice nurses in specialties that are required by the Services. These uniformed nurses must already have a clinical specialty area, usually one that is no longer required by their Service. The program length is between six months to one year depending upon the education and experience of the individual student.

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**Outcome Goals of the Department of Nurse Practitioners.** Upon completion of the Nurse Practitioners Program, the DNP faculty is committed that their graduates will be able to: 1) assess the health and developmental status of patients using the appropriate data gathering and health assessment techniques; 2) evaluate family systems to determine individual and family health care needs; 3) evaluate cultural, economic, and environmental factors which affect family relations, patient behavior, health, and health care delivery; 4) develop and implement, in conjunction with the patient and family, an individual and family health care plan which emphasizes health promotion and disease prevention; 5) analyze and comprehensively manage common acute and chronic health problems; 6) engage in collegial and collaborative relationships with other health care providers in order to provide optimal delivery of primary care to the patient, family, and community; 7) utilize personal skills in communicating with and counseling the patient, family, other health team members, and the public; 8) analyze the delivery of patient health services and the role of the Nurse Practitioner within the health care system; 9) evaluate personal role development as a Nurse Practitioner; 10) develop, promote, and implement the role of the Nurse Practitioner in traditional and non-traditional practice sites; and, 11) utilize research-based findings as a means of improving patient care.

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**Clinical Sites at Military Health Care Centers.** The Department of Nurse Practitioners has completed memoranda of understanding (MOUs) for its affiliations with 12 military health care facilities: **Army** - (5) the DeWitt Army Community Hospital, Fort Belvoir, Virginia; the Kimbrough Ambulatory Care Center, Fort Meade, Maryland; the Walter Reed Army Medical Center, Washington, D.C.; Fort Carson Army Community Hospital, Fort Carson, Colorado; and, the Womack Army Medical Center, Fort Bragg, North Carolina; **Navy** - (6) the Annapolis Naval Medical Clinic, Maryland; the National Naval Medical Center, Bethesda, Maryland; the Naval Air Facility Branch Medical Clinic, Andrews Air Force Base, Maryland; the Quantico Naval Medical Clinic, Quantico Marine Corps Base, Virginia; the Naval Ambulatory Care Center, Groton, Connecticut; and, the Portsmouth Naval Medical Center, Virginia; **Air Force** - (1) the 1st Medical Group, Langley Air Force Base, Virginia.

Memoranda of Understanding (MOUs) are currently pending approval with five additional military clinical sites: **Army** - (1) the Darnell Army Community Hospital, Fort Hood, Texas; **Navy** - (1) the Naval Hospital, Naval Training Center, Great Lakes, Illinois; **Air Force** - (3) the David Grant Medical Center, Travis Air Force Base, California; the Air Force Academy, Colorado Springs, Colorado; and, the Scott Air Force Base, Illinois. In addition, the NP Department has affiliations with 41 additional non-DoD Federal and civilian treatment facilities.

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1999 - 2000 Program Review. During 1999 through 2000, the Department of Nurse Practitioners conducted an inclusive review of its entire program and an assessment of the success of its educational program as demonstrated by the DNP graduates.

Program Assessment. To date, a total of 53 nurse practitioner graduates have taken the ANCC National Certification Examination for Family Nurse Practitioners. Fifty-two out of the 53 students, 98 percent, have successfully passed the examination on their first attempt (the 1998 National Certification statistics indicate a 76 percent certification pass rate on the first examination). All of the 53 graduates are currently certified. With the assistance of the GSN Department of Nursing Research, assessment surveys were conducted during 1999 and 2000, to determine both GSN graduate and supervisor satisfaction with the DNP educational program. The performance of over 90 percent of all GSN alumni was rated as above-average, significantly exceeding expectations for new graduates. Even more significant were the proportions of graduates given the highest competency rating by their supervisors. Eighty-four percent of the DNP graduates received the highest competency rating from their supervisors. (See the detailed discussion on the survey instrument provided in the Department of Nursing Research section of this report.)

Curriculum Assessment. Extensive coordination has taken place between the Department of Nurse Practitioners and the Offices of the Federal Nursing Chiefs throughout 1999 and 2000. As a result, the following program enhancements were set in place: 1) under the newly implemented curriculum, the DNP students will increase their hours of clinical experience from 720 to 945 hours; this change occurred, in part, due to survey responses from both graduates and supervisors who recommended additional experience in the development of skills for efficient management of the time required for patient care/service; 2) the additional increase of three months to the overall DNP Program (an increase from 21 to 24 months) allows the DNP students to spend their entire last year in a practicum where they can gain more experience in the emergency room, in triage, ACLS, X-ray interpretation, and ortho assessment; 3) while the actual number of written papers has been reduced throughout the DNP Program, the weekly oral reports by the students assigned to clinical sites has been increased. Throughout all of the DNP courses, the students must provide an oral presentation on subject matter related to each course. To prepare for their presentations, students must research relevant clinical literature and formulate a cogent presentation; additionally, DNP students are asked to research pertinent journal articles in conjunction with their Research Courses and Scholarly Project requirements; 4) to respond to recommendations from supervisors of GSN graduates that GSN graduates must be encouraged to continue to read relevant journals and nursing literature during their entire career, the DNP faculty is increasing its efforts to emphasize the critical importance of scholarly reading throughout the entire DNP Program; and, 5) curriculum review processes have been successfully established throughout the DNP Program and following graduation.

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THE DEPARTMENT OF NURSE ANESTHESIA

Background. Nurse anesthetists have faithfully served their Nation in all of its wars and conflicts and at home during times of peace throughout the 20th Century. During the late 1800's, Dr. Charles Mayo appointed Alice Magaw, his nurse anesthetist at St. Mary's Hospital in Rochester, Minnesota, as the "Mother of Anesthesia." She was a talented anesthetist at a time when people from all over the world came to the Mayo treatment center to learn from its physicians and nurses about anesthesia. In fact, the United States Army sent nurses to Dr. Mayo to study anesthesia before the Nation entered World War I.

Nurse Anesthetists provided anesthesia during World War I and served in the Combat Clearing Stations near the front lines in France; they taught French nurses and physicians to do anesthesia, and with British physician concurrence, taught British nurses to provide anesthesia, relieving over 100 physicians to do other medical and surgical work.

During World War II, four nurse anesthetists were among the nurses captured in the Philippines, having provided anesthesia services in the jungles of Bataan and on Corregidor until the ether and other drugs ran out, along with the food and ammunition. Nurse Anesthetists served with distinction throughout every operational theater in WWII; they were at Anzio, Salerno, on board Navy ships, and went into Normandy with the first hospital.

Nurse anesthetists also served proudly during the Korean War, in Vietnam, Granada, Panama, Somalia, Desert Storm, and other military missions requiring anesthesia capability. Throughout the entire Century, physicians and nurse anesthetists have successfully worked together during times of war, humanitarian operations, and in civilian practice.

Nurse Anesthetists, among the first to incorporate the Harvard Monitoring Standards, consistently follow the philosophy that the nurse anesthetist has a duty to the patient he/she anesthetizes, to stay with the patient and to provide continuous care and monitoring. While most professional certifications for nurses were started in the 1970's, the nurse anesthesia certification program has existed since 1945. Specialty nursing certification has grown significantly over the last two decades. A study conducted by the Nursing Credentialing Research Coalition and released in February of 2000, found that certification has a dramatic impact on the personal, professional and practice outcomes of certified nurses. Specifically, the study stated that certification is a successful approach to improving patient safety and the overall quality of care. In addition, the practice of anesthesia is much safer today due to the advancing knowledge and technology that allows everyone in the operating room, from the surgeon to the nurse anesthetist to the technician, to perform his, or her, job more efficiently.

Composition of the Department of Nurse Anesthesia. The Department of Nurse Anesthesia currently has five full time faculty members, to include: three active duty CRNAs, one each, from the Army, Navy, and Air Force; and two basic scientists. In addition, there is one civilian CRNA who functions as a training administrator. There are a variety of physicians, nurse anesthetists, and basic scientists who provide expertise for the core content.
In October of 2000, 13 students graduated from the Nurse Anesthesia Program. All graduates from the Class of 2000 successfully completed the national certification examination for nurse anesthetists and are credentialed to practice in their respective Services.

Currently, there are 26 students enrolled in the program: both Phase 1 and 2 include a total of 13 students. Seventeen student officers are from the Air Force; five students are Army officers; three are Navy officers; and, one student officer represents the Public Health Service. It is anticipated that the next class will have from 14 to 16 students.

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**Outcome Goals of the Certified Registered Nurse Anesthesia Program.** Upon completion of the Nurse Anesthesia Program, the faculty of the Department of Nurse Anesthesia is committed that either through the oral examination process or actual demonstration on any patient or selected pieces of equipment, the nurse anesthesia graduate will be able to: 1) comply with USU GSN requirements for graduation; 2) meet, or exceed, Council on Certification of Nurse Anesthetists Case Requirements; 3) satisfy eligibility requirements to write the Certification Examination; 4) obtain the academic capability to pass the Certification Examination; 5) successfully master the terminal objectives; and, 6) be able to meet the mission of the USU Nurse Anesthesia Program.

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**Clinical Training at Military Health Care Centers.** Clinical training was restructured within the Department of Nurse Anesthesia in response to feedback from students, clinical faculty, and external reviews. All students are now assigned to a military hospital as their primary clinical training site. Students, overall, receive more cases, a better case mix, and appropriate supervision and evaluation. A clinical coordinator is assigned to each site whose primary responsibility is to oversee student scheduling and to evaluate their progress; this oversight responsibility has increased consistency in evaluation and scheduling of the rotations. In addition, the site coordinators participate in all faculty meetings, maintain student records, and complete other administrative activities associated with running the clinical training. The five primary military clinical training sites are: 1) the Air Force Medical Center at Wright Patterson Air Force Base, Ohio; 2) the David Grant Army Medical Center at Travis Air Force Base, California; 3) the Walter Reed Army Medical Center in Washington, D.C. (Following collaboration with the Director of Nursing Services at the Walter Reed Army Medical Center (WRAMC), additional clinical sites were offered during 2000. Health assessment demonstration/practice rooms were also made available at WRAMC for the GSN students); 4) the Naval School of Health Sciences/the Naval Medical Center at San Diego, California; and, 5) the National Naval Medical Center in Bethesda, Maryland. It is not possible to obtain all of the required cases at these sites, so GSN students rotate to a variety of Federal, civilian, and military health centers to obtain additional experience.

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**Program Review.** During 2000, in response to external and internal reviews, many changes were instituted by the faculty of the Department of Nurse Anesthesia. These changes were coordinated with the
Federal Nursing Chiefs following an inclusive review and assessment of the entire educational program. Current efforts are underway to identify all areas of the curriculum which support the readiness mission of the Services.

Program Evaluation and Administrative Structure. To date, a total of 69 Nurse Anesthesia graduates have taken and passed their certification examinations. With the assistance of the Department of Nursing Research, assessment surveys were conducted during 1999 and 2000 to determine both GSN graduate and supervisor satisfaction with the Department of Nurse Anesthesia educational program. The performance of over 90 percent of the GSN alumni was rated as above-average, significantly exceeding expectations for new graduates. Even more significant were the proportions of graduates given the highest competency rating by their supervisors. Seventy percent of the Nurse Anesthesia graduates were rated at the highest competency level. (See the detailed discussion on the survey and evaluation instruments provided in the Department of Nursing Research section of this report).

In conjunction with the Evaluation Committee, a comprehensive evaluation process is now in place that covers all facets of the program. A process to integrate information received from the evaluation surveys has also been instituted so that progress and changes can be tracked. This information is then shared with the students so they can see how their input is used to institute positive change. The policy and procedures for the Student Promotion Committee were also rewritten; the policy has been strengthened to ensure due process and fair evaluation of student progress.

A new committee structure for the Department has been instituted. It provides a structure for integrating Phase I and 2, the evaluation plan, and a comprehensive program review through GSN faculty, student, and external participation.

Program Length. The length of the Nurse Anesthesia Program was extended to 30 months and is in effect for the Class of 2002. The additional time will be used to increase exposure to more difficult clinical cases and to allow adequate time for permanent change of station moves between Phase 1 and 2 of the program.

Curriculum Assessment and Enhancement. Collaborative efforts throughout 1999 and 2000 resulted in a positive exchange of information between the Nurse Anesthesia Department and the Offices of the Federal Nursing Chiefs. As a direct response to the 1999 surveys and coordinated assessments, the following enhancements to the curriculum were agreed upon: 1) in January of 2000, the faculty of the Nurse Anesthesia Department completely restructured three courses: Pathophysiology and Basic and Advanced Principles of Anesthesia. The Nurse Anesthesia Department contracted with Dr. Osvaldo Bustos to instruct the Pathophysiology Course. Under his direction, the students have expressed a renewed interest in the course; 2) the didactic curriculum has been re-sequenced so that the courses are taught in a more integrated manner. For example, students first learn about the structure of the human body (Anatomy and Cell Biology), which is followed by the study of function (Physiology) and then, malfunction (Pathophysiology); 3) operational readiness concepts are integrated into each course. Concepts are taught with special attention to their application to military health care. For example, the management of gunshot wounds will be covered in anesthesia for trauma: and, aspects of Nuclear, Biological, and Chemical (NBC) warfare will be incorporated into the Pathophysiology and Anesthesia Pharmacology Courses. The Nurse Anesthesia faculty also completed coordination on the Military Medical Humanitarian Assistance Course. The development of the first GSN
Humanitarian and Disaster Mission Course for advanced practice nurses was well received during 2000, and will be offered again during 2001. Efforts are being made to increase the scope of the course to include the concept of the International Health Specialist; 4) the use of a patient simulator and the instructions for using regional anesthesia and central line placement have been incorporated wherever possible in the Nurse Anesthesia curriculum. This has resulted in providing a bridge between the academic and clinical phases of the educational program; 5) the return of the clinical students to the cadaver laboratories during 2000 reinforced the concepts of anatomical and regional anesthesia; 6) the Anesthesia Seminars were restructured and scheduled to accommodate the students on clinical rotations; and, 7) the faculty of the Nurse Anesthesia Department has instituted quality assessment/improvement plans for on-going programmatic evaluation. The GSN Nursing Research Department will assist in the resulting process for gathering program statistics, to include trends of clinical case counts, certification examination results, summaries of application/admission results, and collective trends in program evaluation.

Program Leadership. An extensive search for a new Chair for the Department of Nurse Anesthesia has been completed; Lieutenant Colonel Paul Austin, USAF, CRNA, has been selected as the Chair of the Department of Nurse Anesthesia. He is expected to report to his new assignment during the Summer of 2001.

Communication. During 2000, an effort was made to increase communication between faculty, students, and the GSN administration. Mandatory all-faculty meetings are held twice each year, in conjunction with national meetings; they are now an integral part of the Department's program planning and design. Policies, procedures, and processes are discussed; and, the faculty is working as a team to ensure consistency of policies and procedures throughout the clinical sites. Faculty members communicate freely through telephone calls and e-mail. They are actively involved in GSN and University committees. Communication with the Dean of the GSN is open and active.

In addition, to increase communication with students assigned to clinical rotations, site visits are conducted biannually. Sufficient time is spent with the students to discuss program changes, receive feedback, and to access individual progress. The students appreciated the individual time and also provided valuable insight into the training process.

Patient Simulator—Realistic Training through Advanced Technology. The patient simulator has previously been addressed in Part II of this report. The USU’s GSN program for Nurse Anesthetists has increased the utilization of the patient simulator for training as well as for evaluation. First, the GSN students receive simulator training in anesthesia induction procedures. After extensive classroom study, the students return to the simulation area where each student is presented with his, or her, own unique (simulated) case. These cases include specific (simulated) patients superimposed with complicating events that could occur during the anesthesia induction process. The GSN students combine everything they have learned about the physiology of gas exchange and physiologic and pharmacologic responses and actually perform the procedures and administer anesthesia without putting human patients, or themselves, at risk. In response to student evaluations, the patient simulator is now fully incorporated into the Basic and Advanced Anesthesia Principles Course. Mr. John Connelly, CRNA, was hired to run the simulator program. Working in conjunction
with the course directors, he has established a simulator curriculum to allow students hands-on training prior to their starting clinical training. Student response has been overwhelmingly positive. A plan is in effect to expand the simulator training to students in Phase 2 training. Use of the simulator is also being expanded to other courses, including Anesthesia Pharmacology. Evaluations will be conducted to determine the effectiveness of this training.

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Scholarly Project. Each graduate must complete an individual or group thesis or scholarly project before graduation from the GSN. The student's research project generally has application to anesthesia practice and includes bench studies, both quantitative and qualitative research, surveys, and clinical studies. All topics must be relevant to the Uniformed Services and serve to enhance the clinical practice of the graduate. All students are encouraged to publish their findings. During 2000, students were involved in a variety of scholarly projects, including both clinical and bench research studies. Students are encouraged to publish in peer-reviewed journals or to give poster and oral presentations of their findings. An emphasis is being placed on outcomes and how they may be incorporated into future practice.

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Innovative Teaching of Traditional Nurse Anesthesia Topics. Contemporary training of Advanced Practice Nurses (APNs) including Nurse Practitioners (NP) and Nurse Anesthesia (NA) students requires innovative technologies while maintaining traditional, proven techniques. The National League for Nursing Accreditation Commission (NLNAC) and the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) outline a variety of topics related to the practice of anatomy and neuroscience which students must master for the successful administration of anesthesia. To meet these requirements, a unique program is being taught by a diversified clinical and basic science faculty drawn from the GSN, the School of Medicine, affiliated hospitals, and federal agencies. A Simulation Center using "standardized patients" and anesthesia simulator have recently been added. Three courses are taught in the summer and fall semesters; they are coordinated by Donald D. Rigamonti, Ph.D., an Anatomist/Neuroscientist, in the GSN Department of Nurse Anesthesia. They are Anatomy and Cell Biology and Neuroscience I and II. The summer semester provides an extensive use of a "state-of-the-art" anatomy teaching laboratory where special topics useful for NP and NA students are demonstrated. Both the laboratory and computer-aided instruction have been cited as highlights by site reviewers from the National League for Nursing Accreditation Commission and the Council on Accreditation of Nurse Anesthesia Educational Programs. Recently, the staff and patients at the Simulation Center have been used to "mirror" the anatomy and neuroscience summer courses. Furthermore, the USU classrooms and library have several software packages on-line and these are used during the Anatomy and Cell Biology Course. Neuroscience I is taught in the Summer and provides a review of basic neurophysiological concepts and an examination of gross central and peripheral nervous system structures. Neuroscience II is taught in the fall semester; it provides an in-depth review of neurophysiological concepts related to peripheral nerves, spinal cord segments, and the brain. These principles are demonstrated in laboratories utilizing human subjects and computer-assisted data acquisition. In addition, computer-aided instruction is routinely used to teach human anatomy, cell biology, and nervous system structure and function. Throughout their courses of instruction, individual students are assigned lecture topics. They can then select laboratory sessions, including cadaver laboratories, and lead discussions with visiting faculty and study groups. These courses utilize the Visible Human Project, which is available
through the National Library of Medicine, a resource which offers the possibility of simulating anesthetic procedures in the virtual environment. Virtual lectures on five topics have been developed in collaboration with the University of California Medical Center. Dr. Rigamonti, Dr. Osvaldo Bustos, and other staff have worked closely with Helene Hoffman, Ph.D., University of California Medical Center, to present virtual lectures to the GSN students at USU. This work was fully presented in the recent Visible Human Conference sponsored by the National Library of Medicine at the National Institute of Health.

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THE DEPARTMENT OF NURSING RESEARCH

Background and Mission. The Department of Nursing Research, under the leadership of its Department Chair, was established to assist the educational programs in the GSN. This department allocates over 80 percent of its resources to provide the Departments of Nurse Practitioners and Nurse Anesthesia with the following support: 1) guidance and individual support to all GSN students for their theses or scholarly projects during 2000: 13 NP theses; 13 NA theses; all studies focused on clinical practice or specialty characteristics. Following consultation with the Federal Nursing Chiefs during 1999, it was decided that the GSN students may now choose among several types of scholarly projects which include: research culminating in either a written thesis or a publishable paper; a research practicum; and/or, a defined project. No matter which option is chosen, any scholarly project may be done individually or in a group. A GSN research committee will determine that each scholarly project meets the USU requirements for a Master's of Science Degree and that it is relevant to the Uniformed Services; 2) instruction of course work for the two nursing programs during the Academic Year 2000: two courses were presented; two academic credits were earned for each course; and, during the fall and spring semesters, 25 students attended each course; 3) assistance, as appropriate, for the distance learning programs; 4) implementation and analyses of assessment and outcome surveys of GSN graduates and supervisors; 5) preparation for, and implementation of, reaccreditation processes for: a) the National League for Nursing; the next site visit is scheduled for October of 2001; b) the American Association of Colleges of Nursing; the site visit is scheduled for November of 2001; and, c) the Council on Accreditation of Nurse Anesthesia Educational Programs; the next site visit is scheduled for the Fall of 2003; 6) leadership for the Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base effort; and, 7) executive guidance for the GSN Science and Engineering Apprentice Program.

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The Electronic Military/Uniformed Services Nursing Research Data Base - A Collaborative Effort.

Background. The Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base was initiated by the GSN Board of Advisors, when it approved the formation of a Task Force with a goal to "design and develop an electronic bibliographic storage retrieval data base for nursing research documents in the military and uniformed services." Virginia K. Saba, Ed.D., FAAN, Professor and Advisor on Educational Technologies, GSN Nursing Research Department, was appointed as the Chair of the Task Force. Barbara Sylvia, Ph.D., Associate Professor and Chair, GSN Department of Nursing Research, was also appointed to the Task Force. Other members included the Director of the Learning Resource Center, USUHS.

Following the guidance of the Task Force, the development of an Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base was initiated by the GSN. The data base was designed, with the assistance of the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Information Systems and the LRC, as an integral component of the newly created special interest category for the Military Services and Commissioned Corps: EMUSNR, incorporated as a virtual data base in the CINAHL, is the first of
its kind. This data base provides electronic access to the Military Services and Commissioned Corps nursing research documents that have been previously available in only selected and diverse locations.

**Global Access.** The newly created EMUSNR data base allows global access to documents completed by graduate students at the GSN and the final reports of the TriService Nursing Research Grant Program. The EMUSNR offers electronic searching and retrieval of bibliographic citations to the respective nursing research documents. Those documents will be fully indexed and will consist of the following characteristics: relevant uniformed services subject headings; a 150 to 200 word informative abstract; and, a description of research methods, instruments and other research concepts. To accommodate these new information resources and to make them retrievable for the military/uniformed services nursing community, the CINAHL Thesaurus has been expanded. Also, when appropriate, the full text of brief research reports will be incorporated. Currently, the full text of the final grant reports can be obtained from the National Technical Information Services (NTIS). It is expected that this data base will provide significant benefit to the Military Health System.

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**The Science and Engineering Apprentice Program.** For the past five summers, the GSN, through executive coordination provided by Eugene Levine, Ph.D., Professor, Department of Nursing Research, has participated in the Science and Engineering Apprentice Program (SEAP) which is sponsored by the DoD. This program assigns high school students, who are selected competitively, to various agencies such as the USU GSN. The students spend eight weeks during their summer break working on projects of a scientific or technical nature.

A total of 13 students have been assigned to the GSN since it began participating in the program in 1996. These students have engaged in a variety of projects, including developing a data base to analyze the characteristics of applicants to the GSN which resulted in an article published in the journal, Military Medicine. Other projects include developing predictors of success in the GSN programs, conducting a survey of textbooks used in pathophysiology courses for advanced practice nurses, creating a data base for theses completed by GSN students, and assisting in laboratory studies by recording data from scientific measuring instruments. The SEAP program has benefitted both the students and the GSN. The high productivity, combined with the quality of their work, resulted in significant progress on numerous GSN projects. Related to their assigned projects, the students visited the University of Maryland’s Shock Trauma Center and actually participated in the work of the Center. They also conducted literature searches at the LRC, National Library of Medicine and the Clinical Center of the National Institutes of Health, and they attended the annual Federal Computer Convention (FOSSE) held in July of 2000.

During the Summer of 2000, the GSN continued its participation in the SEAP Program. Two students, Samantha Tenenbaum and Marie Wei, were assigned to the Department of Nursing Research, under the mentorship of Dr. Eugene Levine. As in the past, the students spent a mutually beneficial summer working on projects through which they learned the essentials of research and statistical procedures; all of this was accomplished while completing useful projects for the faculty and students of the GSN. Ms. Tenenbaum, in her second year as a SEAP student with the GSN, continued her development of a data base to include the research theses completed by the GSN students. In its final form as a CD-ROM, the data base will be searchable by author, topic, literature sources used, conceptual framework, research design, methodology,
and findings. Among other uses, the data base will be a resource for new students in selecting ideas for their thesis topics, locating literature sources, and obtaining information about data-collection instruments and research methodology. Ms. Wei's major project was the development of an Excel Software Manual for students using Excel software for statistical analysis by computer. All students are currently taught SPSS, a highly sophisticated statistical program, for their statistical data processing. But, for those students whose research involves only modest statistical requirements, a simpler tool is desirable. Moreover, most students already possess Excel software for their personal computers and thus, do not need to install additional programs. By the conclusion of her SEAP assignment, Ms. Wei completed a draft of the Excell Software Manual: it is now being tested and refined. The Excell Software Manual will be made available to students entering the GSN in June of 2001.

In addition to their major projects, Ms. Tenenbaum and Ms. Wei engaged in various productive activities during the Summer of 2000. They took several field trips to include visits to a major computer exhibition at the Washington, D.C. Convention Center and to the USUHS Simulation Center at Forest Glen, Maryland. They also prepared several short papers on statistical analyses they had pursued entitled, "Who Are the Most Dangerous Drivers?" and "Which Was the Most Lethal War?"

The GSN coordinators have followed the progress of their SEAP students. Four students have graduated from high school: one entered Princeton University with plans to attend the medical school at USU in 2001; another is at Swarthmore College; a third is in the ROTC Program at the University of South Carolina; and, a fourth SEAP student has applied to the Naval Academy. Ms. Tenenbaum is in her senior year in high school and has applied for admission to the Honors Program at the University of Maryland. Her application to this excellent program was accepted: she indicated that her SEAP experiences were significant to her acceptance. Ms. Tenenbaum can be added to a long line of former GSN SEAP students who have been admitted to outstanding universities. All of the GSN SEAP students have expressed interest in pursuing studies leading to careers in the areas of health and/or science.

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Alumni Assessment/Survey Process for Outcome Evaluations of the Nurse Practitioner and the Certified Registered Nurse Anesthesia Programs.

"I just wanted to take a moment to thank you again for all of your dedication to me as a student at USUHS ... You more than prepared me for this - you inspired me and I now come to work with only 7+ anxiety instead of 10+. I see a lot of pediatrics, women, and basically nothing so far that I did not see in any of my clinical assignments at USUHS ... I am forever grateful!!!"

-Major. Kathleen Herberger, AN, USA, in an E-Mail, from her assignment at Fort Monmouth, to the GSN faculty, dated June 7, 2000.

**Background.** Since 1996, the Department of Nursing Research has conducted a periodic Alumni Survey of its educational programs. The detailed surveys include both the GSN graduates and their supervisors, although separate data-collection instruments are used for surveying the two groups. During 2000, the survey instrument used to gather data from the GSN graduates, concerning their evaluation of the education and training received at the GSN, were revised to provide even more significant data. The survey instruments utilized to obtain evaluations from current supervisors of the GSN graduates continue to gather data on the graduates' performance in relation to the terminal objectives of the GSN programs and the effectiveness of its programs in preparing the GSN students to meet those objectives.

On-going reviews and in-depth assessments of the survey data have resulted in the identification of areas for improvement. The GSN Faculty Council and Departments have continuously initiated corrections where necessary and expanded their curriculum as appropriate. For example, when graduates of the Class of 1995 recommended the inclusion of training in the procedures for suturing, basic laboratory testing, and triage, the GSN faculty incorporated those procedures into the appropriate GSN courses. The Nurse Practitioner graduates also recommended the addition of Anatomy into the curriculum; that recommendation was implemented during 1999. The Nurse Practitioner Program has recently been expanded from 21 to 24 months in length to allow for additional clinical experiences. In every case, the Federal Nursing Chiefs coordinated with the GSN reference the recommendations; and, in every case, the support of the Federal Nursing Chiefs was both positive and immediate.

**Revision of Instruments.** During 2000, extensive changes were made to the Alumni Survey instruments. First, the method of data collection was changed by redesigning the instruments as Web-based tools. Thus instead of mailing "paper and pencil" survey instruments, computerized forms are now available to GSN graduates and their supervisors at the USU Website which encourages an immediate response. The use of the website should simplify, accelerate, and increase the rate of return of completed survey instruments. In addition, the survey forms have been redesigned for targeting specific groups of the GSN graduates: recent alumni who have completed their first year of practice following graduation; and, earlier alumni who have been practicing for at least two to three years following their USU GSN graduation. These survey tools are expected to provide valuable information on the impact of the graduates' education at the GSN through the accumulation of years of experience following graduation, thus resulting in a broader evaluation of the outcomes for the GSN programs.

Extensive changes have also been made in the content of the survey instruments. The Evaluation Committee of the GSN, under the direction of Diane C. Siebert, M.S., CRNP, Assistant Professor, USU...
GSN Department of Nurse Practitioners, thoroughly reviewed each item on the various Alumni Survey Instruments for the GSN graduates and their supervisors in the Certified Registered Nurse Anesthesia (NA) and Nurse Practitioner (NP) Programs. Each of the forms have been completely revised so that individual items on the forms for recent alumni are sharply focused on specific skills and competencies which the new graduates should have acquired through the training received at the GSN. For example, items on the Nurse Anesthesia Program form ask respondents to rate how well prepared they are in such skills as interpreting x-rays, providing regional anesthesia, management of a difficult airway, and the care of the postoperative patient. Items on the form for alumni who have been practicing from at least two to three years obtain information on specific achievements in research, publications, and presentations at conferences; in addition, the survey instrument requests the graduates to rate how well they can perform functions in those areas for which they have received training at the GSN, and are expected to perform competently following two to three years of experience in their fields of practice.

The Web-based forms were mailed to selected graduates and their supervisors during the Year 2000 to test the validity and reliability of the instruments. These were found to be adequate. In the future, the Alumni Survey will be administered by computer.

Supervisors’ Evaluations of Alumni. The 1999 Edition of the USU Journal contained preliminary data from forms filled out by supervisors of GSN graduates representing the years 1996 through 1998. Additional forms for graduates of those years and for the graduates of 1999 were received during 2000. This information was added to the data base and updated summaries of the data were prepared. A total of 48 supervisors provided evaluations of GSN alumni. These included supervisors of 23 Nurse Anesthesia and 25 Nurse Practitioner graduates. The performance of over 90 percent of the alumni was rated as above-average, significantly exceeding expectations for new graduates. Even more striking, were the proportions of graduates given the highest competency rating by their supervisors: 70 percent of the Nurse Anesthesia graduates and 84 percent of the Nurse Practitioner graduates. On a seven point scale in which supervisors rated the relevancy of the training received at the GSN by the graduates, ratings for both Nurse Anesthesia and Nurse Practitioner supervisors averaged six, or highly relevant. Verbal comments reinforced the satisfaction of supervisors with the competency outcomes of GSN graduates: "... best NA in my department ... my choice for chief nurse anesthetist at any site ... extremely professional ... and, ... the Air Force should retain people like this whatever the cost."

Data obtained from supervisors from the Web-based data collection instruments during 2000, although representing only a small number of respondents, reveal a continuing high level of satisfaction with the graduates of the GSN programs. Such a trend should be expected as the educational programs of the GSN mature and feedback from alumni surveys and other sources of evaluation data are used by the Dean and GSN faculty to make enhancements and refinements in the curricula; all of which will improve the capabilities of the GSN graduates.

Alumni Evaluations. During 2000, an analysis was undertaken of the qualitative data contained in the forms submitted by the 1996 through 1999 GSN graduates. The forms allowed considerable opportunity for graduates to provide narrative comments about various aspects of the education received at the GSN. The forms contained many positive comments, such as, when asked which portions of the program were particularly beneficial several students stated: "... the variety of training, supportive instructors, and the reference sources available at the LRC... the didactic portion of the program... were very strong ...
excellent clinical experiences with plenty of variety that make me the strongest new graduate to arrive at my particular assignment ... the USUHS NA program is the best in the country ... USUHS graduates have a very good reputation in the real world." Most significant for the improvement of the educational programs were the many suggestions received for programmatic changes and enhancements. Alumni were encouraged to be constructive in offering these suggestions, and, as a result, much useful information was received. Changes made on the basis of those suggestions demonstrate the value of conducting alumni surveys. The surveys serve as an integral part of the essential process of program evaluation and improvement.

Changes Based on Alumni Surveys. GSN graduates provided numerous suggestions for program improvement that have resulted in modifications in the curriculum of courses, in the structure and process of clinical assignments, and in other significant aspects of the GSN educational programs. Recommendations implemented throughout the Nurse Anesthesia Program included: "... stronger emphasis on regional anesthesia ... more experience in OB anesthesia ... increased emphasis on military anesthesia including more hands-on practice with the portable field anesthesia machine ... the need for more mentoring by faculty while at the same time allowing students more independence." Alumni suggestions that were implemented into the Nurse Practitioner Program included: "... increased experience in radiology and laboratory interpretation and in performing certain procedures ... more experience in obtaining consultations from other providers and/or specialists ... the need for guidance in time management ... and, increased Emergency Room rotations ...

Change from Thesis to Scholarly Project. As previously mentioned, beginning with the initial class, the GSN had required that all students must complete and successfully defend a research thesis. While many students have found this requirement to be rewarding and of long-term benefit, some have had difficulties in selecting a manageable research topic and preparing a scientifically-based research proposal. Moreover, because of the demands of the clinical portion of their educational requirements, some students experienced time limitations for executing their theses research projects. In addition, as more students were pursuing their clinical experiences at sites away from the USU campus, access to their thesis committees, statistical information, consultation, and library resources became difficult. Many of the problems associated with conducting a thesis were revealed in the Alumni Surveys. As a result of this information, and coordination with the Federal Nursing Chiefs, the thesis requirement was changed to allow students to choose from various options, called scholarly projects. It has since been determined that these scholarly projects better meet the research objectives, interests, and capabilities of the students. Options include participating in an on-going research project under the guidance of a principal investigator; conducting a defined project in a scholarly area that is not necessarily a research project; and, conducting a thesis research project as part of a team of two or three students. Regardless of the option selected, all GSN students are encouraged to prepare a paper for publication on their project and to present those papers at professional meetings. The Department of Nursing Research has redesigned the GSN research courses to introduce the scholarly projects at an earlier stage, thus allowing students to initiate their projects months earlier than before. Earlier initiation should lighten the workload of the students as they near graduation and free more time for participation in the clinical portion of their educational programs. The redesign of the thesis process and research courses has received many favorable comments from the GSN students in their course evaluations.
Future Direction of Alumni Surveys. As previously indicated, the Alumni Surveys for graduates and their supervisors have been installed on the Web, accessible through the USUHS home page. A full report of the data collected in this manner from both the GSN graduates and their supervisors will be provided on the Web in 2002. Future reports will statistically link responses by alumni and supervisors to specific changes made in the educational programs of the GSN.

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THE GSN AND DISTANCE LEARNING

The Adult Nurse Practitioner Post-Master's Program - The Department of Veterans Affairs/Department of Defense Distance Learning Program.

The Department of Veterans Affairs and the Department of Defense participated in their first virtual graduation (at the Master's Degree level) from the Graduate School of Nursing at the Uniformed Services University of the Health Sciences on May 18, 1999.

"The conferees are pleased with the progress report on the DoD/DVA Distance Learning pilot project to transition clinical nurse specialists to the role of nurse practitioners. It is noted that 27 students graduated from the first virtual advanced program and 35 new students have been admitted for the second class of distance learning. The conferees encourage further refinement of this program as requirements develop."


Background. The popularity of distance learning is increasing due to advances in telecommunication, rapid access to knowledge, availability and access to the Internet, changes in student demographics, and interest in previously untapped rural or work-based markets. Distance education evolved from various types of home study. First, through correspondence courses, the instructors sent assignments, study guides, and other printed materials by mail to students, who, in turn, gained credit when they completed the required assignments. This was followed by Open Universities which used audio-conferencing with telephone handsets, speakerphones, and an audio-bridge to connect multiple telephone lines. Also, radio broadcasts, recorded media such as radio, television, audio/video tapes, and telephones were used to provide opportunities for students in rural, isolated areas. The next level of distance learning emerged with the introduction of interactive and digital technologies that delivered educational projects to students via interactive television, electronic networks, and computer-based multi-media systems or synchronous technology. Today's most current level of distance learning offers both synchronous and asynchronous audio, video, and graphic communication through the use of electronic networks. The further improvement of interactive technologies by using cable, compressed video, and video teleconferencing has provided an expansion of the traditional classroom experiences to distant students.

The classroom technologies generally include desktop computers with modems to access the Internet, electronic mail, and on-line literature data bases (in this case, nursing literature). Video teleconferencing technology allows the faculty member at the control station to control and view the types of images. This allows split screens and two-way interactions including images, sound, and motion. Students at the remote sites can see, hear, and observe the instructor by using a keypad with a built-in microphone; and, they can interact with the instructor or students in other locations. Interactive video teleconferencing requires: 1) a communication network (satellite or a land-line telephone); 2) interactive equipment on site; and, 3) that transmission be communicated at a certain time to specific distant locations. Simply stated, distance learning
and/or education differs from traditional higher education classroom instruction in two ways: students and teachers are separated by geographic distance; and, electronic technology is used for communication between the instructor and students.

The Internet has revolutionized distance learning education. Primarily, the Internet is used as a reference, or as a means of searching and obtaining information from multiple resources, on a specific topic of interest. The Internet, as a means of electronic communication, allows one to attach or retrieve multiple attachments. Thus, it is an easy process to transmit many requirements for the distance learning course. For example, the course syllabus, assignments, and required readings can be transmitted as e-mail attachments, making the distribution of information a rapid process and eliminating the time and expense required for duplicating the documents. Current software allows for controlled, on-line examinations; and, relevant course data can also be collected for outcome evaluations.

The Restructuring of the Department of Veterans Affairs Health Care System Called for an Increase in the Number of Nurse Practitioners. The Department of Veterans Affairs, Veterans Health Administration/Department of Defense (VA/DoD) Distance Learning Program was initiated following an objective issued by the Under Secretary for Health, Department of Veterans Affairs, which called for a 200 percent increase in the number of primary care providers in the VA medical centers. This goal is in keeping with recommendations by national nursing organizations to increase the number of advanced practice nurses. As early as 1994, the National Advisory Council on Nurse Education and Practice for the Health Resources and Services Administration of the Department of Health and Human Services had identified the need to upgrade the knowledge, skills, and abilities of the existing registered nurse work force to match the practice requirements within the health care systems. As late as 1999, the American Association of Colleges of Nursing also reported that the demand for advanced registered nurses continues to increase. Current demands across the country are for advanced practice nurses who can deliver a high complexity of care across the projected life-span of their patients within an integrated health care system. There is a shortage of advanced practice nurses who are qualified to assess, diagnose, and manage patients in primary care settings.

In response to the goal established by the Under Secretary for Health, the Department of Veterans Affairs Nursing Strategic Healthcare Group of the Office of Patient Care Services determined that one effective solution would be to assist currently employed, master's-prepared VA nurses to obtain new knowledge and skills as nurse practitioners. Since these VA employees already hold full-time positions, educational programs that complemented their existing work schedules would be most cost-effective.

At the same time, the national need for increased numbers of nurse practitioners was reflected in existing Nurse Practitioner Programs - many of which were oversubscribed and preferred full-time students. In some cases, nurses seeking additional education were often required to travel great distances or to relocate. In most cases, the demands of full-time course work, travel time, and/or relocation would force potential VA nurse practitioner students to reduce or eliminate their work responsibilities at the VA medical centers. For organizations, such as the Department of Veterans Affairs, which are in the process of rapid and dramatic change in their approach to health care delivery, the traditional model of attaining nurse practitioner education was difficult. One promising solution was to capitalize on the increasing benefits of communication technology and to approach nurse practitioner education from a distance learning perspective.
A 1996 survey completed by 155 VA medical centers indicated that nearly 750 master's-prepared clinical nurse specialists would be interested in enrolling in a post-degree, nurse practitioner certificate program if it were offered via distance education. Once individuals from this group were enrolled in a post-degree certificate program, they could complete additional courses, building on their current academic preparation, to become certified nurse practitioners and be prepared to provide out-patient and preventive health care. To accomplish this re-education process, the Department of Veterans Affairs needed to partner with an educational institution. At the time that the VA/DoD Distance Learning Nurse Practitioner curriculum was being designed, VA project managers could identify no programs that offered all course work via distance learning. Rather, distance learning programs in nursing required their students to spend several weeks each summer at the host campus to complete the clinical practicum. Such requirements would have significantly increased program costs for the Department of Veterans Affairs. This review process led to the coordination and collaborative efforts which took place between the Department of Veterans Affairs and the Graduate School of Nursing (GSN), Uniformed Services University of the Health Sciences (USUHS). The GSN would provide a curriculum to transition VA clinical nurse specialists into the role of adult nurse practitioners. The USUHS GSN curriculum was unique, and a national first, because it built on the excellent resources of the Department of Veterans Affairs to implement well-defined, closely-monitored, clinical practica offered concurrently with didactic content provided by the fully-accredited Graduate School of Nursing in Bethesda, Maryland.

The GSN Nurse Practitioner Program meets or exceeds all standards established by the National Organization of Nurse Practitioner Faculties. An Adult Nurse Practitioner Post-Master's Program was designed to meet the VA's patient care needs with a focus on adult health. Upon completion of the program, VA graduates are prepared to take the appropriate national certification examination in their nursing specialty. Twenty-one graduates of the May 1999 virtual graduation passed their certification examinations to date. It was anticipated, and generally proven to be correct, that such a program would be cost-effective and would enhance staff morale through the reeducation and the retraining of a loyal cadre of long-term, competent VA staff.

The Department of Veterans Affairs and the USUHS Graduate School of Nursing, Department of Defense, Form a Partnership. During late 1996, the GSN and the VA Nursing Strategic Healthcare Group entered into a working partnership. They agreed to conduct a two-phase project. Phase I would consist of one course to test the feasibility of the project: Phase II would contain the remainder of the curriculum study. The GSN agreed to educate the VA master's-prepared registered nurses to become adult nurse practitioners through the use of distance learning technologies.

The Graduate School of Nursing agreed to:

1) determine the length of the program;
2) establish the curriculum;
3) allocate credit for the courses;
4) assure that graduates were qualified for certification;
5) develop policies for the transfer of credit for prior courses;
6) adjust and modify institutional policies to accommodate the VA civilian registered nurse students:

7) validate appropriate faculty from VA and the GSN to instruct in the Program (each had to hold at least a Master's Degree, preferably in Nursing, be prepared in a nurse practitioner specialty, and be currently certified);

8) provide support staff; and,

9) procure resources for the new program.

**The Department of Veterans Affairs agreed that it would:**

1) utilize its national telecommunication network for the Distance Learning Program;

2) obtain the distance learning sites at the VA medical centers;

3) select the students and submit candidates to the GSN for evaluation of academic requirements;

4) provide educational resources for the students such as library books and computers;

5) approve the assignment of VA employees to serve as on-site preceptors and to coordinate with the GSN in the Distance Learning Program; and,

6) provide the VA portion of the funding for the Project.

**Each VA medical center with a distance learning site would provide the following:**

1) an educational coordinator to administer the program; and,

2) a Master's-prepared nurse practitioner preceptor to arrange and supervise the clinical aspects of the program.

Following a survey of its potential medical centers and students, the Department of Veterans Affairs determined that the didactic courses would be scheduled after working hours. The classes would be designed to parallel the on-campus GSN courses and would be held twice a week for two hours, with a third hour conducted as a laboratory activity by the lead preceptor at the individual VA sites.

**Phase I - The Pilot Project Test Class.** Early in 1997, the USUHS Graduate School of Nursing, in cooperation with the Department of Veterans Affairs, initiated Phase I, the Pilot Project Test Class. Phase I was conducted at two VA medical centers located at Atlanta, Georgia and Fayetteville, North Carolina with a total of 11 students. The class was taught using the GSN curriculum for basic and advanced health assessment. It was offered as a two-hour didactic course with a one-hour laboratory practicum on a specific physical assessment content area. The preceptors at each VA site conducted health assessment laboratories, demonstrated "hands-on" technical skills, and supervised basic clinical experiences. The Distance Learning Project Test Video Teleconferencing Course was transmitted from the National Naval Medical Center's (NNMC) Naval Tele-Training Center located in Bethesda, Maryland. Staff from the VA Nationwide
Teleconferencing System and the National Naval Medical Center worked together throughout the course to facilitate the transmission of classes which were conducted from 4:30 to 6:30 p.m., two times a week. This type of transmission was selected because the Department of Veterans Affairs has an efficient nation-wide teleconferencing network that uses telephone land-lines to connect all of the major VA medical centers. The teleconferencing sites employed Picture Tel video teleconferencing systems equipment to transmit the live classes. While the pilot test class was being conducted, the GSN was in the process of planning for and installing such equipment on the USUHS campus. The pilot test class was designed to determine and test technical capabilities and teaching strategies, and to identify the most successful technological media that could be transmitted using video teleconferencing techniques. It also tested reception at the pilot VA sites. The pilot test class allowed the faculty to evaluate the students’ comprehension of the didactic portion of the course content.

The evaluation of Phase I consisted of input from the GSN and the VA administration, faculty, and students. The VA preceptors reported that there was no discernable difference in the capabilities or skills of the distance learning students as compared to other students from traditional campus-based nurse practitioner programs. Eight of the eleven students completed the course on time, with three students requesting a one-month extension (which was granted) to meet their clinical requirements. The students evaluated both the course content (flow, depth, and relevance) as well as the technology (audio, video, and transmission). The student feedback was clearly positive. At the completion of Phase I of the Distance Learning Project, the GSN and the VA administrators, faculty, and staff reviewed all of the evaluation data. Based upon that review, all parties concluded that the Distance Learning Pilot Class Project was successful. Because of personal reasons and overseas transfers, four of the members of the test pilot class were unable to proceed to Phase II.

Phase II - The Twenty-Month Distance Learning Program - Curriculum and Faculty. Following the success of Phase I, in the Fall of 1997, the Graduate School of Nursing and the Department of Veterans Affairs implemented a twenty-month program to prepare advanced practice clinical nurse specialists to diagnose and manage primary healthcare problems of adults and to pass certification as adult nurse practitioners. Phase II, the Adult Nurse Practitioner Post-Master’s Program, also known as the VA/DoD Distance Learning Program, provided education or training courses at remote (off-campus) locations via audio, video or computer technologies. Phase II began with 35 students at the following VA medical Centers: Atlanta, Georgia; Baltimore, Maryland; Bronx, New York; Charleston, South Carolina; Fayetteville, North Carolina; Leavenworth, Kansas; San Diego, California; and, West Los Angeles, California. Phase II took place in conference rooms on the USUHS campus which were fully equipped for teleconferencing. The curriculum, developed by modifying the existing GSN Nurse Practitioner curriculum, emphasized 1) comprehensive physical and psycho-social assessment; 2) decision-making processes in both acute and chronic health conditions; and, 3) health maintenance care. The Program consisted of nine courses which stressed both health promotion and disease prevention. There were 29 credits of didactic content and a minimum of 560 hours of clinical experience over five semesters or 20 months. Students who were already certified in a sub-specialty could obtain a waiver for some, or all, of the clinical and didactic requirements for that specific specialty area.

All of the nine courses were presented using different video teleconferencing educational strategies. Generally, the courses consisted of didactic lectures using a computer-generated video shown by the instructor. The Department of Veterans Affairs assigned two individuals to serve as faculty on the Project: Angela Martin, CRNP, and Kathleen Burkhart, CRNP. Both individuals have extensive experience in distance
education and as nurse practitioners. The didactic content, readings, and references were mailed to the students prior to the class lecture (until e-mail transfer could be used); all classes were taped. Those tapes were then provided to students who could not attend the class. All lectures included dialogue between students from all eight of the remote sites. Most lectures also included slide shows, overhead displays from the textbooks, anatomical models and/or a live examination of a patient model. The students were responsible for presenting clinical material relevant to the selected topics and for preparing written assignments. Supervised clinical experience took place at all eight sites; the site preceptors identified medical clinics, health maintenance organizations, mental health clinics, retirement centers, acute care, and other settings where the students could receive positive clinical experience. Written correspondence and supervised clinical experience in the students' home areas were also included in the curriculum.

Students received a broad foundation of educational preparation in adult health, advanced nursing practice, nursing theory, and nursing research. In addition, health assessment, primary prevention, health maintenance, clinical decision making, illness management and pharmacology (including writing prescriptions) were emphasized in the classroom and clinical practicum. The faculty for the Distance Learning Program were primarily certified nurse practitioners and basic science faculty from USUHS. Each faculty member had to have a Master's Degree and be prepared with a specialty as a nurse practitioner, with current certification. The partnership between the Department of Veterans Affairs and the USUHS Graduate School of Nursing included the agreement that the GSN would provide the academic rigor for the new program. The GSN would also monitor the teaching program/curriculum and conduct evaluations to ensure that all standards for certification were met. Preceptors were located at each site to ensure that the curriculum presented by the distance learning classroom at USUHS was comprehended and that questions were resolved immediately at each of the sites. Each remote site had a video teleconferencing capability and an educational classroom, access to an on-line computer, and current advanced nurse practitioner bibliographic and library materials. And, all preceptors working with the distance learning program were appointed to the GSN Department of Nurse Practitioners as adjunct clinical faculty following University protocol and policy.

Site visits were required by the Project staff to ensure that the academic supervision and clinical experiences of the Distance Learning Program met National League for Nursing and Commission on Collegiate Nursing Education accreditation requirements. Each of the eight sites were visited by a Project staff team consisting of the GSN faculty member responsible for the specific site, the GSN Project coordinator, the Chair of the GSN Department of Nurse Practitioners, and the VA Project coordinator. The four member team was responsible for ensuring that each VA site had: 1) appropriate space for the educational project classroom; 2) a practice laboratory; 3) appropriate video teleconferencing equipment to include technical support; 4) current materials in the library to include on-line literature searching capabilities; 5) adequate computer support; 6) appropriate clinical experience with qualified preceptors; and, 7) support from the VA medical center's administrative, medical, and nursing departments. Each site visit gave students and administrators an opportunity to discuss the quality of the educational activities and to identify any difficulties that may have arisen.

During the twenty-month program, each of the lead preceptors and coordinators attended VA-sponsored workshops facilitated by the GSN faculty. Additionally, the GSN faculty offered in-service education on 1) the fundamentals of distance learning; 2) the role responsibilities of the coordinators and preceptors; and, 3) the evaluation of the students' clinical performance.
Graduates of the VA/DoD Distance Learning Program are prepared to deliver, coordinate, and evaluate high-quality care; advocate for vulnerable individuals and groups; and, provide leadership in the health care delivery systems through the promotion and maintenance of adult health. Early graduates of the Program are expected to assume clinical positions within the Department of Veterans Affairs. And, graduates are eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners.

Technology Used in the Distance Learning Program. The VA/DoD Distance Learning Program is composed of didactic course work delivered via state-of-the-art distance learning technology, including interactive video teleconferencing and the Internet. The GSN extended its network of high-speed, digital telephone lines from USUHS's compressed-video classroom to the VA telecommunication center in Martinsburg, West Virginia (the Hub) which in turn is linked to the various distance learning sites at the VA medical centers. The first distance learning program reached eight VA sites. The graduation of the first class provided both the Department of Defense and the Department of Veterans Affairs the ability to: 1) critique and assess aspects of the teaching/learning process; 2) evaluate existing technological capabilities; and, 3) determine the cost (or cost-avoidance) of implementing such a program.

During the twenty-month program, the Department of Veterans Affairs was in the process of upgrading its technological capacity. As a result, most of the VA medical centers were equipped with video teleconferencing capabilities. Several computer and educational technologies were immediately required to ensure the success of the project. These included an upgrade of the file server at the Hub in Martinsburg, West Virginia, the establishment of a video teleconferencing unit at USUHS, and the confirmation of video conferencing capability at each site. All was accomplished.

The GSN used special equipment that was linked to the teleconferencing unit such as: a "smart" electronic camera that could focus on the lecturer; a graphical computer (via a laptop computer); slide shows (via a slide projector); tape sequences of sound and motion (using a VCR); the demonstration of anatomical models (via a separate camera that could focus on the model); and, an overhead document camera for paper illustrations. A summary of student evaluations, clinical experiences, and faculty reviews concludes that the students, for the most part, were pleased with the technology; they were able to learn the material and grasp the master course requirements without distractions or interference resulting from the technology. Plans are under way to adapt the course work for the World Wide Web, which will allow students to undertake course-related collaborative projects and to take examinations over the Internet.

The First Advanced-Level Virtual Graduation in the Department of Veterans Affairs and the Department of Defense. Twenty-six students, through a virtual commencement exercise, graduated from the VA/DoD Distance Learning Program on May 18, 1999. An additional student completed requirements during August of 1999, bringing the total to 27 students who have graduated from the program. This graduation marked the first virtual advanced-level graduation by either the Department of Veterans Affairs or the Department of Defense. Since the first graduation, twenty-one graduates have successfully passed their certification examinations. The remaining graduates are scheduled to take their examinations within a two-year period from the date of their graduation. The coast-to-coast, virtual graduation took place at eight Veterans Affairs medical centers: Atlanta, Georgia; Baltimore, Maryland; Bronx, New York; Charleston, South Carolina; Fayetteville, North Carolina; Fort Leavenworth, Kansas; San Diego, California; and, West Los Angeles, California. The Distance Learning Program was successfully implemented due to extensive coordination by the following individuals: the Dean, GSN; the GSN Distance Learning Advisor; Chairs of
Summary of the First Graduating Class - A Successful Collaborative Effort. There is no way to immediately measure all of the benefits resulting from this successful distance learning project. The experience gained by both the Graduate School of Nursing and the Department of Veterans Affairs will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month, VA/DoD program. Outcome evaluations will be continued with the early graduates and their supervisors. Fine tuning will continue throughout the original curriculum. The technology will continue to evolve to reflect the rapid growth of the field. The difficulties faced by the project coordinators in creating a new program utilizing the latest technologies were numerous and challenging; the GSN and VA Departments, faculty, staff, and students who succeeded in doing so, are well pleased with their initial results and continue to work to improve their educational efforts in distance learning. This report was also submitted to the Congress as the Department of Veterans Affairs and the Department of Defense response to a legislative directive for a summary report on the distance learning program.

The Distance Learning Program Admitted its Second Class of Distance Learning Students in 1999. The GSN Adult Nurse Practitioner Post-Master's Program admitted its second class of students during 1999. Thirty-five students were enrolled as members of the Class of 2001. The nine VA distance learning sites are: Buffalo, New York; Cleveland, Ohio; Atlanta, Georgia; Detroit, Michigan; Los Angeles, California; Milwaukee, Wisconsin; San Juan, Puerto Rico; Shreveport, Louisiana; and, Washington, D.C.

From Concept to Graduation. To ensure that other federal entities can easily access the lessons learned during the VA/DoD Distance Learning Program, a joint report was issued by the GSN and the VA Nursing Strategic Healthcare Group in November of 2000. The report, From Concept to Graduation, documents, in chronological order, the formulation of the partnership between the DoD and the VA, the conceptual stages and developmental processes, learning strategies, course evolvement, assessment methodologies, clinical experiences, and the transmission effectiveness (computer technology and video teleconferencing) for the entire program. In short, the report provides an inclusive roadmap for implementing a distance learning program - from concept to the matriculation of the second class.

The Second Virtual Graduation Is Scheduled on May 15, 2001. Thirty-three students are currently enrolled in the Adult Nurse Practitioner Post-Master's Distance Learning Program. The nine VA distance learning sites listed above remain current. All of the clinical specialists enrolled in the program hold a Master's Degree or higher in Nursing; and, all currently practice as clinical specialists in their respective VA Medical Centers. A "virtual graduation" is planned for May 15, 2001.

Curriculum Changes for the Second Class. Several curriculum changes were made to the twenty-month program in response to suggestions from the 27 graduates of the first class. Pharmacology and Pathophysiology Courses must now be completed before students can enroll in the Advanced Practice Clinical Courses. In addition, the Role Course was increased from one to two credits in order to meet individual state
requirements. Students can now evaluate courses on-line using course evaluation forms developed for Internet postings. Using a confidential identification code, students can anonymously evaluate a course and provide written feedback for the instructors. The evaluation results are both paperless and immediate, which reduces cost and enhances communication.

During the Spring Semester of 2001, students will participate in simulated patient scenarios at the National Capital Area Medical Simulation Center located at the Forest Glen Annex at the Walter Reed Army Medical Center. The scenarios were developed in consultation with faculty from the GSN. Students are provided the opportunity to virtually observe a fellow student, during an entire diagnostic process, interview and examine a patient and receive immediate feedback from an on-site instructor. Participants in the Distance Learning Program are encouraged to join the activity by explaining how they might have approached the patient in a different manner, or by discussing their questions and resulting concerns over dealing with similar patients in the future. Also during the Spring Semester of 2001, students will develop and produce four video-teleconferences for the purpose of exploring the Adult Nurse Practitioner role. Groups of the distance learning students will develop probing questions designed to elucidate role dimensions and professional practice issues when interviewing groups of nurse practitioners and patients located at their current VA Medical Center sites. This will be the first time that a Role Course will be taught using this instructional tool.

New Staff Appointments. Several staff changes were made since the writing of the initial report. Angela Martin, RN, MSN, FNP, CS, was appointed as the Associate Director of the Distance Learning Program in October of 1999. She brings to her new role 13 years of experience in graduate nursing education, to include six years of coordinating responsibilities for a statewide distance learning program for a Master's Degree in Nursing with a specialization as a Family Nurse Practitioner. In July of 1999, Terry Malavakis, RN, MA, was appointed as the Administrative Assistant for the Distance Learning Program. She is experienced in nursing practice and management and has successfully enhanced communication between the sites, faculty, and other participants who are involved in delivering this highly technical program to the distance learning students. In addition to these staff changes, the USU SOM Department of Medical Informatics headed by Leon Moore, Ph.D., and the GSN/Department of Veterans Affairs collaborated in the purchase of new video-teleconferencing equipment for a studio located at USU. This equipment allows instructors to arrange video-conferences with students, from one to four sites, without the requirement of a central bridge to handle the connection with a satellite. This capability will greatly enhance the staff's ability to communicate with students as an alternative to using e-mail or telephone conferences. Thus, the staff has not only enhanced communication through the use of technology, it has also reduced the overall cost associated with the educational activities involved.

Plans for the Third Class. Plans are in place for admitting a third class. The partnership between the GSN and the Department of Veterans Affairs continues to be successful in reducing the shortages of primary care providers throughout the VA Medical Centers; in recognition of that success, four previously enrolled VA Medical Center sites will participate in the third class, along with four new sites. An emphasis on utilizing technology to deliver high quality distance learning education will continue throughout the next two years.
IV. GRADUATE EDUCATION PROGRAMS

ESTABLISHMENT

The Uniformed Services Health Professions Revitalization Act (Public Law 92-426) Established the University in 1972 and Directed the Establishment of Graduate Education Programs. Following Congress’ establishment of the University and the School of Medicine in 1972, the early founders understood that in order to gain and sustain accreditation, Graduate Education Programs had to be structured within the School of Medicine. The Liaison Committee on Medical Education (LCME) accreditation process is designed to certify that a medical program meets prescribed standards. It is recognized by both the LCME and the USU Board of Regents that predoctoral graduate programs in the basic medical sciences leading to the Doctor of Philosophy Degree or to appropriate degrees at the Master's Degree level are essential components of a School of Medicine dedicated to excellence in medical education.

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The Establishment of the Office of the Associate Dean for Graduate Education. In accordance with the requirement to ensure the academic excellence of the newly established Graduate Education Programs, the Dean of the USU School of Medicine (SOM) appointed Colonel John W. Bullard, Ph.D., USA, (retired), as the Assistant Dean of Graduate and Continuing Education Programs. Dr. Bullard was recognized as one of the Army's experts on educational affairs, and in particular, continuing education. He had been a Medical Service Corps officer who served in Vietnam and had been previously assigned to the Army Academy of the Health Sciences, the Office of the Surgeon General of the Army, and the Office of the Assistant Secretary of Defense for Health Affairs. The SOM admitted its first graduate students in 1977. During the early 1980's, in an effort to highlight the contribution of the Graduate Education Programs, Dr. Bullard began a research symposium to showcase the research contributions of the graduate students. Following Dr. Bullard's death in November of 1990, the Office of the Dean, SOM, with the concurrence of the USU President and Board of Regents, and in recognition of the importance of the Graduate Education Programs, determined that the leadership position for the Graduate Education Programs should be separated from the Continuing Education Programs and a subsequent search was held for the position of Assistant Dean for Graduate Education. Michael N. Sheridan, Ph.D., Professor, USU Department of Anatomy and Cell Biology, was selected as the second Assistant Dean for Graduate Education in 1991. The Dean, SOM, elevated the position to Associate Dean for Graduate Education in 1993; Dr. Sheridan continues to serve in that position and to provide leadership for the Office of Graduate Education.

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Graduate Education Programs Are Provided in Eleven Disciplines. At USU, graduate programs leading to doctoral degrees are offered in the following disciplines: 1) Anatomy, Physiology, and Genetics; 2) Biochemistry; 3) Clinical Psychology (military students only); 4) Emerging Infectious Diseases (established during 1999); 5) Medical Psychology; 6) Molecular and Cell Biology; 7) Neuroscience; 8) Pathology (Comparative Pathology and Molecular Pathobiology); 9) Medical Zoology; 10) Environmental Health
Science (established during 2000); and, 11) Public Health. Master's Degrees are offered in Public Health; Tropical Medicine and Hygiene; Military Medical History (military students only); and, Molecular and Cell Biology (military students only).

The Graduate Education Committee and Department Reviews Ensure the Quality of the Programs. Each departmental or interdepartmental Graduate Education Program is managed by a Program Director. The Graduate Education Committee (GEC) is composed of all of the Program Directors, the Associate Dean for Graduate Education, the Vice President for Teaching and Research Support, two members of the faculty appointed by the Dean, SOM, and a Graduate Student Representative. The GEC is responsible for periodic reviews of the policies and procedures of each Graduate Education Program, reviews of academic records and other aspects of graduate student standing, and the monitoring of the overall quality of graduate student life at the University. In addition, all graduate courses must be submitted to the GEC for consideration and approval prior to offering (over 200 individual graduate education courses have been established by the participating faculty). Significant changes to previously approved courses must also be considered by the GEC prior to incorporation. In addition, departmental faculty annually review and update the graduate course offerings for each program. Some departments rely upon medical school course offerings for their Graduate Education Program curricula, supplemented by graduate course offerings. Some medical school courses have been subdivided into individual graduate offerings, allowing graduate students to take appropriate parts of a larger course. The GEC makes recommendations on its areas of responsibility to the Dean, SOM, through the Associate Dean for Graduate Education. Following the 1999 SOM Self-study, no major revisions were recommended for the Graduate Education Programs.

**MISSION**

"The USUHS shall: .... 4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services."


Mission Direction Calls for the Development of Graduate Education Programs. The goal of graduate study at the School of Medicine is to develop independent scholarship, originality, and competence in research, teaching, and professional service. This goal has guided the development of the Graduate Education Programs, which are designed for outstanding students committed to careers in the basic medical sciences, public health, or tropical medicine. The purpose of the Graduate Education Programs and their relationship to the School of Medicine were defined in the founding documents which recognized that superior Graduate Education Programs in the basic medical sciences are an essential component in the accreditation process for a school of medicine.
Graduate Programs Benefit the Military Health System. Graduate programs in the basic medical sciences benefit the USU and the Military Medical System (MHS) as follows: 1) the graduate programs provide training opportunities for qualified active duty personnel of the Uniformed Services who receive authorization to participate in the USU graduate training programs under the sponsorship of their parent service; 2) graduate students have the opportunity to become aware of the outstanding investigative programs which are ongoing in the Department of Defense laboratories in the Washington, D.C. area. It is anticipated that the research institutes within the Department of Defense will be assisted in their recruitment of well-qualified graduates on the basis of the mutual knowledge and respect developed during the graduate students' interaction at USU; 3) the academic environment of the School of Medicine is maintained at a high level exposing the uniformed physicians-in-training to the disciplined methods of critical scientific inquiry that are the rational basis of problem solving in medical science; and, 4) graduate students participate as teaching assistants and assist in the performance of instructional and investigative efforts that are essential to the mission of the School of Medicine and significant to the Military Health System (MHS).

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Responsiveness to the Needs of the Services.

Master's Program in Military Medical History. A specific example of the USU Graduate Education Program's direct response to the needs of the Surgeons General is the creation of a new program for the Master's Degree in Military Medical History. This program is an outgrowth of the Fellowship in Military Medical History established at USU in 1983 to train instructors of history for the United States Army Academy of the Health Sciences. A request was received from the Medical Service Corps of the Army to establish a degree granting program so that officers could continue to be used for lessons learned and history education assignments as teachers at the Army Academy. The program of study is currently limited to officers in the Medical Service Corps of the Army; two degrees have been granted: one in 1997; and, one in 1998.

Three Interdisciplinary Research Programs Relevant to the Needs of the Uniformed Services. The research and development goal of the USU Strategic Plan is to build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services. Currently, there are three interdisciplinary research programs: 1) Neuroscience. The Interdisciplinary Program in Neuroscience and its Ph.D. Graduate Program are supported by 29 faculty members whose primary appointments are in 12 of the SOM departments. It provides a seminar series, and a flexible program of courses and research areas for graduate students and postdoctoral fellows; 2) Molecular and Cell Biology. An Interdisciplinary Program in Cell and Molecular Biology (including Genetics) has been developed to contribute to cross-disciplinary interactions, to develop critical skills needed for data presentation and analysis, as well as a seminar series and a journal club, all of which support the Ph.D. program. The program consists of 37 faculty mainly from six SOM departments; and, 3) Emerging Infectious Diseases and Tropical Medicine. The Department of Microbiology and Immunology and the Department of Preventive Medicine and Biometrics are exceptionally strong in the areas of infectious diseases and tropical medicine. A special interest group from these departments, to include faculty from other departments who are interested in infectious diseases, began meeting and
subsequently submitted (and was awarded) an NIH training grant in this area. The Emerging Infectious Diseases Graduate Program has been developed and is in its second year (description of the program follows).

The Interdisciplinary Graduate Program in Emerging Infectious Diseases.

Background. In August of 1999, the USU Board of Regents gave its final approval to a Graduate Program in Emerging Infectious Diseases (EID). This program is designed for both military and civilian applicants who wish to pursue a program of study leading to the Ph.D. Degree in one of the academic tracks within the interdisciplinary field of Emerging Infectious Diseases. The EID Program includes training in the basic science areas of microbial pathogenesis, host immune responses, and, the pathology of, and epidemiology of, infectious diseases. In addition, this Program provides an opportunity for military pediatric and adult Infectious Diseases Fellows to complete the research components of their Fellowships in Infectious Diseases. With the addition of this Program, the SOM has increased its capacity and commitment to instruct students in the biology of infectious diseases, especially in the areas of interest to military medicine. The faculty of the EID Program are primarily full-time members of the Departments of Microbiology and Immunology, Pathology, Preventive Medicine and Biometrics, Pediatrics, and Medicine. In addition, faculty from other SOM Departments in the University who share an interest in infectious diseases at the molecular and cellular level are also included. In September of 1999, Eleanor S. Metcalf, Ph.D., Professor of Microbiology and Immunology, was selected as the Program Director.

The EID Program recognizes the extent to which basic science advances in the area of infectious diseases can affect the current and future health of individuals throughout the Military Health System. The Emerging Infectious Diseases Program will also serve as an opportunity for the facilitation of educational and scientific interactions between students and faculty at USU who share common interests in the contemporary approaches to the study of the molecular biology, pathogenesis, and host responses within the context of emerging infectious diseases. The establishment of the EID Program at USU formally recognizes the breadth of disciplines spanned by Emerging Infectious Diseases and the extent to which advances in these areas can affect the current and future health of individuals within the United States and also in the global arena. The implementation of an interdisciplinary and interdepartmental program in Emerging Infectious Diseases will also broaden and enhance the overall educational objectives of USU and bring together faculty and students in a scientific community designed to stimulate and promote collaborative interactions. The USU SOM is the only school of medicine, to date, to offer a formal program in EID; the University plans to continue to be at the forefront of training broadly-based military and civilian infectious diseases scientists for the future.

Both military and civilian students comprise the inaugural class. The first graduate student class was admitted to the EID Program in the Spring of 2000, and matriculated during the Fall of 2000. This inaugural class consists of ten students, seven of whom are full-time. Two of the three part-time students are in the Uniformed Services. The full-time students are in the process of completing the first year of their Core Curriculum and have begun to take advanced courses and laboratory rotations. All of these students will have decided on a dissertation advisor by the end of the current academic year. The EID Program-unique course, Models of Emerging Infectious Diseases, is underway, and three military Pediatric Infectious Diseases Fellows are attending, as well as the first year EID graduate students. Next year, the EID Program plans to involve the Adult Infectious Diseases Fellows; and, collaboration is taking place with Colonel Naomi 207
Aronson, MC, USA, SOM Class of 1981, Director of the Division of Infectious Diseases, USU SOM Department of Medicine. As a result, the EID Program has invited the new Adult Infectious Diseases Fellows to join the in-coming EID students and the new Pediatric Infectious Diseases Fellows at a welcoming event. For next year's class, the applicants to the EID Program have doubled in number. Applicants from the Uniformed Services have also increased; and the EID Program has already accepted three uniformed officers for the class beginning in the Fall of 2001.

Graduate Education Programs in Preventive Medicine Address the Special Needs of the Military Health System. The Department of Preventive Medicine and Biometrics offers graduate programs leading to the Degree of Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), Master of Science in Public Health (MSPH), Doctor of Public Health (DrPH), and Doctor of Philosophy (PhD) in Medical Zoology and Environmental Health Sciences. Since 1983, 371 individuals have graduated from these degree programs. During 2000, 40 Preventive Medicine and Biometrics students were awarded advanced degrees: three Doctors of Public Health; one Master of Tropical Medicine and Hygiene; 34 Masters of Public Health; and, two Masters of Science in Public Health.

The current Graduate Program in Public Health has 32 students at the Master’s level (MPH, MTM&H, and MSPH). Twenty-nine of these students are in the Uniformed Services and three are civilians. These students include 20 physicians, six veterinarians, two dentists, and one clinical psychologist. Among the physicians, six are General Preventive Medicine/Public Health residents, four are Occupational and Environmental Medicine residents, two are from the Walter Reed Army Medical Center Programs, and one is an Aerospace Medicine resident. Among the six uniformed veterinarians, four are Laboratory Animal Medicine residents and two are Air Force Public Health Officers. At the doctoral level, 16 are Doctor of Public Health candidates and four are Doctor of Philosophy candidates. The MTM&H and doctoral students have undertaken research in affiliated overseas laboratories, including the United States Army and Navy biomedical research laboratories in Bangkok, Thailand; Rio de Janeiro, Brazil; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and, Lima, Peru.

The Department of Preventive Medicine and Biometrics Graduate Education Programs have an outstanding record of responding to the Requirements of the Uniformed Services: 1) A new Ph.D. Program in Environmental Health was recently established in response to identified needs within the Uniformed Services; the first military student has been admitted to the program; 2) the Master of Science in Public Health (MSPH) graduated its first two degree candidates during 2000; 3) the TriService Advanced Military Tropical Medicine Course has been offered at USU, beginning in 1996, through the Summer of 2000. During 2000, 58 military medical officer students and six civilians were trained in operational military medicine; 4) the Diagnostic Parasitology Course is offered as a series of lectures and hands-on laboratory sessions for individuals wishing to study the diagnosis of parasitic infections in humans. Military and civilian medical technologists and physicians from all parts of the world have completed this course. During 2000, there were 14 participants; since 1988, over 25 individuals have taken the course; and, 5) Clinical and Managerial Decision Support Tools for Managed Care, a five-day training course held four times each year, responds to the Congressional mandate that current and prospective Medical Treatment Facility Commanders receive training in health care management and administration. To date, ten sessions have been held in the TRICARE Regions and a total of 217 senior officers have been trained for the MHS. (See Section II, "The USU SOM Department of Preventive Medicine and Biometrics and the Centers for Preventive Medicine and Public Health," for further discussion.)

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The Development of Independent Scholarship. The goal of graduate study in the basic medical sciences at USU is to develop independent scholarship, originality, and competence in research, in teaching, and in professional service to the Nation. The Graduate Education Programs are designed for outstanding students with a strong commitment to permanent careers in the basic medical sciences and potentially, in the federal government. Within each Ph.D. program, an individualized course of study is designed for each student to meet his or her specific needs (over 200 individual graduate education courses have been established by the participating faculty of USU). The graduate programs are open to qualified civilian and uniformed personnel. Students accepted for graduate study are enrolled on a full-time basis. They assist in the performance of the instructional and investigative efforts that are carried out at the University. Active duty military and uniformed services personnel must obtain the approval and sponsorship of their parent Service; they also incur an obligation for additional service, in accordance with the regulations of the parent Service which govern sponsored graduate education. Most of these officers will complete careers in their parent Services and use their graduate education and training to fulfill specific assignments for their Surgeons General and the MHS.

Research Facilities Are Well Equipped and Support the Graduate Education Programs. The Graduate Education Programs are conducted in facilities on the campus of USU. Well-equipped, modern laboratories are available to support the wide variety of research projects directed by the faculty in the basic medical sciences. Special resources include high resolution transmission and scanning electron microscopes, video-based computer graphics and confocal microscopy, a central resource facility providing custom synthesis of oligonucleotides and peptides, biohazard containment laboratories, a centralized animal resources facility, a medical library, computer support to include orientation to web sites and the Internet, and a learning resources center.

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Research Day and the Graduate Student Colloquium. Beginning in 1994, the USU Faculty Senate has sponsored an annual Research Day that is designed to promote faculty interactions and emphasize the importance of the research contributions of the University. It is composed of an afternoon symposium followed by a full day of posters and platform presentations of abstracts submitted by faculty, trainees, and students in the university community. For the past several years, the annual Graduate Student Colloquium has been held concurrently with Research Day. The Colloquium features the research accomplishments of the USU graduate students and includes a competition for the best platform and poster presentations. Awards are presented at the USU Research Day dinner which also features an invited keynote address, the John W. Bullard Lecture. The Lecture is presented by a distinguished scientist and educator. These activities are intended to highlight the Graduate Education Programs and to foster an intellectual exchange between graduate students and the entire university community.

The theme for the 2000 USU Faculty Senate Research Day and Graduate Student Colloquium was "Biomedicine in the Information Age." On March 22 and 23, 2000, the University celebrated its 7th Faculty Senate Research Day and Graduate Student Colloquium. These significant events were coordinated by the
Faculty Senate Research Committee, the Vice President for Research, and the Associate Dean for Graduate Education. The research events included 45 oral presentations in the Sanford Auditorium and 175 poster presentations in temporarily sheltered areas in the University courtyard. Twenty-three of the posters were selected for the introduction of a new session entitled, Special Featured Poster Sessions (SPFs). Within a collegial atmosphere, the SPFs involved short, informal oral presentations and dialogue between the presenters and the audience. Over 200 participants participated in the events.

The Graduate Student Colloquium consisted of oral presentations by six graduate students from Departments and Programs throughout the University. Following the platform portion of the Graduate Student Colloquium, Roger M. Perlmutter, Ph.D., Executive Vice President, Worldwide Basic Research and Preclinical Department, Merck Research Laboratories, presented the John W. Bullard Colloquium Lecture entitled, "Protein Kinases and Protein Kinase Inhibitors: Prospects for the Development of Breakthrough Therapeutics." A formal dinner reception was then held in the USU dining hall during which awards were presented. The evening activities closed following an address by Philip K. Russell, M.D., Johns Hopkins Center for Civilian Biodefense Studies. Dr. Russell's presentation entitled, "Vaccines for the Protection of U.S. Forces," was presented to some 200 attendees.

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ACCREDITATION

**Academic Excellence and Uniformity Ensure Accreditation.** To ensure academic excellence within the Graduate Education Programs, in addition to the oversight and reviews provided by the GEC and the academic departments, a series of requirements for the Doctor of Philosophy Degree (Ph.D.) have been established. Some departments have established additional requirements. The minimum residency requirement for the Ph.D. is 36 months of full-time study; but, it may be less if a student holds an advanced degree. All requirements must be completed no later than seven years after matriculation. Formal course work, participation as teaching assistants in the SOM teaching programs, and directed research activities are all components of a student's predoctoral program. Full-time status is defined as 12 or more credit hours each quarter. The minimum course work requirement for the doctorate is 48 credit hours and the minimum for total academic credit is 144 credit hours. A qualifying examination (comprehensive exam) is conducted and graded by a committee of graduate faculty. A written dissertation based on the original experimental research, or an alternative thesis format, differentiated by the materials and methods section and results section, in the form of acceptable peer-reviewed publications is required. A total of 24 credit hours of graduate course work taken at other academic institutions, either before admission to the SOM or during study at USU, may be transferred, provided such courses are equivalent to courses at the SOM and are approved by the graduate faculty of the specific program and the Graduate Education Committee. Some department's Ph.D. programs of study encompass an independent project whereby the student will receive a Master's Degree while pursuing the Ph.D. Requirements are designed to ensure academic excellence and uniformity in degree programs across the departments. An approved thesis is required of all candidates for the Master of Science Degree. A thesis is not required for the Master of Public Health or the Master of Tropical Medicine and Hygiene, but an independent project paper must be completed to fulfill requirements for those degrees.

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**Accreditation of USU Graduate Programs in Public Health Is Extended through December 31, 2003.** The Council on Education for Public Health (CEPH) is the recognized accrediting body for graduate schools of public health and graduate programs in community health education and community health/preventive medicine (described above). Following a site-visit during 1998, the CEPH Board of Directors determined on October 3, 1998, to continue the accreditation of the USU Graduate Programs in Public Health through December 31, 2003.

Given the mission of USU and the importance of prevention to military medicine, PMB is a large and vital part of the medical school and the University. The program was initially accredited by CEPH in 1985, followed by a review in 1991 at which time accreditation was extended for a seven-year term. The most current review included a self-study process carried out by program constituents, the preparation of a self-study document, and a site visit in mid-June of 1998 by a team of external evaluators. The site visit team interviewed USU officials, department administrators, program staff, faculty, students, alumni, and community representatives. The CEPH found that "the public health programs constitute the largest graduate program and have both visibility and appropriate decision-making prerogatives. The environment is a multi-disciplinary setting which values and supports interactions both within the department and externally to a wide variety of rich intellectual resources within the institution and with federal partners throughout the Washington, D.C.
The values of the institution and the philosophy of military medicine are an exceptionally 'good fit' with the values and philosophy that underlie public health and preventive medicine. The program has strong ties to the military community, both locally and worldwide, and the instructional programs have particular relevance to the needs of the uniformed services to which program graduates will return after their training. The curriculum is quantitatively-oriented and rigorous. There is a well qualified faculty (some 47 full-time, assigned faculty members), augmented by an extensive and impressive list of adjunct faculty (currently totalling 115).

Following the CEPH accreditation process in 1998, an ad hoc committee was established to articulate the mission, goals, and objectives of the graduate programs, which has since become part of a dynamic process of program review and evaluation for continuous quality improvement. In addition, the recent addition of a CEPH requirement for a field experience in the MPH program led to the establishment of a new practicum. Along with the attention to measurable program outcomes, greater emphasis is placed on independent projects and research methodology. Tomoko I. Hooper, MD, MPH, Assistant Professor, Department of Preventive Medicine and Biometrics, is the Practicum Coordinator and also the Deputy Director for Graduate Programs in the Department.

Clinical Psychology Program Receives Accreditation. The Department of Medical and Clinical Psychology's Clinical Psychology Ph.D. Program received full accreditation from the American Psychological Association Committee on Accreditation. The program received its accreditation in record time and will be listed annually among accredited programs of professional psychology in the American Psychologist. The site visit report stressed that "the curriculum is clearly articulated and appropriately sequenced, and the practicums are organized. Well-qualified and accessible, the faculty provides excellent role models for students. Also commendable is the program's commitment to systematic self-evaluation." The program is designed for students with a background in psychology who wish to pursue clinical practice in military settings.

STUDENT AFFAIRS

Selection of Students. A formal application is required of all persons seeking admission to graduate study at USU. Applications and all supporting documentation must be received no later than January 15 for programs beginning in the following August. Applicants must have completed a Baccalaureate Degree Program from an accredited academic institution and take the Graduate Record Examination (GRE) before matriculation at USU. The GRE may be waived if the applicant possesses an advanced academic degree. All graduate students are admitted to a program of graduate study on a full-time, or part-time, basis and assist in the teaching and research programs that are integral components of the Graduate Education Programs in which they are enrolled.
Well over 2,000 family members and guests attended the 21st Commencement Ceremony at The Daughters of the American Revolution Constitution Hall in Washington, D.C., on May 20, 2000. At the graduation ceremony, the School of Medicine's Graduate Education Programs awarded: 10 Doctor of Philosophy Degrees (LCDR William Watson, MC, USN, Neuroscience Program was one of two USU graduates to complete both the M.D. and the Ph.D. Programs); 3 Doctor of Public Health Degrees (these three graduates were the first to complete the Doctor of Public Health, initiated in 1995 by the Department of Preventive Medicine and Biometrics); 2 Master of Science in Public Health Degrees; and, 31 Master of Public Health Degrees.

At the end of May, 2000, the Graduate Education Programs granted a total of 616 degrees: 200 Doctors of Philosophy: 3 Doctors of Public Health; 54 Masters of Science: 331 Masters of Public Health; 2 Masters of Science in Public Health: 24 Masters of Tropical Medicine and Hygiene; and, 2 Masters of Military Medical History.

The 2000 Graduate Student Award. The Graduate Student Award was presented to Major Bruce Schoneboom, USA, Ph.D. This award was presented during the 2000 USU Graduation Ceremonies to recognize this graduating student for his outstanding and exceptional service rendered to the student body, medical school, and the University. During the graduation ceremonies, Major Schoneboom received a Doctor of Philosophy for his work in the Neuroscience Program. This award recognizes Major Schoneboom’s academic achievement, participation in the academic and intellectual life of the community, and contributions to the welfare and morale of other graduate and medical students.

The Henry M. Jackson Foundation Fellowship in Medical Sciences Award. The Henry M. Jackson Foundation inaugurated a Foundation Fellowship to provide stipend and travel support for an outstanding graduate student during the terminal year of his/her program of study at the Uniformed Services University. The Fellowship is awarded annually to a USUHS graduate student who is expected to complete research and defend the dissertation in sufficient time to participate in commencement activities. The 2000 Award was presented to Martha Faraday, Ph.D., from the Department of Medical and Clinical Psychology.

The University Has Granted a Total of 23 Honorary Degrees Since its Establishment. Since the first Honorary Degree which was granted in 1991, a total of 23 recipients have been selected. The Honorary Degree recognizes individuals who have demonstrated outstanding support for the Military Health System and/or the Uniformed Services University of the Health Sciences. The following have received Honorary Degrees:

1991  Jay Sanford, M.D., Third President of the University and first Dean of the School of Medicine, recognized as a major participant in the establishment and early leadership of the University.
Harry C. Holloway, M.D., Professor, USU Department of Psychiatry, and Deputy Dean from 1990 through June 1992, recognized for unwavering support during a transitional period:

The Honorable Daniel K. Inouye, United States Senator from Hawaii, Senate Appropriations Committee, recognized for continuous leadership and support for Military Medicine and the University as one of the original members of the Congress who supported the establishment of the University;

Mr. Zachary Fisher, Champion of the Armed Forces, recognized for his founding of the Intrepid Museum, the Fisher House Foundation, the Fisher Armed Services Foundation, and his tremendous support for both Military Medicine and the University;

The Honorable David Packard, Former Deputy Secretary of Defense, first Chairman of the USU Board of Regents, and Acting President of USU from 1976 to 1981, recognized for his constant support of Military Medicine and the University and oversight during the original construction of the USU campus;

The Honorable Strom Thurmond, United States Senator from South Carolina, Chairman, Senate Armed Services Committee, recognized for continuous leadership and support for Military Medicine and the University and as one of the original members of the Congress who supported the establishment of the University;

The Honorable Sam Nixon, M.D., former Chairman of the USU Board of Regents and Founder of the USU Tradition of the Mace for the University Commencement Ceremonies, recognized for his dedication to Military Medicine and superb leadership provided to the University;

Frank Reynolds, M.D., Internationally recognized throughout the practice of civilian medicine and for his continuous support and interest in both Military Medicine and the University: he was also the commencement speaker for the 1995 Commencement Ceremonies:

The Honorable Melvin R. Laird, Former Secretary of Defense and continuous supporter of Military Medicine and the University, has provided essential guidance and support since the establishment of USU;

Francis D. Moore, M.D., Internationally recognized as a distinguished Surgeon and supporter of Military Medicine and for his consistent support to programs within the University:

Michael E. DeBakey, M.D., Renowned Surgeon who has been recognized by numerous Presidents of the United States and leaders of numerous nations for his knowledge of medicine and his unwavering support for Military Medicine and the University:
The Honorable C. Everett Koop, M.D., Former Surgeon General of the United States and Member of the USU Board of Regents, recognized for his consistent support for Uniformed Medicine and the University;

President Ronald W. Reagan, President of the United States from 1980 through 1988, recognized for his dedication to the welfare of the Armed Forces, Military Medicine, and the University;

The Honorable Constance Morella, Member of the United States House of Representatives from the State of Maryland, recognized for outstanding dedication to quality health care, medical research and technology, and for her unwavering support for the University;

Donald L. Custis, M.D., Vice Admiral (retired), former Surgeon General of the United States Navy, recognized for his career of dedicated service to Military Medicine and consistent support for the University;

General Charles Krulak, Commandant, United States Marine Corps, recognized for his outstanding support for Military Medicine and for the welfare of the University; he also presented the commencement address for the 1998 graduation ceremonies;

Joshua Lederberg, Ph.D., Nobel Laureate and internationally recognized leader in medicine and for his participation in, and support of, University activities and programs;

V. M. Rexroad, Brigadier General, United States Air Force (retired), recognized as one of the original supporters of the University and for his dedication to Military Medicine and continuous dedication to the welfare of the University;

David C. Sabiston, Jr. M.D., Internationally recognized throughout the civilian practice of medicine for his professional expertise and for his dedication and support of Military Medicine in general and the University;

Oliver H. Beahrs, M.D., Professor of Surgery, Emeritus, Mayo Medical School, Past President of the American College of Surgeons, recognized for his continuous support for Military Medicine in general and for his dedicated support to the University;

Sheila Burke, Executive Dean, Lecturer in Public Policy, John F. Kennedy School of Government, Harvard University, former Chief of Staff, Office of the Republican Leader, U.S. Senate, from 1986 to 1996, recognized for her dedication to Military Medicine and the University;

The Honorable Paul S. Sarbanes, United States Senator from Maryland, recognized for his unwavering support of, and dedication to, essential legislation for both the Military Health System and the University; and,

The Honorable William S. Cohen, Secretary of Defense, recognized for his outstanding support and dedication to Military Medicine and the welfare of the University (description follows).
One Honorary Degree Was Recognized During the 2000 Commencement Ceremonies - The Honorable William S. Cohen, Secretary of the Department of Defense.

The Honorable William S. Cohen, was sworn in as the Nation's 20th Secretary of Defense on January 24, 1997. Secretary Cohen previously served three terms in the United States Senate for the State of Maine from 1979 to 1997, and three terms in the House of Representatives from Maine's Second Congressional District from 1973 through 1979. Secretary Cohen served on the Senate Armed Services and Governmental Affairs Committees from 1979 through 1997. He was also a member of the Senate Select Committee on Intelligence from 1983 through 1991 and from 1995 through 1997; he served as Vice Chairman of the Committee from 1987 through 1991. Secretary Cohen co-authored the Intelligence Oversight Reform Act of 1991, as well as legislation designed to overhaul efforts in the areas of United States Counter-Intelligence.

Secretary Cohen's leadership and unselfish dedication to country as an attorney, author, poet, and legislator was culminated by his selection as the Secretary of Defense. The USU Honorary Degree of Doctor of Medical Jurisprudence, Honoris Causa, recognized Secretary Cohen's commitment to patriotism, his concern for those who serve the Nation, and his dedication toward excellence in military service and medicine. His continuous attention to the delivery of quality health care and support for the thousands of health care providers in the Military Health System was recognized within the citation for the honorary degree.

Secretary Cohen received his honorary degree at the USU campus on May 8, 2000. Secretary Cohen addressed an audience of approximately 350 USU faculty, staff, students, and distinguished guests (the Assistant Secretary of Defense for Health Affairs; the Director of Administration and Management for the Office of the Secretary of Defense; the Surgeons General (or their deputies) of the Army, Navy, Air Force, and the Public Health Service; the Federal Nursing Chiefs; the Commander of the National Naval Medical Center; and, executive leadership from the Military Associations).

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Recipients of the University Medal. The University Medal is one of the University's highest honors. It was created in 1999, to pay tribute to deserving alumni, staff, and faculty members, friends and supporters of the University, its schools, programs, and mission. The recipients are recognized for professional or academic success or public service. Receipt of the University Medal is by endorsement and recommendation of the USU Committee for Names and Honors with the approval of the USU Board of Regents.
The University Medal, molded from silver, displays the University Seal on the front side; the medal's number, recipient's name, and the award date are engraved on the reverse side. 2000 marks the first annual presentation of the University Medal during Commencement Ceremonies.

University Medal Recipients:

1999  Lieutenant General Ronald Blanck, Surgeon General of the Army, received the first University Medal at the November 1, 1999 Meeting of the Board of Regents. As Surgeon General, he served as a member and Chair of the USU Executive Committee; he was also the Assistant Dean of Student Affairs at USU from 1976 through 1979;

2000  Rear Admiral Michael L. Cowan, MC, USN, Chief of Staff for the Assistant Secretary of Defense for Health Affairs, received the University Medal as recognition of thirty years of dedicated service in support of Military Medicine and the University. Admiral Cowan delivered the Commencement Address for 2000:

David O. Cooke, Director of Administration and Management, Office of the Secretary of Defense, was awarded the University Medal in recognition of his continuous service in the Office of the Secretary of Defense since 1958. During these many years, Mr. Cooke has provided continuous support and administrative guidance for Military Medicine and the University: and,

Jeffrey R. Swope, Director, USU Audio Visual Center, upon his retirement from public service, was recognized for his leadership in the establishment of the University Audio Visual Center during 1977 and for his 23 years of continuous dedication and unwavering support to the USU community.

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Graduate Education Students Enrolled During 2000. During 2000, 56 applicants were matriculated into the Graduate Education Programs: 27 students started the Doctor of Philosophy Program; 3 individuals began the Ph.D Program in Public Health: and, 26 students have begun work in Masters Degree Programs (Masters of Science in Public Health - 2; Master of Tropical Medicine and Hygiene - 1; and, Master of Public Health - 23). It is noted that over 200 applicants sought admission to the USU Graduate Education Programs. The student body of the Graduate Education Programs has a total of 126 individuals; with approximately 147 faculty members.

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ALUMNI AFFAIRS

Selected Profiles of Graduates from the Graduate Education Programs.

Class of 1986.

**Deborah Bowen, Ph.D., Medical Psychology**, is a member of the Cancer Prevention Research Program at the Fred Hutchinson Cancer Research Center. Dr. Bowen has been elected by her peers as a Fellow of the American Psychological Association (APA) for 2001. APA Fellows are selected for their exceptional and outstanding contributions to the research, teaching, or practice of psychology. Fellows must also demonstrate the national impact of their work, such as numerous research-based publications, leadership roles within psychology, or community service in their clinical practice. Dr. Bowen has worked at the Fred Hutchinson Cancer Research Center since graduating from USU.

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Class of 1989.

**Commander Joseph Chen, USPHS, Master of Public Health**, is the Clinical Director for Immigration Health Services in San Pedro, California. He is responsible for the health care of over 600 detainees, as well as the day-to-day clinical operations, staff education, and clinical supervision of two nurse practitioners. Previously, he served as the Clinical Director at the Southern Bands Health Center in Elko, Nevada.

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Class of 1991.

**Ann (Miller) Donoghue, Ph.D., Physiology**, received the United States Presidential Early Career Award for Scientists and Engineers during a ceremony at the White House during 2000. The award includes $25,000 in research funding. Dr. Donoghue has been previously recognized for her work during 1999, when the Department of Agriculture named her the Agricultural Research Service Herbert L. Rothbart Outstanding Early Career Research Scientist of the Year. In 1997, the Maryland Science Center named her the Distinguished Young Scientist for the State of Maryland.

**Nicholas Fleischer, Ph.D., Department of Pharmacology**, is the Director of Biopharmaceutics at the Weinberg Group, Inc., in Washington, D.C. He is a retired United States Public Health Service officer.

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Naomi Lester, Ph.D, Medical Psychology, is an Assistant Professor in the Counseling and Health Psychology Department at Bastyr University in Kenmore, Washington.

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Class of 1997.

Major Carol Fisher, USAF, Master of Public Health, is the Commander of Public Health at Yokota Air Base, Japan. She is assigned to the Air Force's Biomedical Sciences Corps.

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Class of 1998.

Major Randy Nedegaard, USAF, Ph.D., Clinical Psychology, was recognized as the Alan W. London Company Grade Psychologist of the Year for 2000. Each Air Force Major Command submits a nominee for this award, which is given to one psychologist each year. The winner is selected for leadership, job performance, community activities, citizenship, significant self-improvement, other accomplishments, and articulate representation of the Air Force. Major Nedegaard is the Chief, Psychology Services, at the United States Disciplinary Barracks, Fort Leavenworth, Kansas.

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FACULTY

The Faculty of the Graduate Education Programs Ensures an Individualized Program Built on Quality Research and Instruction. All departments have sufficient full-time faculty to accommodate the present advising needs for the students in the Graduate Education Programs. Most academic departments reported in the 1999 SOM Self-study that additional students are desired and could be accommodated without placing undue demand on existing faculty resources. All departments have a faculty/student ratio that provides excellent opportunities for continuous interaction (147 faculty members/126 students). Formal occasions for faculty and graduate student interaction occur through seminars, journal clubs, research laboratory rotations, and courses: opportunities abound for students to interact with faculty on an informal and regular basis.

A faculty actively involved in research is critical to the success of the Graduate Education Programs. Through their research activities, high quality faculty members maintain themselves at the cutting edge of their various disciplines. Thus, they contribute to the research mission of the SOM by making advances in medically related research, and they are also better equipped to function as "state-of-the-art" educators. The productivity of the USU SOM research faculty, the quality of their research, and their ability to successfully compete for extramural and intramural funding are all indications of the success of the USU research
mission. The presence of strong Graduate Education Programs contributes to this success and is essential not only for the continued growth of the research activities in the University, but also for the future of medical research and education. The SOM Graduate Education Programs are recognized by the institution as essential to achieving success in the University's research mission. Departments with active and vigorous graduate programs show high research productivity. USU graduate education students regularly present their research at professional meetings and publish their findings in peer-reviewed scientific journals, thus publicizing and promoting the University's reputation. The University's reputation is also enhanced by the success of the graduates to secure postdoctoral positions in highly regarded public and private research laboratories, followed by faculty appointments or positions of responsibility in government research, regulatory agencies, and industry.

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2000 F. Edward Herbert School of Medicine Biomedical Graduate Educator Award. As part of the 2000 USU Graduation Ceremonies, Franziska B. Grieder, Ph.D., Assistant Professor, Department of Microbiology and Immunology, received the Biomedical Graduate Educator Award. The award recognized the outstanding contributions of Dr. Grieder, who was also a member of the USU Neuroscience Program in the School of Medicine. Dr. Grieder was selected to receive this award because of her demonstrated commitment to graduate education through her extensive and outstanding contributions to the education of students in the graduate doctoral training programs at USU. The award recognizes excellence in teaching, mentoring of graduate students, administering graduate programs, and promoting the interests of graduate education.

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V. GRADUATE MEDICAL EDUCATION

ESTABLISHMENT

Background - Graduate Medical Education Programs in the Military Health System. Following their graduation from the School of Medicine (SOM), USU physicians are active duty officers in the Military Health System (MHS) and are assigned to serve as residents in the MHS Graduate Medical Education Programs. The length of time served as a resident depends upon the individual specialty areas. Residents in the MHS enjoy unique educational advantages. For example, the uniformed faculty at the military teaching hospitals are all full-time, ensuring a level of involvement in student and resident (GME) education that is unmatched at other settings. The military GME system is second in size only to that of the Department of Veterans Affairs; and, it is committed to medical education at all levels over a broad range of disciplines. The National Capital Consortium (NCC) residents, as well as all other residents in the integrated GME programs throughout the Military Health System, significantly benefit from the dedicated uniformed faculty and staff who provide educational GME programs and training at the military medical centers.

The military resident, in most programs, also serves as an educator or trainer of medical students and junior residents. This proves to be a unique growth opportunity; and, most often, the resident comes to understand that teaching is actually an advanced expression of learning. Preparation for student lectures and teaching rounds is a reiterative process that consolidates the resident's own base of medical knowledge. The USU medical students and the more junior NCC residents are the indirect beneficiaries of the senior resident's training as they observe and participate in conferences, activities and clinics directed toward their education.

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The School of Medicine Office of Graduate Medical Education (GME). The SOM Office of Graduate Medical Education was established in 1986 to provide consultation on GME programs (internship, residency, and fellowship training for physicians) for Program Directors and the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). From 1986 to present, USU GME, under the leadership of the Associate Dean for Graduate Medical Education, has provided DoD-wide consultation and oversight for numerous GME programs.

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MISSION

USU Office of GME Serves as a Significant Academic Component for Graduate Medical Education in the Military Health System. The University is directed to educate and train competent medical personnel qualified to serve the needs of the MHS through the provision of quality education programs in the health sciences. The Graduate Medical Education Programs of the MHS are of critical importance to both the
University and to the entire network of Military Treatment Facilities. In light of this, the USU SOM Office of Graduate Medical Education serves as a significant academic component in the development of the medical expertise of the MHS residents in their assignments throughout the military GME programs. The following responsibilities are currently assigned to the USU GME program: 1) oversight for the National Capital Consortium; the USU SOM Associate Dean for Graduate Medical Education serves as the NCC Administrative Director; 2) collection and evaluation of data for the DoD GME programs to ensure academic and scientific excellence; 3) oversight for the integration of the DoD GME programs to ensure that accreditation is not jeopardized; and, 4) consultation and advice for the Dean, School of Medicine, the President, USU, and others on military-unique medical curricula.

USU GME Office Assists in the Coordination of Simulated Training for the National Capital Consortium.

Simulated Operating Rooms for Specific Specialties Are Available on the Main USU Campus. The advanced training provided by the USU patient simulator is described in Section II of this report. When the anesthesiology residents come from the National Capital Area Anesthesiology Program, the training is intense. The scenarios are designed to present specific patients who provide complex clinical problems. Residents are purposely pushed beyond their competency levels, until they begin to make mistakes; those lessons will be remembered. Thus, critical lessons are learned without putting human patients or the residents at risk. Recent incoming classes of anesthesia residents to the Walter Reed Army Medical Center were given an extensive trauma training/evaluation with the simulator.

The USU simulation laboratory is fully equipped with all of the functional equipment of an operating room, including the standard monitoring equipment, the life support system (anesthesia machine and ventilator), a defibrillator, and instruments used in treatment. The laboratory also includes complete audio/video recording and playback equipment. Training sessions are recorded, and the residents review their performance with the instructors. The simulated patient provides a unique opportunity to experience relatively rare cases, military relevant, and combat trauma scenarios. The residents gain experience in recognizing problems, developing decision-making skills, familiarizing themselves with instruments and equipment, and refining techniques and procedures. Residents are able to repeat the scenarios until they are performed correctly.

New Satellite Facility Offers Simulation Training. Following collaborative efforts that began in 1995, the University and the Surgeons General instituted a new teaching facility, the National Capital Area Medical Simulation Center, for all GME and National Capital Consortium training programs (the Center is described at length in Section I of this report). The Simulation Center, a satellite facility located in Silver Spring, Maryland, began initial operations in the Fall of 1999. The administrative requirements and management of the Center are assigned to the USU SOM Assistant Dean for Simulation Education. This unique Center is available for training purposes for all GME-sponsored programs.
POLICY FOR MILITARY UNIQUE TRAINING IN DOD-SPONSORED GRADUATE MEDICAL EDUCATION PROGRAMS

"The USUHS shall coordinate efforts of the Services in developing the necessary curricula (for military unique training in DoD-sponsored Graduate Medical Education Programs) and shall establish a centralized repository of information on educational materials and courses to support the implementation of the curricula."

- Policy Memorandum, Office of the Assistant Secretary of Defense, Health Affairs, dated June 28, 1999, page one.

New Policy Is Issued by the Assistant Secretary of Defense for Health Affairs on June 28, 1999. In a memorandum dated June 28, 1999, the Assistant Secretary of Defense for Health Affairs (ASD/HA) stated that the Graduate Medical Education (GME) Programs conducted for military trainees in DoD facilities offer an opportunity to include military unique aspects that will prepare physicians for the rigorous demands of practice in a wartime or contingency environment. The memorandum pointed out that it is essential for the military medical services to avail themselves of this opportunity in a comprehensive yet efficient manner; and, that new policies relative to DoD-sponsored GME programs are being established.

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Each Program Must Include a Military Unique Curriculum that Is Standardized and Specialty Specific. The policy memorandum specified that at the entry level, each GME program shall incorporate a standardized curriculum that includes a core of those topics essential to every physician who will practice medicine in the military. This curriculum should be augmented by an orientation to field medicine such as the Combat Casualty Care Course (C4) or equivalent experience. The curriculum should be designed to complement, not replace, military training obtained through other means and only those elements that are both necessary and appropriate to the GME education program should be included. Beyond the entry year, each program should also include a military unique curriculum that is standardized and specialty specific. For subspecialty training, the curriculum may be directed toward the projected utilization of the trainee, usually in his/her core specialty. An appropriate exposure to the practice of the specialty in an austere or contingent environment should be an essential element of each program.

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USU School of Medicine Office of Graduate Medical Education Coordinates the Development of Curricula. The USU School of Medicine Office of Graduate Medical Education has been tasked by the Assistant Secretary of Defense for Health Affairs to coordinate the efforts of the Services in developing the necessary curricula and to establish a centralized repository of information on educational materials and courses to support the implementation of a military unique curriculum that is standardized and specialty specific.
The policy memorandum also directs that military unique training in GME programs must be documented on an annual basis and reported to the ASD(HA) by the Services by September 30 of the completed training year. Each program review must confirm that a military unique curriculum is in place and that it is being utilized: it should also confirm that appropriate opportunities to experience specialty practice in constrained environments exist and are being utilized.

Following the receipt of the June 28, 1999 policy memorandum, the military unique curriculum for each major specialty was developed and posted on the Graduate Medical Education Web Site <http://cim.usuhs.mil/dodgme/>. Subject matter expert panels are currently being reconstituted to accomplish the biennial revision.

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NATIONAL CAPITAL CONSORTIUM

Mission of the National Capital Consortium. The mission of the National Capital Consortium (NCC) is to educate physicians, dentists, and other health care professionals to provide care for the soldiers, sailors, airmen, and marines throughout the Military Health System, to include their families. The NCC provides a scholarly environment that is dedicated to excellence in both education and health care and to the provision of ethical values and standards to all trainees, such as would be expected of those who devote their lives to careers in public service.

The NCC serves as an institutional entity for the GME- integrated programs offered by the three major Medical Treatment Facilities (MTFs) in the National Capital Region: the Walter Reed Army Medical Center, the National Naval Medical Center, and the Malcolm Grow Medical Center. The three MTFs comprise the NCC membership: and, the USUHS SOM serves as the fourth, and final, member of the NCC.

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Accreditation. The NCC, by supplying leadership and resources, complies with the Accreditation Council for Graduate Medical Education (ACGME) Institutional Requirements and ensures that Consortium-sponsored programs comply with ACGME program requirements. Consortium-sponsored GME programs operate under the authority and control of the Consortium (the NCC). The Consortium regularly assesses the quality of its educational programs.

Development of the National Capital Consortium. In 1993, the Assistant Secretary of Defense for Health Affairs directed the integration of duplicate GME programs in the National Capital Region (NCR).
In accordance with that directive, the National Capital Consortium was established by the Commanding Officers of the Walter Reed Army Medical Center (WRAMC), the National Naval Medical Center (NNMC), the Malcolm Grow Medical Center (MCMG), and the Dean, USU School of Medicine on January 25, 1995.

Five programs were initially identified for integration: Obstetrics and Gynecology; Otolaryngology/Head and Neck Surgery; Pathology; Pediatrics; and, Psychiatry. The process of the selection of program directors for the integrated residencies and arrangements for site surveys by the Accreditation Council for Graduate Medical Education (ACGME) began immediately; and, by the end of 1995, there were a total of seven GME programs under the NCC.

During 1996, the pace of integration progressed toward the integration of all duplicative programs with the possible exception of several specialties which had identified specific impediments to integration. Non-duplicative Fellowship Programs joined the Consortium as their parent programs were integrated. By the end of 1996, there were a total of 19 GME programs included within the NCC.

On June 20, 1997, the first joint graduation exercise for the National Capital Region was held at the Walter Reed Army Medical Center with more than 350 graduates participating. By July of 1997, there were 15 programs under Consortium sponsorship as well as seven integrated programs under the sponsorship of one of the TriServices. An institutional site survey of the National Capital Consortium by the Accreditation Council for Graduate Medical Education was completed in July of 1997, and resulted in a favorable decision. There were 25 programs under the Consortium sponsorship at the end of 1997.

By the end of 1998, 47 of the total GME programs were under the Consortium. And, by December 31, 1999, 50 integrated medical training programs were under the sponsorship of the Consortium. The Consortium hopes to have all of the 62 GME programs, found throughout the four Member institutions, under its sponsorship by the Year 2001. The following chart provides the status of the GME programs from 1995 through 2000:

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USU GME Ensures Coordination/Administrative Support for the National Capital Consortium. In September of 1997, the USU Office of Graduate Medical Education was selected as the Administrative Office for the National Capital Consortium; this delegation of responsibility was placed under the leadership of the USU Associate Dean for Graduate Medical Education.

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NCC/GME Academic Achievements (1999-2000). Significant accomplishments have been achieved throughout the GME programs. During 1999 through 2000, NCC residents published 175 articles and over 200 abstracts for their respective NCC core and sub-specialty programs. The following examples reflect the outstanding academic accomplishments reported to the NCC Administrative Office during the 1999-2000 Academic Year:

1. Washington Urologic Society Scholars Day
   (Resident Competition)

   **Lieutenant Commander Brian Auge, MC, USN**
   Urology - NNMC

2. Bailey K. Ashford Award - WRAMC
   (Laboratory Research)

   **Major William Conner, MC, USA**
   General Surgery - WRAMC

3. Major General Lewis A. Mologne Award - WRAMC
   (Dedication to the Practice of Medicine)

   **Major William Conner, MC, USA**
   General Surgery - WRAMC

4. Pfizer Urology Scholar

   **Lieutenant Commander (sel) Timothy Donahue, MC, USN**
   Urology - NNMC

5. Finalist - Bailey K. Ashford Award - WRAMC
   (Laboratory Research)

   **Major John Frattarelli, MC, USA**
   Reproduction/Endocrinology
6. Finalist - Bailey K. Ashford Award - WRAMC (Clinical Research)

    **Lieutenant Colonel Charles Hoge, MC, USA**
    Psychiatry

7. American Society for Clinical Laboratory Sciences (Distinguished Author Award)

    **Captain Keith Kaplan, MC, USA**
    Pathology

8. James Leonard Award for Teaching

    **Major Leslie Jackson, MC, USA**
    Rheumatology

9. Cheitlin Award for Research (Research Conducted by a Fellow)

    **Major Marisa Orgera, MC, USA**
    Cardiovascular

10. Finalist - Bailey K. Ashford Award - WRAMC (Clinical Research)

    **Major Andrew Shorr, MC, USA**
    Pulmonary and Critical Care Medicine

11. Chesapeake Vascular Society Research Award

    **Major Michael Weber, MC, USA**
    General Surgery - WRAMC

Information about the NCC programs, governance, By-laws, and the NCC Administrative Handbook can be accessed via the NCC web site: <http://www.usuhs/mil/gme/NCC.htm>.

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VI. THE OFFICE OF CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

"I would like to commend you for your efforts and contributions in supporting the educational needs of our Foreign Service medical professionals. The University has done an outstanding job in sponsoring superb medical conferences during these past four years. Specifically worthy of commendation is the work of Dr. Eric Marks (USU SOM Associate Dean for Faculty Affairs and Associate Professor, Department of Medicine) and Dr. David Wherry (Professor, USU SOM Department of Surgery), and the Office of Continuing Education for Health Professionals' Captain Laura Omer, (Senior Executive Director of USU CHE until July of 1999), Captain W.T. Nunns, (Senior Executive Director of USU CHE from July of 1999 through 2000), and Ms. Charlotte Naschinski (Director of CHE).

"As you know, trusted medical care is one of the most significant quality of life issues for our personnel and their families overseas. A quality medical education program is fundamental to the success of our program. On behalf of all our beneficiaries, I want to thank you for sustaining high quality medical education for the Department of State.

"The success of this ongoing effort is a shining example of the benefits of interagency cooperation. I hope and trust that this cooperation between federal agencies will continue and expand in the years ahead."


MISSION

USU is Mandated by Congress to Provide Continuing Education for Health Professionals. Under Title 10, U.S. Code (Section 2113), USU is mandated by Congress to "establish programs in continuing medical education for military members of the health professions to the end that high standards of health care may be maintained within the military medical services." The mission of the USU Office of Continuing Education for Health Professionals (CHE) is to sponsor, directly or jointly, activities in continuing education for members of the Federal health care delivery system to ensure that high standards of health care are maintained within the Federal health care services. This standard of excellence is achieved through a vigorous and creative evaluation process. The Office of CHE plays a central role in facilitating the continued professional growth of health care professionals in the Federal services by providing live courses and conferences, enduring materials, and journal CME. In addition, the Office of CHE establishes activities for non-Federal civilian health professionals in disciplines where the body of knowledge is available primarily within the Federal services medical domain and when that knowledge will contribute to the health of the Nation, other countries, or the global community.
Six Factors Mandate CHE's Essential Role in Today's Military Health System. Continuing education (CE) has always been recognized as an essential component of the continuum of education for health professionals. The critical role of CE in the educational spectrum has come to the fore during more recent years as a result of several educational, social, and political factors:

- Rapid advances in biomedical knowledge and its application to the practice of health care;
- Changing expectations of health care professionals as effective communicators and team members;
- Enhanced awareness of the role of health care providers in disease prevention;
- Incorporation of evidence-based medicine, accountability and financial incentives into daily medical practice;
- Changes in the work environment of health care providers with the move of medical practice to the ambulatory setting; and,
- The use of CE as evidence of the maintenance of competence for medical practice in relicensure, hospital privileging, specialty recertification, professional society membership and selected other requirements.

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CHE Must Ensure Academic Involvement in all Phases of Programs Designated for Credit. The Office of Continuing Education for Health Professionals is under the leadership of the Senior Executive Director, who reports directly to the USU President, and is responsible for academic involvement in all phases of programs designated for credit to include:

- Identification of educational needs, planning, implementation, and evaluation of continuing education activities for members of the health professions serving in the uniformed and other federal services (a number of methods are used by the Office of CHE in determining the topics for continuing education activities. These range from formal surveys and structured interviews to current topics in the professional literature. In every case, the particular interest and needs of a specific audience are considered in planning and preparation);
- Acquisition and maintenance of continuing education accreditation at USU;
- Administrative and logistical support and determination of budgetary requirements for continuing education programs sponsored by the University;
- Maintenance of professional and educational liaisons with military and civilian professional organizations and academic institutions; and,
- Monitoring the quality of continuing education activities and utilizing evaluative data and research findings to improve the quality of these activities at the University (annual total program evaluations
identify areas where improvement can enhance the continuing education services provided by the University. A consistent focus on developing employee potential through cross training within the office and additional training within the University and from outside sources also improves the provision of services. Attendance at professional conferences and meetings conducted by the accrediting agencies or peer groups ensures compliance by the University with all continuing education requirements of the Accreditation Council for Continuing Medical Education, the American Nurses Credentialing Center’s Commission on Accreditation, the American Psychological Association, the American College of Healthcare Executives, and the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners. Continuous quality improvement is active in all phases of the Office of CHE. Mechanisms such as the evaluation of events by participants, by faculty, and by office staff help to improve the quality of similar future events).

*****
NATIONALLY RECOGNIZED CONTINUING EDUCATION CREDIT

Unique Accreditation Within the Military Health System. The USU Office of Continuing Education for Health Professionals provides nationally recognized continuing education credit for physicians, nurses, psychologists, healthcare executives, and social workers through its accreditation by: 1) the Accreditation Council for Continuing Medical Education (site visit was held during March of 2001); 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing (site visit was held during April of 2001); 3) the American Psychological Association (accredited through March 2004); 4) the American College of Healthcare Executives (ACHE) authorized USU, on May 24, 1996, to award pre-approved Category II (non-ACHE) continuing education credit through May of 2005; and, 5) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners (indefinitely). This inclusive provision of continuing education for multiple disciplines, from one office, is believed to be unique within the Military Health System (MHS).

The Office of CHE, under the academic umbrella of the University, is uniquely positioned to perform a significant role in facilitating the continued professional growth of health care professionals in the MHS. The principal responsibilities of the office are the identification of education needs, planning, implementation, and the evaluation of continuing educational and resuscitative medicine programs for members of the health professions. CHE is also responsible for the acquisition and maintenance of the University's continuing education accreditations and for the trauma and resuscitative medicine training program affiliations.

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The Continuing Health Education Committee. The Continuing Health Education (CHE) Committee serves as a reviewing body and as an advisory committee to the USU President and to the Office of CHE. The CHE Committee members are appointed by the USU President. Other faculty members are invited to participate in the activities of the committee on an ad hoc basis. This Committee meets at least four times each year. The membership consists primarily of department chairs or their designated representatives; their membership facilitates communication and provides a forum for planning education activities and for the discussion of issues and policies that affect continuing medical education.

******
INCREASED SUPPORT FOR THE MILITARY HEALTH SYSTEM

**CHE Support for Graduate Medical Education Programs.** In conjunction with the National Capital Consortium, the Office of CHE's involvement has greatly increased through the sponsoring of on-going continuing medical education (CME) programs such as Grand Rounds in Faculty Development, Family Medicine, Preventive Medicine, Ophthalmology, Pediatrics, and Psychiatry.

*****

**CHE Support for TRICARE/Health Affairs Initiatives.** During Fiscal Year 2000, the USU Office of CHE supported the Office of the Secretary of Defense (OSD), Health Affairs (HA) with the TRICARE Winter Conference, the Health Information and Management Systems Society Conference, a Medical Executive Skills Course, 15 Medical Effects of Ionizing Radiation (MEIR) Courses both CONUS (continental United States) and OCONUS (Overseas), a MEIR Course on videotapes, the Interagency Institute for Federal Health Care Executives, the DoD Medical Initiative Conference on Weapons of Mass Destruction, and the Women's Memorial Health Care Seminars.

*****

**Specialty and Review Courses for the Military Health System.** The Office of CHE sponsored continuing education for numerous specialty and review courses for the Military Health System during 2000.

Medical Readiness - The Military Medical Humanitarian Assistance Course. The Military Medical Humanitarian Assistance Course is a two-day interactive course designed to train U.S. military health care providers to deliver optimal medical care to civilian populations, primarily women and children, in the aftermath of humanitarian emergencies. Prior to this course, a void existed in preparing medical officers with the necessary skills, knowledge, and confidence to actively participate in such missions. Given the U.S. military's increasing involvement in Military Operations Other Than War (MOOTW), the focus of this course is centered on familiarizing clinicians with the unique aspects of humanitarian missions, so that they are best prepared to actively participate and lead future missions. Though the health issues are often predictable, the paradigm presents issues that rapidly progress to the severest degree. Resources are typically more limited than in other operations, complicating any attempt for immediate intervention. The course emphasizes practical skills and techniques, not often addressed in the curriculum of American medical education that will be useful to the provider who is challenged to provide the best possible medical care in an austere environment. The faculty who present this course are committed to the quality and credibility of this educational experience. Thus, all clinical instructors have not only mastered the clinical material, but also have had personal experience practicing medicine in an austere health environment. All of the clinical cases are derived from real experiences in operational medicine. This course was developed at USU under the sponsorship of the Dean, School of Medicine, and the Department of Pediatrics. The course was held seven times for 162 physicians, four nurses, and two others during 2000. Four courses are scheduled during 2001.
A course on Medical Humanitarian Assistance for Advanced Practice Nurses is also scheduled.

AMA Seminar on the Medical Response to Biological and Chemical Terrorism. The AMA Seminar: "Medicine's Role in Responding to Biological and Chemical Terrorism, Is Your Community Ready?" was offered for physicians as a pre-conference activity to the American Medical Association (AMA) Annual Meeting in Chicago on June 19, 1999. It was supported by the AMA Section Council on Federal and Military Medicine, the National Medical Veterans Society, and the AMA Council on Scientific Affairs. The program was designed to educate physicians on the health effects of terrorism and to provide information resources on how AMA leaders of organized medicine can help local communities to prepare for such disasters. Speakers, considered to be experts in their subject areas, presented an overview of recognition, diagnosis, and treatment for acts of biological and chemical terrorism at the community level. The psychological impact of terrorism and the need for the early involvement of federal assets were also addressed. One hundred physicians were awarded three hours of Category 1 CME credit. The positive results of the seminar were reported to the House of Delegates at the Annual 2000 Meeting.

Other Courses/Activities Sponsored by CHE During 2000:

- The International Spine Workshops (Cervical, Peripheral Nerve, Thoraco-Lumbar);
- The Capital Conference Family Practice Review;
- The three courses on TriService Video Endoscopy for Perioperative Nurses were held at the USU campus: San Diego, California; and, San Antonio, Texas;
- One Obstetrical Ultrasound Course was held at the National Naval Medical Center;
- The two Biomedical Ethics Courses were held in Japan and Barksdale Air Force Base, Lousiana;
- The Fourteenth Conference on Military Medicine, A Challenge to Readiness: Injuries in the Military: and,
- CHE sponsored the U.S. Air Force Reserve Flight Surgeon's Sustainment Course, directed by the USU Department of Family Medicine and CHE.

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Association of Military Surgeons of the United States (AMSUS) Annual Meeting. Since the 99th Annual Meeting in 1992, CHE has worked with AMSUS to provide continuing education credit for their Annual Meetings. AMSUS was established in 1891, and incorporated by an Act of Congress in 1903, as the Society of the Federal Health Agencies. As such, it contributes to the improvement of all phases of the
federal health services. The constituent services of AMSUS include the medical departments of the U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service, and the Department of Veterans Affairs. The U.S. Navy hosted the 106th Annual Meeting, Health Professions Education: An Investment in Our Future, held on November 7 - 12, 1999, in Anaheim, California. The agenda emphasized federal medicine and took full advantage of the unique forum offered by the meeting and the 5,588 attendees. For Fiscal Year 2000, the USU Office of CHE offered 218 sessions for continuing education credit in five disciplines (a significant increase from the 47 sessions offered in two disciplines during Fiscal Year 1993).

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Women's Memorial Health Seminars. Brigadier General Wilma L. Vaught, USAF (Ret.), President of the Women in Military Service for America Memorial Foundation envisioned a series of seminars for a National Forum on Women's Health Issues at the Women's Memorial Education Center beginning in the Spring of 2000. The Assistant Secretary of Defense for Health Affairs and the USU President tasked the USU Graduate School of Nursing to coordinate the undertaking. The seven seminars in Fiscal Year 2000 served as an opportunity for the co-sponsoring organizations to educate women, particularly active duty women and women veterans, about their health, maladies common to women, current findings, and preventive care. The series will continue in 2001.

*****
**GENERATED COST AVOIDANCE FOR DOD BY CHE**

**CHE Generates Cost Avoidance for DoD.** In carrying out its principal responsibilities during Fiscal Year 2000, CHE sponsored continuing medical education for 332 programs with an attendance of 3,679 physicians; provided continuing nursing education for 43 activities with an attendance of 2,129 nurses; and, approved Category II (non-ACHE) continuing education credit for nine programs for 221 members of the American College of Healthcare Executives. CHE also sponsored two continuing education activities for 32 psychologists, and two continuing education activities for 47 social workers. Because the USU Office of CHE brings medical training to the medical health care professionals, an estimated cost avoidance of $1,502,516 was generated for the DoD by eliminating extensive travel expenses and time away from the hospitals and clinics (the total cost avoidance was calculated by subtracting all of the operating costs for the USU Office of CHE, to include civilian and military manpower, from the total of savings generated by the elimination of travel, per diem and significant commercial registration expenses ($2,222,642 - $720,126 = $1,502,516).

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**SUPPORT FOR OTHER FEDERAL ORGANIZATIONS**

**Department of State Programs.** Each year since 1998, USU has provided two iterations of a continuing education program for the Office of Medical Services of the Department of State. During Fiscal Year 2000, topics included two days of medical updates, one day of infectious disease issues, three half days each of surgical topics, food handling, and mental health. Forty physicians, 41 advanced practice nurses, and eight physician assistants were able to earn up to 29 hours of CME or 34.8 nursing contact hours. In 2001, USU will again provide two iterations of a continuing education program for this office, focusing on pediatrics, patient safety, and infectious disease issues. The Basic Life Support for Instructors Course is also scheduled. This work for the State Department elicited the letter of commendation from the Secretary of State which is quoted at the beginning of this section.

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**NASA Teleconference Continuing Education Series.** Another example of service to other federal agencies was the NASA series on Emerging Diseases. Video-teleconferencing systems connected live seminars to the Institute for Biomedical Problems, Moscow; the Institute of Telemedicine, Toulouse, France; the Medical Informatics Center, the Medical College of Virginia; the USU; the Robert Byrd Health Sciences Center, West Virginia University; and, the 14 NASA Centers. Fifty-five physicians, nine nurses, five members of the American College of Healthcare Executives (ACHE), and 100 others participated in the 11 seminars. These seminars are part of the continual initiative of the NASA Office of Life and Microgravity Sciences and Applications to provide continuing education to the NASA employee and contractors and to promote international understanding and interactions among the international Space Station Project Partners. USU has provided CME, nursing, and ACHE continuing education support for three other NASA seminar series since 1998. A series on Aging is planned for 2001.

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MILITARY TRAINING NETWORK

Mission. The mission of the Military Training Network (MTN) is to 1) provide an efficient administrative framework that assures course accessibility; 2) develop and implement policy guidance; and, 3) ensure compliance with curriculum and administrative standards for resuscitative and trauma medicine training programs for the Uniformed Services and Department of Defense affiliates. The USU TriService MTN staff provides specific service expertise, central record keeping, world-wide coordination of programs and ensures that national resuscitative and trauma medicine organizations are aware of the unique requirements of military medicine.

World-Wide Capabilities Essential to Medical Readiness. The USU MTN is designed as the DoD affiliate for the American Heart Association and the American College of Surgeons for resuscitative and trauma medicine training programs. The resuscitative and trauma medical programs administered by the MTN include: Advanced Cardiac Life Support (ACLS); Advanced Trauma Life Support (ATLS); Pediatric Advanced Life Support (PALS); Army Emergency Medical Technician (EMT); and, Basic Life Support (BLS).

Currently, the USU MTN is the only American Heart Association Affiliate with worldwide reciprocity for health care providers. The USU MTN provision of this training enhances DoD’s ability to provide training in strategically critical areas throughout the world (e.g., Bosnia, Korea, and Turkey), on operational platforms (e.g., aboard aircraft carriers), and remote sites where civilian training would not be available. All of these capabilities are essential to the wartime medical readiness of the Uniformed Services.

MTN Generates Estimated Savings for DoD. Department of Defense sites affiliated with the MTN are approved to conduct self-sustained resuscitative and trauma medicine training. This continues to prove cost-effective to the Military Health System because it eliminates the need to pay premium training costs for civilian resuscitative and trauma medicine programs. For example, during Fiscal Year 2000, 194,044 defense personnel were trained through the USU MTN. The average commercial cost for providing that training would have conservatively totalled at least $10,602,780. The cost avoidance generated for the DoD during 2000, an estimated total of $9,890,579, was calculated by subtracting all of the operating costs, to include civilian and military manpower, provided by the three Services from the average commercial cost ($10,602,780 - $7 12,201 = $9,890,579).
VII. THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

"...changing world conditions have posed new threats for which there are little or no data. The need for new data comes at a time when the scientific community's ability to respond has been severely restricted by worldwide closings of radiobiological research centers. AFRRI has value because it is designed and organized to generate these types of data, and because it is one of the very few places that can do so."


RELEVANCE

Background. The Armed Forces Radiobiology Research Institute (AFRRI), a TriService organization, is located in a 173,242 square foot complex on the campus of the National Naval Medical Center (NNMC) in Bethesda, Maryland. AFRRI was chartered in 1961 to conduct relevant applied radiobiological research in support of the military medical mission and to support accidental or premeditated events involving nuclear reactors, nuclear weapons, radiological dispersal devices, and other nuclear/radiological situations. The AFRRI complex houses a 1 Megawatt TRIGA nuclear reactor, a cobalt-60 irradiation facility licensed for 400,000 Curies, a 54 Mev linear accelerator, a 100 Curie cobalt-60 chronic irradiation facility, a full-service veterinary facility accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International, and a full complement of laboratory and administrative spaces. Particularly unique features of the TRIGA nuclear reactor are its ability to simulate the high prompt dose of neutron radiation from the detonation of a nuclear weapon, and its two exposure rooms that can accommodate large-animal experimental models. Human resources consist of 160 professional, technical and administrative personnel. About 60 percent are civilian; and, 40 percent are military personnel.

Governance. On September 22, 1992, the Deputy Secretary of Defense approved a program decision memorandum and transferred the management of AFRRI from the Defense Nuclear Agency (DNA) to USU; the Director of AFRRI reports directly to the President of USU. An Administrative Plan for program execution and administrative support for the integration of AFRRI as an Institute within USU was coordinated by the USU Vice President for Administration and Management and the Director of AFRRI; the plan was approved by the USU President in October of 2000. The Office of the Director, Defense Research and Engineering (ODDR&E) directly funds AFRRI's program and provides management oversight of the research program through the Director, Bio Systems.

On August 17, 2000, the ODDR&E suggested that USU revise its DoD Directive 5105.45 to reflect the placement of AFRRI within USU. That suggestion was followed and on November 13, 2000, the USU President approved a draft revision of the USU Directive as coordinated by the USU Vice President for Administration and Management and the Director of AFRRI with the executive staff of both USU and AFRRI. Upon further guidance from the Office of the Secretary of Defense (OSD), the submission of the
draft DoD Directive for OSD approval was postponed pending the reprogramming of funding lines in a new Program Budget Decision (PBD). Subsequently, USU was advised that a new PBD might not be forthcoming. Once a determination has been reached on the PBD, USU will proceed to complete the coordination process with Health Affairs, the Bureau of Medicine, the USU Executive Committee, the current AFRRI Board of Governors, the Graduate School of Nursing Executive Council, DDR&E, and others, as appropriate, to revise DoD Directive 5105.45 (so that it reflects the placement of AFRRI within USU) during 2001.

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Mission. AFRRI must 1) conduct applied radiobiological research to develop militarily relevant medical countermeasures against radiation injuries alone or in combination with biological or chemical injuries; 2) maintain a Medical Radiobiology Advisory Team to support accidental or premeditated events involving nuclear reactors, nuclear weapons, radiological dispersal devices, and other nuclear/radiological situations; 3) advise the Joint Chiefs of Staff (J-4 Medical), the Deputy Assistant to the Secretary of Defense, Nuclear Matters, the Joint Task Force for Civil Support, and the Surgeons reporting to the Commander-In-Chiefs (CINC) on medical nuclear defense; and, 4) train DoD medical personnel on the management and treatment of radiation casualties (Medical Effects of Ionizing Radiation Course).

A Unique Program. There is no other comprehensive, militarily relevant radiobiological research program like AFRRI's. While several initiatives exist in universities and private industry to develop pharmacologic strategies to prevent collateral injury in radiation therapy patients, no other program exists which addresses the spectrum of radiological injuries anticipated under combat situations involving nuclear or radiological weapons use. AFRRI does, however, leverage findings from private sector initiatives to develop countermeasures not only to prevent injuries but also to treat and assess radiological injuries under military operational scenarios. Only AFRRI offers a program dedicated to these special military requirements. And, no other program within the Department of Defense addresses medical radiological defense research requirements.

The AFRRI complex was designed and built to conduct radiobiology research and to develop medical radiological countermeasures in support of the military medical mission. AFRRI's ability to safely operate a TRIGA research nuclear reactor has made it an ideal source to simulate the prompt radiation pulse from a nuclear weapon. The AFRRI reactor also provides a source of fission spectrum neutrons to conduct radiobiology experiments at very low-doses and dose rates to simulate chronic exposure scenarios. Although there are 49 of these small research reactors in the world, and 18 in the United States, only the AFRRI reactor is designed for and is wholly dedicated to applied medical radiobiology research. AFRRI's second major source is a cobalt-60 irradiation facility. It is designed to safely hold up to 400,000 Curies of cobalt-60; the facility is the largest source of gamma rays on the East Coast. Because this source can produce a high exposure rate consisting of monoenergetic gamma-ray fields, it is ideally suited as a reference source for the high-energy photons needed in applied military radiobiology research.

Documented Relevance. Despite the end of the Cold War, risk of radiological injury is on the rise. A growing threat remains from small-scale conflicts, terrorist incidents, accidents, and even peacekeeping missions in troubled areas around the world. Each of these scenarios involves real prospects for the use of
nuclear or radiological devices, or the uncontrolled or intentional release of hazardous radioactive materials. Unlike a strategic nuclear exchange which would devastate infrastructure and all but eliminate prospects for the delivery of any remaining healthcare resources, most casualties of nuclear/radiological incidents in today's threat environments should expect to have quick access to sophisticated medical care. It is essential to ensure that the best possible products of today's technology are available to the personnel of the health care delivery system who must respond to any such disaster scenario. The military has a clear need for information on the sources and complicating effects of radiation in wartime, terrorist, and accident scenarios.

Military planning, deployment and employment decisions in response to nuclear/radiological incidents depend on information available only from test (i.e., experimental), theoretical and/or empirical (event-generated) data. AFRRI has played a significant role in providing information to devise strategies for early response to high, acute doses of radiation. In addition, "...Needs have changed in response to the contemporary world's environment; low-dose, chronic exposures are more likely to occur. There is a growing concern to define accurately the consequences of a variety of such scenarios.... They (AFRRI) demonstrated dedication to, and focus on, the real and current need for information to deal with risk situations already being encountered, or likely to be encountered, by Armed Services Personnel. It was made clear that changing world conditions have posed new threats for which there are little or no data. The need for new data comes at a time when the scientific community's ability to respond has been severely restricted by worldwide closings of radiobiological research centers. AFRRI has value because it is designed and organized to generate these types of data, and because it is one of the very few places that can do so" (American Institute for Biological Sciences (AIBS) Peer Review on AFRRI, Executive Summary, dated July 1996, pages 1 and 2).

Response Agreements with the Office of the Secretary of Defense Confirm AFRRI's Relevance to DoD. The relevance of AFRRI's mission is solidified by the direct support provided to the Office of the Secretary of Defense (OSD) and Joint Chiefs of Staff (JCS). Upon request during emergency situations, AFRRI deploys teams of technical and scientific experts as consultants to these offices within a three-hour response time.

March 2001 Technology Area Review and Assessment. The bi-annual Technology Area Review and Assessment (TARA), held the week of 26 February 2001 in San Antonio, Texas, noted that advances in medical science and technology indeed portend the prospects that "radiation-induced injuries can be managed" and that major elements of AFRRI's program are "focused on an important problem, with potential impact on homeland defense."

In summary, the DoD's annual funding of the Medical Radiological Defense Research Program at the Armed Forces Radiobiology Research Institute is a timely investment that supports relevant medical requirements of the Services. A value-added benefit to DoD and national security is derived from the AFRRI's pool of scientific and technical experts in government service who are available on short notice to provide advice and guidance to high-level offices within DoD during national emergencies. AFRRI is poised to continue paying dividends well into the future by ensuring enhanced medical readiness that will save lives and reduce injuries in nuclear/radiological and combined NBC threat environments.

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TIMELINESS

An Impressive Response. AFRII routinely disseminates its research findings with the scientific community, within DoD, the private sector, and internationally. Its investigators' publications in peer-reviewed journals, presentations at professional conferences, and reports and recommendations to the TriServices and CINC Surgeons provide timely information on the mitigation of radiation hazards and optimization of medical treatment strategies for radiation casualties. Research findings are also integrated into the AFRII-sponsored accredited course on the Medical Effects of Ionizing Radiation, the only high level training medium available to the medical personnel of the Armed Forces for the management of radiological injuries. Attendance and presentations at national and international conferences ensures that AFRII investigators stay abreast of the latest developments around the world. It provides an important source of critical feedback through direct peer interaction; and, it fosters recruitment of other scientists to contribute independently to solving problems in radiobiology common to both the military and private sectors. Past studies focused primarily on high radiation doses, because the military was then concerned with the high prompt dose effects from nuclear weapons detonations. Today, ... "the AFRII investigators have been able to use this knowledge, and the experimental approaches which allowed its development, to design reasonable and logical approaches to the extremely difficult problems of current interest which (in addition to on-going nuclear threats from terrorist activities) involve low doses and possible low dose rates.... AFRII has always played a national and international role in solving radiobiological problems, interacting with NATO, sending response teams anywhere in the world where they are needed, and training physicians and military personnel to respond to radiation accidents. This role is expanding due to the default of other centers. Key to the ability to uphold this responsibility, and a major strength, is the combination of dedicated radiation sources, animal facilities, and the mixture of military and civilian personnel with expertise in many relevant fields. This allows a think tank approach to experimental design, rapid execution of experiments, and frugal use of resources, including experimental animals" (AIBS Peer Review on AFRII, dated July of 1996, page 2).

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AFRII Fields Medical Training and Provides Rapid Response in Support of DoD Missions.

Medical Radiobiology Advisory Team. The AFRII Medical Radiobiology Advisory Team (MRAT) provides medical and health physics consultation and dose assessment capabilities to the U.S. military and private sectors around the world for contending with a broad spectrum of nuclear or radiological accidents, incidents, or injuries. The team most recently responded during the loss of the Russian submarine Kursk and its crew in the Barents Sea. The AFRII MRAT is also a critical arm of the Defense Nuclear Advisory Team fielded by the Defense Threat Reduction Agency, and is called upon to deploy worldwide in response to incidents of any kind involving nuclear weapons or radiological devices (a recent article in U.S. News and World Report, during February 2001, illustrates an example of the heightened risk for a radiological event by citing the prospects for nuclear accidents at several locations across the former Soviet Union).
October 2, 1999 Response to the Tokaimura Nuclear Criticality Accident in Japan. AFRRRI was in consultation with Dr. Haraguichi at the Tokaimura Prefecture Emergency Operations Center addressing his questions on public health and methods to mitigate the adverse radiophobia and psychological effects of the nuclear incident on the public. AFRRRI also provided guidance to U.S. Army Japan on measures to reassure the U.S. military members and families that they were not in harm's way, to include the monitoring of food sources for the U.S. community.

August 14, 2000 Response Capability to the Accident of the Russian Submarine Kursk. During the aftermath of the Russian submarine accident, AFRRRI was asked by the Defense Threat Reduction Agency for medical capabilities, which could be offered to the Russians in anticipation of an official Russian request. AFRRRI immediately responded with radiation biodosimetry support to assess the radiation dose to the surviving Russian sailors.

January 8, 2001 Response to German Ministry of Defense Request. The recent upheaval within the NATO alliance, stemming from claims by some allied forces and their governments that depleted uranium (DU) exposures during their operations in the Balkans were the cause of serious personal illness, prompted the German Ministry of Defense to seek AFRRRI's support in dispelling such claims. The request recognized AFRRRI's worldwide leadership role and scientific expertise in studies on the health effects of chronic exposures to DU. Through AFRRRI's capacity as Chair of Technical Group-006 of the NATO Human Factors and Medicine Panel, information was provided that greatly helped to defuse the crisis.

Support to the Secretary of Defense. On January 10, 2001, AFRRRI provided the Office of the Secretary of Defense with the most current scientific information on the human bioeffects of depleted uranium resulting from various sources of exposure (dermal, inhalation, and wounding). The information was used later that day by the Secretary of Defense to address the National Press Club on European concerns over DU exposures among NATO forces in the Balkans.

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Internal and External Review Mechanisms Ensure Standards of Scientific Excellence. USU and AFRRI have implemented internal and external review mechanisms for the systematic planning, review and analysis of AFRRI's programs to ensure the highest standards of scientific excellence. The USU School of Medicine Committees will provide significant support during the review process.

Strategic Approach to Program Management. AFRRI management has implemented a three-tiered hierarchy of management controls which provide a clear picture of all funded work in the context of logical levels of effort. The system provides a roadmap showing how the overarching goals and objectives of the two Program Elements are to be achieved. It serves as the basis for the planning, funding, review and analysis of all work, and it ensures that resources are appropriately allocated so that programmatically relevant goals are achieved within specified timeframes and clearly defined metrics of acceptability. The three-tiered hierarchy consists of team-based Project Areas, Task Areas within each Project Area, and Studies within each Task Area.

Project Areas encompass major programmatic thrusts toward related product goals that are identified based on military requirements. A Team Leader who is responsible for managing, organizing, planning and executing coordinated scientific investigations heads each Project Area.

Task Areas define subsets of related efforts within a Project Area. Studies within a Task Area are executed by a highly coordinated group of collaborating investigators, each pursuing a critical element of work needed to support a targeted product under development within the Project Area. Task Areas also serve as cost centers to better control the allocation and tracking of financial, capital and human resources.

Studies are the basic unit of research and are defined by a detailed written protocol. The protocol contains a clearly stated objective, a tenable scientific hypothesis, an experimental approach, a statement of program relevancy, a table of milestones and metrics, and an assessment of resource requirements. Each Study protocol is reviewed and approved by AFRRI's Research Management Council (RCM) composed of the Institute's senior science managers and the Scientific Director; and, recommendations for funding are forwarded to the Director before the start of work. The Study can last no more than three years, at which time the RCM performs a formal assessment of progress. If warranted, a new protocol is written to continue the line of work.

The three management tiers of Project Areas, Task Areas and Studies, and accompanying documentation are the administrative tools by which key individuals, from investigators to the institute Director, execute the program. Overlaying this process is a four-part quality assurance mechanism to monitor program execution using the tiered management process as a basis for oversight review.
A Four-Part Approach for Quality Assurance. In response to a direction from the USU President, from April through October 2000, the senior management of USU and AFRRI coordinated and developed an administrative operation plan for the integration of AFRRI within USU. On October 27, 2000, the USU President accepted the proposed operating plan; Section 16 of that plan includes the area of Research Administration. The executive leadership of both USU and AFRRI finalized a four-part process already initiated by AFRRI for quality assurance for the AFRRI research programs. The four-part process includes a planning phase for review, approval and funding of the proposed work, and a three-tiered phase for the review and analysis of progress, which is described in further detail below. The management process starts with the documentation, review and approval of research plans, which includes a USU/AFRRI merit review committee assessment of written protocols prior to the funding and start of new studies. All funded work must be approved in this manner as the basis for the rest of the management process. The purpose of this up-front critical look is to ensure that the scientific merit and program relevancy of the work meet the program's needs. Also, its purpose is to assess the work's risk in terms of the likelihood of achieving the stated goals relative to resource requirements and technical challenges. As such, the planning process is included as one of the fundamental tiers of program management.

Complementing the planning and funding is a follow-on process of structured review and analysis of progress that is currently being implemented. As previously mentioned, this will take the form of annual, in-house self-examinations by an in-process review mechanism, supplemented with a biannual, external peer review carried out by a multidisciplinary Scientific Advisory Board (SAB). The SAB will be composed of recognized subject matter experts qualified to critically evaluate AFRRI's work from a scientific point of view and who are preferably colleagues with whom AFRRI investigators collaborate or consult with frequently. This latter point is essential. Its intent is to foster healthy and productive relationships with leaders in the field from industry and academia who also serve the significant role of providing formal advice and guidance. The continuity of such relationships assists AFRRI scientists to remain abreast of scientific advances and current theory relative to the program's needs. Capping the periodic review and analysis process will be a completely independent assessment such as many organizations commission the American Institute of Biological Sciences (AIBS) to do. Panelists are selected by the AIBS to provide an unbiased assessment of the program; and, such reviews will be conducted every three to five years, or as deemed needed. Although the program management process as detailed below identifies the two major elements of planning and funding versus review and analysis, it should be understood that the SAB and AIBS program assessments which focus primarily on review and analysis also take into consideration how effectively AFRRI/USU management executes the planning and funding process.

Part I - Program Planning. Part I of the process is the planning and programming of Studies within the Task Areas. Investigators write detailed protocols for up to three years of effort. Prior to funding and commencement of work, the protocols must be subjected to critical review by a sub-panel of the USU School of Medicine Merit Review Committee, composed of both USU and AFRRI scientists. The purpose of this up-front critical look is to ensure that the scientific merit of the proposed work meets the program's needs. The review also assesses the work's risk in terms of the likelihood of achieving the stated goals relative to resource requirements and technical challenges. Program military relevancy will be evaluated by the JTCG-7 with representatives from the Office of the Surgeons General and other appropriate organizations.
Part II - Internal Annual Reviews. In-process reviews of all outstanding studies are conducted annually. Investigators are required to provide short written summaries of progress in the context of the milestones and metrics of approved protocols. Written reviews give principal investigators the opportunity to critically assess their own progress and to justify continuation of the effort. The reviews provide program managers and the AFRRI Director assurances that Studies, Tasks and Projects are on course and properly resourced. Reviews also provide the basis for annual reporting requirements and budget submissions to DDR&E.

Part III - Scientific Advisory Board. To validate the annual in-process review, and provide a venue for developing and maintaining collaborative interactions and information exchanges with leaders in the field, a Scientific Advisory Board (SAB) will be commissioned. The SAB conducts comprehensive program reviews on a biannual basis. During site visits, individual board members meet with their AFRRI Department Head, Team Leader or investigator counterparts for detailed, in-depth discussions of experimental progress. The board as a group then hears selected presentations under a symposium format, which highlights all facets of the entire program. The board summarizes their findings in an out-briefing to the AFRRI Director and Scientific Director, and to the USU President and Vice President for Research, as deemed appropriate. A detailed written report culminates the biannual review and is made available to all senior managers at AFRRI and USU. Attempts are made to ensure that SAB members consist of collaborators and colleagues of the AFRRI scientific staff in order to foster a continuing consortium of interacting topflight experts throughout the intervening period between on-site SAB visits. The intent is to develop and maintain open lines of communication and information exchange with scientific leaders in the field as a means of staying technically and scientifically current. The estimated cost for bringing in such a review team is approximately $20,000; the first visit is projected to take place by the end of Fiscal Year 2001.

Part IV - Independent Peer Review. Capping the four-part quality assurance review process will be an independent periodic review by the American Institute for Biological Sciences (AIBS) on a three to five year time cycle. The AIBS review panel examines the entire program for relevance and scientific merit, and provides a comprehensive written review that will go to the Bio Systems Director of DDR&E in addition to senior AFRRI and USU management. The next AIBS review is scheduled for the end of Fiscal Year 2002.

Department of Radiobiology, School of Medicine. The development of an academic Department of Radiobiology for placement within the USU School of Medicine will take place during the next few years, resources permitting. Both USU and AFRRI agree that, if possible, the AFRRI Scientific Director should also serve as the Chair of the new department. The Department of Radiobiology will require a basic research foundation that will support AFRRI's Medical Radiological Defense Research Program mission. The Chairman of the Department of Radiobiology will directly report to the Dean of the School of Medicine.

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The Quality of AFRRI's Science Measures Well Against National Scientific Capabilities and Standards for Technical Merit.

March 2001 Technology Area Review and Assessment. The Technology Area Review and Assessment (TARA) panel noted that AFRRI's research thrusts are characterized by "quality, hypothesis-driven science" and that major elements of the program employ "novel methodology" and "logical approach" in executing studies that have the "potential for significant impact on treatment decisions."

AFRRI Publications in Peer-Reviewed Journals. The quality and productivity of AFRRI's science is reflected in its record of peer-reviewed publications and other printed materials. A listing of citations is provided at Tab C for the period of 1998 to the present.

Recent Endorsements of the Quality of the AFRRI Research Programs. AFRRI's research program is highly regarded throughout the scientific and medical communities, both nationally and internationally. The following selected accounts of recent activities and engagements testify to this fact:

- One of AFRRI's senior scientists is invited to deliver a keynote lecture at the "Advanced Research Workshop on Protracted, Intermittent or Chronic Irradiation: Biological Effects and Mechanisms of Tolerance." The workshop is an international meeting to be held at the University of Ulm, in Ulm, Germany, May 14 - 17, 2001, and is sponsored by the European Commission Directorate for General Research and Technical Development, the International Searle Foundation, and the University of Ulm;

- AFRRI's Radiation Casualty Management Team Leader holds the Chair of NATO Research Task Group 006 for Radiation Injury and Medical Countermeasures. This task group falls under the Human Factors and Medicine Panel of NATO and its membership includes radiobiology experts from 13 NATO countries, with Australia as an observer nation;

- Upon invitation, another AFRRI senior scientist serves as the United States representative to International Standards Organization (ISO) Working Group #18 tasked to develop performance standards for specialized laboratories performing radiation dose assessments using cytogenetic procedures;

- AFRRI planned, organized and hosted a highly successful International Conference on Low-Level Radiation Injury and Medical Countermeasures. Held in November of 1999, the conference attracted over 147 participants and included several of the world's most preeminent radiobiologists. A combined total of 72 oral presentations and posters were given over the course of three days. The proceedings of the conference are in press to be published in a special issue of Military Medicine;

- AFRRI scientists are invited members of the International Atomic Energy Agency's (IAEA) working group to review and update the agency's Biodosimetry Manual (IAEA Report No. 260). This manual serves as the current basis for the standardization of cytogenetic-based assays for radiation dose assessment. The updated manual is expected to be released in 2001 and will include, for the first time, reference to the premature chromosome condensation assay pioneered and recently published by the AFRRI Biodosimetry Team;
- Members of the AFRRI Depleted Uranium (DU) Team were invited to make formal presentations of AFRRI's DU research findings to the National Academy of Sciences, Institute of Medicine, Committee on Health Effects Associated with Exposures during the Gulf War (National Academy of Sciences, Washington, D.C., June 14, 1999). Information presented by the DU Team is included in the published book summarizing the Committee's findings: Gulf War and Health, Volume 1. Depleted Uranium, Pyridostigmine Bromide, Sarin, Vaccines, (Fulco, C.E., C.T. Liverman, H.C. Sox, eds.) National Academy Press, Washington, D.C. 2000;

- An AFRRI senior scientist was an invited speaker at the 4th International Conference on the Medical Basis for Radiation Accident Preparedness sponsored by the Radiation Emergency Assistance Center/Training Site (REAC/TS) of the Department of Energy. The conference was held in March 2001 and addressed issues and current advances in the management of acutely irradiated or contaminated patients. The AFRRI Biodosimetry Team also organized and hosted a workshop on "Updates on the Current Dose Assessment Techniques: Biological" in conjunction with the REAC/TS conference;

- AFRRI planned, organized and hosted a highly successful International Conference on the Operational Impact of Psychological Casualties from Weapons of Mass Destruction held in July of 2000. Keynote speakers included the Principal Deputy Under Secretary of Defense for Personnel and Readiness, and the Deputy Assistant to the Secretary of Defense, Chemical and Biological Defense.

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The Transition of New and Improved Medical Technologies. AFRRI's Science and Technology Programs are soon expected to transition new and improved medical technologies into advanced development with FDA approval and eventual fielding.

Four Defense Technology Objectives (DTOs) Guide the Thrust of AFRRI's Research. AFRRI's research programs present a strategic commitment which leans heavily toward moving products of basic and developmental research into definitive applied studies of safety and efficacy aimed at transitioning new and improved medical technologies into advanced development, with Food and Drug Administration (FDA) approval, and eventual fielding.

Since 1998, AFRRI has been assigned four Defense Technology Objectives (DTOs). A DTO is a specifically recognized high priority element of technology advancement that will be developed or demonstrated and has an anticipated delivery date. The product of a DTO is expected not only to enhance military operational capability but also to address other important issues such as affordability and dual-use application, both of which receive special emphasis in the Defense Science and Technology Strategy.

Four Research Thrusts. There are four major AFRRI research thrusts that are carried out by AFRRI teams:

The Radiation Casualty Management Team. The Radiation Casualty Management Team investigates the full spectrum of medical countermeasures for an external exposure to ionizing radiation. Compounds are under development that can raise the threshold of hazardous radiation doses, save lives, and reduce injuries. The team investigates compounds that carry anti-oxidant or DNA damage surveillance and repair stimulating properties, or impart cell-cycle regulatory activities or immune system-enhancing characteristics that, when combined, provide important radioprotective qualities. The team also develops treatments for life-threatening injuries to the blood forming and gastrointestinal systems to include the lungs. During 1999, AFRRI investigators demonstrated significant radioprotective qualities of a non-androgenic steroid, 5-androstenedial (5-AED). The drug has no measurable toxicity at the doses being used to achieve protection. Ongoing research includes attempts to deliver similar protective efficacy by the oral route of administration and will lead to a product that can be more easily managed logistically and used by deployed military troops. Transition of a cytokine treatment regimen is expected to occur within the next three to five years;

The Biological Dosimetry Team. The Biological Dosimetry Team has made important technical achievements that significantly advance the science and medical application of cytogenetic-based methods of radiation dose assessment. Development of a combined chemical and enzymatic treatment of peripheral blood lymphocytes makes it possible to assess radiation exposures across a very broad dose range not possible with conventional cytogenetic procedures. The new procedure also allows testing of large sample numbers within a single day's time instead of the usual three days. Further enhancing this development, the team, in collaboration with private industry under a cooperative research and development agreement, has developed an automated microscopic imaging system that will facilitate processing of even larger numbers of samples with higher precision and accuracy. This new procedure known as the Premature Chromosome
Condensation (PCC) assay promises to supplant the current gold standard dicentric assay for cytogenetic-based biodosimetry. A recently published report on the procedure and abstract presentations at several national and international conferences have drawn considerable attention from around the world to AFRRI and its Biological Dosimetry Team. AFRRI is rapidly becoming recognized as a leader in experimental biological dosimetry. The team is also at the forefront of discovery involving the identification and development of novel DNA and RNA molecular markers of radiation exposure. These markers can be measured rapidly and accurately with high precision and sensitivity using hand-held battery-operated analytical platforms designed for field use. Success in this area will, for the first time, allow use of radiation dose assessment and diagnostic techniques to aid triage and medical management decisions under field operations. The PCC assay and a software package for biodosimetry assessment are expected to transition within the next three to five years;

The Depleted Uranium Team. In partial response to concerns over Gulf War illness, the Depleted Uranium Team was established to study the biological consequences and potential health risks from chronic exposure to tissue-embedded depleted Uranium (DU). The team's research findings have resulted in a recent change to medical doctrine that calls for more aggressive removal of DU shrapnel fragments. The AFRRI team also works closely with the Office of the Special Assistant for Gulf War Illness as a subject matter expert and consultant on DU issues, and collaborates with the Department of Veterans Affairs in their program to medically follow Gulf War veterans wounded by DU shrapnel. Team members have been called upon on several occasions to give testimony before Congress in this regard. Development and refinement of an inductively coupled mass spectrometry procedure that can differentiate DU from natural uranium in biological samples has become an integral part of this collaborative study and has contributed to AFRRI's being recognized as a center of excellence in DU studies. Development of a simple chemical assay for DU that can be configured into a compact, rapid field test to aid triage and medical management decisions is another achievement of the DU team. Together, these accomplishments and their validation in peer-reviewed publications have made the AFRRI DU Team a focal point of recognized expertise frequently consulted by DoD and other United States and NATO government policy makers. The rapid field-based DU detection assay has been patented and is expected to transition within the next two to three years; and,

The Nuclear, Biological, and Chemical Interactions and Countermeasures Team. The Nuclear, Biological, and Chemical Interactions and Countermeasures Team was established to examine the biological effects of combined exposure to sublethal doses of radiation and biological or chemical warfare agents. The team focuses on quantifying the synergistic effects of combined exposures across the entire spectrum of doses, dose rates and time courses which can be expected in a battlefield scenario. The Defense Threat Reduction Agency (DTRA) component responsible for the building of casualty prediction models used for wartime planning and execution relies on the data generated in these detailed studies. The team recently made an important finding involving the combined insults of radiation and Bacillus anthracis, the bacterial agent causing anthrax. This finding should prove critical for guiding successful antibiotic treatment of combined exposure casualties. The team's product is primarily informational in nature and experimental data is already being transferred to the DTRA casualty-modeling component.

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RESPONSE TO THE SPECIAL REQUIREMENTS OF MEDICAL READINESS

AFRRI Projects Address Requirements of Military Operations and Homeland Defense. AFRRI's portfolio of current and planned projects adequately addresses needs related to military operations and homeland defense through an on-going review process by five entities.

"The United States and its Allies have an obvious need for a source of reliable and relevant information on the complicating effects of irradiation on the health and safety of its military personnel and citizenry. The AFRRI expertise is intramural, dedicated, and performing original work of the highest quality in response to mission-driven questions."


Five Entities Provide Oversight and Review. Five entities provide oversight and review of AFRRI research programs or provide guidance on program objectives and product development based on specific military requirements:

The AFRRI Board of Governors. At least once each year, the AFRRI Board of Governors meets to assist in the oversight of AFRRI's radiobiology research, to advise and review program plans and accomplishments, and to ensure compliance with Service Requirements. The AFRRI Board of Governors consists of the Assistant Secretary of Defense for Health Affairs: the Surgeons General of the Army, Navy, and Air Force: the Deputy Chiefs of Staff for Operations of the Army, Navy, and Air Force, or their designated representatives: and, the President of USU who will serve as the Chair of the AFRRI Board of Governors:

The United States Army Nuclear Chemical Agency. The United States Army Nuclear Chemical Agency (USANCA) with the assistance of AFRRI subject matter experts publishes every two years their Specific Military Requirements for nuclear and chemical defense. Three of USANCA's top 20 requirements fall within the mandates of AFRRI's Medical Radiological Defense Research Program and were influential in the establishment of AFRRI's current Defense Technology Objectives:

The Medical Programs Sub-Panel of the Joint Service Integration Group under the Joint NBC Defense Board. Although not a voting member, AFRRI is an invited guest to meetings of the Medical Programs Sub Panel (MPSP) of the Joint Service Integration Group under the NBC Defense Board. An important function of the MPSP is the establishment and prioritization of joint service operational requirements documents and mission needs statements that serve as guidance for product acquisition and justify specific research efforts in the technology base. Participation in the MPSP process keeps the AFRRI Director closely informed on newly established requirements;
The Medical Force Protection Integrated Concept Team. AFRRI is a member of the Medical Force Protection (MFP) Integrated Concept Team (ICT). This team has the responsibility to identify futuristic medical requirements for addressing MFP for the total force under all combat and non-combat conditions; this includes protection of the service member on the battlefield, at the site of injury, through his/her period on active duty, and following departure into civilian life and retirement. It is well within the scope of the MFP ICT to recommend that joint requirement documents be established for medical radiological defense products such as pretreatment and treatment pharmaceuticals and fieldable and rapid assessment biodosimetry techniques; and,

The Office of the Director, Defense Research and Engineering. The Office of the Director, Defense Research and Engineering conducts a technology area review and assessment every two years. AFRRI is part of the review process which includes, but is not limited to, the status of AFRRI's four DTO's (Defense Technology Objectives) and the milestones established for each DTO and, AFRRI's response to meeting DoD requirements.

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OPTIMIZATION OF FUTURE OPERATIONS

Resource Sharing Continues Between USU and AFRRI.

Continuation and Expansion of On-Going Cost-Avoidance Measures by USU and AFRRI. In addition to AFRRI’s significant reductions in staffing that have taken place since 1992, both USU and AFRRI agree that on-going, cost-effective measures will continue and be expanded as appropriate. Some examples follow: 1) the frequent review of all contracts and maintenance agreements for cost avoidance/savings; 2) the USU Security Division will continue to process security background investigations for the contracted employees assigned at AFRRI; 3) the USU Civilian Human Resources Directorate will continue to provide all personnel requirements for AFRRI in accordance with current agreements; 4) the USU Administrative Support Division will continue to provide support for AFRRI’s visa/passport requirements; 5) the USU Contracting Directorate will continue to provide guidance and back-up support for the employee assigned with the AFRRI contracting/support requirements; this contracting employee is seated within the USU Contracting Division; 6) the AFRRI and USU Directors of Laboratory Animal Medicine will continue to share equipment and use joint purchases for supplies; 7) the USU Learning Resources Center (Library) will continue to provide all related services for AFRRI in accordance with current agreements; 8) collaboration on occupational medicine training requirements will continue; 9) the USU Veterinary Pathology Division will continue its support for AFRRI’s microbiology and electron microscopy requirements; the AFRRI Veterinarian Pathologist will continue to assist USU as required; 10) USU will continue to serve as the Internet Service Provider for AFRRI; the ongoing sharing of Self-Help videos and distance learning expertise will continue; and, 11) the USU Military Personnel Office will continue to share its Equal Opportunity and mandatory training classes with the AFRRI military personnel.

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Necessary Steps Are Identified to Remedy Deficiencies in Resourcing.

Determination of Staffing/Funding Requirements. Generally, when an organization is integrated within another, there are anticipated savings in manpower and operating costs throughout the administrative and support areas. However, due to continuous and significant reductions in the AFRRI budget over the past eight years (beginning in 1992/3 when AFRRI’s funding was reduced by over 40 percent), the manpower levels in the AFRRI administrative support areas have been consistently reduced, at times below recommended manpower levels. At the same time, the USU administrative support staff has been maintained at the minimum level required to support the University’s mission and to assure compliance with its controlling regulations. A joint recommendation by both USU and AFRRI has been documented in the Administration Plan of October 2000 for five additional administrative hires in the areas of Security, Facilities, and Research Administration. The inclusion of the funding for these additional five hires ($262,000) has been included in the estimated cost of staffing AFRRI during FY2002 and beyond.
One-Time Property Renovation Costs. AFRRI's urgent requirements for real property maintenance and repair and/or renovation projects have not been addressed due to consistent budget reductions since 1993. The Facilities Divisions of USU and AFRRI coordinated to provide an estimated total cost for addressing these concerns. The estimated one-time cost for renovations and/or repairs totals $4,000,000. These real property maintenance and renovation projects are urgently required for the continued use of the AFRRI complex; the costs have been discussed with the Office of the Director of Defense Research and Engineering. (The $4,000,000 total reflects DDR&E input on the original October 2000 submission of $4,500,000.)

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AFRRI's Internal Response to Budget Deficiencies.

AFRRI's Internal Program Management. Due to consistent budgetary reductions, in order to maintain a vibrant and productive program, AFRRI has reengineered its strategic approach to program management and resource allocation. A system of planning, programming, budgeting, review and analysis rounds out a streamlined process that focuses on programmatic relevance, scientific merit, and monitored productivity. This system is structured so that professional and technical staff at all levels within the Institute become stakeholders in the program and are more fully committed to meeting the Institute's goals and objectives. The implementation of this comprehensive management strategy has had a profound impact on productivity and the quality enhancement of program output.

Product Transition.

Efforts by AFRRI to Obtain Higher Level Programmed Funding Lines. To date, DoD supports AFRRI's Medical Radiological Defense Research Program (MRDRP) initiatives up to, and including, pre-clinical trials for efficacy in surrogate animal model systems (P6.2/6.3 funding lines). Conducting pre-clinical safety trials under current Good Laboratory Practices (cGLP) and transitioning products into advanced development involving clinical studies in humans requires higher level programmed funding lines (P6.4/6.5). Also needed is a sophisticated project management process compliant with FDA regulatory affairs, which AFRRI does not have in order to meet this requirement. A memorandum of agreement between AFRRI and the United States Army Medical Research and Material Command, signed in 2000, provides project management and regulatory affairs support from the United States Army Medical Material Development Activity (USAMMDA).

Four Products Have Been Identified for Transition. AFRRI has identified four candidate products for transition within the next three to five years that will be presented to USAMMDA for initial evaluation and cost estimates. With funding projections in hand, AFRRI will pursue a service or agency sponsor for the P6.4/6.5 funding lines as required by the Services. Operational requirements are being promulgated through the Medical Programs Sub-Panel of the Joint Service Integration Group under the Joint NBC Defense Board.

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SUBJECT: Uniformed Services University of the Health Sciences (USUHS)

(a) DoD Directive 5105.45, subject as above, May 17, 1999 (hereby canceled)
(b) Chapter 104 et seq. of title 10, United States Code
(c) Secretary of Defense Report, "Defense Reform Initiative," November 1997
(e) through (g), see enclosure 1

1. REISSUANCE AND PURPOSE

This Directive reissues reference (a) to:

1.1. Update the mission, policy, organization and management, responsibilities and functions, relationships, and authorities of the USUHS.

1.2. Provide for USUHS governance under reference (b).

1.3. Establish the USUHS Executive Committee, pursuant to the direction of reference (c).

1.4. Designate the Secretary of the Navy as the "DoD Executive Agent" for administrative support of the USUHS, in accordance with reference (d).

1 Available at http://www.defenselink.mil/pubs/dodreform/
2. **APPLICABILITY**

This Directive applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as "the DoD Components").

3. **DEFINITIONS**

3.1. **Academic Affairs.** Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well-being of the USUHS.

3.2. **Uniformed Services.** The Army, the Navy, the Air Force, the Marine Corps, the Coast Guard, the Commissioned Corps of the U.S. Public Health Service, and the Commissioned Corps of the National Oceanic and Atmospheric Administration.

4. **MISSION**

The USUHS shall:

4.1. Educate and train competent medical personnel qualified to serve the needs of the Uniformed Services through providing the highest quality education programs in the health sciences.

4.2. Place high priority on educating and training personnel to meet the combat and peacetime medical needs of the Armed Forces.

4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services.

5. **POLICY**

It is DoD policy that:
5.1. Consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USUHS Board of Regents in advising the Secretary of Defense. Consistent with applicable law and accomplishment of the DoD mission, the Assistant Secretary of Defense for Health Affairs (ASD(HA)), the USUHS Executive Committee, and the President of the USUHS shall be guided by the advice of the USUHS Board of Regents on academic affairs.

5.2. USUHS funding shall be within the Defense Health Program.

6. ORGANIZATION AND MANAGEMENT

6.1. The USUHS is a joint entity of the three Military Departments, subject to the overall supervision of the ASD(HA) and the management direction of the USUHS Executive Committee, and shall consist of the following:

6.1.1. A Board of Regents that shall be established and operated, in accordance with 5 U.S.C. Appendix (Federal Advisory Committee Act) (reference (e)), and shall consist of members appointed under Section 2113(a), Chapter 104 of 10 U.S.C. (reference (b)).

6.1.2. A President of the USUHS, who shall be the chief executive officer of the USUHS, and who also is the Dean of the USUHS, as described in reference (b), and who shall report to the ASD(HA), through the USUHS Executive Committee.

6.1.3. A Dean of the F. Edward Hebert School of Medicine, who shall function as the chief academic officer of the F. Edward Hebert School of Medicine and report to the President of the USUHS.

6.1.4. A Dean of the Graduate School of Nursing, who shall function as the chief academic officer of the Graduate School of Nursing and report to the President of the USUHS.

6.1.5. Other subordinate positions and elements as are established by the President of the USUHS within authorized resources.

6.1.6. Students selected under procedures prescribed, in accordance with Chapter 104 of reference (b), and graduate students.
6.2. The USUHS Executive Committee is established to provide the supervision and management of the USUHS, pursuant to the Defense Reform Initiative (reference (c)), and consistent with the direction of the Secretary of Defense to reduce the operational and program management responsibilities of the OSD.

6.2.1. The USUHS Executive Committee shall consist of the Surgeons General of the three Military Departments and shall report to the ASD(HA) on USUHS matters.

6.2.2. A Chair shall be designated from among the membership, as mutually determined by the membership.

6.2.3. The President of the USUHS shall provide an Executive Secretary and associated staff support.

6.2.4. The DoD Executive Agent shall be represented on the USUHS Executive Committee by the Surgeon General of the Navy.

7. RESPONSIBILITIES AND FUNCTIONS

7.1. The Assistant Secretary of Defense for Health Affairs, under the Under Secretary of Defense for Personnel and Readiness, shall:

7.1.1. In accordance with DoD Directive 5136.1 (reference (f)), exercise authority, direction and control over the medical personnel, facilities, programs, funding, and associated resources in the Department of Defense as they relate to the USUHS.

7.1.2. Exercise the authorities over the USUHS vested in the Secretary of Defense by Chapter 104 of 10 U.S.C. (reference (b)), except that the authority to appoint the President of the USUHS is reserved to the Secretary of Defense.

7.1.3. Develop policies and issue policy guidelines to ensure the effective integration of USUHS programs and activities in the DoD Health Program. That includes, but is not limited to, the development of DoD Directives, the issuance of DoD Instructions, and OSD-level participation in the Planning, Programming, and Budgeting System process.

7.1.4. Ensure that the advice of the Board of Regents in matters of academic affairs is considered, in accordance with the policy in section 5.1., above.
7.1.5. Ensure that the Board of Regents shall participate in the governance of the USUHS by advising the Secretary of Defense, through the ASD(HA), on academic affairs and on the administration and management of the USUHS.

7.1.6. Ensure that the President of the USUHS shall:

7.1.6.1. Make certain that educational programs leading to a Doctor of Medicine or other advanced degrees in the health professions meet the standards of applicable and recognized, accrediting, licensing, and certifying Agencies.

7.1.6.2. Carry out those responsibilities and functions pertaining to the supervision and management of University programs, activities, personnel, and resources as the ASD(HA) and Executive Committee prescribe.

7.1.7. Ensure that the Dean of the F. Edward Hebert School of Medicine shall develop and administer policies and procedures on the academic affairs of the F. Edward Hebert School of Medicine.

7.1.8. Ensure that the Dean of the Graduate School of Nursing shall develop and administer policies and procedures on the academic affairs of the Graduate School of Nursing.

7.2. The Secretary of the Navy shall serve as the DoD Executive Agent for administrative support of the USUHS, to include budget, personnel, information, facilities, and other resource responsibilities required for the mission of the USUHS.

7.2.1. Civilian personnel authorizations shall be under the purview of the DoD Executive Agent and civilian employees shall be carried on the rolls of the Department of the Navy.

7.2.2. The USUHS funding and personnel requirements shall not be offset against the Navy Surgeon General budget or work-year allocations.

7.3. The Director, Defense Legal Services Agency, shall provide legal advice and services for the USUHS.

7.4. The USUHS Executive Committee, consistent with the policy guidance of the ASD(HA), shall:

7.4.1. Oversee the operation of the USUHS and provide management direction to the President of the USUHS on the day-to-day operation of the USUHS.
7.4.2. Provide guidance to the President of the USUHS and advice to the ASD(HA) on the annual USUHS program and budget submissions.

7.4.3. Provide advice to the ASD(HA) on health policy matters relating to the USUHS.

8. RELATIONSHIPS

8.1. In carrying out the responsibilities and functions of the chief executive officer of the USUHS, the President of the USUHS shall:

8.1.1. Obtain advice from the USUHS Executive Committee and the Board of Regents, as necessary, to assist the President of the USUHS in performing the President's duties.

8.1.2. Coordinate and exchange information and advice with elements of the OSD and the other DoD Components having collateral or related responsibilities.

8.1.3. Make use of established facilities and services in the Department of Defense and other Government Agencies, when practical, to avoid duplication and achieve maximum efficiency and economy.

8.1.4. Consult and coordinate with other Governmental Agencies and non-Governmental agencies on matters for the mission and programs of the USUHS.

8.2. The Heads of the DoD Components shall coordinate with the ASD(HA) on all matters relating to the mission and programs of the USUHS.

9. AUTHORITIES

The President of the USUHS is specifically delegated the authority to:

9.1. Obtain reports, information, advice, and assistance consistent with DoD Directive 8910.1 (reference (g)), as necessary, to carry out assigned responsibilities and functions.

9.2. Communicate directly with appropriate representatives of the DoD Components and other Executive Departments and Agencies, and members of the public, as appropriate, on matters related to the mission and programs of the USUHS.
9.3. Appoint civilian members of the faculty and staff under salary schedules and grant retirement and other related benefits prescribed by the Secretary of Defense so as to place the employees of the USUHS on a comparable basis with the employees of fully accredited schools of the health professions within the vicinity of the District of Columbia, as provided by law (reference (b)).

9.4. Exercise the administrative authorities contained in enclosure 2.

10. EFFECTIVE DATE

This Directive is effective immediately.

Enclosures - 2

E1. References, continued
E2. Delegations of Authority
E1. ENCLOSURE 1

REFERENCES, continued

(e) Title 5, United States Code

(f) DoD Directive 5136.1, "Assistant Secretary of Defense for Health Affairs (ASD(HA))," May 27, 1994

E2. ENCLOSEMENT 2

DELEGATIONS OF AUTHORITY

E2.1.1. Under the authority vested in the Secretary of Defense, and subject to the authority, direction, and control of the Secretary of Defense, the Under Secretary of Defense for Personnel and Readiness, and the ASD(HA), the President of the USUHS is hereby delegated authority, subject to paragraph E2.1.2., below, as required in the administration and operation of the USUHS, to:

E2.1.1.1. Exercise the powers vested in the Secretary of Defense by 5 U.S.C. 301, 302(b), 3101, and 5107 on the employment, direction, and general administration of USUHS civilian personnel.

E2.1.1.2. Fix rates of pay for wage-rate employees exempted from the "Classification Act of 1949" by 5 U.S.C. 5102 on the basis of rates established under the Federal Wage System. The fixing of such rates shall follow the wage schedule established by the DoD Wage Fixing Authority.

E2.1.1.3. Administer oaths of office to those entering the Executive Branch of the Federal Government, in accordance with 5 U.S.C. 2903, and designate in writing, as may be necessary, officers and employees of the USUHS to perform that function.

E2.1.1.4. Establish a USUHS Incentive Awards Board and pay cash awards to, and incur necessary expenses for the honorary recognition of, civilian employees of the Government whose suggestions, inventions, superior accomplishments, or other personal efforts, including special acts or services, benefit or affect the USUHS or its subordinate activities, in accordance with 5 U.S.C. 4503; Office of Personnel Management (OPM) regulations; and DoD 1400.25-M, "DoD Civilian Personnel Manual (CPM)," Chapter 400, Subchapter 451, "Awards," December 1996, authorized by DoD Directive 1400.25, November 25, 1996.

E2.1.1.5. Maintain an official seal and attest to the authenticity of official USUHS records under that seal.

E2.1.1.6. Establish advisory committees and employ part-time advisors, as approved by the Secretary of Defense, for the performance of USUHS functions,
consistent with the 10 U.S.C. 173, 5 U.S.C. 3109(b), and DoD Directive 5105.4,


E2.1.1.7.1. Designate any position in the USUHS as a "sensitive" position.

E2.1.1.7.2. Authorize, in case of an emergency, the appointment of a person to a sensitive position in the USUHS for a limited period of time and for whom a full field investigation or other applicable investigation, including the National Agency Check, has not been completed.

E2.1.1.7.3. Initiate personnel security investigations, and, if necessary, in the interest of national security, suspend a security clearance for personnel assigned, detailed to, or employed by the USUHS. Any action under this paragraph shall be taken, in accordance with procedures prescribed in DoD 5200.2-R, "DoD Personnel Security Program," January 1987, authorized by DoD Directive 5200.2, April 9, 1999.

E2.1.1.8. Act as the agent for the collection and payment of employment taxes imposed by Chapter 21 of the Internal Revenue Code of 1954, as amended; and, as such agent, make all determinations and certifications required or provided for under Section 3122 of the Internal Revenue Code of 1954, as amended, and Sections 205(p)(1) and 205(p)(2) of the "Social Security Act," as amended (42 U.S.C. 405(p)(1) and 405(p)(2)), about USUHS employees.

E2.1.1.9. Authorize and approve the following:

E2.1.1.9.1. Temporary duty travel for military personnel assigned or detailed to the USUHS, in accordance with the Joint Federal Travel Regulations (JFTR), Volume 1, "Uniformed Service Members," current edition.

E2.1.1.9.2. Travel for USUHS civilian personnel, in accordance with the Joint Travel Regulations (JTR), Volume 2, "DoD Civilian Personnel," current edition.

E2.1.1.9.3. Invitational travel to non-DoD employees whose
consultative, advisory, or other highly specialized technical services are required in a
capacity that is directly related to, or with, USUHS activities, in accordance with the

E2.1.1.9.4. Overtime work for the USUHS civilian personnel, in
accordance with 5 U.S.C. Chapter 55, Subchapter V, and applicable OPM regulations.

E2.1.1.10. Approve the expenditure of funds available for travel by military
personnel assigned or detailed to the USUHS for expenses incident to attendance at
meetings of technical, scientific, professional, or other similar organizations in such
instances when the approval of the Secretary of Defense, or designee, is required by 37

E2.1.1.11. Develop, establish, and maintain an active and continuing
Records Management Program under 44 U.S.C. 3102 and DoD Directive 5015.2,

E2.1.1.12. Utilize the Government purchase card for making
micro-purchases of material and services, other than personal services, for the USUHS,
when it is determined more advantageous and consistent with the best interests of the
Government.

E2.1.1.13. Authorize the publication of advertisements, notices, or proposals
in newspapers, magazines, or other public periodicals, as required for the effective
administration and operation of the USUHS, consistent with 44 U.S.C. 3702.

E2.1.1.14. Establish and maintain, for the functions assigned, an applicable
publications system for the promulgation of common supply and service regulations,
instructions, and reference documents, and changes thereto, under the policies and
prescribed procedures in DoD 5025.1-M, "Department of Defense Directives System

E2.1.1.15. Enter into support and service agreements with the Military
Departments, the other DoD Components, and the other Government Agencies, as
required for the effective performance of USUHS functions and responsibilities.

E2.1.1.16. Enter into and administer contracts, directly or through a Military
Department, a DoD contract administration services component, or other Federal
Agency, as applicable for supplies, equipment, and services required to accomplish the
mission of the USUHS. To the extent that any law or E.O. specifically limits the
exercise of such authority to persons at the Secretariat level, such authority shall be
exercised by the applicable Under Secretary of Defense or Assistant Secretary of
Defense,

E2.1.1.17. Establish and maintain appropriate property accounts for the
USUHS, and appoint Boards of Survey, approve reports of survey, relieve personal
liability, and drop accountability for USUHS property in the authorized property
accounts that is lost, damaged, stolen, destroyed, or otherwise rendered unserviceable,
in accordance with applicable laws and regulations.

E2.1.1.18. Promulgate the necessary security regulations for the protection
of property and places under the jurisdiction of the President of the USUHS, under

E2.1.1.19. Exercise the authority delegated to the Secretary of Defense by
the Administrator of the General Services Administration for the disposal of surplus
personal property.

E2.1.2. The delegations of authority provided by paragraph E2.1.1, above, are
also subject to the following, in order of precedence:

E2.1.2.1. The authority, direction, and control of the ASD(HA).

E2.1.2.2. The management direction and control of the USUHS Executive
Committee.

E2.1.2.3. Regulations and procedures of the DoD Executive Agent,
applicable to the USUHS, under section 7.2. of this Directive, for administration of the
USUHS.

E2.1.3. The President of the USUHS may redelegate those authorities, as
applicable, and in writing, except as otherwise specifically indicated in paragraph
E2.1.1. through subparagraph E2.1.2.3., above, or as otherwise provided by law or
regulation.
CHARTER

THE BOARD OF REGENTS OF THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

A. Official Designation: The Advisory Committee shall be known as the Board of Regents of the Uniformed Services University of the Health Sciences (USUHS). As an advisory committee, the Board will be governed by the provisions of the Federal Advisory Committee Act (FACA), the GSA Final Rule (41 C.F.R. Part 101-6), and DoD Directive 5105.4, the "DoD Federal Advisory Committee Management Program."

B. Objective and Scope of Activity: To provide advice and guidance to the Secretary of Defense through the Assistant Secretary of Defense for Health Affairs for the operation of the Uniformed Services University of the Health Sciences. To assure that said operation is in the best tradition of academia and in compliance with the appropriate accreditation authorities.

C. Period of Time Required: This Committee is established pursuant to 10 U.S.C. 2112 et seq and exists indefinitely.

D. Official or Sponsoring Proponent to Whom the Committee Reports: The Secretary of Defense through the Assistant Secretary of Defense for Health Affairs.

E. Support Agency: The Uniformed Services University of the Health Sciences.

F. Duties and Responsibilities:

1. The business of the University shall be conducted by the Secretary of Defense through the Assistant Secretary of Defense for Health Affairs and the USUHS Executive Committee with the advice of the Board of Regents (hereinafter referred to as the "Board") with funds appropriated for and provided by the Department of Defense within the Defense Health Program. The Board shall consist of:

   a. nine persons outstanding in the fields of health and health education who shall be appointed from civilian life by the President, by and with the advice and consent of the Senate;

   b. the Secretary of Defense, or designee, who shall be an ex-officio member;

   c. the Surgeons General of the Uniformed Services, who shall be ex-officio members; and

   d. the person referred to in subsection (4).
2. The term of office for each member of the Board (other than an ex-officio member) shall be six years except that:

   a. any member appointed to fill a vacancy occurring before the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term;

   b. any member whose term of office has expired shall continue to serve until his successor is appointed.

3. One of the members of the Board (other than an ex-officio member) shall be designated by the President as Chairman and shall be the presiding officer of the Board.

4. The Board shall provide advice regarding the appointment of a President of the University (hereinafter in this charter referred to as the "President") who shall also serve as a non-voting ex-officio member of the Board. The Board shall also provide advice regarding the appointment of a Dean of the Medical School and Dean of the Graduate School of Nursing.

5. Members of the Board (other than ex-officio members) while attending conferences or meetings or while otherwise performing their duties as members shall be entitled to receive compensation at a rate to be fixed by the Secretary of Defense, but not exceeding $100.00 per diem and shall also be entitled to receive an allowance for necessary travel expenses while so serving away from their place of residence.

6. The Board may recommend academic titles, as appropriate, upon military and civilian members of the faculty. The Board may recommend the awarding of appropriate academic degrees to successful candidates.

7. The Board is authorized to recommend negotiation of agreements with agencies of the Federal Government to utilize on a reimbursable basis appropriate existing Federal medical resources located in or near the District of Columbia. Under such agreements the facilities will retain their identities and basic missions. The Board is also authorized to recommend affiliation agreements with an accredited university or universities. Such agreements may include provisions for payments for educational services provided students participating in Department of Defense educational programs.

8. The Board may recommend establishment of postdoctoral, postgraduate, and technological institutes.

9. The Board may recommend establishment of programs in continuing medical education for military members of the health professions to the end that high standards of health care may be maintained within the military medical services.
10. The Board may recommend to the Assistant Secretary of Defense for Health Affairs that the University, upon approval of the Secretary of Defense, may enter into agreements with foreign military medical schools for reciprocal education programs under which students at the University receive specialized military medical instruction at the foreign military medical school and military medical personnel of the country of such medical school receive specialized military medical instruction at the University. Any such agreement may be made on a reimbursable basis or a nonreimbursable basis.

11. In carrying out the specific functions listed above and in performing other activities, the Board shall serve as the primary advisor to the Secretary of Defense, to the Assistant Secretary of Defense (Health Affairs), to the USUHS Executive Committee, and to the President of USUHS concerning academic affairs of the University.

G. Estimated Annual Operating Costs and Estimated Man-Years: $149,136.00; 2.0 FTE

H. Number of Meetings: This Committee is established by statute, 10 U.S.C. 2112 et seq, and shall meet at least four (4) times per year and as often as the Secretary or Chairperson of the Board shall deem necessary to conduct University business.

I. Termination Date: The Committee by statute has no termination date (Cf Sec. 8091, P.L. 101-511, DoD Appropriations Act, 1991).

J. Date Charter is Filed: April 4, 1999
Bylaws
of the
Uniformed Services University of the Health Sciences
Board of Regents

Article I

Name
The Advisory Committee shall be known as the Board of Regents of the Uniformed Services University of the Health Sciences (USUHS).

Official Designation
As a federal advisory committee, the Board will be governed by the provisions of the Federal Advisory Committee Act (FACA), the GSA Final Rule (41 C.F.R. Part 101-6), DoD Directive 5105.4, "Federal Advisory Committee Management Program," and DoD Directive 5105.45, "Uniformed Services University of the Health Sciences."

Article II

Purpose and Objective,
A. The purpose of the Board of Regents shall be to provide advice and guidance to the Secretary of Defense through the Assistant Secretary of Defense for Health Affairs and also to the USUHS Executive Committee for the operation of the Uniformed Services University of the Health Sciences.

B. To assure that said operation is in the best tradition of academia and in compliance with the appropriate accreditation authorities.

C. Other specific purposes as identified in DoD Directive 5105.45.
Article III

Members
The Board shall consist of:

A. Nine persons, outstanding in the fields of health and health education, who shall be appointed from civilian life by the President of the United States, by and with the advice and consent of the Senate;

B. The Secretary of Defense, or designee, who shall be an ex-officio Member;

C. The Surgeons General of the Uniformed Services, or their designees, who shall be ex-officio Members; and

D. The President/Dean of the University who shall also serve as a non-voting ex-officio Member of the Board.

Term of Office
The term of office for each Member of the Board (other than an ex-officio Member) shall be six years except:

A. Any Member appointed to fill a vacancy, occurring before the expiration of the term for which his predecessor was appointed, shall be appointed for the remainder of such term;

B. Any Member whose term of office has expired shall continue to serve until a successor is appointed. These appointments will be renewed annually on the anniversary of the original appointment date.

Appointment of Chair
One of the Members of the Board (other than ex-officio Members) shall be designated by the President of the United States as Chair and shall be the Presiding Officer of the Board. The term of the Chair shall continue until a successor is appointed.

Selection of Vice-Chair
The Chair shall appoint a person to serve as Vice Chair.
Article IV

Duties and Responsibilities
A. The Board shall advise the Secretary of Defense, through the Assistant Secretary of Defense, regarding the appointment of the President of the University and the appointments of Deans to the School of Medicine and the Graduate School of Nursing, and approve the nomination from the Deans of the Schools of the Department Chairs. (See U.S. Code Title 10, Section 2113, attached.)

B. The Board shall be informed by the President of the University of appointments of associate deans and assistant deans.

C. The Board shall recommend the awarding of appropriate academic degrees to successful candidates.

D. The Board will ensure that the University maintains appropriate accreditation requirements.

E. The Board shall act upon recommendations made by the Committees on Appointments, Promotion, and Tenure.

F. The Board shall act upon recommendations made to establish new academic programs. A reading will occur when a proposal is presented; action will be taken at the next regularly scheduled subsequent meeting.

G. The Board shall perform other duties as deemed appropriate and within its charter.

Article V

Advisors
A. The Deans of the Schools are advisors to the Board.

B. The Commanders of affiliated teaching hospitals are advisors to the Board.

C. A military advisor to the Board will provide guidance from an operational perspective.

D. The Board may invite other individuals to be advisors.
Article VI

Committees

A. Executive Committee of the Board of Regents

Designation

The Board shall designate a body as the Executive Committee. The Executive Committee shall report to the Board.

Purpose

The Committee shall be responsible for conducting Board business between Board meetings. Actions taken by the Committee shall be submitted for ratification at the next regularly scheduled meeting.

Membership

The Committee will be composed of:

a. Chair, Board of Regents
b. Vice Chair, Board of Regents
c. Chair, USU Executive Committee
d. Two members selected by the Board
e. President, USU

Meetings

The Executive Committee of the Board of Regents will meet either at the call of the Chair or at the request of any two members other than the Chair. Meetings may be held in person or via conference call.

B. Ad Hoc Committees

Designation

The Board, as a body, shall designate ad hoc committees as necessary.

Purpose

Each such ad hoc committee shall be responsible for in-depth consideration of assigned Board agenda items and/or special projects between scheduled meetings.
Membership

The Chair of the Board of Regents will appoint ad hoc committee members.

Meetings

Each ad hoc committee will meet either at the call of its Chair, or at the request of any two members other than the Chair of the committee. Meetings may be held in person or via conference call.

Article VII

General Procedures
A. Regular Meetings

(1) The Board will hold at least four (4) meetings in an annual period from October 1 to September 30, or as often as the Secretary of Defense or Chair of the Board shall deem necessary to conduct University business.

(2) Unless otherwise determined by the Board, meetings will be held in the Board of Regents conference room at the University, 4301 Jones Bridge Road, Bethesda, MD 20814.

B. Additional Meetings

(1) Additional meetings will be called by the Executive Secretary upon the direction of the Chair, the President of the University, or written request of three or more Regents.

(2) Additional meetings of the Board will be held at such times and places as will be specified in the notice of the meeting.

C. Notice of Meetings

(1) Notice of all meetings of the Board shall be sent by the Secretary to each Regent by mail, fax, electronic mail (e-mail), or telephone.
(2) The Secretary shall mail a notice not less than fifteen (15) days before any regular meeting. Faxing, e-mailing, or telephoning a notice shall be done not less than seven (7) days before a regular meeting.

(3) The recital by the Secretary in the minutes that notice was given shall be sufficient evidence of the fact.

(4) Public Announcement of the meetings of the full Board will appear in the Federal Register as provided in the Government in the Sunshine Act. (5 U.S.C. 552b(e)(3))

D. Quorum

A majority of all Members will constitute a quorum of the Board. As currently constituted, a quorum means at least eight (8) members must be present in person or via electronic means.

E. Voting

(1) During a meeting, if a quorum is called for by a member and found not to be present, no further business may be transacted.

(2) During a meeting, issues will be determined by voice balloting, unless an individual Member requires a written ballot.

(3) The Chair of the Board is a Member of the voting assembly and has the right to vote as any other Member when the vote is by ballot.

(4) Unless otherwise specified, a simple majority vote will determine matters of issue before the Board. In the event of a tie vote, the proposed resolution is lost.

(5) At the direction of the Chair, action may also be taken by a majority of the Members by notation voting (that is to say by voting on material circulated to the Members individually or serially, or by polling of Members individually or collectively by mail, telephone, fax, e-mail or similar procedure). Such action will be reported by the Secretary at the next Board Meeting.

(6) The Secretary of Defense, or the Secretary's designee, is authorized to vote.
(7) The Surgeons General of the Uniformed Services, or their duly appointed designees, are authorized to vote. The President/Dean of the University is precluded by DoD Directive 5105.45 from voting.

F. Order of Business

The order of business will be at the discretion of the Chair unless otherwise specified by the Board.

G. Rules of Order

In the determination of all questions of parliamentary usage, the decision of the Chair or presiding officer will be based upon the latest available revision of "Robert's Rules of Order."

Article VIII

Amendment of Bylaws
A. Amendments

These Bylaws may be amended at any meeting of the Board of Regents as long as each proposed amendment has been provided to Members at least 60 days before the next scheduled meeting. Amendments will take effect by the affirmative vote of two-thirds (2/3) of the Members present.

Effective Date:
These Bylaws are effective February 6, 2001.

Lonnie R. Bristow, M.D., Chair, Board of Regents
CHARTER

THE EXECUTIVE COMMITTEE OF THE UNIFORMED SERVICES
UNIVERSITY OF THE HEALTH SCIENCES

A. Official Designation: The committee shall be known as the Executive Committee of the Uniformed Services University of the Health Sciences. The committee shall be governed by the provisions of Department of Defense Directive 5105.18, "DoD Committee Management Program," February 8, 1999.

B. Objective and Scope of Activity: To provide for the management and supervision of the Uniformed Services University of the Health Sciences. To assure that the operation of the University is in compliance with appropriate Department of Defense Directives, Instructions and Regulations. To ensure the President of the University shall have execution authority direction and control of USUHS and report to the Executive Committee. To facilitate accomplishment of the function's of the ASD(HA), the Surgeons General, and the Executive Agent as described in DoD Directive 5105.45, "Uniformed Services University of the Health Sciences."

C. Period of Time Required: This Committee is established pursuant to Program Budget Decision 711 of December 17, 1997 and will exist until rescinded by the Secretary of Defense.

D. Official of Sponsoring Proponent to Whom the Board Reports: Assistant Secretary of Defense (Health Affairs).

E. Duties and Responsibilities:
   1. The business of the University shall be conducted under the management and supervision of the Executive Committee with Defense Health Program and other funds appropriated for and provided by the Department of Defense through the Department of the Navy as the Executive Agent.

   2. The Executive Committee shall consist of the Surgeons General of the Military Services. The membership will determine the Chair.

   3. The Executive Committee will be guided by the advice of the USUHS Board of Regents on academic affairs.

   4. The Executive Committee will oversee matters involving programming, budgeting and funding execution. In this regard, budgets approved by the Executive Committee will be presented by the Executive Agent to the Defense Health Program as a part of its responsibility for the planning, programming and budgeting execution system of the USUHS.
F. **Signature Authority:** The Chair has authority to transmit decisions upon which the Executive Committee has reached unanimity. In the absence of a member of the Executive Committee, the representative of a Surgeon General is authorized to participate in the decision-making process.

G. **Number of Meetings:** The Executive Committee shall meet at the call of the Chair but not less than quarterly.

Charter Approved, December 18, 2000:

VADM Richard A. Nelson  
Surgeon General of the Navy  
Chair

LtGen Paul K. Carlton Jr.  
Surgeon General of the Air Force  
Member

LTG James B. Peake  
Surgeon General of the Army  
Member
Introduction

The University Strategic Plan has become the core document with which the University is formulating its future. In accordance with good management practices, we aligned our plan with the Department of Defense Medical Health System Strategic Plan. As you can see, each goal is associated with one or more goals of that plan.

The University plan is organized into six goals, each with an identified Goal Tender who can be reached for comment via email:

Preeminence in the Academics of Military and Operation Medicine
(Eric Marks; emarks@usuhs.mil)

Information Technologies and Resources
(Vern Schinski; vschinski@usuhs.mil)

Research and Development
(Michael Sheridan; msheridan@usuhs.mil)

Resource Stewardship
(John Dexter; jdexter@usuhs.mil)

Organizational Culture
(Mary Dix; mdix@usuhs.mil)

University Recruitment and Diversity Affairs
(Lt Col Carolyn Miller, cmiller@usuhs.mil)

When the University began to add performance measures to the plan, the six goal groups recognized that existing objectives did not necessarily lend themselves to measurement. Consequently, several objectives have been rewritten to allow measurement criteria to be developed. Performance measures are being drafted at this time.
I believe that a useful plan is always a work-in-progress. We will constantly refer to the strategic plan as our beacon, but will adjust a few points of the compass as the University deals with the changing environment.

I invite you to read this plan, coming back occasionally as new performance measures are added. I also encourage you to engage in discussions with the goal group leaders—a button is located at the bottom of each goal that will connect you with the leader's email address. Please share your thoughtful comments.

This is our strategic plan to guide the University in the 21st century. This strategic plan has no value if it is filed or posted and ignored; it becomes an effective and dynamic plan directed towards the University's vision when we are all involved in its creation and maintenance. Your input is important. Please offer your comments to the Goal Tenders.

April 2000

James A. Zimble, M.D.
President
The Uniformed Services University of the Health Sciences will be recognized in the government and public sectors as the preeminent national leader in military and operational medicine as demonstrated by excellence in education, training, consulting, and applied research.

**University Goal 1 Link with the Military Health System Strategic Plan:**

MHS Goal 1, Joint Medical Readiness: We will help ensure that military members of the Armed Forces attain an optimal level of fitness and health and are protected from the full spectrum of medical and environmental hazards. Our medical forces will meet the challenges of a rapidly changing continuum of Service specific, joint, and combined roles in war and peace.

MHS Goal 2, Benchmark Health System: We will be the world's best integrated health system.

MHS Goal 5, Training and Skills Development: We will train and develop our people for their roles in war and peace.

**Strategy 1.1** We will establish and maintain a continuum of military medical education extending throughout the careers of uniformed health professionals that meets the joint medical readiness needs of the services and conforms to national standards.

1.1.1 Educational programs will meet readiness requirements of the Services.

1.1.2 Educational programs will meet appropriate national standards for quality.

1.1.3 Educational programs will include emphasis on professional values and behavior, especially the values and behaviors appropriate to Uniformed Service officers.
1.1.4 Establish a continuing medical education process for developing leadership, professional and administrative skills for military medical professionals throughout their careers.

**Strategy 1.2** We will provide programs and an environment designed to provide the opportunity for full personal and professional growth and development for our faculty, student body, and staff consistent with our mission.

1.2.1 Ensure that faculty and staff receive appropriate rewards for expertise in teaching, scholarly activities, and professional service.

1.2.2 Establish and maintain comprehensive educational programs and mentoring to provide for the development of professional and leadership expertise and skills for military medical professionals.

**Strategy 1.3** We will develop and constantly improve programs of the highest quality to expand and enhance the knowledge and understanding of military and contingency medicine as a special field of study.

1.3.1 Establish a fellowship program to afford senior officers opportunities to work on military medical research projects and a Masters in Military Medicine by Academic Year 2001.

1.3.2 Continue to establish and maintain degree-granting mechanisms for non-residential students through off-campus distance learning.

**Strategy 1.4** We will be recognized as the premiere consulting organization in various areas of military medicine.

1.4.1 Seek partnerships to develop or expand new education programs in health care and disease prevention tailored to the needs of the Services and other agencies within the Federal Government.

1.4.2 Seek partnerships to aid in the development of programs to prepare and train for humanitarian assistance operations.

E-mail comments and suggestions to Eric Marks; emarks@usuhs.mil
The University will develop and maintain integrated, standards-based information resources and applications responsive to the educational, clinical, research, and administrative needs of our customers.

University Goal 2 Link with the Military Health System Strategic Plan:

MHS Goal 6, Technology Integration: We will integrate technologies into best practices designed to achieve high quality clinical outcomes, decrease health care delivery costs, and improve management processes.

Strategy 2.1 We will develop and use a proactive system to evaluate, plan, establish priorities for, and fund the information resources needs of the University.

2.1.1 Create an Automated Information System Policy Committee (AISPC) combining currently fragmented groups into a single policy and planning body that will identify resources, collect customer needs, and review major information technology proposals, recommending policies and priorities to the President.

2.1.2 Determine the use and utility of information systems for our customers by establishing an annual evaluation system to assess customer satisfaction with information technologies and to identify new user requirements.

Strategy 2.2 We will plan for, implement, and maintain an information technology infrastructure for the University that attempts to stay ahead of user requirement.

2.2.1 Recommend a standard set of DoD compatible information technology tools on every desktop at the University to be supported by the University Information Systems (UIS).

2.2.2 Draft a Five-Year Information Technology Plan for the University that will be reviewed by the AISPC prior to being submitted to the
President.

2.2.3 Develop the plans and procedures for an Enterprise Database that will support and connect information on personnel, student records, finances, facility data, research protocol information, animal housing, inventory control, and other University information systems, publishing general standards and core data element definitions.

2.2.4 Periodically conduct a survey of Internet bandwidth utilization and investigate alternative methods of providing adequate Internet access to our customers.

2.2.5 Develop and implement a plan to upgrade and stabilize the central (VAX) computers supporting the University financial management program and other legacy systems until these systems can be replaced or eliminated.

2.2.6 Develop a business plan for the extension of University electronic library services to other DoD agencies.

2.2.7 Develop a plan for a studio, expanded telecommunication capabilities, and other services required to carry out the mission of the Department of Medical Informatics and distance learning requirements.

2.2.8 Complete the implementation of a plan to replace outdated O&M funded computer systems, software, and networked peripherals on a three-year cycle by FY 2000.

2.2.9 Develop a plan for a computer-based testing center to meet National Medical Board Examination requirements.

2.2.10 Develop and implement a quality of service monitoring system for servers, the Internet, and the Local Area Network.

2.2.11 Design and prepare for recommendation policies, procedures, and components necessary to provide an adequate security barrier for University information systems.

Strategy 2.3 We will implement, maintain, and provide user training for state-of-the-art information systems to support the student, faculty, and staff educational requirements, distance learning, video teleconferencing, recruitment, and educational program management.

2.3.1 Design, implement and maintain a records management system to support student, alumni, and faculty data with a goal of providing basic student records modules by the beginning of the 1999-2000 school year.

2.3.2 Complete a module for the production of standard student
transcripts.

2.3.3 Develop system modules to support the electronic management of educational program information, student schedules, and room scheduling beginning with the replacement of existing Y2K incompatible programs.

2.3.4 Develop and present a series of ongoing programs to provide user training to students, faculty, and staff.

2.3.5 Design and produce a series of CD ROM disks and homepages to be utilized in the recruitment of new students.

**Strategy 2.4** We will design, implement, and maintain computer-based tools to assist faculty in identifying research funding opportunities, drafting research proposals, obtaining clearances, maintaining research records, and publishing results.

2.4.1 Implement electronic grant management wherever feasible to include implementation of the latest grants management package, assuring that University Research Administration modules are fully compatible with the Enterprise Database and the Henry M. Jackson Foundation system.

2.4.2 Develop and implement routing and approval tools for assurance committees.

2.4.3 Ensure the latest versions of statistical programs, genetic databases, electronic journals, and biomedical databases are available to faculty and students.

2.4.4 Continue membership in the Community of Science, FEDIX Alert, and similar investigator notification systems.

**Strategy 2.5** We will implement and maintain systems that administer and manage University resources to include the provision of meaningful resource management information in an automated, user friendly manner.

2.5.1 Examine the feasibility of the University implementing a Defense Finance and Accounting Service standard accounting system.

2.5.2 In concert with the DoD sponsored program (IMPAC) through US Bank, provide automated support programs that will assist credit card holders with their administrative responsibilities (budget, funds tracking, ancillary approvals, ordering, receiving, and reallocation of charges).
2.5.3 Implement modem automated solutions for the planning, budgeting, ancillary approving, ordering, receiving and tracking of University goods and services greater than $2,500. (These purchases are not eligible for IMPAC use.)

2.5.4 Implement the DoD Defense Travel System.

2.5.5 Implement modern automated programs for controlling/tracking capitalized and non-capitalized University assets entered into the Property Book.

2.5.6 Implement modern automated interfaces/programs with the Defense Civilian Payroll System.

2.5.7 Implement modem automated inventory management systems to administer assets of the University Self Service Store.

2.5.8 Develop contracting vehicles that will enable the expeditious and best value acquisition of University automation resources.

E-mail comments and suggestions to Vem Schinski; (vschinski@usuhs.mil)
GOAL 3

Research and Development

The University will build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services.

MHS Goal 2, Benchmark Health System: We will be the world’s best integrated health system.

Strategy 3.1 in addition to the Interdisciplinary Programs in Neuroscience (including Behavioral Sciences) and Molecular and Cell Biology (including Genetics), we will develop and augment interdisciplinary programs in Infectious Diseases and Tropical Medicine, Casualty Care and Operational Medicine, Health Maintenance and Diseases Prevention, and Integrated Systems Biology.

3.1.1 Develop data collection system to establish baselines.

3.1.2 Monitor progress and improvement of program quality.

Strategy 3.2 We will improve the research environment for investigator-initiated research and collaboration and coordination with Uniformed Services’ research and development programs; collaboration and coordination with Uniformed Services’ clinical investigation programs; and collaboration with international programs.

3.2.1 Survey and enhance ongoing collaboration with Uniformed Services research and development at institutional and individual levels.

3.2.2 Survey investigators to identify administrative barriers and solutions to overcome barriers.

Strategy 3.3 We will improve the public benefit by public disclosure via the media and through technology transfer.
3.3.1 Promote public disclosure of research findings.

3.3.2 Expand the technology transfer program.

E-mail comments and suggestions to Michael Sheridan; msheridan@usuhs.mil
The University will acquire and effectively utilize resources for the development and enhancement of military medical readiness, programs, schools, and research.

University Goal 4 Link with the Military Health System Strategic Plan:

MHS Goal 4, Resources and Structure: We will identify and prioritize resource requirements and establish effective and efficient organizations to support the readiness and benefit missions.

**Strategy 4.1** We will acquire resources to accomplish the goals, strategies, and objectives of this strategic plan.

4.1.1 Obtain financial support from multiple sources, including appropriated funds, endowments, and Cooperative Research and Development Agreements.

4.1.2 Develop an appropriate manpower program.

4.1.3 Determine suitable space requirements and acquire requisite facilities.

**Strategy 4.2** We will continuously improve administrative and financial systems, processes, and practices to ensure the effective, efficient, and equitable use of resources that are directed toward defined strategic goals.

4.2.1 Replace the College and University Finance System with a Windows-based, DoD-approved finance and accounting system.

**Strategy 4.3** We will ensure that the University’s input to the DoD POM process is in concert with this strategic plan and overall DoD guidance.
GOAL 5

Organizational Culture

The University will promote and maintain a diverse, interdependent community of uniformed and civilian students, faculty, and staff responsive to the present and future needs of its internal and external customers.

University Goal 5 Link with the Military Health System Strategic Plan:

MHS Goal 5, Training and Skill Development: We will train and develop our people for their roles in war and peace.

Strategy 5.1 We will establish an enhanced sense of intramural community through effective cross-boundary communication, mutual collaboration, and continued reinforcement of the linkages between our multifaceted community, and the University mission, vision, and guiding principles.

5.1.1 Identify opportunities for understanding mutual and diverse values and concerns and develop innovative solutions to community issues.

5.1.2 Promote and maintain respectful interaction between students, alumni, staff, faculty, and the Board of Regents through the timely sharing of information internally and externally with openness, candor, sensitivity, and reliability.

5.1.3 Foster and reward a team-based, customer-focused environment that values the contributions of each member of our community to achieve a culture characterized by cooperation, integrity, trust, and collegiality.

Strategy 5.2 We will establish development and retention programs that will make employment and collaboration at the University attractive and rewarding to a diverse population.

5.2.1 Assist each individual in establishing a self-development plan, including specific education and training requirements, that meets his or her
personal mission within the University community.

5.2.2 Implement a training program for all supervisors on both civilian and military personnel issues utilizing existing civilian and military human resources.

E-mail comments and suggestions to Mary Dix; (mdix@usuhs.mil)
University Recruitment and Diversity Affairs

The University will recruit personnel, representative of our nation’s diversity, to become successful uniformed leaders who respond to military requirements and the nation’s medical and scientific needs, during peace and war.

University Goal 6 Link with the Military Health System Strategic Plan:

MHS Goal 1, Joint Medical Readiness: Our medical force will meet the challenges of a rapidly changing continuum of service-specific, joint, and combined military operations anywhere at anytime.

MHS Goal 3, Healthy Communities: We will forge partnerships to create a common culture that values health and fitness and empowers individuals and organizations to actualize those values.

MHS Goal 4, Resources and Structure: The identification and prioritization of resource requirements and efficient organizations is critically important to the ultimate acquisition of resources to support MHS programs.

MHS Goal 5, Training and Skills Development: We will train and develop our people for their roles in war and peace.

Strategy 6.1 We will recruit quality people to become students at the University and thus, Department of Defense public servants and military personnel.

6.1.1 Direct Recruiting Strategies. Solicit qualified civilian candidates by attending designated recruiting fairs at civilian colleges and universities in all geographic areas.

6.1.2 Indirect Recruiting Strategies. Ensure the university is well known, mail recruiting materials to all Reserve Officer Training Corps units, all military service academies, Education Centers at military bases worldwide, and civilian undergraduate pre-medical colleges indicated by the American College Application Services.

6.1.3 Overall Recruiting Strategies. Create a pipeline, a steady source of qualified candidates from both civilian and military sectors.
6.1.4 Admissions Committee Representation. Strive to bring knowledge and a diverse population of qualified applicants for acceptance as future medical military leaders

**Strategy 6.2** Formulate programs to meet the needs of disadvantaged (underrepresented minority medical students) and ensure their retention and successful completion of military and medical school training.

6.2.1 Retention Programs. Deploy programs for retention of all future disadvantaged physicians. This includes former graduates assisting with recruitment and mentoring.

6.2.2 Mentoring. Promote development of competent military physicians to serve during peace and war.

6.2.3 GLAXO Wellcome Pathway. Promote the training of satisfied physicians dedicated to military service

6.2.4 Networking (SNMA and WIMS). The Student National Medical Association (SNMA) and Women in Medicine and Science (WIMS) provide a forum for all students nationally to discuss issues and help each other attain their goal of becoming physicians.

6.2.5 Academic Promotions Committee Representation. Pursue opportunities to assist disadvantaged students in learning from mistakes of other Underrepresented minority students.

**Strategy 6.3** Develop and implement programs to ensure the success and retention of underrepresented minority students in the graduate education and graduate nursing programs.

6.3.1 Retention Programs. Assist graduate students with time management, study skills, and test-taking skills.

6.3.2 Mentoring. Promote and foster a supportive atmosphere for development of future scientists.

**Strategy 6.4** Recruit qualified men and women to increase ethnic and gender-based diversity by becoming medical school faculty at the University.

6.4.1 Active Duty Faculty Recruiting Strategies. Identify and resource active duty underrepresented minority physicians and scientists to become faculty members to educate and train military physicians and scientists.

6.4.2 Civilian Faculty Recruiting Strategies. Pursue opportunities to recruit and develop partnerships for a diverse civilian University faculty.
**Strategy 6.5** Develop and implement programs to ensure the retention and advancement of underrepresented minority medical school faculty and women in medicine.

6.5.1 Mentoring. Use best practice models to achieve maximum development of new culturally diverse University faculty members.

6.5.2 Retention Programs. Provide requested resources to assist Department Chairs with progressive development of faculty if necessary.

**Strategy 6.6** Initiate programs to promote positive community relations between our underrepresented minority students and faculty who will serve as role models and exemplary citizens for U.S. communities.

6.6.1 Community Volunteer Work with Schools (YSEP). Encourage and support a policy of inclusion for communities representing a variety of backgrounds through our Youth Science Enrichment Program (YSEP).

6.6.2 Community Committee Memberships. Promote a cooperative relationship through representation on committees within the local community.

6.6.3 Civilian Organizations Sponsored. Actively sponsor national minority organizations, for example, the National Youth Leadership Forum, National Hispanic Youth Initiative, and the National Native American Youth Initiative.

6.6.4 Community Outreach Programs. Student instruction in support of community outreach programs, e.g., Spanish for students, the Helping Hands Clinic, etc.

E-mail comments and suggestions to LtCol Carolyn Miller; (cmiller@usuhs.mil)
APPENDIX C

Selected Examples of Billeted and Off-Campus Members of USU Departments and Programs and Department Activities Which Received Special Recognition During 2000.

Anatomy, Physiology and Genetics - School of Medicine.

During October of 2000, the Department of Anatomy & Cell Biology and the Department of Physiology merged to form the Department of Anatomy, Physiology and Genetics. A goal of the new Department is to strive to integrate the "information explosion" resulting from the Human Genome Initiative and the myriad of cellular and molecular biological approaches. Under the guidance of Harvey B. Pollard, M.D., Ph.D., Professor and Chair, the faculty of the new Department have set in motion a goal to coordinate educational and research initiatives based upon an integrative philosophy. The APG faculty oversees courses that extend for the entire Academic Year. In fact, first year medical students spend 53 percent of their time with APG faculty.

There are over 100 members in the Department with wide-ranging and varied research programs. Research programs within the Department include many fundamental biological problems that employ anatomical, electrophysiological, biochemical, cellular, and molecular biological methods to address medical problems associated with neurodegenerative disorders such as Multiple Sclerosis, Parkinson's Disease and Alzheimer's Disease, Down Syndrome, Canavan Disease, and central and peripheral nerve injury. APG faculty also have active research programs in hypertension and cardiovascular pathophysiology, neuroimmune responses in gastrointestinal function, and understanding metabolic expression, biological clock mechanisms, neuroendocrine secretory processes, the role of glial cells in CNS injury and disease, neuronal regeneration and plasticity. Several programs employ state-of-the-art approaches, including cell therapy using engineered cells, gene therapy using viral and chemical vectors, and knock-out and transgenic mouse models. The Department’s research funding is supported by the National Institutes of Health, the National Science Foundation, the United States Air Force, the Food and Drug Administration, the Juvenile Diabetes Foundation, the Cystic Fibrosis Foundation, the Department of Defense/Veterans Head Injury Program, as well as the USU Intramural Grants Program. Currently, the Department’s yearly research grant funding exceeds $5.5 million with a total extramural grant portfolio of $12.5 million.

The inclusion of genetic approaches has further expanded the depth of the Department’s research initiatives. Genomic and proteonomic approaches that employ microarray technology, mass spectrometry, and sophisticated cell imaging techniques tap into the wealth of information from the Human Genome Initiative. In the hands of scientists with an integrative approach to normal and disease processes, the application of these new and powerful tools promises to bring about discoveries that could well serve Military Medicine and medical education.

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Lieutenant Colonel Geoffrey S.F. Ling, MC, USA, Associate Professor, Department of Anesthesiology, was recognized during 2000 for receiving the Army Medical Corps "A" Proficiency Designator Award.

Lieutenant Colonel Paul D. Mongan, MC, USA, Associate Professor, Department of Anesthesiology, USU SOM Class of 1987, was selected as the Chair of the Department of Anesthesiology. LTC Mongan is the first medical school alumnus to become a chair of a clinical department at the University. LTC Mongan has been an anesthesiology faculty member since 1997, serving as Director of Research, and since 1999 as the Vice Chair of the Department. LTC Mongan is a co-author of nearly 30 medical publications and more than 30 abstracts; he has also helped to write three chapters for a new book, A Handbook of Cardiovascular Anesthesia. Elected to the Alpha Omega Alpha Medical Honor Society while a student at USU, he is a member of the Association of University Anesthesiologists, the American Society of Anesthesiologists and the International Society of Anesthesiologists.

Sheila Muldoon, M.D., Professor and Former Chair, Department of Anesthesiology, following a dedicated and successful 14 year term as the Department Chair, will remain with the Department as a Professor of Anesthesiology.

*****

Biochemistry and Molecular Biology - School of Medicine.

Recognition of the Department’s Web Page. The Department of Biochemistry and Molecular Biology’s web page, "USUHS Medical Biochemistry Exams," has been recognized as a "Key Resource on the Topic of Biochemistry" by Links2Go. Each quarter, Links2Go samples millions of web pages to determine which pages are most heavily cited by web page authors. The most popular pages are downloaded and automatically categorized by topic. At most, 50 of the pages related to a topic are selected as Key Resources. Out of 50 pages selected as Key Resources on Biochemistry, the USU page ranked 22nd, making it one of the most relevant pages related to Biochemistry on the World Wide Web.

Peter D’Arpa, Ph.D, Assistant Professor, Department of Biochemistry and Molecular Biology, studies topoisomerase I, an enzyme that is the molecular target of a widely used class of anticancer drugs. His laboratory studies how these anticancer drugs affect the molecular target and lead to the elimination of cancer cells. Other research explores the molecular cell biology of the drug target and proteins that interact with it. The goal of the research is to characterize the cellular functions of topoisomerase I and proteins that interact with it in order to design improved therapies utilizing topoisomerase I anticancer drugs. Dr. D’Arpa also served as a Scientist Reviewer for the Molecular
Saibal Dey, Ph.D., Assistant Professor, Department of Biochemistry and Molecular Biology, works on a human protein (P-glycoprotein) found in the cell membranes of cancerous as well as normal cells. This protein removes structurally unrelated hydrophobic compounds from cells by acting as a pump. Since most of the anticancer and antimicrobial drugs are hydrophobic in nature, this protein prevents them from reaching their targets. Dr. Day has been working on the mode of action of this protein and on the molecular mechanism by which this protein can be inactivated using pharmacological agents. The outcome of his study could improve the availability of chemotherapeutic drugs at their site of action and aid treatment against cancer and microbial diseases. Dr. Day published "Functional Characterization of Glycosylation-deficient human P-glycoprotein using a vaccinia virus expression system" in the Journal of Membrane Biology, Volume 173, pages 203-214.

Teresa M. Dunn, Ph.D., Professor, Department of Biochemistry and Molecular Biology, studies complex lipid molecules in yeast that are found in cell membranes. Similar compounds in humans are found in membranes of the brain and nerves. The human brain has several hundred varieties of these compounds. Several gene products (both enzymes and regulatory proteins) are required to synthesize these complex molecules. The discovery of these genes and their function in producing these molecules in yeast is possible by genetic methods developed in Dr. Dunn’s laboratory. This work will likely suggest what processes in nerves or brain are affected or regulated by these molecules. Using a powerful genetic screen devised in her laboratory, many of the genes encoding the sphingolipid biosynthetic enzymes have been identified. This genetic screen is described in an article, "Selection of yeast mutants in sphingolipid metabolism," published in Methods in Enzymology, Volume 312, pages 317-330. Other articles by Dr. Dunn were published in the Journal of Biological Chemistry, Volume 275, pages 7597-7603, and Molecular and Cellular Biology, Volume 21, pages 109-125. A new grant to characterize the microsomal fatty acid elongating enzymes was awarded to Dr. Dunn by the National Science Foundation in August of 2000. Dr. Dunn continues to serve as a member of the Metabolic Biochemistry Review Panel for the National Science Foundation.

David A. Grahame, Ph.D., Associate Professor, Department of Biochemistry and Molecular Biology, studies metal-containing enzymes in the Archaei, a genetically distinct group of microorganisms that provide insight into the early evolution of life on Earth. Dr. Grahame studies fundamental problems of how metals such as cobalt, iron, and nickel function in several highly unusual enzyme systems. These processes are closely related to how cobalt acts in the anti-anemia vitamin B12, and how iron functions in the body. These studies advance our understanding of metal-containing enzymes in metabolic, ecological, and environmental processes, and contribute to the use of microorganisms for bioremediation, agricultural, and biomedical applications. Dr. Grahame published "Methane Biochemistry" in the Encyclopedia of Microbiology, Volume 3, 2nd Edition, pages 188-198. He also published in the Journal of Biological Chemistry, Volume 275, pages 29053-29060. During the past year, Dr. Grahame presented at the Gordon Research Conference, Molecular Basis of Microbial One-Carbon Metabolism, in New
London, Connecticut. Dr. Grahame received new extramural research support from the Department of Education (DOE) during the past year; this new research support is in addition to on-going funding from DOE and from the National Science Foundation.

Susan Haynes, Ph.D., Assistant Professor, Department of Biochemistry and Molecular Biology, has identified proteins that regulate the production of mature sperm in fruit flies. The production of functional sperm is a complex process that is tightly regulated. A major cause of human infertility is impaired sperm production. Because sperm develop similarly in flies and humans, these studies in fruit flies could lead to novel treatments to correct human male infertility, and to the development of novel pharmacological agents for male contraception. Dr. Haynes also published in Development, Volume 127, pages 1715-1725. She served as the co-chair of two Washington area regional scientific groups: the RNA Club and the Drosophila Interest Group. Dr. Haynes spoke at the 41st Annual Drosophila Research Conference in Pittsburgh, Pennsylvania, on two topics; and, she also presented at the RNA 2000 Meeting held in Madison, Wisconsin. In addition, Dr. Haynes was invited to speak to the Department of Biological Sciences at the Carnegie Mellon University.

David S. Horowitz, Ph.D., Assistant Professor, Department of Biochemistry and Molecular Biology, works on the molecular processes involved in the production of messenger RNA (RiboNucleic Acid), which carries information from the cell’s genes to form the blueprint for the synthesis of cellular proteins. When initially synthesized, the genetic information is encoded in a large linear polymer containing segments of information separated by non-information-bearing segments. Processing the RNA for the protein synthesis machinery of the cell requires the removal of the non-information segments and the joining of the information-containing segments. How the many cellular macromolecules that participate in this fundamental process work together is necessary to understand protein production in cells. Dr. Horowitz published "Crystal Structure of the Functional Domain of the Splicing Factor Prp 18" in the Proceedings of the National Academy of Science, Volume 97, pages 3022-3027. He presented at the Immunophilins: Cellular Functions and Immunosuppressive Drug Targets Meeting in Keystone, Colorado; and, Dr. Horowitz also presented at the RNA 2000 Meeting in Madison, Wisconsin. During the past year, Dr. Horowitz received new extramural research support from the National Institutes of Health (NIH).

Ishaiahu Shechter, Ph.D., Professor and Chair, Department of Biochemistry and Molecular Biology, studies the regulation of cholesterol synthesis by the first specific enzyme in its biosynthesis. Over production of cholesterol is the major cause of death from atherosclerosis. Dr. Shechter’s present research is focused on understanding what molecular interactions stimulate or inhibit the gene for this enzyme in mammalian liver. These studies can lead to treatments to lower cholesterol levels and to reduce atherosclerosis. Certain proteins in cells called oncoproteins, when mutated, can cause the cell to become cancerous, and lead to the development of malignancies such as liver hepatomas and colon cancers. These oncoproteins must first be activated. This activation process involves the attachment of cholesterol intermediates to the oncoproteins, and their subsequent relocation to the cell membrane. Finding a way to block their formation may make it possible to block the activation of these oncoproteins and to prevent, or block, malignant growth. Dr. Shechter’s on-going research, "Metabolic Hepatic Flux of Isoprenoids," is extramurally funded by the National Institutes of Health (NIH).
Daniel R. TerBush, Ph.D., Assistant Professor, Department of Biochemistry and Molecular Biology, studies exocytosis in yeast. Exocytosis is the process whereby vesicles containing lipid and protein cargo bud off the trans Golgi and are targeted to, and fuse with, the plasma membrane. Exocytosis is highly regulated and exocytic vesicles only fuse at specific, localized domains on the plasma membrane. A multiprotein complex, termed the Exocyst, serves as a specific targeting patch for the exocytic vesicles and is required for their fusion at these specialized domains in yeast and in higher eukaryotes. The research has focused on understanding the role of Exo70p, the 70kDa component of the exocyst complex in vesicular trafficking. Understanding the biochemical mechanism of how exocytic vesicles are specifically targeted will help us understand such basic processes as cellular differentiation, the formation and maintenance of chemical distinct regions of the plasma membrane (apical and basolateral membranes), neurotransmission, and axon pathfinding. Dr. TerBush’s on-going research, "The Biochemical, Functional and Genetic Characterization of EX070 in the Yeast Secretory Pathway," is funded extramurally by the Mallinckrodt Foundation, and starting in 2001, by the National Science Foundation.

Xin Xiang, Ph.D., Assistant Professor, Department of Biochemistry and Molecular Biology, studies how intracellular transport works. Cells move material from areas of assembly to areas of destination like a monorail on intracellular highways composed of protein tubules. A virus can infect a cell by this pathway to transport its genes to the nucleus. Neuronal function requires movement of material produced in the nucleus to the nerve endings. A molecular motor composed of several proteins attaches to transportable material, and uses energy to move it to its destination. The understanding of which proteins are used to regulate the motor; attach cargo to it; and, transport and release the cargo area could lead to antiviral drugs or enhanced neuronal function. Dr. Xiang published "Dynamics of cytoplasmic dynein in living cells and the in vivo effect of a mutation in the dynactin complex actin-related protein, Arp 1" in Current Biology, Volume 10, pages 603-606. Dr. Xiang also presented at the Carnegie Institution of Washington, the American Heart Association Meeting in Dallas, Texas, at SUNY in Buffalo, New York, and at the Annual Meeting of Cell Biology held in San Francisco, California. Dr. Xiang's on-going research, "NUDF, a Protein Required for Nuclear Migration in Aspergillus Nidulans," is funded by the American Heart Association, and starting in 2001, by the National Science Foundation.

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Dermatology - School of Medicine.

Thomas N. Darling, M.D., Assistant Professor, Department of Dermatology, and Director of the Sulzberger Laboratory for Dermatologic Research, was awarded the maximum three-year grant from the Dermatology Foundation during the past year.

Scott Norton, M.D., Department of Dermatology, a national authority on ethnodermatology, recently joined the faculty at USU. Dr. Norton was recently interviewed in the national press and on television due to his interest in "health food" ingredients.
Colonel Leonard Sperling, MC, USA, Professor, Department of Dermatology, was selected as the Chair of the Department of Dermatology. Colonel Sperling had served as Interim Chair of the Department of Dermatology since 1996; following an extensive search process, he was appointed as the new chair of the Department. Colonel Sperling also supervises medical students during their Dermatology Rotation at the Walter Reed Army Medical Center. He has been a faculty member at Walter Reed since 1987. Colonel Sperling is a Diplomate of the American Board of Dermatology and a Fellow of both the American Academy of Dermatology and the American Society of Dermatology. During the past year, Colonel Sperling was the keynote speaker at the recent National Alopecia Areata Foundation Conference held in Norfolk, Virginia. Also, Colonel Sperling and the members of his Department, in cooperation with the National Capital Area Consortium Dermatology Residency Program, will be presenting the Fourth Annual "Deployment Considerations for Military Health Care Providers” Seminar during May of 2001. Health Affairs, Office of the Secretary of Defense, has mandated a comprehensive, ongoing, and relevant course in military unique curriculum for interns, residents, and fellows during their training. This course is designed to meet a significant portion of this requirement by discussing deployment planning, physician roles, chemical/biological threats, and other topics related to combat medicine. Topics during 2000 included "Battlefield Casualties for the Non-Surgeon;" "Preparing for the Humanitarian Assistance Mission;" "Chance Favors the Prepared Mind: A Deployment Checklist;" and, "The Top 10 Hits for 2000: Common Infectious Disease Threats."

CAPT Dennis A. Vidmar, MC, USN, Associate Professor, Department of Dermatology, was promoted to the academic rank of Professor in the two USU SOM Departments of Dermatology and Military and Emergency Medicine. CAPT Vidmar was responsible for providing direct patient care in Clinical Dermatology; he instructed the USU medical students in combat medical skills, and supervised and instructed students and residents in Dermatology. He was also involved in clinical research in chemical warfare defense and the use of telemedicine within the Department of Defense (DoD). CAPT Vidmar was recognized within DoD as an authority on the effects of skin diseases on operational readiness. He also published a clinical study sponsored by the United States Army Medical Research and Development Command on skin protection against vesicant chemical warfare agents. CAPT Vidmar retired during May of 2000; at the time of his retirement, he was a member of the American Medical Association, the American Academy of Dermatology, the Association of Military Surgeons of the United States, and the Association of Military Dermatologists.

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Family Medicine - School of Medicine.

Simon L. Auster, M.D., Associate Professor, Department of Family Medicine, was recognized as one of 44 national finalists for the Association of American Medical Colleges’ Humanism in Medicine Award. The award recognizes individuals who embody the finest qualities in a healer who teaches healing. The seven defining characteristics emphasized include positive mentoring skills, compassion, collaboration, tolerance, sensitivity, community service activity, and observance of professional ethics.
Major C. Randall Clinch, MC, USAF, Assistant Professor and Director of Undergraduate Programs, Department of Family Medicine, developed and implemented a program of faculty development for the faculty preceptor in the busy outpatient setting. The program provides Family Practice Clerkship site faculty, both family physicians and other specialties, with the opportunity to attend four one-hour modules of the Preceptor Education Project, 2nd Edition (PEP2) - "A Guide for Teaching in Your Practice" (developed by the Society of Teachers of Family Medicine). This faculty development training is held in conjunction with annual clerkship site visit; and, additional modules are presented at the Clerkship Site Coordinators Conference held annually at USU. Training was provided to over 150 clinical faculty.

Lieutenant Colonel Wayne B. Jonas, MC, USA, Associate Professor, Department of Family Medicine, was featured by The NIH Catalyst, in a front-page article, for his work as Director of the National Institutes of Health (NIH) Office of Alternative Medicine. LTC Jonas headed the office from July 1995 through 1998. The article pointed out that there is a growing public demand for research in alternative medicine approaches and it recognized LTC Jonas’ significant contributions to the office. During 2000, LTC Jonas was also appointed by President Clinton to the White House Commission on Complementary and Alternative Medicine Policy. The 15 member commission reports to the President, through the Secretary of Health and Human Services, on legislative and administrative recommendations for assuring that public policy maximizes the benefits to Americans of complementary and alternative medicine. The commission was chartered for a two-year term. On July 11, 2000, LTC Jonas conducted a seminar on complementary and alternative medicine for women at the Women in Military Service for America Memorial at Arlington National Cemetery. LTC Jonas delivered the fifth of a year-long series of lectures targeted toward active duty women, veterans and health care professionals; the lectures also serve as a source of continuing education credit for nurses and physicians.

CAPT Thomas A. Miller, MC, USN, Associate Professor, Department of Family Medicine, was named Physician of the Year 2000 at the Uniformed Services Academy of Family Physicians Meeting held in Atlanta, Georgia. CAPT Miller is the Vice Chairman of the USU SOM Department of Family Medicine.

Lieutenant Colonel Francis G. O’Connor, MC, USA, Assistant Professor, Department of Family Medicine, was the co-author of "Exercise-Related Syncope in the Young Athlete: Reassurance, Restriction, or Referral," which was published in the November 1, 1999 Edition of the American Family Physician. The article is the first of a series of problem-oriented diagnosis articles. LTC O’Connor is also a Guest Editor of the series. Articles in the series will overlap areas of research interest in the Department of Family Medicine. Other topics planned for the series include exercise-related problems and a number of often-encountered problems in the office. LTC O’Connor also received the 2000 Medical Corps "A" Proficiency Designator Award.

Charles Privitera, M.D., Associate Professor and Director, Mental Health Division, Department of Family Medicine and the Department of Psychiatry, received the Nancy C.A. Roeske Certificate for Excellence in Medical Student Education, which is annually presented by the American
Psychiatric Association (APA). The certificate recognizes outstanding and sustained contributions made by a member of the USU faculty. Dr. Privitera received the certificate at the APA Annual Meeting in Washington, D.C.

Colonel Jeannette South-Paul, MC, USA, Associate Professor and Chair, Department of Family Medicine, served as a Guest Editor for a series of problem-oriented diagnosis articles that will appear in the American Family Physician. The series of articles will overlap areas of research interest in the Department of Family Medicine.

Lieutenant Commander Mark B. Stephens, MC, USN, Assistant Professor, Department of Family Medicine, was recognized at the Uniformed Services Academy of Family Physicians Meeting in Atlanta, Georgia, during 2000. LCDR Stephens received the first-place staff award in the Clinical Investigations Category. LCDR Stephens also won a Parke-Davis Teacher Development Award, which honors outstanding part-time teachers of family medicine. The award is administered through the American Academy of Family Physicians Foundation. According to the award’s history, "many of the most effective teachers are those who combine clinical practice with part-time teaching, thereby serving as role models." In addition, the USU Family Medicine Interest Group (FMIG) under the guidance of LCDR Stephens, the FMIG Faculty Advisor, provided TAR WARS training at local elementary schools. TAR WARS is an anti-tobacco program directed toward elementary school students and sponsored by the American Academy of Family Physicians. Through discussion and demonstrations, students are educated about the long term consequences of tobacco use. In addition to TAR WARS, the USU FMIG provides other community service while providing students an opportunity to learn more about the specialty of Family Practice.

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Laboratory Animal Medicine - Uniformed Services University.

Major Andrew Wilkinson, VC, USA, Deputy Director, Department of Laboratory Animal Medicine, USU, received the Henry and Lois Foster Award from the American College of Laboratory Animal Medicine (ACLAM) at its 2000 Forum held in Fort Myers, Florida. The award, which recognizes academic excellence in laboratory animal medicine, is given to the individual(s) achieving the highest score on the written and practical portions of the certifying examination given by the ACLAM. Major Wilkinson earned the highest score on both the 1999 written and practical examinations. ACLAM is a specialty board recognized by the American Veterinary Medical Association. Membership in the College consists of more than 600 specialists in the field of laboratory animal medicine. Certification as a specialist or "diplomate" is achieved by meeting standards of education and experience, and passing comprehensive written and practical examinations.

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Medical History - School of Medicine.

Dale Smith, Ph.D., Professor and Chair, Department of Medical History, was interviewed on August 17, 2000, for the PBS Program, "Health Week." Dr. Smith discussed medical procedures used during the Civil War.

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Medical Students - School of Medicine.

Second Lieutenant David Harper, USA, Third Year Medical Student, wrote a paper, "Angelical Conjunction: Religion, Reason, and Innoculation in Boston, 1721-1722," which was published in the Winter 2000 edition of the Pharos, a publication of the Alpha Omega Alpha (AOA) Honorary Medical Fraternity. Lieutenant Harper wrote the paper as his first year medical history paper; and, he originally submitted it to the AOA Student Essay Contest.

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Medical and Clinical Psychology - School of Medicine.

Michael Feuerstein, Ph.D., Professor of Medical and Clinical Psychology and Preventive Medicine and Biometrics, has created the Center for Ergonomics and Workplace Health. This is a joint program developed with the Unite States Army Center for Health Promotion and Preventive Medicine (CHPPM) to conduct research in the area of occupational ergonomics and its impact on health and military readiness. Dr. Feuerstein also served as a member of the National Academy of Sciences/Institute of Medicine's Panel on "Musculoskeletal Disorders and the Workplace," a multidisciplinary group of scientists and physicians requested by Congress to investigate the scientific research related to the etiology, prevention, and management of work related musculoskeletal disorders.

Neil Grunberg, Ph.D., Professor, Department of Medical and Clinical Psychology, spoke at the seminar, "Sex, Science and Drugs: Gender Differences in Addiction and Recovery," on January 29, 2000, at the Smithsonian Institution. His presentation was on tobacco addiction. The meeting was part of the Smithsonian's continuing education arm, Campus on the Mall, which provides on-going courses, lectures, and seminars in the humanities, arts, and sciences.

David S. Krantz, Ph.D., Professor and Chair, Department of Medical and Clinical Psychology, was this year's recipient of the Award for Outstanding Contributions to Health Psychology from the American Psychological Association (APA) Division of Health Psychology. Dr. Krantz received
this award for his efforts as Editor-in-Chief of the APA journal, Health Psychology, from 1995-1999, and for his other contributions to this field. The APA Health Psychology Division has more than 4,000 members across the Nation.

Richard Tanenbaum, Ph.D., Assistant Professor, Department of Medical and Clinical Psychology, and CAPT (select) Evelyn L. Lewis, MC, USN, Assistant Professor, Department of Family Medicine, have created an interdisciplinary Center for the Enhancement of Healthcare Outcomes (CEHO). This Center, established with the cooperation of the Office of the Dean, SOM, is designed to enhance and to systematically evaluate overall USU training programs (particularly efforts involving the NCA Medical Simulation Center) and to identify gaps in current programs of health care provider education.

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**Medicine - School of Medicine.**

Graceanne Adamo, Assistant Professor, Department of Medicine, gave a presentation on the USNS Comfort Exercise entitled, "Use of Standardized Patients to Assess Medical Response to a Natural Disaster."

Colonel Naomi Aronson, MC, USA, USU SOM Class of 1981, Associate Professor, Department of Medicine, was appointed Director, Division of Infectious Diseases for the Department of Medicine. She was formerly Director, Clinical Research, Infectious Diseases, at the Walter Reed Army Medical Center. Colonel Aronson was also awarded the "A" Designator by the Army Surgeon General for Proficiency in Infectious Diseases Research.

HM1 Kevin Dean, USN, received the Bachelor of Science Degree in Healthcare Management from Southern Illinois University.

Sonia Q. Doi, M.D., Research Associate Professor of Medicine, Department of Medicine, earned the Doctor of Philosophy Degree from the University of Sao Paolo, Brazil.

Andre Dubois, M.D., Ph.D., Research Professor of Medicine and Surgery, Department of Medicine, was an invited speaker to the Fourth International Workshop on Pathogenesis in Helicobacter, held in Helsingor, Denmark, in July of 2000. His presentation was on "The Role of Virulence Factors in H. pylori Infection."

Captain Steven Durning, USAF, MC, Assistant Professor, Clerkship Director, Wright Patterson Air Force Base, Ohio, USU SOM Department of Medicine, presented at the Clerkship Directors in Internal Medicine (CDIM) 2000 Conference on the subject of "Does Academic Cohab Affect
Medical Student "Education? Views of Learners and Teachers." At the Association of Program Directors in Internal Medicine (APDIM) 2000 Meeting, he presented a session on "The Role of Mini-CEX in Internal Medicine Residency Training."

**Sherry Fleming, Ph.D., Instructor in Medicine, Department of Medicine,** received the International Complement Society Trainee Merit Award in July of 2000 for her work on complement receptor 2 and mesenteric ischemia/perfusion injury.

**Robert E. Goldstein, M.D., Professor and Chair, Department of Medicine,** in June, chaired a session entitled, "Future Direction in Cardiac Arrhythmia Therapy" at the "Jerusalem Symposium on Cardiac Arrhythmias: Genes, Drugs, and Devices," sponsored by the Multi Center Research Group and the Hadassah Medical Center in Jerusalem, Israel.

**Mark C. Haigney, M.D., Assistant Professor, Director, Division of Cardiology, Department of Medicine,** was recognized by the Air Force for his assistance in the investigation of an F-16 crash and the loss of its pilot in July of 1999. Dr. Haigney responded to questions from the Air Force Safety Investigation Board Flight Surgeon and provided tables and references that assisted the Board with its accident findings. Dr. Haigney also presented a paper on "Magnesium Modulation of Ventricular Repolarization" at the "Jerusalem Symposium on Arrhythmias" sponsored by the Multi Center Research Group and the Hadassah Medical Center in Jerusalem, Israel.

**CAPT Richard Hawkins, MC, USN, Assistant Professor, Department of Medicine,** was appointed Assistant Dean for Simulation Education and the Clinical Director of the new Simulation Center for the USU/National Capital Area Consortium. In September of 2000, he made a presentation to the National Library of Medicine Board of Regents, entitled, "The Use of Simulation in the Evaluation of Clinical Competence." He was the Plenary Session Speaker at the October 2000 Meeting of the Association of American Medical Colleges’ Council on Academic Societies. CAPT Hawkins’ topic was "Evaluating Physician Competency." In addition, he was an invited speaker at the Medical Educators’ Conference in Capetown, South Africa.

**Lieutenant Colonel Paul A. Hemmer, USAF, MC, Assistant Professor, Associate Clerkship Director, Director of Undergraduate Educational Research, Educational Programs Division, Department of Medicine,** was selected as Councilor to the Governing Council of the Clerkship Directors in Internal Medicine (CDIM). He is also Co-Chair of the CDIM Research Committee. The CDIM is the national organization for medicine clerkship directors. LtCol Hemmer has made numerous presentations at national and international medical educators’ conferences to include South Africa and Israel. For example, in September of 1999, LtCol Hemmer presented a paper at the Association for Medical Education in Europe in Linkoeping, Sweden; and, he also presented at the Association of American Medical Colleges (AAMC)-sponsored Research in Medical Education Conference in November of 1999. He also presented one of a series of papers establishing the validity of medical evaluation systems. LtCol Hemmer has published extensively in the areas of medical education, student evaluation, and professionalism. LtCol Hemmer’s paper, "Assessing How Well Three Evaluation Methods Detect
Deficiencies in Medical Students’ Professionalism in Two Settings of an Internal Medicine Clerkship,” was published in Academic Medicine, (2000), Volume 75, pages 167-171. During October of 2000, LtCol Hemmer was awarded the Joint Service Commendation Medal.

Andrew Lees, Ph.D., Research Associate Professor, Department of Medicine, had several publications in various journals such as Vaccine, Journal of Immunology, Annals of Biochemistry, and Immunological Review.

Solomon Levy, MPH, Research Assistant Professor, Deputy Chair for Administration, Department of Medicine, created and implemented the new web site for the USU Interdepartmental Center for Space Medicine <www.usuhs.mil/csm>. In addition, the Department of Medicine web site <www.usuhs.mil/med>, which he created, received the HON (Health On the Net Foundation Code of Approval for meeting the principles of honesty for health and medical web sites. He also received a secondary appointment as Assistant Professor of Biomedical Informatics.

Eric S. Marks, M.D., Associate Professor, Department of Medicine, and Associate Dean for Faculty Affairs, was an invited faculty at the United States Department of Justice, National Advocacy Center Course: "Basic Medical Malpractice Seminar" in November of 2000. Dr. Marks was also an invited speaker at the Society of Teachers of Family Practice Medicine and Association of Department of Family Medicine Meeting at the Association of American Medical Colleges (AAMC) Annual Meeting in October of 2000. Dr. Marks’ topic was "Expanding Scholarship: Leading Educational Change." In addition, Dr. Marks has published papers on the subject of tenure and other faculty issues in Academic Medicine and The Journal of Medicine.

Commander Brian Monahan, MC, USNR, Associate Professor and Director, Division of Hematology/Oncology, Department of Medicine, was presented the prestigious National Cancer Institute’s Annual Teacher of the Year Award in ceremonies conducted at the National Institutes of Health (NIH) Clinical Center and the National Naval Medical Center (NNMC) Combined Modality Conference. The award recognizes excellence in teaching of the medical oncology and hematology fellows at the National Cancer Institute (NCI). The award has historically been presented to the civilian faculty at the NCI; this years’ award to Commander Monahan represents the first occasion in which a Naval officer has been so recognized. Through his advocacy in the American Medical Association (AMA) Section on Medical Schools, Commander Monahan has been able to promote the USU Simulation Center as an exciting teaching paradigm such that the AMA will feature a plenary session featuring the Simulation Center at the next Section on Medical Schools Meeting in June of 2001, in Chicago, Illinois.

In September, the Division of Hematology and Oncology established the Bethesda Oncology Center for Excellence at USU. The Center’s mission is to promote graduate medical education in hematology and medical oncology. Each month, the Center provides an evening program for all physicians in training in the Washington/Baltimore area, at which, leading scientists in the disciplines of hematology and oncology are invited to provide state-of-the-art overviews within their areas of expertise. Attendees are comprised of both military and civilian oncology physicians representing the largest collection of fellows from all the regional university and hospital affiliated training programs. In addition
to providing a forum for this diverse group of physicians, the Center highlights the presence of the USU as a central leader in regional hematolgy and medical oncology excellence. The Center is funded through the Henry M. Jackson Foundation for the Advancement of Military Medicine at no cost to the University.

**Louis N. Pangaro, M.D., Professor and Vice Chair, Educational Programs, Department of Medicine**, was the editor and co-author of a chapter on evaluation and grading for the second edition of the Handbook for Clerkship Directors, which was published by the Association of American Medical Colleges (AAMC) during 2000. Additionally, his research project on reliable and valid assessment for the AAMC Group on Educational Affairs has generated two multi-school projects to establish whether the Department of Medicine’s evaluation system will demonstrate proven reliability, validity, and inter-site consistency in other schools, and in clerkships other than medicine. Dr. Pangaro was also elected to the National Committee on Research in Medical Education (RIME). He received the Educational Research Award from the Clerkship Directors in Internal Medicine, the national organization of clerkship directors. Dr. Pangaro also made presentations on educational research to the AAMC Organization of Student Representatives. In addition, Dr. Pangaro gave a presentation at the International Medical Educators Conferences held in Capetown, Africa, and Beer Sheva, Israel.

**Scott Rehrig, M.D.,** received first place in the Trauma competition at the Wratton Surgical Symposium, and first place in the TriService Residents Trauma Competition. Both awards were for work on complement inhibition and mesenteric ischemia/reperfusion injury.

**Major Michael Roy, MC, USA, Department of Medicine,** received funding from the U.S. Army Research and Material Command at Fort Dietrick, Maryland, for his proposal to study the effects of di-ethyl-toluamide, pyridostigmine bromide and permethrin. The proposal was one of 16 accepted out of 90 submissions, and the only one of five on the subject of chemical weapons treatment.

**Helen T. Santiago, Ph.D., Research Associate, Department of Medicine and Interdepartmental Center for Space Medicine,** had her masters thesis, "Prognostic Value of Mental Stress Testing in Coronary Artery Disease," published in the American Journal of Cardiology. Papers related to her doctoral dissertation have been published in the Journal of Consulting Clinical Psychology and are in press with Pain Research and Management.

**Commander Philip S. Schoenfeld, MC, USN, Assistant Professor, Department of Medicine,** was selected to receive one of the Department of Medicine’s Third Annual Jack F. Maher Awards for Research Excellence. Commander Schoenfeld was recognized for the paper, "Accuracy of Polyp Detection by Gastroenterologists and Nurse Endoscopists During Flexible Sigmoidoscopy: A Randomized Trial." The paper was published in Gastroenterology, 1999, Volume 117, Pages 312-318.

**Terez Shea-Donohue, Ph.D., Research Professor, Department of Medicine,** was invited to serve on the GMA2 (General Medicine 2) Grant Review Subcommittee at the National Institutes of Health.
Lieutenant Colonel Allen Taylor, USAF, MC, Associate Professor, Department of Medicine, authored an article published by the New England Journal of Medicine entitled, "Lack of Positive correlation Between Multiple Physiological Variable and Sub-clinical Coronary Artery Disease in a Screening Population."

Colonel George C. Tsokos, MC, USA, Professor, Director, Division of Immunology/Rheumatology, Department of Medicine, was appointed by the Director of the National Institutes of Health to be a permanent member of the Immunological Sciences Study Section for the term 2000 through 2004.

Major Henry K. Wong, MC, USA, Assistant Professor, Department of Medicine, was recognized for his paper, "Abnormal NF-kB Activity in T Lymphocytes from Patients with Systemic Lupus Erythematosus is Associated with Decreased p65-RelA Protein Expression." His paper was published in the Journal of Immunology, August 1999, Vol. 163(3), pages 1682-1689. As a result he was awarded one of the Department of Medicine’s Third Annual Jack F. Maher Awards for Research Excellence.

Colonel Roy K.H. Wong, MC, USA, Professor of Medicine and Director, Division of Digestive Diseases, Department of Medicine, received the Army Meritorious Service Medal, was elected to AOA, and was also named the Best Clinical Lecturer by the USU Class of 2002. COL Wong serves on numerous prestigious boards and committees including: Chairman, Board of Governors, American College of Gastroenterology; Chairman, Credentials Committee, ACG; and, member of the USU SOM Committee on Appointments, Promotions and Tenure. He has published extensively on the topics of Barrett’s Esophagus, gastroesophageal reflux, and colonic neoplasia, irritable bowel syndrome, in peer reviewed journals; and, he has presented numerous papers at national and international conferences.

Aiping Zhao, M.D., Visiting Scientist, Division of Digestive Diseases, Department of Medicine, received a Young Investigator Award from the American Motility Society for his work on alterations in adrenergic receptor control of smooth muscle function in colitis.

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Microbiology and Immunology - School of Medicine.

Overview. Within the past year, the faculty of the Department of Microbiology and Immunology has been awarded six new or competitively renewed grants worth over $1 million from the National Institutes of Health. Those six faculty members are: Paul D. Rick, Ph.D.; Stefanie N. Vogel, Ph.D.; Eleanor Metcalf, Ph.D.; Chou-Zen Giam, Ph.D.; Ann E. Jerse, Ph.D.; and, Guangyong Ji, Ph.D. Also summarized below are the scholarly activities and contributions of the faculty, to include publications in peer-reviewed journals, which have been widely recognized at both the national and international level.
Chou-Zen Giam, Ph.D., Professor, Department of Microbiology and Immunology, published "p300 and p300/cAMP-Responsive Element-Binding Protein Associated Factor Interact with Human T-cell Lymphotropic Virus Type-1 Tax in a Multi-Histone Acetyltransferase/Activator-Enhancer Complex," in the Journal of Biological Chemistry.

Ann E. Jerse, Ph.D., Assistant Professor, Department of Microbiology and Immunology, published "Experimental Gonococcal Genital Tract Infection and Opacity Protein Expression in Estradiol-Treated Mice," in the Journal of Infection and Immunity. Dr. Jerse was an Invited Speaker at the 100th General Meeting of the American Society for Microbiology which was held in Los Angeles, California. Her topic was "Experimental Gonococcal Genital Tract Infection in Female Mice." In addition, Dr. Jerse was an Invited Speaker at the 2000 Gordon Research Conference on Microbial Toxins and Pathogenesis held in Andover, New Hampshire.

Anthony T. Maurelli, Ph.D., Professor, Department of Microbiology and Immunology, published Spa33, a Cell Surface-Associated Subunit of the Mxi-Spa Type III Secretory Pathway of Shigella Flexneri, Regulates Ipa Protein Traffic," in the Journal of Infection and Immunity. Dr. Maurelli was an Invited Speaker on "Black Holes and Anti-Virulence Genes in Shigella Flexner," at the Department of Microbiology and Immunology, University of Rochester Medical Center, Rochester, New York.

Eleanor S. Metcalf, Ph.D., Professor, Department of Microbiology and Immunology, published "Gram-Negative Pathogens and Molecular Mimicry: Is There a Case for Mistaken Identity: Response," in Trends in Microbiology. During 2000, Dr. Metcalf served on the Editorial Boards of the Journal of Infection and Immunity and Proceedings of the Society of Exp. Biology. She was also chosen as the Outstanding Microbiology Instructor by the USUHS Class of 2002.

Alison D. O’Brien, Ph.D., Professor and Chair, Department of Microbiology and Immunology, published "Elastase in Intestinal Mucus Enhances the Cytotoxicity of Shiga Toxin Type 2d," in the Journal of Biological Chemistry. Dr. O’Brien was an invited speaker at the 4th International Symposium and Workshop on "Shiga Toxin (Verocytotoxin)-Producing Escherichia coli’ Infections," held in Kyoto, Japan. During 2000, Dr. O’Brien continued to serve as the Editor-in-Chief of Infection and Immunity.

Paul D. Rick, Ph.D., Professor and Vice Chair, Department of Microbiology and Immunology, published "The Modality of Enterobacterial Common Antigen Polysaccharide Chain Lengths Is Regulated by o349 of the wee Gene Cluster of Escherichia coli’ K-12," in the Journal of Bacteriology. Dr. Rick was an invited speaker at the University of Texas Southwestern Medical Center, Department of Microbiology, in Dallas, Texas. During 2000, Dr. Rick was appointed to serve as Editor of Archives of Microbiology.

Stefanie N. Vogel, Ph.D., Professor, Department of Microbiology and Immunology, published "CD116/CD18 Acts in Concert with CD14 and TLR4 to Elicit Full Lipopolysaccharide and Taxol-Inducible Gene Expression," in the Journal of Immunology. Dr. Vogel was an invited speaker at the
Keystone Symposium on "Interfaces Between Innate and Adaptive Immunity and Macrophage Activation and Deactivation," in Keystone, Colorado. Also during 2000, Dr. Vogel served as the Co-Chair of the Keystone Symposium on Interfaces Between Innate and Adaptive Immunity; she also served as the Deputy Editor of the Journal of Immunology.

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Military and Emergency Medicine - School of Medicine.

Joseph H. Heck, M.D., Visiting Scientist, Medical Director, Casualty Care Research Center, Department of Military and Emergency Medicine, presented "Weapons of Mass Destruction: Emergency Department Preparation" at the 105th Annual Convention and Scientific Seminar of the American Osteopathic Association. His talk was featured in the AOA Conventioneer.

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Neurology - School of Medicine.

Lieutenant Colonel Kevin Cannard, MC, USA, Associate Professor, Department of Neurology, developed the Program of Deep Brain Stimulation (DBS) at the Walter Reed Army Medical Center. This cutting edge treatment, which uses the latest technology, offers relief from disabling tremor and drug induced involuntary movements to veterans, retirees and their dependents with advanced Parkinson's Disease.


Colonel Bahman Jabbari, MC, USA, Professor and Chair, Department of Neurology, was recognized as the lead author of three papers: "Paroxysmal Tonic/dystonic Episodes in Sjogren's Syndrome," was published in Movement Disorders, 1999, Volume 14, pages 698-700; "Electroencephalogram of Asymptomatic Adult Subjects" was published in Clinical Neurophysiology 2000, Volume 111, pages 102-105; and, "Neurophysiological Assessment of Painful Hands and Fingers," published in Movement Disorders, Volume 15, page 1259. Colonel Jabbari, with Lieutenant Colonel Leslie Foster from the Department of Physical Medicine and Rehabilitation at the Walter Reed Army Medical Center, have shown, in a double blind, randomized study that the administration of botulinum toxin A in para-spinal muscles can lead to significant relief of low back pain in over half of the affected patients. This study will be published in Neurology, the Journal of American Academy of Neurology, in 2001. Colonel Jabbari also presented a talk on "Epileptiform EEG Abnormalities in Asymptomatic
Subjects" at the Annual Meeting of the American Epilepsy Society. In addition, Colonel Jabbari was elected as a member of the Technology Committee of the American Epilepsy Society for a term of three years.

The Epilepsy Research, Medical and Surgical Program in the Department of Neurology continues to generate significant cost-avoidance for the Defense Health Program. It annually offers extensive monitoring and epilepsy surgery for over 200 active duty personnel and their dependents. During 2000, this program was assisted by the arrival of Lieutenant Commander Lisa Mulligan, an epilepsy surgeon trained at Yale University. Colonel Jabbari is the co-founder and co-director of the DoD Epilepsy-Monitoring-Surgery Program at the Walter Reed Army Medical Center.

Ann Marini, M.D., Ph.D., Associate Professor, Department of Neurology, was the lead author on the article, "Intracellular Survival Pathways Against Glutamate Receptor Agonist Excitotoxicity in Cultured Neurons." The Article was published in *Annals of the New York Academy of Sciences*, 1999, Volume 890, pages 421-437. Dr. Marini also chaired a section during the International Neuroprotection Meeting at Lake Taho, Nevada, during June of 2000.


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**Obstetrics and Gynecology - School of Medicine.**

Lieutenant Colonel Matrice W. Browne, MC, USA, USU SOM Class of 1985, Assistant Professor, Department of Obstetrics and Gynecology, was one of 20 individuals selected for the Association of Professors of Gynecology and Obstetrics (APGO)/Solvay Educational Scholars Development Program. The program is designed to help obstetricians and gynecologists become better teachers and leaders in the field of women’s health. LTC Browne was selected from a group of applicants across the United States based on her credentials and demonstrated commitment to women’s health.
education. The APGO/Solvay Program is the first-ever comprehensive educational curriculum designed to improve education in obstetrics and gynecology. It consists of a 15-month curriculum covering four major areas: curriculum and instruction; measurement and evaluation; research and statistics; and, leadership and management. She serves as the OB/GYN Student Special Interest Group Adviser and Minority Student Mentor. LTC Browne is also a member of Women in Medicine and Science at USU.

CAPT William H.J. Haffner, M.D., USPHS, Professor and Chair, Department of Obstetrics and Gynecology, was named a member of the Council of the Association of Professors of Gynecology and Obstetrics. His term will run for three years beginning in March of 2000. CAPT Haffner and Lieutenant Colonel Matrice W. Browne, MC, USA, presented the opening keynote address on the topic, "Department of Obstetrics and Gynecology: Developing a Learning Organization and its New Teachers," at the Association of Professors of Gynecology and Obstetrics Annual Faculty Development Workshop in Los Angeles, California, on January 8-11, 2000.

Prabir Chakraborty, Professor, Department of Obstetrics and Gynecology and Head of the Research Division, presented two abstracts of his work at national and international meetings. He presented "Retinoic Acid Induces Progesterone Secretion by Transformed Rat Granulosa Cells (DC-3)" at the Annual Meeting of the Society for the Study of Reproduction which was held at Washington State University in Pullman, Washington; and, he presented "Evidence for Retinoic Acid-Induced Luteinization of Transformed Rat Granulosa Cells (DC-3)" at the International Congress of Endocrinology in Sydney, Australia.

Paul H. Driggers, Ph.D., Assistant Professor, Department of Obstetrics and Gynecology, was honored by his selection to receive the Elsa U. Pardee Foundation Award in the sum of $40,000 for his proposal titled, "Mechanism of Estrogen Receptor Activation by brx, a Novel dbl Family Proto-Oncogene." This work is to be conducted in the Department's laboratory in the School of Medicine.

Major Christian Macedonia, MC, USA, Assistant Professor, Department of Obstetrics and Gynecology, USU SOM Class of 1992, presented invited papers at two national professional meetings. He presented "Is Technology Killing Graduate Medical Education?" at the Annual Meeting of the Association of Professors of Gynecology and Obstetrics in New Orleans, Louisiana, in March of 2000; and, he presented "Adventures in Technology" at the Optimistic Futures Conference attended by the East Coast Residency Program Directors in Obstetrics and Gynecology in Washington, D.C., during June of 2000.

Lieutenant Colonel Andrew J. Satin, USAF, MC, Associate Professor and Vice-Chair, Department of Obstetrics and Gynecology, Residency Program Director for the National Capital Consortium, and USU SOM Class of 1986, had three papers published, including "A Handheld Computer Operating System Program for Collection of Resident Experience Data" in Obstetrics and Gynecology, November 2000, Volume 96, pages 792-794. In addition, he was appointed to the Editorial Board of the premier journal in his specialty, Obstetrics and Gynecology, and as an oral examiner for the American Board of Obstetrics and Gynecology.
James H. Segars, Jr., M.D., Associate Professor, Department of Obstetrics and Gynecology, and Director of the National Capital Consortium’s Fellowship Program in Reproductive Endocrinology and Infertility, authored three papers, including being the senior author on the paper, "The brx proto-oncogene is Expressed in Normal Ovary and Epithelial Ovarian Neoplasms," which was published in the American Journal of Obstetrics and Gynecology, 2000, Volme 182, pages 286-295. In addition, Dr. Segars serves as the Medical Director of the Assisted Reproductive Technology Program which is located at the Walter Reed Army Medical Center.

Pathology - School of Medicine.

Colonel Richard M. Conran, MC, USA, Professor, Course Director for both the 2nd Year Pathology Course and the Fundamentals of Infectious Disease Course, Department of Pathology, generated significant savings for the University through the development and revision of the CD for Pathology which is provided to the second year medical students. Colonel Conran was also elected as the President of the Faculty Senate; a position which he will serve from mid-2000 through mid-2001; and, he serves as a member of the Walter Reed Army Medical Center Human Use Committee. Colonel Conran presents lectures in Pathology, Biochemistry, and Present Pathology at the Walter Reed Army Medical Center; and, he also provides a lecture on the Legal Aspects of Biowarfare and Bioterrorism.

Mary Lou Cutler, Ph.D., Assistant Professor, Department of Pathology, was selected to serve as the Associate Director for Basic Sciences at USU’s United States Military Cancer Institute in November of 2000. During 1999, she was an invited speaker at two universities in Italy. During July of 2000, Dr. Cutler was an invited speaker for the Breast Cancer Think Tank at the National Institutes of Health, in Bethesda, Maryland; her presentation was entitled, "Ectopic Expression of Rsu-1 Enhances Apoptosis in Breast Cancer Cells." Also during July, she presented the same topic at the Lombardi Cancer Center at Georgetown University in Washington, D.C. Dr. Cutler developed a new Pathology Graduate Course, Mechanisms of Growth Control in Neoplasia, for the Spring of 2001. (During 2000, she co-authored a publication entitled, "Expression of Rsu-1 Results in Elevation of p21 CIP and Prevents Anchorage Independent Growth of MCF7 Breast Cancer Cell Line." Breast Cancer Research and Treatment, 2000, Volume 61, pages 69-78.)

Michael J. Daly, Ph.D., Assistant Professor, Department of Pathology, was appointed a Planetary Task Group Member by National Academy of Sciences to advise NASA on protecting Jupiter's moon, Europa, from forward contamination by future exploratory missions; and, most recently, protecting Earth from back-contamination following NASA’s planned 2008 Mars Sample Return Mission. Dr. Daly teaches part of the USU Graduate Course, "The Emerging Threat of Biological Weapons and Bioterrorism," where he lectures on the emerging impact of genomic informatics on the development of such weaponry. In addition, he participates in teaching Genomic Informatics at the University of Minnesota. In the past two years, Dr. Daly has published twelve papers, including two in Science, and two in Nature.
Robert M. Friedman, M.D., Professor and Chair, Department of Pathology, is working with the Wellcome Institute for the History of Medicine in London and the International Society for Interferon and Cytokine Research to establish an archive on the discovery and early work on interferons in the period from their discovery in 1963 until the early 1980's. (Interferon - Any of a group of glycoproteins produced by a cell in response to viral infection and acting to prevent viral replication.) Future medical historians will certainly rank the discovery of cytokines as one of the most important accomplishments of medical research in the 20th Century. The interferons are of importance not only in their own right, but also because they paved the way to the discovery of the cytokines, and greatly speeded up their development.

Colonel Morton H. Levitt, USAF, MC, Associate Professor, Chief of Clinical Medical Education, and Director of Medical Clerkships and Continuing Education, Department of Pathology, was promoted to Associate Professor during 2000. Colonel Levitt was also appointed by the College of American Pathologists to the American National Standards Institute, Healthcare Informatics Standards Board, which is the international body that sets the standards for medical computer applications. Also during 2000, he was appointed as the Webmaster for the Department of Pathology and to the USU Electronic Editorial Board (EEB); he serves as the Chair of the USU Controlled Substances and Alcohol Inventory Board and as a member of the Faculty Senate, the Faculty Senate Nominations and Elections Committee, and the USU SOM Admissions Committee. Colonel Levitt formulates and oversees lectures, laboratories and clinical conferences; he also develops and coordinates all clinical pathology education for the department. Colonel Levitt teaches a pathology course to more than 160 second-year medical students. Colonel Levitt is also a member of the following entities: the College of American Pathologist Informatics Committee; the College of American Pathologists House of Delegates; the Duke University Medical Alumni Council; the College of American Pathologists; and, the Maryland Society of Pathologists. He led two Round Table Discussions on Computer Utilization I and II for the American Society of Clinical Pathologists (ASCP)/College of American Pathologists (CAP), at meetings held in New Orleans, Louisiana. During April of 2000, he presented "The Search Engine: Searching the Internet: An Up to the Minute Update," to the ASCP/CAP during ten one hour sessions; he also presented "Basic Computer Architecture: An Electronic Media Presentation," in October of 2000, to the ASCP/CAP in San Diego, California. Colonel Levitt serves as the Senior Officer Advisor for the Air Force; he reviews all of the evaluations for the Air Force Officers assigned to the University and advises the USU President and Brigade Commander on all promotion activities, to include attending Management-Level Reviews, as required, at the Pentagon.

Radha K. Maheshwari, Ph.D., Professor, Department of Pathology, organized a symposium on "The Role of Cytokines in Human Health and Diseases" for the Asian Congress of Pharmacology in December of 1999; the conference was held in New Delhi, India. Four USU faculty members participated in the conference, to include Dr. Maheshwari and Val G. Hemming, Dean, School of Medicine. Dr. Maheshwari published numerous research papers in peer-reviewed journals throughout 2000. For example, during 2000, Dr. Maheshwari, and his associated researchers in the Department of Pathology, published "Picroliv Preconditioning Protects the Rat Liver Against Ischemia-Reperfusion Injury," in the European Journal of Pharmacology. The USU researchers, recognized that cell death following ischemia-reperfusion injury is a major concern in clinical issues such as organ transplantation and trauma, and evaluated the efficacy of Picroliv, a potent antioxidant, derived from the plant Picrorhiza kurrooa, in protecting against hepatic ischemia-reperfusion injury in vivo. Their studies examined and described how Picroliv pretreatment resulted in lesser neutrophil infiltration; reduced cell death; resulted in greater DNA synthesis
as compared to the control rat; and, the possibility that Picroliv protects the liver and enhances its ability to withstand ischemia-reperfusion injury, most likely through an antioxidant pathway. Dr. Maheshwari also participated in the Emerging Infectious Diseases Program during 2000 by presenting in one of the courses; he also mentored one high school student who was recognized as an "Intel Semi-Finalist.

Commander Aileen Marty, MC, USN, Associate Professor, Department of Pathology, received the McGinnis Family Award in recognition for her being the Top Graduate at the Naval War College during 2000. She also received the Directors Award for Academic Excellence 2000; in addition, both a Letter of Commendation from Professor James Warren and her Diploma of Graduation from the Naval War College reflected that she had graduated with the "Highest Distinction." During 2000, Commander Marty served as the Pathology Consultant for the International Registry of Tropical Imaging. Commander Marty also developed and executed Course PA0530: The Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror, Part I: The Emerging Threat of Biological Weapons and Bioterrorism; and, in collaboration with scientists from AFRRI, The Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror, Part II: Nuclear, Radiological, High Explosives and Toxic Chemical Agents. In November of 2000, she participated in the Hong Kong Division of the International Academy of Pathology Infectious Disease Symposium and Update; her presentations included five different sections on infections and the role of infectious agents in causing neoplasms and other secondary complications. One of Dr. Marty's new publications, "Inflammation Is a Component of Neurodegeneration in Response to Venezuelan Equine Encephalitis Virus Infection in Mice," was published in the Journal of Neuroimmunology, September 22, 2000, Volume 109, pages 132-146.

Hallgeir Rui, M.D., Ph.D., Assistant Professor, Department of Pathology, was appointed as an ad hoc member of the National Institutes of General Medical Sciences MBRS Grant Review Panel, the National Institutes of Health, Bethesda, Maryland. In addition, Dr. Rui was appointed during 2000 as a member of the Scientific Advisory Board, the Wellcome Trust Joint Infrastructure Fund, London, United Kingdom. During 2000, Dr. Rui co-authored the publication, "Epithelial Defect in Prostates of Stat5a Null Mice," Laboratory Investigation, Volume 80, pages 993-1006.
Pediatrics - School of Medicine.

Merrily Poth, M.D., Professor of Pediatrics and Neuroscience, Department of Pediatrics, received the USU Distinguished Service Medal for her service as President of the Faculty Senate from July 1999 to June 2000. According to her award citation, Dr. Poth "served the faculty and the University as a sincere and effective spokesperson through her successful efforts in presenting the views and meeting the requirements of the faculty. Dr. Poth met regularly with senior USU management officials and the Board of Regents to maximize communication across the University. She promptly and comprehensively provided input to the USU administration regarding institutional policies, issues, and concerns."

Pediatric/Pediatric Surgery Symposium. USU SOM Department of Pediatrics and the USU SOM Department of Surgery co-hosted the 14th Annual Pediatric/Pediatric Surgery Symposium on June 15, 2000. The topic was "Current Issues in Fetal Intervention. The Former United States Surgeon General, C. Everett Koop, M.D., was among the key note speakers. Dr. Koop’s presentation was entitled, "Pediatric Surgery From My Perspective." Also presenting were Nancy Hueppehen, M.D., Assistant Professor of Obstetrics and Gynecology, at USU; Martin Keszler, M.D., Professor of Pediatrics and Director of Nurseries, Georgetown University Medical Center; Tristram C. Colbert, M.D., Jr., Professor of Surgery, Children’s Hospital of Philadelphia; Brian Carter, M.D., Associate Professor of Pediatrics, Vanderbilt University Medical Center; and, Richard Pearl, M.D., Chief, Pediatric Surgery, University of Illinois.

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Pharmacology - School of Medicine.

Beata Buzas, Ph.D., Research Associate Professor, Department of Pharmacology, received continued funding during 2000, from the Defense/Veterans Head Injury Program for one grant: Opioid Peptides and Oxidative Stress.

Brian Cox, Ph.D., Professor and Chair, Department of Pharmacology, received continued funding during 2000 from the National Institute on Drug Abuse for a grant on the Regulation of Opioid Systems. Dr. Cox also served during the past year as the Chairman of the International Union of Pharmacology Subcommittee on Opioid Receptor Nomenclature.

Jeffrey M. Harmon, Ph.D., Professor, Department of Pharmacology, received continued funding during 2000, from the Veterans Administration (VA)/Department of Defense (DoD) for Molecular Regulation of Corticosteroid Receptor Expression in Stress-Responsive Cells.
Cinda J. Helke, Ph.D., Professor, Department of Pharmacology, and Program Director, Neuroscience, received continued funding during 2000, from the National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health, for one grant: Neurotransmitters and Visceral Afferent Neurons.

Robert J. Lechleider, M.D., Assistant Professor, Department of Pharmacology, received two grants from the National Institutes of Health (NIH): Regulation of Embryonic Angiogenesis by Smad Proteins and Gene Trapping TGF-beta Targets in Breast Epithelial Cells. In addition, he received one grant from the National Kidney Foundation: Smad5 Regulations of Vascular Smooth Cell Development and Function.

Aviva J. Symes, Ph.D, Assistant Professor, Department of Pharmacology, received funding from the American Society for Pharmacology and Experimental Therapeutics (Summer 2001) Undergraduate Research Training Program. Funding also continued during 2000 for one grant each from: the National Institute of Neurological Disorders and Stroke (NINDS), the National Institutes of Health; the Defense/Veterans Head Injury Program; and, the American Heart Association.

Zoltan I. Szallasi, M.D., Assistant Professor, Department of Pharmacology, received funding for two grants from the United States Army Medical Research and Materiel Command (USAMRMC): cDNA Microarray Based Comparative Gene Expression Analysis of Primary Breast Tissue Versus In Vitro Transformed Neoplastic Breast Epithelium and Generative Model-Based Statistical Analysis of Gene Expression Patterns in Breast Cancer.

Pending Funding. In addition to the above funded research activities, 11 research proposals from the Department of Pharmacology are currently under review by extramural funding agencies.

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Preventive Medicine and Biometrics - School of Medicine.

Biostatistical Consulting Center. The Department of Preventive Medicine and Biometrics established a University-wide Biostatistics Consulting Center (BCC) during the Summer of 2000. This center provides statistical consulting to USU scientific investigators engaged in: the design of studies and experiments; statistical and graphical analysis of data, choice, application, interpretation, and reporting of statistical methods; and, the preparation of presentations and publications, and revision of papers based on referee's comments. Since its establishment, the BCC has provided statistical consulting to over 50 faculty, students, and staff in at least 17 departments at the University. The BCC staff consists of two faculty members in Preventive Medicine and Biometrics, David F. Cruess, Ph.D., Professor and Deputy Chair of Biostatistics, Department of Preventive Medicine and Biometrics, is a part-time Director of the BCC. Cara H. Olsen, M.S., AB, Assistant Professor, Department of Preventive Medicine and
Biometrics, is the full-time Biostatistics Consultant. The purpose of the BCC is to: 1) improve the quality of USU research by providing statistical advice regarding study design, analysis, and reporting; and, 2) encourage collaborative research between statisticians and investigators from other disciplines.

CAPT Marlene N. Cole, D.V.M., MPH, USPHS, Director, Veterinary Education and Research, Co-Director, USU Laboratory Animal Medicine Residency Program, Assistant Professor, Department of Preventive Medicine and Biometrics, was elected and served as President of the American Society of Laboratory Animal Practitioners. She presented the keynote address at the first international meeting of the European Society of Laboratory Animal Veterinarians in Dublin, Ireland. The American Veterinary Medical Association selected her to represent the membership as a judge at the 51st International Science and Engineering Fair. She continues her research in the development of an animal model for Bartonellosis. Staff Sergeant Rickey D. Luckett, B.A., USA, joined the Department of Preventive Medicine and Biometrics in June of 1999, as the Non-Commissioned Officer-in-Charge (NCOIC), of the USU Laboratory Animal Medicine Residency Program. He is a registered Laboratory Animal Technologist and Certified Veterinary Technician. SSG Luckett received a Bachelor of Arts in Technology and Management from the University of Maryland in May of 2000 and was the recipient of the Laboratory Animal Management Association Honor Scholarship in September of 2000. He has also received the "Certified Manager" designation by the Institute for Professional Certified Managers.

John H. Cross, Ph.D, Professor, Department of Preventive Medicine and Biometrics, was recognized for his dedication to teaching with a plaque naming him as the Outstanding Professor of Parasitology by the School of Medicine Class of 2003.

Robert J. Fitz, Jr., MPH, MSPH, Assistant Professor, Department of Preventive Medicine and Biometrics, and Lieutenant Colonel Arthur P. Lee, Ph.D., MSC, USA, Assistant Professor, Department of Preventive Medicine and Biometrics, are principal investigators on a five-year research effort funded at $21.4 million, which was initiated at the Center for Health Promotion and Preventive Medicine in July of 1995. The project currently involves separate research initiatives designed to assess and improve the delivery of preventive medicine support services in the areas of health risk assessment, health promotion, health hazard assessment, occupational and environmental medicine, environmental compliance and pollution prevention, medical entomology, and radiation protection. To date, over 20 papers have been published in the professional literature, and an equal amount are in various stages of preparation. Over 30 presentations and/or poster sessions have been made at professional meetings, and over 200 technical reports, consultations, or assessments have been provided. The project was extended for six months until April of 2001; and, plans were set in place for a five-year follow-on project to commence on that date.

Deborah C. Girasek, MPH, Ph.D., Assistant Professor, Director of Social and Behavioral Sciences, Department of Preventive Medicine and Biometrics, directs the division’s course work and oversees a research portfolio which focuses on public attitudes toward injury risk and prevention. She also serves on the University’s Merit Review Committee and the Department of Defense’s Injury/Occupational Illness Prevention Committee. In March, Dr. Girasek presented her research to the 5th World Conference on Injury Prevention and Control in New Delhi, India. She was also invited to present a "primer" on Behavior at the 14th Annual Conference on Military Medicine, which focused this year on injury control.
Her manuscript, "Public Beliefs About the Preventability of Unintentional Injury Deaths," was accepted for publication in Accident Analysis & Prevention. She was also invited to serve as a reviewer for the Society of Public Health Education's new journal, Health Promotion Practice. Dr. Girasek's Health Promotion class carried out an innovative needs assessment at the Andrews Air Force Base that resulted in a letter of commendation from the Chief of Medical Staff at the 89th Airlift Wing; the commendation characterized Dr. Girasek's contribution as "outstanding," and estimates that similar services would have cost the command more than $30,000 had they been purchased from the private sector. In September, Dr. Girasek successfully, completed the Federal Aviation Administration's Cabin Safety Workshop. Finally, during 2000, Dr. Girasek was credited with serving as the catalyst for the establishment of the first Nursing Mother's Program at the University.

Thomas E. Johnson, Ph.D., Assistant Professor, Department of Preventive Medicine and Biometrics, began his career as an enlisted member of the United States Navy's Nuclear Propulsion program; he then graduated from the Navy Nuclear Power School. While assigned to the USS Cavalla, he attended the Southern Illinois University extension program and obtained his B.S. Degree. Upon the completion of his enlisted service, he was awarded a scholarship to the MBA program at the University of Illinois. He later earned his Ph.D. in Health Physics from Purdue University. Later, he accepted a position as a postdoctoral fellow at USU, and subsequently became an Assistant Professor in the Department. Dr. Johnson is an active member of the Air Force Reserves and the President-elect of the Baltimore Washington Chapter of the Health Physics Society. Dr. Johnson is also the Principal Investigator for the project entitled, "Performance Assessment of Laboratories Performing Uranium Analyses on Gulf War Veterans," funded by the Office of the Deputy Secretary of Defense for Gulf War Illnesses, Investigations and Analysis Division. The project was awarded in March of 2000. This study was instituted to give an indication of the capabilities of the various laboratories performing urine analysis on Gulf War Veterans. The study examines the ability of laboratories to detect not only the type, but also the amount of uranium present in spiked samples of reference urine. The project is in conjunction with the University of Pittsburgh and the results will be published during 2001.

CAPT Larry W. Laughlin, MC, Ph.D., USN, Professor and Chair, Department of Preventive Medicine and Biometrics, was appointed to the J.P. Sanford Chair in Tropical Medicine in the Department of Preventive Medicine and Biometrics. (Dr. Jay Sanford and his wife, Lorraine, endowed the Chair at USU. Dr. Sanford was a pioneer in the creation of USU and served as the Founding Dean of the School of Medicine. The annual interest revenues from the Sanford Fund will be used for special tropical medicine educational programs visiting professors, grand rounds, and student research projects.) CAPT Laughlin has had extensive experience working in tropical medicine, and he developed and implemented a special tropical medicine training program that leads to credentials in tropical medicine given by the American Society of Tropical Medicine and Hygiene. CAPT Laughlin, along with collaborating scientists from USU, NASA, and the Peruvian Ministry of Health, were awarded a $450,000 grant by the National Oceanic and Atmospheric Administration to study the effects of climate change on bartonellosis, an important vector-borne disease in Peru.

Lieutenant Colonel Arthur P. Lee, Ph.D., MSC, USA, Assistant Professor, Department of Preventive Medicine and Biometrics, is working with Lieutenant Commander Philip A. Smith, MSC, USN, Assistant Professor, Department of Preventive Medicine and Biometrics, on two related projects, the "Detection of Chemical Warfare Agents in Drinking Water Using Solid Phase Microfiber Extraction
CAPT Gerald V. Quinnan, USPHS, Professor, Department of Preventive Medicine and Biometrics, and Peng Fei Zhang, Ph.D., Assistant Professor, Department of Preventive Medicine and Biometrics, have been leading a research team studying issues pertinent to the development of a vaccine effective against HIV. The principle underlying the research is that neutralizing antibodies are critical for protection against viral infections. The group has been determining molecular mechanisms responsible for the resistance of HIV strains to neutralization by antibodies, and attempting to exploit the information obtained in the design of novel vaccine candidates. The work has been successful in demonstrating a number of unexpected, structure-function relationships which determine neutralization resistance within the envelopes of HIV (the proteins which are targets for neutralizing antibody responses). Based on these results, candidate envelope protein genes have been introduced into a potent in vivo expression vector derived from Venezuelan equine encephalitis virus, and studied for immunogenicity in small animals. Potent, broadly cross-reactive neutralizing antibody responses have been obtained, which suggest the potential for the induction of more effective responses in humans than achieved to date with other vaccine approaches. Plans have been developed for the expansion of these studies into higher animal species, to further explore the potential for use in human clinical studies. The work has been funded by USU intramural funds and grants from the National Institutes of Health; it has resulted in numerous scientific publications and presentations.

Donald R. Roberts, Ph.D., Professor, Department of Preventive Medicine and Biometrics, was mentioned in a story on DDT that appeared in the December 11, 2000, issue of U.S. News and World Report. The magazine quoted Dr. Roberts from an earlier interview he completed with the medical journal, Lancet, in which he stated that there are no epidemiological studies or other evidence to prove human risks from DDT use.

Colonel Bonnie Smoak, MC, USA, Associate Professor, Department of Preventive Medicine and Biometrics, received the Superior Honor Award from the Department of State for her actions following the bombing of the United States Embassy in Nairobi, Kenya. At the time of the incident, she was the Acting Commander of the United States Army Medical Research Unit in Kenya. Colonel Smoak worked with the Embassy medical unit personnel to locate Embassy patients in hospitals and clinics around the city to coordinate the transfer of these patients to a central hospital, and to evacuate them to

(SPME)," and the "Detection of Chemical Agents in Drinking Water Using Supercritical Fluid Extraction (SFE)." The grants were funded for approximately $36,000. The SPME project examined drinking water concentrations of several chemical warfare agents that were procured through the United States Army Center for Health Promotion and Preventive Medicine. The chemical agents included Lewisite, Mustard, and VX. Several different types of SPME fibers were inserted into these samples to determine the best fiber to use for detecting a particular chemical agent. The adsorption rates were also measured for the different fibers and chemical agents. The SFE work addresses the use of supercritical CO2 to desorb agent and hydrolysis products from the collection media used, and on-line analysis by solvating gas chromatography (SGC). The SGC method has been used previously to rapidly separate and identify a range of environmental contaminants of high concern, and combines the solvating power of high pressure CO2 mobile phase with short packed capillary columns. The GSC instrument to be used in separating and detecting the agents of concern is in place at USACHIPPM, and work is underway to develop separation methods and to couple the analysis to the SPME methods described earlier in this paragraph.
the airport when United States military transportation was available. In addition, she screened injured personnel who had not been evacuated, served as a liaison to the Joint Task Force on Medical Issues, and made initial recommendations for medical supplies needed by the Kenyans.

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**Psychiatry - School of Medicine.**

Etzel A. Cardena, Ph.D., Assistant Professor, Department of Psychiatry, was presented the Morton Prince Award for "Cumulative Scientific Achievement in the Study of Dissociation" from the international Society for the Study of Dissociation (ISSD). His work with hypnosis was recently profiled in a British Broadcasting Corporation (BBC) series on evolution entitled, "Apeman," and his book, Varieties of Anomalous Experience: Examining the Scientific Evidence, was also recently published by the American Psychological Association.

Lieutenant Colonel Charles C. Engel, Jr., MC, USA, Assistant Professor, Department of Psychiatry, received the 2000 Medical Corps "A" Proficiency Designator Award.

Elzbieta Chalecka-Franaszek, Ph.D., Research Assistant Professor, Department of Psychiatry, received a Young Investigator Award from the National Alliance for Research on Schizophrenia and Depression. Her research project is entitled, "Is Mood Stabilizers-Induced Modulation of the Serine/Thioneine Protein Kinase AKT an Underlying Mechanism of their Clinical Effectiveness?" The award of $60,000 was awarded for a period up to 24 months.

Ralph J. Gemelli, M.D., Adjunct Professor of Psychiatry, was the recipient of the Outstanding Civilian Educator Award. Chosen by the graduating students, the award is presented to the civilian faculty member who displays the highest qualities of a medical educator by personal example and performance. Dr. Gemelli has been a member of the USU faculty since 1980; and, he has directed the developmental section of the second year Human Behavior Course for the past 20 years.

Commander Thomas Grieger, MC, USN, Associate Professor, Department of Psychiatry and Director of the National Capital Area Psychiatry Residency Training Program, USU SOM Class of 1987, spoke at "Leadership and Operational Stress," a meeting sponsored by the Department of Defense on June 20-21, 2000. The need for decreasing and mitigating operational stress in 2020 was addressed by operational commanders, chaplains, and mental health providers.

Harry C. Holloway, M.D., Professor, Department of Psychiatry, participated in "The Psychological and Social Impacts of Biological Attacks on the American Homeland" sponsored by ANSER, the National War College, and the Johns Hopkins Center for Civilian Biodefense Studies on October 12, 2000.
Edmund G. Howe, III, M.D., J.D., Professor, Department of Psychiatry, gave the Dr. Alice H. Kiessling Memorial Lecture to the American Society of Psychoanalytic Physicians in Washington, D.C. His lecture focused on current ethical and psychiatric controversies regarding infants born with intersexual conditions and the surgeries performed to correct those abnormalities. Dr. Howe also directs the Program in Medical Ethics at the University.

Colonel Ann Norwood, MC, USA, Associate Professor and Associate Chair of the Department of Psychiatry, USU SOM Class of 1981, was a keynote speaker at the Emergency Situations and Mental Health Russia - United States Conference which was held in St. Petersburg, Russia, from June 13-15, 2000. The Conference was sponsored by the Ministry of Public Health of the Russian Federation, the Russian Academy of Sciences, and the Center for Mental Health Services of the United States Department of Health and Human Services. Colonel Norwood also participated in "The Psychological and Social Impacts of Biological Attacks on the American Homeland," sponsored by ANSER, the National War College, and the Johns Hopkins Center for Civilian Biodefense Studies on October 12, 2000. In addition, Colonel Norwood was appointed Chair of the American Psychiatric Association's Committee on the Psychiatric Dimensions of Disaster.

The Stanley Laboratory for Basic Research, under the direction of E. Fuller Torrey, M.D., continued to receive national attention. Dr. Torrey is an Adjunct Professor in the Department of Psychiatry; the Stanley Laboratory is located in Building 53 near the main USU campus. The October issue of the Washingtonian included an article about studies Dr. Torrey completed on identical twins, including details of his work and a picture of his brain collection in the USU Laboratory. In addition, the December 2000/January 2001 issue of Lingua Franca, a magazine for academics, featured Dr. Torrey's research on infectious agents and schizophrenia, and included a description of the USU Laboratory.

Robert Ursano, M.D., Professor and Chair, Department of Psychiatry and Director of the Center for the Study of Traumatic Stress, spoke at the DoD-sponsored meeting, "Leadership and Operational Stress," which was held on June 20-21, 2000. The meeting was attended by operational commanders, chaplains and mental health providers to address the need for decreasing and mitigating operational stress in 2020. Dr. Ursano also attended the World International Traumatic Stress Conference in Australia. He discussed papers by the Australian Defense Forces on their recent peacekeeping missions in Rwanda and East Timor, participated in an ADF stress conference, and met with the Chief of Mental Health for discussions on the status of peacekeeping forces and mental health services. In addition, Dr. Ursano had meetings with the Director of the Veterans Affairs National Traumatic Stress Health Center and the Secretary of Veterans Affairs. The Center for the Study of Traumatic Stress organized and sponsored a three day conference with the Center for Mental Health Services, Department of Health and Human Services, on "Planning for Bioterrorism: Behavioral and Mental Health Responses to Weapons of Mass Destruction and Mass Disruption." Attendees included internationally known scientists, risk communicators and terrorism experts as well as representatives of local agencies. Presenters included Dr. Joshua Lederberg, Nobel Laureate and member of the DoD Science Board.

Guoqiang Xing, Ph.D., Research Assistant Professor, Department of Psychiatry, received a two-year Theodore & Vada Stanley Foundation Research Award during 2000, to continue the study of the molecular mechanisms underlying neuropsychiatric illnesses. This study has yielded interesting results and several manuscripts which have been submitted for publication. The research has found that the brain
enzymatic activity of the nitric oxide synthase (NOS) was significantly reduced in the prefrontal cortex of the postmortem brains in patients with schizophrenia. A similar trend of reduction was also found in depression and bipolar patients.

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Radiology and Nuclear Medicine - School of Medicine.

CAPT Jerry A. Thomas, MSC, USN, Assistant Professor, Department of Radiology and Nuclear Medicine, was interviewed by CNN, early in 2000, regarding the FDA's approval of new digital imaging mammography equipment. The equipment, which is being used at the National Naval Medical Center, was the only digital imaging process nationwide chosen by the FDA. The research partnership between USU, the National Naval Medical Center, and General Electric, involving field trials of advanced digital mammography imaging was also featured on the local Channel 9 (WUSA) evening newscasts on April 3, 2000. The news channel detailed the advantages of what General Electric calls "breakthrough medical imaging technology." The USU/NNMC collaboration is one of only five such sites in the United States.

James G. Smirniotopoulos, M.D., Professor and Chair, Department of Radiology and Nuclear Medicine, received a tribute reference his department's web site on November 10, 2000. Cheryle Kelm, MSc, BPT, Dip, PT, Associate Professor, School of Physical Therapy, College of Medicine, at the University of Saskatchewan, requested permission to link to Dr. Smimiotopoulos' web site and the Department's resources on understanding and interpreting Chest X-rays. She teaches cardiorespiratory components of the Physical Therapy Cumculum at her University. During 2000, Dr. Smimiotopoulos presented fourteen invited lectures. The following are examples of those presentations: "Imaging Interpretations Session, Patterns of Location, and Patterns of Enhancement" were presented at the Brazilian Armed Forces Institute of Pathology (AFIP) Course 30th Jomada Paulista de Rziologia in Sao Paulo, Brazil, on April 26-30, 2000; "Patterns of Location Parts I and II, and Patterns of Enhancement" were presented during the Armed Forces Institute of Pathology Europeon Course/Sociedade Portuguesa de Radiologia (presented in Madrid, Spain; Oporto, Portugal; and, Vienna, Austria) from June 15-30, 2000; "The Phakomatoses, The Basal Ganglia: Diagnostic Imaging" were presented at the Harvard Medical School, Massachusetts General Hospital, the Harvard Post Graduate Course, in Boston, Massachusetts, on October 1-5, 2000; and, "CNS Trauma, CNS Vascular Disease, Patterns of CNS Enhancement, and Phakomatoses" were presented at the Scientific Meeting of the Atlantic Provinces Radiologists Atlantic Radiology Conference which was held in Halifax, Nova Scotia, on October 12-14, 2000.

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**Surgery - School of Medicine.**

**Departmental Activities During 2000.** During the past year, USU SOM Surgical Faculty began teaching "Definite Surgery for Trauma Courses" in collaboration with the Royal Medical Defense College and the Royal College of Surgeons in London, England. Also, Continuing Medical Education Programs were conducted in France, South Korea, the Philippines, Mexico, and other Military Medical Centers. In addition, the Department of Surgery International Research Scholar Program continued throughout the past year. During 2000, an extensive renovation of the Surgical Laboratories was completed on schedule and on budget. Department researchers have begun work in the renovated space in a manner which predicts the continued high quality of contributions to academic surgery and to Military Medicine. The extraordinary productivity of the members of the USU SOM Department of Surgery in the area of Military Medicine is reflected throughout the year through numerous articles published in peer-reviewed publications and, presentations at National and Internationally recognized organizations and conferences. And, continuing the established tradition of the "Distinguished Visiting Professor Series," the following are examples of the prestigious surgeons and educators who presented named lectures during 2000 for the Department of Surgery:

**Murray Brennan, M.D., Memorial Sloan Kettering**, gave the 2nd Francis Moore Distinguished Surgical Lecture entitled, "Management of Soft Tissue Sarcoma;"

**Donald Trunkey, M.D., Oregon Health Sciences University**, presented the 3rd William R. Drucker Trauma Lecture entitled, "Trauma Care: The Military Mission;"

**C. Everett Koop, M.D., Former Surgeon General of the United States, Dartmouth**, spoke at the 1st C. Everett Koop Lecture entitled, "Pediatric Surgery;"

**Brigadier General John E. Hutton, Jr., MC, USA, (Ret), Professor, USU SOM Department of Surgery**, presented the 2nd Oliver H. Beahrs Lecture entitled, "Presidential Medical Support;"

**Dr. Thomas Krummel, Stanford University**, gave the 1st David C. Sabiston Distinguished Lecture entitled, "Emerging Technologies;" and,

**Mr. H.H.G. Eastcott, London**, presented the 3rd Charles G. Rob Distinguished Lecture entitled, "Orthopaedic Shoulder Surgery."

**20th Annual Surgical Associates/Reserve Components Surgical Day.** The USU SOM Department of Surgery held its 20th Annual Surgical Associates/Reserve Components Surgical Day on March 20, 2000. The following awards were presented to the Department’s faculty members: the Barry Goldwater Service Award was presented to Lieutenant Colonel George Gibel, USAF, MC; the Baron Dominque Jean Larrey Award was awarded to Colonel Christoph R. Kaufmann, MC, USA; the Michael E. DeBakey International Military Surgeon’s Award was presented to Colonel Peter Roberts, of the United Kingdom; the Charles A. Hufnagel Residents’ Basic Research Award was awarded to Lieutenant Eric Elster, MC, USN; the Andrew C. Ruoff III Travel Award was presented to Major Benjamin W. Starnes, MC, USA; and, the Joseph H. Baugh Residents’ Award was awarded to Dr. Randall Goodman, USAF Medical Center, Lackland Air Force Base, Texas.
Pediatric/Pediatric Surgery Symposium. USU SOM Department of Surgery and the SOM Department of Pediatrics co-hosted the 14th Annual Pediatric/Pediatric Surgery Symposium on June 15, 2000. The topic was "Current Issues in Fetal Intervention." Former United States Surgeon General, C. Everett Koop, Dartmouth, was featured among the speakers, Dr. Koop's presentation was entitled, "Pediatric Surgery From My Perspective." Also speaking were Nancy Hueppehen, M.D., Assistant Professor of Obstetrics and Gynecology, at USU; Martin Keszler, M.D., Professor of Pediatrics and Director of Nurseries, Georgetown University Medical Center; Tristram C. Colbert, Jr., M.D., Professor of Surgery, Children's Hospital of Philadelphia; Brian Carter, M.D., Associate Professor of Pediatrics, Vanderbilt University Medical Center; and, Richard Pearl, M.D., Chief, Pediatric Surgery, University of Illinois.

Hassan, Alam, M.D., Research Fellow, Department of Surgery, co-authored three abstracts which were published in Shock, 2000, Volume 13, pages 50, 52, and 114; they were entitled: "Ketone Ringer's Solution Attenuates Resuscitation Induced Apoptosis in Rat Lungs Following Hemorrhagic Shock, Neutrophil Activation Induced by Lactated Ringer's Resuscitation Can Not Be Prevented by Altering the Volume or Rate of Infusion, and, Dextran and Hespan Resuscitation Causes Neutrophil Activation in Swine After Hemorrhagic Shock." Dr. Alam also provided 13 presentations at national and international events during the past year; some examples are: 1) the 86th Clinical Congress of the American College of Surgeons held in Chicago, Illinois, during October of 2000; 2) The 23rd Annual Conference on Shock held in Snowbird, Utah, during June of 2000; 3) Rare Disease Meeting held at the National Institutes of Health in Bethesda, Maryland, in May of 2000; 4) the 8th International Conference on Hypertonic Resuscitation held in Galveston, Texas during 2000; and, 5) the 5th World Congress on Trauma, Shock, Inflammation and Sepsis which was held in Munich, Germany during March of 2000.

Colonel David Burris, MC, USA, Associate Professor, Chief, Division of Surgical Research, Coordinator, USU Third Year SOM Student General Surgery Rotation at Walter Reed Army Medical Center, Department of Surgery, USU SOM Class of 1982, was promoted to Associate Professor and designated for promotion to Colonel during 2000. Colonel Burris is a member of the Association of Military Surgeons of the United States, the American College of Surgeons, the Society of Critical Care Medicine, the American Association for the Surgery of Trauma, and the Society of University Surgeons. Colonel Burris was selected to serve as the Chair, the Army Committee on Trauma, of the American College of Surgeons. Also during 2000, Colonel Bums co-authored nine articles which were published in peer-reviewed publications (Journal of Trauma, Critical Care Medicine, International Angiology, etc.). Colonel Burris provided numerous presentations during 2000; some examples follow: 1) "Shock" was presented to the USU Graduate School of Nursing, on March 9, 2000; 2) "Resuscitation/Blood Substitutes" was given at the 2000 Federal Health Law Conference held at USU on May 16, 2000; 3) "Cardio Respiratory Collapse" was presented at the 1st Responder, Military Medicine Conference held at USU on May 24,2000; 4) "To Treat or Not to Treat?" was presented at the USU 15th Annual Surgery for Trauma Day on August 24, 2000; and, 5) "Medical Training in the United States Army and the HDF: Mass Casualty Exercises," "Emergency Responses in Field Medicine," "The System of Field Surgical Support in the United States Army," "Field Trauma Practices in the United States Army," and, "Damage Control Surgery," were presented at the 8th American-Hungarian Military Medical Conference held in Passau, Germany, on September 10-14, 2000.
William R. Drucker, M.D., Professor, Department of Surgery, completed all of the requirements for, and received, the Diploma in the Medical Care of Catastrophes from the Society of Apothecaries of London, England. Dr. Drucker passed the requirement process with distinction.

Lieutenant Colonel David Gillespie, MC, USA, Associate Professor, Department of Surgery, received the Sigvaris Traveling Fellowship Award from the American Venous Forum/Foundation. He will use the $12,000 fellowship to visit medical centers throughout the world that have been established as centers of excellence in the management of venous disease. The grant is intended to initiate personal and professional development, promote an exchange of important clinical information and stimulate the development of centers in the management of venous disease.

Major James M. Goff, Jr., MC, USA, Instructor, Department of Surgery, following the completion of all requirements, received the Diploma in the Medical Care of Catastrophes from the Society of Apothecaries of London, England.

John E. Hutton, Jr., M.D., Professor, Department of Surgery, earned the University's Distinguished Service Medal for his accomplishments while serving as president of the USU Faculty Senate from July 1998 to June 1999. Dr. Hutton was recognized for highlighting the significance of the Packard Lecture, which was established by the Faculty Senate in 1985 to annually honor an individual who has made significant contributions to the military medical community. He spearheaded USU's Surgical Research Day, which, through more than 200 oral and poster presentations, illustrated the abundance and quality of completed and ongoing research at USU. The event is sponsored by the Research Committee of the Faculty Senate. Dr. Hutton has been with USU since 1979; he spent more than 30 years in the military, retiring from the Army Medical Corps in 1992 at the rank of Brigadier General. He was White House Physician and the Senior Medical Officer, White House Medical Unit, from 1984-86, and physician to President Ronald Reagan from 1987-89.

Colonel Christoph R. Kaufmann, MC, USA, Associate Professor, Department of Surgery, Trauma Center Site Reviewer for Pennsylvania, Virginia, and Illinois, USU SOM Class of 1982, was awarded the Baron Dominque Jean Larrey Award at the 20th Annual Surgical Associates/Reserve Components Surgical Day. The award recognizes an active duty military surgeon who has made outstanding contributions in military surgery, as exemplified by Baron Dominique Jean Larrey, a 19th Century surgeon who served under Napoleon. Colonel Kaufmann is also a Member of the Institute of Medicine Committee on a Vision for Space Medicine Beyond Earth Orbit. During 2000, Colonel Kaufmann co-authored six articles which were published in peer-reviewed publications; four were published in The Journal of Trauma. Colonel Kaufmann also provided 19 presentations during 2000, at various functions, selected examples include: 1) the "Future of Trauma Systems," Trauma Directors' Workshop, Eastern Association for the Surgery of Trauma Annual Meeting, January of 2000; 2) "Limitations of Virtual Reality Surgical Testing," Metrics Workshop, Medicine Meets Virtual Reality Meeting, held in Newport Beach, Virginia, January of 2000; 3) "Medical Modeling and Simulation Needs of the National Capital Area Medical Simulation Center," Integrated Research Team Meeting, Telemedicine and Advanced Technology Research Center, Fort Detrick, Maryland, February of 2000; 4) "Damage Control in Austere Circumstances," World Congress of Trauma 2000, Guadalajara, Mexico, February of 2000; 5) "Minimally Invasive Surgery and the Use of Robotics," 5th World Congress on
Lieutenant Colonel George E. Peoples, Jr., MC, USA, Assistant Professor of Surgery, Department of Surgery, was named one of the Ten Outstanding Young Americans for 2001 by the United States Chamber of Commerce. The award is presented annually to outstanding Americans with exceptional achievements and demonstrated service to humanity. LTC Peoples, who also is a surgical oncologist at the Walter Reed Army Medical Center, was recognized for his groundbreaking work in the discovery and development of preventive cancer vaccines. The vaccines have proven effective in preliminary trials and apply to a wide variety of cancers, including lung, breast, and prostate cancer. The Ten Outstanding Young Americans for 2001 were honored on January 27, 2001, at the Renaissance Hotel in Washington, D.C.

Basil A. Pruitt, Jr., M.D., Professor, Department of Surgery, received the Distinguished Investigator Award from the American College of Critical Care Medicine. Dr. Pruitt, a retired colonel in the Army Medical Corps, is also the editor of the Journal of Trauma.

Commander Peter M. Rhee, MC, USN, Associate Professor, Department of Surgery, detached from the USU SOM in August of 2000 to report for duty with Surface Forces Pacific in San Diego, California. He continues to communicate and participate in the ongoing shock and resuscitation fluid studies which he began at USU. In February of 2000, Commander Rhee received $1,368,871 in funding from the Office of Naval Research, Navy Medical Research and Development Command for his grant, "Forward Treatment of Hemorrhagic Shock." Commander Rhee's grant is funded through September of 2002. He continues to publish numerous articles in peer-reviewed publications.

Norman M. Rich, M.D., FACS, David Packard and Leonard Heaton Professor of Surgery, Professor and Chair, Department of Surgery, continued to speak and to represent the USU SOM at numerous prestigious events and meetings. Among these were the "Sterling Edwards Lecture" at the Rocky Mountain Vascular Society on August 20, 2000; and, presentations before the Virginia Vascular Society and the Mayo Clinic Vascular Society in September of 2000.

CAPT Peter W. Soballe, MC, USN, Professor, Department of Surgery, was promoted to the rank of Professor in the USU SOM Department of Surgery. CAPT Soballe joined the USU SOM faculty in 1995; he is also in charge of the Bethesda Breast Care Facility at the National Naval Medical Center in Bethesda. CAPT Soballe is a member of the Society of Surgical Oncology, the American Association for the Advancement of Science, and the Association of Military Surgeons of the United States.
Gary G. Wind, M.D., FACS, Professor, Department of Surgery, presented "Embryology" and "Variations" at the American College of Surgeons Biliary Postgraduate Course at the Annual Congress in Chicago, Illinois.

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The Graduate School of Nursing.

CAPT Cynthia Cappello, USN, NC, CRNA, Chair (Acting), Nurse Anesthesia Department, Graduate School of Nursing, was appointed as Consultant to the Navy Surgeon General for Nurse Matters. CAPT Cappello provides expert specialty advice to the Navy Surgeon General and the respective Corps Chiefs on matters pertaining to nurse anesthesia; and, she advises the Corps Chiefs and medical department professional review boards on qualifications and desirability of candidates for appointment to active or Reserve duty. CAPT Cappello also provides input for definitive problem solving, and tactical and strategic planning. During 2000, CAPT Cappello co-directed the first Medical Humanitarian Assistance Course for Advanced Practice Nurses.

Colonel Martha Turner, USAF, NC, Ph.D., was selected as Associate Dean, Graduate School of Nursing. Colonel Turner has been on the faculty of the Graduate School of Nursing (GSN) since 1998; during her 24-year military career, she has held numerous clinical and teaching positions at Air Force hospitals both stateside and overseas. As Associate Dean, she will assist in the selection process of qualified applicants to the GSN programs. Colonel Turner will also participate in the development, implementation, and evaluation of the GSN curricula, to include research and continuing education programs.

Lieutenant Colonel Richard Ricciardi, MSN, CRNP, USA, Assistant Professor, authored "First Pelvic Examination in the Adolescent." The article was published in Nurse Practitioner Forum, Volume 11, No 3 (September), 2000, pages 161-169. The article addresses how the first pelvic examination is often an emotionally charged and stressful event in the adolescent patient; and, that the female adolescent patient has many unique health care needs, which if not met, can negatively impact future gynecologic health. During 2000, LTC Ricciardi co-directed the first Medical Humanitarian Assistance Course for Advanced Practice Nurses.

Angela Carter Martin, RN, MSN, FNP, CS-P, Department of Veterans Affairs, Assistant Professor, Department of Nurse Practitioners, authored "Major Depressive Illness in Women: Assessment and Treatment in the Primary Care Setting." The article was published in Nurse Practitioner Forum, Volume 11, No 3 (September), 2000, pages 179-186. The article discusses that illness in women carries with it a tremendous price to the woman’s sense of well-being and health. Primary care providers who have frequent and continuous contact with women at risk for developing a depressive disorder are in an excellent position to diagnose and treat depression.

Janice Agazio, RN, Ph.D., Assistant Professor, Department of Nurse Practitioners, accepted a full time position in October of 2000, following a 22 year career in the Army Nurse Corps. Dr. Agazio has specialized in pediatric nursing and is certified as a Pediatric Nurse Practitioner. After completing her doctorate at Catholic University, she completed four funded studies as the principal investigator and two additional funded studies as a co-investigator. She is currently a co-investigator on two funded studies and is completing one intramural project. She was active in continuing education serving for six years
on the Army Nurse Corps Continuing Education Approver Committee. And, she has also served as a member of the Maryland Nurses Association Approver Committee since 1992 to the present and assumed the position of Chair during 1996.

Publications of the Department of Nurse Practitioners during 2000 - Nurse Practitioner Faculty and Veterans Affairs Faculty provided all of the articles for both the September and December 2000 issues of Nurse Practitioner Forum. Both of these issues focused on Women's Health. Articles addressed such topics as "Urinary Incontinence in Women," "Assessing Breast Pain," "Hormone Replacement Therapies," "Heart Disease in Women," "Depression in Women," "Patient Satisfaction with Prenatal Care in Military Settings," and "The First Pelvic Examination." Patricia C. McMullen, J.D., M.S., CNS, CRNP, Associate Professor, Acting Department Chair and Program Director, served as the guest editor for both of these issues. Also during 2000, the faculty of the Department of Family Nurse Practitioners contributed chapters for Pharmacology for the Primary Care Provider, by M.W. Edmunds and M.S. Mayhew, published by Mosby Publishers, Inc. The following chapters in Pharmacology for the Primary Care Provider were provided by the GSN:

M.S. Mayhew and C.K. Grandjean co-authored Chapter 25, "Calcium Channel Blockers;"

K.M. O'Rourke, C.K. Grandjean, and M.S. Mayhew co-authored Chapter 27, "Other Antipypertensives and Peripheral Vascular Drugs;"


C.K. Grandjean and M.S. Mayhew co-authored Chapter 40, "Muscle Relaxants;"

S.S. Gibbons authored Chapter 46, "Antidepressants;"

M.L. Lemieux and D.C. Seibert co-authored Chapter 50, "Contraceptives;"

M.S. Mayhew, L.C. Hersey, and P.C. McMullen co-authored Chapter 51, "Hormone Replacement Therapy;"

D. C. Seibert authored Chapter 71, "Vitamins and Minerals;"

M.S. Mayhew and C.K. Grandjean co-authored Chapter 69, "Smoking Deterrents;"

K. Murphy and M.S. Mayhew co-authored Chapter 63, "Sulfonamides;"

T. McManus authored "Emerging Infections: Helicobacter pylori," which was accepted for publication in The Nurse Practitioner: The American Journal of Primary Care, in February of 2000.

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Colonel Robert Eng, MS, USA, Director of the Armed Forces Radiobiology Research Institute, was a guest lecturer at the March Joint Medical Planner's Conference - 2000 in the Republic of Korea. Colonel Eng addressed medical, nuclear, biological, and chemical (NBC) warfare issues, including the use of new drugs for NBC injuries, patient decontamination at night and in cold weather, processing of NBC-contaminated remains, and NBC psychological casualties. The conference is held every two years for units involved in wartime planning in Korea.

(Additional Information on AFRRI Follows)
Armed Forces Radiobiology Research Institute

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Seed TM, Fritz TE, Tolle DV, Jackson WE. Hematopoietic responses under protracted exposures to low daily dose gamma irradiation. *Advances in Space Research* (in press)


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Brook I, Elliott TB, Ledney GD, Knudson GB. Management of postirradiation sepsis (submitted)

Lowry RJ, LaBarre D. Comparison of gamma and neutron radiation inactivation of influenza A virus. *Antiviral Research* (submitted)


Seed TM, Fritz .TE, Tolle DV, Jackson WE. Hematopoietic responses under protracted exposures to low daily dose gamma irradiation. *Advances in Space Research* (submitted)


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