



III. OPTIMIZATION

Four USUHS programs generated over \$24.6 million of cost avoidance for the Department of Defense in Fiscal Year 2002: 153 USUHS faculty members provided 141,842 hours of *clinical and consultative services* at military treatment facilities (MTFs) for a documented cost avoidance of \$10,254,109; USUHS Office of Continuing Education for Health Professionals (CHE) *sponsored continuing medical education* for 499 activities with an attendance of 4,072 physicians; provided continuing nursing education for 52 activities with an attendance of 2,458 nurses; and approved 17 Category II (non-ACHE) continuing education credit for 592 members of the American College of Healthcare Executives for a documented cost avoidance of \$1,861,865; the USUHS Military Training Network (MTN) generated a documented total of \$11,424,909 in cost avoidance by facilitating DoD's ability to *provide essential medical readiness training* for 179,150 defense personnel; the USUHS Graduate Education Programs generated \$1,050,000 of cost avoidance when 35 *uniformed officers received advanced degrees* from the University.

- USU Cost Avoidance Fact Sheet, May 2002.

I wish to convey my congratulations to Dr. Abdellah and the entire staff of the Graduate School of Nursing of the Uniformed Services University of the Health Sciences. Your outstanding performance was recently recognized by the National League for Nursing Accrediting Commission (NLNAC), in the report granting continuing accreditation for an impressive eight additional years. I am particularly gratified by the following statement: "This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crisis and disaster situations. This program is on the cutting edge of cost-effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner. This program can serve as a model to advance nursing education, practice and scholarship as nursing moves into care of the global community." The NLNAC conducted an exhaustive review before coming to the above conclusion, reviewing many documents, attending classes, and

interviewing numerous staff, students and other stakeholders. One of the latter groups, the Federal Nursing Chiefs, was particularly complementary: “We are excited to see the quality of the students who graduate from this program..they are exceptional leaders.” This is a truly outstanding review of the school, which reflects great credit upon your entire staff and our Military Health System. Congratulations to all for a job exceptionally well-done!

- **The Honorable William Winkenwerder, Jr., M.D., The Assistant Secretary of Defense (Health Affairs),** Letter to USU, January 24, 2002.

The General Accounting Office documented in a 1995 report that USUHS, when compared to other sources of military physicians, is an economical source of career medical leaders based on expected years of service and all federal costs; in addition, the Joint Meritorious Unit Award granted to USUHS by the Secretary of Defense on December 11, 2000, officially recognizes that USUHS annually generates over \$22 million in documented cost avoidance for the Department of Defense through the provision of clinical services by the USUHS faculty in the military treatment facilities and the University’s continuing education programs.

- Resolution Number 71, The Eighty-Fourth National Convention of **The American Legion**, August 27-29, 2002.

The USUHS Program Manager for the SmartPay Travel Card, participated in our Best Practices Joint Session. He shared the University’s tools for success with Agency Program Coordinators from all components of the Department of Defense, military as well as civilian. Because of this leadership and unbiased focus on the responsible use of a convenient, cost effective and efficient travel management tool, USUHS enjoys an enviable “benchmark” setting reputation ahead of the other Department of Defense Agencies and military departments.

- **Christopher D. Slack, Government Card Executive, Bank of America,** Letter to USU, September 17, 2002.

As provided to congressional committees during 2002 by the Navy Surgeon General: the median length of non-obligated service for physician specialists in the Military Health System, not including USUHS graduates is 2.9 years, and the median length of non-obligated service for USUHS physician specialists is 9 years. Therefore, the Reserve Officers Association of the United States urges the Congress to retain USUHS to ensure the continued (cost-effective) availability of career-oriented military physicians for the Uniformed Services.

- Resolution Number 02-28, The National Convention of **The Reserve Officers Association of the United States**, June 22, 2002

The University has significantly expanded its academic offerings in graduate and post-graduate medical education, to include programs in tropical medicine, emergent infectious diseases, public health and weapons of mass destruction. The University has assumed increasing (cost-effective) roles in the oversight and administration of the Military Training Network, continuing health education, and the Tri-Service National Capital Area Consortium. The University also seeks to exploit new technologies in medical education and has created the Biomedical Informatics Department to serve as a focal point for distance education and other cutting-edge technologies.

- Fiscal Year 2006 Military Construction Project Data, Defense Medical Facilities Office, Office of the Secretary of Defense, December 2002, page 2.

In response to multiple requests, USUHS faculty have developed and delivered cost-effective training programs for other Federal agencies, medical institutions, and public safety organizations on terrorism response and WMD. For example, the Administrative Offices of the U.S. Courts and the U.S. Marshals Service requested that the USUHS CCRC (Casualty Care Research Center) design and execute a train-the-trainer program in Chemical/Biological Response. Today, this program continues to assure that there are well-trained WMD first responders in every Federal courthouse in the country. In addition, AFRI regularly conducts the Medical Effects of Ionizing Radiation (MEIR) program for the military medical community. During the past year, 757 students from all Services completed the MEIR course.

- USU Board of Regents, Report to the Secretary of Defense, June 1, 2002, pages 1-2; Appendix A, page 8.



Clinical and Consultative Services to the MHS

III. THE GRADUATE SCHOOL OF NURSING

The focus of the programs offered at the University is determined by the needs of the Uniformed Services during times of peace and war, as well as other contingencies. The unique component that is added to the programs is the element of operational readiness. There is a good reason why the school's motto is *Learning to Care for Those in Harm's Way*. A certified nurse anesthetist from USU can function not only under normal circumstances, but is also prepared to practice in more austere settings should deployment occur.

- "A Guide by their Side," Nursing Spectrum, Volume 12, No. 21DC, October 21, 2002, page 7.

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 United States Public Health Service (USPHS)). The Federal Nursing Chiefs initially identified the need for advanced practice nurses in two areas: Family Nurse Practitioner and Nurse Anesthesia. In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners for the Uniformed Services. By February 26, 1996, the GSN had received official approval and recognition from the Office of the Assistant Secretary of Defense for Health Affairs.

GSN Meets Legislative and DoD Mandates. In compliance with Congressional legislation and in direct response to the needs of the Federal Nursing Chiefs and the Uniformed Services, the GSN initially established a Master of Science in Nursing Degree Program with two options in Nurse Anesthesia and Family Nurse Practitioner. These two GSN options were implemented to alleviate shortages of health care providers in the Uniformed Services, as identified by the Federal Nursing Chiefs. Graduates receive the Master of Science in Nursing (MSN) Degree and are qualified to test for national certification in their specialties.

The first students were admitted into the GSN Family Nurse Practitioner option in August of 1993; and, the first students matriculated into Nurse Anesthesia in June of 1994. Family Nurse Practitioner has had eight graduating classes from 1995 through 2002, for a total of 82 graduates; Nurse Anesthesia has had seven graduating classes beginning with the Class of 1996 through the Class of 2002 for a total of 94 graduates. The

GSN Master Completion option has had a total of 7 graduates. Thus, from its first graduation in 1995 through March of 2003, a total of 183 MSN Degrees have been granted by the USU GSN. GSN alumni have excelled in achieving national certification, with greater than a 97 percent pass rate on the first attempt.

Today, the GSN is unique among the Nation's nursing programs as it educates students to support the health care mission of the Military Health System (MHS) during peace, war, disaster, and other contingencies. GSN students are prepared to contribute to the peacetime health care delivery systems of the Uniformed Services and to provide unique support during combat operations, civil disasters and humanitarian missions; they are prepared to serve under austere and harsh conditions in field hospitals, on ships, and during air evacuations. For example, GSN alumni continue to support operations in South East Asia, the Persian Gulf, and the Balkans. The GSN curricula include an increased focus on leadership; and, rotations with senior health care executives provide opportunities for increasing the students' understanding of health care policy and for networking with uniformed and professional leaders. GSN alumni have published articles, presented at national conferences, completed post-graduate courses, and are enrolled in doctoral studies. Along with the GSN faculty, GSN alumni are recognized leaders within their specialties and actively participate in national and international nursing organizations.

To meet its legislative and DoD directives, the GSN's *internal community of interest* extends throughout the University. It includes the executive staff at USU and the students, faculty, research, and administrative personnel within the GSN and the School of Medicine (SOM). The GSN faculty and students provide meaningful contributions to USU committees and collaborate on projects throughout the GSN and the University. The Federal Nursing Chiefs represent one of the GSN's *external communities of interest*. The Federal Nursing Chiefs, serving as a Board of Advisors to the GSN since 1993, meet at least twice a year to provide and receive information on the GSN's curricula and program effectiveness. Information provided by the Service Chiefs is incorporated into the planning of the GSN during continuous review and revision of its mission, philosophy, objectives and curricula. (**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, is an honorary representative on the GSN Nursing Board of Advisors.) The GSN's external communities of interest also include USU alumni, uniformed supervisors of GSN alumni, and members of the uniformed and civilian nursing communities, the Departments of Defense and Veterans Affairs, and the United States Congress.

MISSION

The Accrediting commission pointed out in its summary findings to the University that the mission and philosophy of the USUHS Graduate School of Nursing (GSN) is grounded in the University's mission and in the mission of the Uniformed Services. The GSN Curriculum is designed to be specific to the unique mission of military service nurses: to serve in times of war and peace.

- **The Honorable Daniel K. Inouye, the United States Senate, Congressional Record, Tribute to Dr. Faye Glenn Abdellah, May 15, 2002, pages S4488-S4489.**

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 initial mission of the GSN included five major objectives: 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; and, 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.

The mission of the GSN is in full compliance with the goals of the Assistant Secretary of Defense for Health Affairs. The GSN remains dedicated to providing a quality and unique education that prepares nurses to deliver care and services to all beneficiaries of the Uniformed Services during peace, war, and other contingencies. The GSN faculty and staff provide the Nation with graduate nursing professionals dedicated to a career of service for the Department of Defense, the USPHS and other Federal Health Systems.

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 the Family Nurse Practitioner and Nurse Anesthesia options in its MSN Program; 3) identified accredited clinical practice sites and completed memoranda of understanding (MOUs) for those relationships with 21 military treatment facilities (MTFs) to include an additional 111 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

MSN Degree Program from three professional accrediting entities (status of recent accreditations follows); 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 its academic program; for example, on February 26, 2002, credentialing scoring information released by the American Nurse Credentialing Center's Commission on Certification showed that of the 15 GSN Family Nurse Practitioner graduates who took their certification examination, all 15 passed with a mean score of 123.3, the highest ever achieved; 8) initiated curricula and governance reviews; 9) collaborated with the Department of Veterans Affairs and utilized new technology to establish distance learning options, which resulted in the DoD's first virtual graduation at the advanced level; and, 10) granted Masters of Science in Nursing Degrees to 183 advanced practice nurses, with over 80 percent of its graduates remaining on active duty.

The Implementation of two Post-Master Options. In addition to the establishment of its two traditional MSN Program options of Family Nurse Practitioner and Nurse Anesthesia, the GSN has also implemented a Post-Master Family Nurse Practitioner option and the Department of Veterans Affairs (VA)/Department of Defense (DoD) Post-Master Adult Nurse Practitioner Distance Learning Program (ANP). The Post-Master Family Nurse Practitioner Certificate option began in 1999, primarily in response to, and in support of, the decision by the Army Nurse Corps to transition from a specialty nurse practitioner to a family nurse practitioner focus. During the transition, the number of students varied, resulting in the awarding of two to four certificates per year; as of March 2003, a total of 15 Post Master Certificates have been granted.

The VA/DoD ANP Program was initiated in collaboration with the Department of Veterans Affairs. The VA had identified a requirement to increase its number of adult nurse practitioners throughout its health care system, which includes approximately 173 Medical Centers and 771 ambulatory care and community-based clinics. The student body is composed of civilian VA employees who maintain their full-time responsibilities at the VA facilities while participating in the program. The curriculum incorporates video teleconferencing technology as the primary teaching tool, with faculty conducting GSN-designed lecture-based instruction. Students participate from VA medical centers located across the United States, Puerto Rico, and the United States Virgin Islands; following the third graduation, the GSN will have awarded 70 certificates (this program is covered in more detail at the end of this section of the Journal).

The Development of a Clinical Nurse Specialist Option.

Background. The first Clinical Nurse Specialist Program was established in 1954 at Rutgers University; it was designed to prepare nurses at the Master Degree level who would be dedicated to improving patient and family care in the face of significant technologic advances in cardiac and pulmonary surgery. Early Clinical Nurse Specialists were known by a variety of titles, including nurse clinician, clinical associate, liaison nurse, clinical supervisor, and clinical nurse specialist. By 1970, the core function of the role of the Clinical Nurse Specialist was identified as a graduate-prepared nurse who was able to: 1) assess the nursing needs of patients and develop nursing care plans based on the knowledge of nursing, medical, biological, and social sciences and generally direct the provision of nursing care in the patient unit; 2) consult with others, as needed, and make appropriate use of available administrative and organizational channels in support and maintenance of nursing performance; 3) establish and evaluate standards of clinical nursing practice in a unit; 4) teach

patients and nursing staff on a unit how to improve clinical outcomes; and, 5) introduce nursing practice innovations and refine nursing procedures and techniques and investigate specific nursing practice problems.

Today, there are approximately 58,000 clinical nurse specialists in the United States. They provide care in a variety of clinical specialties in both in-patient and out-patient settings. According to the Division of Nursing, National Sample Survey of Registered Nurses, Clinical Nurse Specialists employment breaks down as follows: *50.3 percent - Hospitals* (24.4 percent have no direct patient care and work primarily in staff development and administration; 46.6 percent work as part of in-patient units; 19.1 percent work as part of out-patient units; and, 9.8 percent work in 'other patient care areas'); *19.5 percent - Nursing Education*; *13.4 percent - Community Health*; *9.5 percent - Ambulatory Care*; and, *7.3 percent - Other* (Private Industry, Pharmaceuticals, etc.).

In June of 2001, a need for a Clinical Nurse Specialist (CNS) option in the GSN Master of Science in Nursing Program was identified by the Federal Nursing Chiefs. A feasibility study and the development of a pilot program were completed and accepted by the Federal Nursing Chiefs. In January of 2002, **Founding Dean Faye Glenn Abdellah** and the GSN Associate Dean presented the CNS option to the USU Executive Committee; that request was approved by the Surgeons General of the Army, Navy and Air Force. The CNS option was then approved by the USU Board of Regents during its meeting held on February 27, 2002. Significantly, the GSN will welcome its Charter Class of eight students in the GSN Perioperative CNS option in June of 2003.

The Development of a Doctoral Program in Nursing. To meet an evolving requirement for nursing research relevant to the MHS, the USPHS, and other Federal Health Systems, in March of 2002, with the support of the Federal Nursing Chiefs, the GSN began the process for the development of a Doctoral Program in Nursing. The GSN Doctoral Program will prepare nurses to be uniquely qualified as leaders in research, education, and clinical practice and serve in the MHS, USPHS, and other Federal Health Systems. In the context of concerns over patient safety, nursing research must be conducted to assess the linkages between nurse staffing, safety, and outcomes assessment throughout the TRICARE Management Activities. Additionally, with the well-recognized national shortage of both staff nurses and nursing faculty, GSN doctoral graduates will be prepared to augment faculty requirements in educational settings and to provide researchers for studying health care in the MHS, USPHS, and other Federal Health Systems.

In June of 2002, following the arrival of the new GSN Dean, **Patricia A. Hinton Walker, Ph.D., RN, FAAN**, parallel planning was initiated to review the existing curriculum to ensure the supportability of new programs. Following an analysis of capabilities, a curriculum was designed that would be responsive to the Federal Nursing Chiefs and flexible enough to easily adapt to the changing requirements of the Uniformed Services. The Doctoral Program in Nursing Science includes a common core of required courses and electives. The program consists of five areas of concentration: 1) *Nursing Knowledge*; 2) *Research Methods, Statistics, and Designs*; 3) *Cognates*; 4) *MHS and Federal Health Care Policy and Issues*; and, 5) the *Dissertation*. Dean Hinton Walker presented the GSN Doctoral Program to the USU Board of Regents and received formal approval for the establishment of the Doctoral Program at the BOR meeting on October 24, 2002. In addition, the GSN held inclusive focus sessions to determine both the interest and support for its proposed doctoral program, to include the initiation of steps for the enrollment of its Charter Class during 2003.

GSN Nursing Philosophy.

I pledge myself to faithfully practice the profession of nursing. I recognize that with higher learning comes greater responsibility: first and foremost, to those placed in my care; to the advancement of nursing science; and to the promotion of the nursing profession. I will strive for personal and professional growth through empirical knowledge and within the highest moral and ethical standards of research. I will remember the long and prestigious traditions of nursing, dating from the early battlefields to the diverse professions of today; and upon this foundation I am called to build. Whether caring for those in my own country or in a foreign land, I will not compromise their safety or dignity, but instead will care for them within the highest standards and practices of my profession.

- From the Oath taken by each new class of students at the GSN; the oath, developed by the Student Advisory Committee with input from the Federal Nursing Chiefs, was revised during the 2002-2003 Academic Year.

The philosophy of the GSN conforms with the mission and goals of the USU Strategic Plan. The GSN 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 provides the Nation with nurses prepared at the Master Degree level, who pursue learning experiences that 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 achieve an advanced level of knowledge to perform and provide leadership as uniformed officers in a joint service environment. And finally, GSN graduates are prepared to participate in research or studies that 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

Accreditation Granted by the National League for Nursing Accrediting Commission.

The Uniformed Services University of the Health Sciences Graduate School of Nursing (GSN) has met and exceeds all criteria for continuing accreditation. This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crises and disaster situations.

- Final Report of the National League for Nursing Accrediting Commission dated March 18, 2002, granting full accreditation to the GSN for the maximum term of eight years.

Background. The University is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools. The GSN is accredited by the National League for Nursing Accrediting Commission (NLNAC) and the Commission on Collegiate Nursing Education (CCNE). In addition to accreditation from the NLNAC and the CCNE, the MSN option in Nurse Anesthesia is also accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA); and, the MSN Family Nurse Practitioner option meets, or exceeds, all standards established by the National Organization of Nurse Practitioner Faculties (NONPF).

In December of 1996, the USU GSN Master of Science in Nursing Degree Program was evaluated for accreditation by the National League for Nursing (NLN) Board of Review for Baccalaureate and Higher Degree Programs. The NLN Board of Review voted to grant accreditation to the USU GSN Master Degree Program and scheduled its next visit for reaccreditation during 2001; during 2000, the GSN began the preparation for its required Self-Study and Site-Visits.

Site Visit and Final Report of the NLNAC Site Surveyors. On October 30 through November 1, 2001, Site Surveyors from the National League for Nursing Accrediting Commission (NLNAC) visited the USU GSN. The following excerpt is taken from the final report of the NLNAC:

The accreditation visit was announced directly to the Nursing Chiefs of the United States Army, Navy, Air Force, and Public Health Service, who disseminated this information through written memoranda and verbal comments to staff at respective hospitals and installation sites. The Federal Nursing Chiefs met with the program evaluators and gave testimony to their support of the GSN. Comments during the meeting with the Federal Chiefs included: 1) we are excited to see the quality of the students who graduate from this program... they are exceptional leaders; 2) we are directly involved in helping the School understand the type of skills graduates need and find them very responsive to our suggestions; and, 3) we are pleased to see that more faculty are completing doctoral degrees and support the actions taken by the Dean to give faculty release time to make it possible for them to accomplish this goal.

In addition to meeting with the Federal Nursing Chiefs, the NLNAC also interviewed 17 individuals who represented the senior leadership at the University. Group conferences were held with the GSN faculty, the GSN Dean's Council, the GSN students; and the Nursing Chiefs of the Branches of the Uniformed Services and their Deputies. Reviewers attended numerous GSN classes, which included Neuroscience II, Basic Principles of Nurse Anesthesia Practice, and Advanced Health Assessment. Six agencies and USU facilities were visited: the Walter Reed Army Medical Center; the National Naval Medical Center's Family Practice Clinics; the National Capital Area Medical Simulation Center (SIMCEN); the Anatomical Teaching Laboratory at USU; the USU Learning Resource Center; and, the Silver Spring Office Complex of the GSN.

A thorough review of documents included: Policy and Precedent Statements; the VA/DoD Post-Master Adult Nurse Practitioner Distance Learning Program: From Concept to Graduation; the 2000 Edition of the USU Journal, the Program for Design Notebook for the proposed construction at the USU campus; the alumni survey tool and data summaries; the GSN Strategic Plan; Dean Abdellah's Curriculum Vita; Curriculum Vita for the entire GSN faculty; course syllabi and random selections from both the Family Nurse Practitioner and Nurse Anesthesia options; examples of students' scholarly projects; clinical site information; the GSN budget; most recent accreditation and approval reports; minutes from the GSN Faculty Council and Corps Chiefs Meetings; committee reports from the GSN Evaluation, Student Promotion, Student Advisory, and Admissions Committees; and, extensive course materials.

In a letter to the USU President, dated January 24, 2002, **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense for Health Affairs**, noted:

I wish to convey my congratulations to you, Dr. Abdellah, and the entire staff of the Graduate School of Nursing of the Uniformed Services University of the Health Sciences. Your outstanding performance was recently recognized by the National League for Nursing Accrediting Commission (NLNAC) in its report granting continuing accreditation for an impressive eight additional years. I am particularly gratified by the following statement: This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crisis and disaster situations. This program is on the cutting edge of effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner... This is a truly outstanding review of the school, which reflects great credit upon your entire staff and our Military Health System. Congratulations to all for a job exceptionally well done!

Notification of Maximum Accreditation. On March 18, 2002, the Dean of the GSN was formally notified of the action taken by the National League for Nursing Accrediting Commission at its meeting on February 27, 2002: **"The Commission approved the Master Degree Program for continuing accreditation and scheduled the next evaluation visit for the Fall of 2009."** Patterns of strength affirmed by the Commission were identified as follows: the mission of the GSN; the Dean's exemplary leadership and expertise; and, the learning resources. The rationale for granting accreditation for the maximum of eight years was provided in the NLNAC final report:

The Uniformed Services University of the Health Sciences GSN has met and exceeds all criteria for continuing education. This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crises and disaster situations. This program is on the cutting edge of effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner. This program can serve as a model to advance nursing education, practice and scholarship as nursing moves into care of the global community.

Accreditation Granted by the Commission on Collegiate Nursing Education.

Background. An accreditation process for nursing programs has 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 had 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 was scheduled by the CCNE for November of 2001.

Site Visit and Final Report of the CCNE Evaluation Team. On November 14 through 16, 2001, the CCNE Evaluation Team visited the USU GSN. The following excerpts were taken from the final CCNE report:

The GSN faculty members are responsive to the needs of the Federal Nursing Chiefs of the Uniformed Services and are willing to work on program modifications suggested by this external community of interest... Communication between the GSN faculty and the Federal Nursing Chiefs is enhanced by monthly teleconferences and semi-annual meetings. In addition, the GSN has an accreditation committee that works to ensure that consistency and congruence between mission, philosophy, and goals/objectives occur within each program. Students described responsiveness of the faculty in assisting them to meet the objectives of the program and in making alterations as necessary in compliance with the mission of the school and university.

Faculty members have extensive opportunities to participate in the governance of the USU GSN. Faculty identified professional and collegial collaboration between all military and civilian GSN faculty, as well as other faculty at the University level... USU provides a supportive environment for teaching, research, service, and practice... Support is given to faculty for development in areas such as time for clinical practice, service to national organizations, and pursuit of doctoral education... All faculty interviewed articulated an overwhelming commitment to the GSN, the students, and their jobs. They describe a genuine happiness with coming to work each day and preparing the best nurses for military service that can possibly be accomplished.

Students reported participation in GSN program decisions and open communication patterns with all GSN faculty. Their feedback is utilized, and the students reported that they are notified of program changes. Students were very articulate in describing the process used to provide input into program development. The GSN has an excellent educational environment with many state-of-the-art laboratory simulation rooms, library and resource materials, and technological support services. Most classrooms are equipped with technology such as computers or LCD players for PowerPoint presentations and Internet access. A state-of-the-art simulation center is available to the GSN and is equipped with 12 fully-equipped patient treatment rooms with computer, video, and audio equipment. In addition, the simulation center has a distance education teleconference room, a computer laboratory, and an operating room simulation laboratory with manikin simulators and anesthesia equipment, which mimics that used in the military field. Virtual reality anatomy lectures are cutting edge and are available for approximately four anatomic systems. GSN students interviewed verbalized knowledge of the many resources available to them on campus and had overwhelmingly positive comments about the laboratories, libraries, simulation center, and virtual reality programs available to them for study.

The inclusion of an interdisciplinary approach to course implementation and content delivery was evident by interdisciplinary team teaching and collaboration across departments. Opportunities to participate in health care delivery on a global scale are consistent with the mission of the university and the professional standards. Clinical experiences are in a variety of sites, all of which are accredited by JCAHO and COA. All clinical sites support the curriculum and course objectives and provide a variety of learning opportunities for clients across the lifespan. Many of the clinical sites are military-related and further support the socialization of the student into the role of the military Advanced Nurse Practitioner.

CCNE Evaluation Team Process. While visiting the GSN campus, the CCNE Evaluation Team had an opportunity to interview school and university officials; program faculty, clinical preceptors, and students; and, other community representatives. During the site visit, the CCNE Evaluation Team also met with the Federal Nursing Chiefs in their capacity as the Board of Advisors to the GSN. As with the NLNAC evaluators, the Federal Nursing Chiefs once more expressed their strong endorsement and satisfaction with the graduates of the GSN. The Evaluation Team reviewed information provided in the self-study document, as well as other materials provided in the resource room, to include information requested by the Evaluation Team. In addition, the CCNE Team also observed classroom and clinical activities. The Evaluation Team reviewed and provided assessments on the following Standards for Accreditation: Mission and Governance; Program Quality - Institutional Commitment and Resources; Program Quality - Curriculum and Teaching-Learning Practices; and, Program Effectiveness - Student Performance and Faculty Accomplishments. The Evaluation Team's final report found that the GSN had met all Standards and all Key Elements of the Standards with no recommendations for improvement.

Notification of Maximum Accreditation. On May 16, 2002, the Dean of the GSN received official notification from the Commission on Collegiate Nursing Education that **“the CCNE Board of Commissioners acted at its meeting on April 20, 2002, to grant accreditation of the Master Degree Program in Nursing at the Uniformed Services University of the Health Sciences for a term of 10 years, extending to**

June 30, 2012.” The next on-site evaluation is scheduled for the Fall of 2011. The following rationale was provided for the maximum accreditation of 10 years without recommendations:

At its meeting the CCNE Board determined that the program met all four accreditation standards. The Board additionally determined that there are no compliance concerns with respect to the key elements. The Commissioners express our best wishes as you proceed with tasks important to the future of your nursing program.

Accreditation Granted by the Council on Accreditation of Nurse Anesthesia Educational Programs. Of the two MSN Program options, only Nurse Anesthesia requires programmatic accreditation by a separate accrediting agency, the Council on Accreditation of Nurse Anesthesia Educational Programs (COA). In April of 1994, the MSN Program option in Nurse Anesthesia was granted initial accreditation by the COA, permitting the admission of students to Nurse Anesthesia at the GSN. Following an intensive review and site visit by the COA in May of 1997, Nurse Anesthesia at USU received full accreditation through September of 2003. Preparation took place throughout 2002 for the site survey scheduled for April 7-9, 2003. At the conclusion of the site visit, the USU President was informed that all of the NA Program standards were in compliance; formal notification will follow.

Establishment of an Honor Society of Nursing at USU. The USU Graduate School of Nursing was informed during 1998, that it had been approved by Sigma Theta Tau to sponsor a Nursing Honor Society, with the intent of becoming a Member Chapter of Sigma Theta Tau International. The Honor Society was formally established during graduation exercises in 1999, to recognize the academic excellence of students, the clinical and educational acumen of preceptors, and the contributions of nursing leaders in the community. *Membership in Sigma Theta Tau is the hallmark of a committed nursing professional* and offers great rewards in terms of potential funding for nursing research, networking with professional colleagues, and professional advancement. The 139 members who have been inducted into the GSN Honor Society are representative of the GSN's diverse student body along with senior leaders in nursing from both the military and civilian sectors.

Over the past two years, the GSN Honor Society has co-sponsored a series of women's health programs at the Women in Military Service Memorial at the Arlington National Cemetery. In addition, the Honor Society sponsored a military nursing research colloquium. The application for approval as a Chapter of the Sigma Theta Tau International Honor Society of Nursing was forwarded in the Fall of 2002; and, a site visit from a member of Sigma Theta Tau was conducted in April of 2003. Following the site visit and extensive review of the GSN Honor Society, the Sigma Theta Tau site visitor indicated that her recommendation to the Sigma Theta Tau Board would be positive. Consequently, after review by the Sigma Theta Tau Board and recommendation to the Sigma Theta Tau House of Delegates next Fall, the GSN should be able to plan for a Sigma Theta Tau Charter Initiation Ceremony for a new Chapter in the Spring of 2004.

MILITARY UNIQUE CURRICULA

The GSN Curricula Respond to the Special Needs of the Uniformed Services.

Background. The USU GSN is unique among the Nation's nursing programs because it educates students to treat and care for both civilian and uniformed personnel in peace, war, disaster, or other situations that occur under austere conditions. There is no other institution better positioned than the GSN to prepare nurses with research, education, and leadership expertise as required by the MHS, USPHS, and other Federal Health Systems. The GSN curricula have been driven by special requirements to meet the missions of the DoD and the USPHS. Common to the GSN academic curricula is subject matter relevant to military health care providers; for example, there are operational readiness components in each course. And, continuous consultation takes 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.

Based on the Federal Nursing Chiefs' initial indications that the career advancement of their officers would be enhanced through the completion of a Master Thesis, the GSN examined the feasibility of the completion of a thesis within the time constraints of its programs. Following an assessment of multiple program components, including a review of the graduating students' research projects and faculty expertise, a Master 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, during 1999, following consultation with the Federal Nursing Chiefs, it was determined that the GSN students could 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 ensures 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 Class of 1995 GSN graduates and their uniformed supervisors recommended the inclusion of training for such requirements as suturing, basic laboratory testing, and triage. The GSN faculty agreed and incorporated those procedures into the appropriate GSN courses. The graduates from the Family Nurse Practitioner option also recommended the addition of Anatomy and Cell Biology into the curriculum, which occurred during 1999. And, with the recommendation of the GSN students and faculty, during 2000, objective clinical examinations using simulated patients were implemented throughout the core courses of the GSN MSN Program. Also, as discussed earlier, the GSN developed an MSN Degree option for a Clinical Nurse Specialist at the request of the Federal Nursing Chiefs.

The GSN also responds to the impact of the current nursing shortage across the Nation; its evolving programs at both the Master and Doctoral Degree levels serve as incentives for the retention of uniformed nurses in the MHS and USPHS to serve as practitioners, nurse educators, or researchers. A critical, nation-

wide nursing shortage is no longer predicted as a possibility; it has arrived. The following information from the American Association of Colleges of Nursing captures the impact of the current nursing shortages on health care delivery and medical readiness in both the civilian and uniformed sectors of our Nation:

According to the latest projections from the United States Bureau of Labor Statistics published in the November 2001, *Monthly Labor Review*, more than one million new and replacement nurses will be needed by 2010. The U.S. Department of Labor projects a 21 percent increase in the need for nurses nation-wide from 1998 to 2008, compared with a 14 percent increase for all other occupations (<www.bls.gov>);

According to a survey by the American Association of Colleges of Nursing, *2000-2001 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, nursing schools turned away 5,823 qualified applicants across the United States due to insufficient number of faculty, clinical sites, classroom space, clinical preceptors, and budget constraints. More than a third (38.8 percent) of schools that responded pointed to faculty shortages as a reason for not accepting all qualified applicants into entry-level baccalaureate programs (<www.aacn.nche.edu>);

Graduations from Master and Doctoral Programs in Nursing are decreasing, which translates into a smaller pool of potential nurse educators. According to AACN's *2000-2001 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, graduations from Masters Degree Programs were down 3 percent; graduations from Doctoral Programs were down 11 percent (<www.aacn.nche.edu>); and,

Higher Compensation in clinical and private sector settings is luring current and potential nurse educators away from teaching. According to the *2001 National Salary Survey of Nurse Practitioners* completed by *ADVANCE for Nurse Practitioners* magazine, the average salary of a master-prepared nurse practitioner working in his or her private practice was \$78,217. In contrast, AACN reports that master-prepared nursing faculty across all ranks earned an average salary of \$54,980 (<www.aacn.nche.edu> and <www.advancefornp.com/npsalsurvey.html>).

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 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 or hospitals, the combat zones of theaters of operations under austere and harsh conditions, on Navy ships, or in isolated areas of the United States and other countries lacking health care providers. The GSN faculty and staff believe that the placement of the GSN within the interdisciplinary boundaries of the University is a distinct strength. The QuadService 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. The multi-Service clinical practice sites of the GSN include: 21 military treatment centers (MTFs); and, 111 non-DoD, Federal, and civilian hospitals and primary care health care clinics generally located in the Washington, D.C. area.

GSN Students Understand the Structure of a Joint Environment. To meet the readiness requirements of the Military Health System, 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 and the GSN Commandant, the uniformed students, faculty, and staff assigned and reporting to the GSN 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 the MSN Degree Program and, as a result, they become familiar with the regulations, procedures, and vocabularies of the QuadServices' health care systems. 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.

Medical Readiness Training.

Because of the unique practice requirements for USU graduates as uniformed officers, the GSN faculty has included an additional terminal objective heading, "Readiness," not included in the American Association of Colleges of Nursing (AACN) "Essentials" document. *Readiness* was added to focus on specialized competency objectives encompassing the ability of the USU graduates to function during deployment or humanitarian health care circumstances. GSN terminal objective 6, which refers to the readiness of graduates to function during deployments or humanitarian health care circumstances, states that graduates will "adapt readily to changes in individual and environmental health care demands." To accomplish this objective, the GSN developed a core course, Operational Readiness, to provide mobility and field training. Lectures address the setup of field hospitals, the function and utilization of Navy hospital ships, aeromedical evacuation, and the use of telemedicine in the field.

- *IX, Graduate Education in Nursing*, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self-Study, submitted in October of 2002, pages 2 and 3.

As of April 2003, 54 uniformed officers are enrolled on campus in the GSN (21 in Family Nurse Practitioner; 4 in Post-Master Nurse Practitioner; and, 29 in Nurse Anesthesia). These 54 commissioned officers represent the Services as follows: Army - 27; Navy - 7; Air Force - 18; and, Public Health Service - 2. These GSN students receive operational medicine and military relevant material and training throughout the GSN curricula; as such, readiness is identified as one of the GSN's outcome goals. The GSN program of study is designed to: prepare students to adapt readily to changes in individual, system and environmental health care demands; provide safe care under austere conditions; and, be flexible in caring for patients with unusual clinical presentations through the use of available resources. The program of study for the students has evolved to include additional clinical hours to prepare the GSN graduates for an immediate transition to work settings in either fixed facilities or deployed environments. For example, beginning in April of 2001, GSN students complete a two-day course on Humanitarian Assistance; the Medical Humanitarian Assistance Course is designed to prepare advanced practice nurses for deployment in support of disaster relief and humanitarian missions. Emergency conditions, such as natural disasters, usually involve a humanitarian component and require the commitment of the Uniformed Services, often under austere conditions. The course includes guest speakers who present information on the Federal Emergency Management Agency, Non-Governmental Organizations, chemical-biological warfare, ethics, and epidemiology. The GSN continuously expands its educational programs to address the changing nature or threats caused by weapons of mass destruction. In addition, GSN faculty were represented and participated in an International Coalition of Nursing Leaders that focused on the development of nursing curricula concerned with addressing the aftermath of weapons of mass destruction.

Preparing for the Battle.

As Army Nurse Corps officers in the USU Master Degree Family Nurse Practitioner Program, our education further prepares us to live out our motto - *Ready, Caring, Proud.*

Operation Bushmaster provided a scenario portraying a hostile environment. The week-long exercise (conducted in San Antonio, Texas) allowed for Advanced Practice Nursing and School of Medicine students to work together in a field environment under simulated battlefield conditions. Seven graduate nursing students, 60 USU medical students, and 11 additional medical students from Japan and the United Kingdom were responsible for triage, management and evacuation of casualties.

We students found ourselves triaging and aggressively maintaining patient care as second nature. Biological and chemical agents played a much bigger part in our scenarios than we had experienced in previous training. The threat of these weapons was ever-present and a time consuming enemy tactic for all medical personnel that required proactive planning. At other times, both nurses and medical students racked their brains attempting to diagnose infrequently seen diseases, such as meningitis and malaria... Exotic diseases were present in our training scenarios as well. With the assistance of battlefield telemedicine and satellite communication

with stateside facilities, such as the Walter Reed Army Medical Center in Washington, D.C., we were able to describe afflictions and send photos of patients for consultation, diagnosis, and treatment.

- “Caring for Those in Harm’s Way,” *Nursing Spectrum*, Volume 13, No. 6DC, March 24, 2003, pages 8-9.

In January of 2003, the GSN faculty arranged an interdisciplinary experience in the *Military Contingency Medicine Course*. This course, unique to the USU School of Medicine (SOM) curriculum, has focused for years on medicine in a deployed environment and in response to a terrorist attack. The first two weeks of the course are currently devoted to reviewing and expanding basic concepts and manual skills; an Advanced Trauma Life Support (ATLS) Course is also taught. Additional topics in the first two weeks include the management of combat trauma, chemical-biological-radiological (CBR) exposure, environmental injuries, and combat stress. Special sections focus on triage, care of blast injuries, the health care of women in military settings, altitude and diving accidents, pain management, and legal/ethical issues on the battlefield. Prior to the field exercise portion of the course, the GSN and SOM students learn and/or review interventions in a simulated lab setting with mannequins that could “bleed” and “breathe.”

Next, the course includes an evaluated field exercise at a training site near San Antonio, Texas; this field experience has become internationally recognized as *Operation Bushmaster*. The field exercise provides nuclear, biological and chemical training, ambulance loading and unloading procedures, and training on radio operations and land navigation. The exercise focuses on the support and leadership roles of the combat and civilian medics during battlefield and humanitarian missions. Students are evaluated on: health care provided to dozens of simulated casualties; leadership skills under demanding and stressful conditions; mission focus; and, overall teamwork.

During Operation Bushmaster, seven GSN students collaborated in a field environment with 60 USU SOM students and 11 medical students from Japan and the United Kingdom. Under simulated battlefield conditions, a war was fought in a mythical country of “Pandakar.” All students served in a variety of roles to include the senior medical officer, commander, radio operator, litter bearer, security officer, and ambulance platoon leader. For a majority of the participating nurses, this served as a continuation of training under austere conditions. During their previous years of military service, several of the GSN students had been deployed on real world missions and had already completed courses in Trauma Nurse Critical Care and Combat Casualty Care. However, Operation Bushmaster provided unique clinical and leadership training opportunities for simulating the role of an Advanced Practice Nurse in a multi-disciplinary setting. On the first day, participants received their first front-line ambulance containing four casualties and applied the concept of tailgate medicine, “care first, tents later.” The field scenario focused on the treatment of moulaged casualties requiring life-saving interventions. Challenges included locating and organizing critically required supplies, as well as determining how and when to begin interventions such as the insertion of chest tubes and needle decompression.

Challenges in the field environment arose when, three miles from the front line, the students were informed that the CT Scanner would not fit on their truck and alternatives had to be considered. Once adjusted to the battle situation, where simulated patients were presenting devastating wounds, the students found themselves triaging and aggressively managing their patients. Amid this activity was the constant threat of biological and chemical agents. All students were confronted with disease non-battle injuries (DNBI) such as meningitis.

gitis and malaria. Several of the scenarios provided moral, ethical, cultural, and geopolitical challenges, as in the medical treatment of a prisoner of war who, upon release from the patient area, was killed by “Pandakar” officials. On the final night of the field exercise, a mass casualty incident required students to triage, treat, stabilize, and evacuate 36 patients who were strewn across a 40 meter radius. Among the casualties were: a patient with a sucking chest wound; a pregnant woman ready to deliver; and, multiple burn patients.

Both GSN and SOM students gained a strengthened appreciation for the role of the senior medical officer on the battlefield. Their playing field was leveled as they came to understand the common goal of *providing good medicine in bad places*. As they boosted each other’s morale during the exhausting exercise, the GSN and SOM students recognized the synergies and challenges shared by the entire team. Operation Bushmaster has added a new dimension to training of advanced practice nurses; *Bushmaster embodies the spirit of the USU motto, Learning to Care for Those in Harm’s Way*.

STUDENT AFFAIRS

Students reported participation in GSN program decisions and open communication patterns with all GSN faculty. Their feedback is utilized, and the students reported that they are notified of program changes. Students were very articulate in describing the process used to provide input into program development. The GSN has an excellent educational environment with many state-of-the-art laboratory simulation rooms, library and resource materials, and technological support services. Most classrooms are equipped with technology such as computers or LCD players for PowerPoint presentations and Internet access. A state-of-the-art simulation center is available to the GSN and is equipped with 12 fully-equipped patient treatment rooms with computer, video, and audio equipment. In addition, the simulation center has a distance education teleconference room, a computer laboratory, and an operating room simulation laboratory with manikin simulators and anesthesia equipment, which mimics that used in the military field. Virtual reality anatomy lectures are cutting edge and are available for approximately four anatomic systems. GSN students interviewed verbalized knowledge of the many resources available to them on campus and had overwhelmingly positive comments about the laboratories, libraries, simulation center, and virtual reality programs available to them for study.

- Excerpt from the Final Report of the Evaluation Team from the Commission on Collegiate Nursing Education (CCNE), provided to the University during 2002.

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 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 applicant pool is unique. Applications to attend the GSN are submitted in accordance with the guidelines of the Services for Long Term Health Education and Training (Army), Duty Under Instruction (Navy), and Sponsored Graduate Education Programs (Air Force Institute of Technology). Officers from the Public Health Service are sponsored by their individual Agencies. The Admissions Committee of the GSN reviews the applicants' records on the basis of academic merit, which shows that the applicants can succeed in a graduate program. 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 grade point averages of between 3.2 and 4.0 in their Baccalaureate Programs; most have had an average of between eight to twelve years of active duty experience in the Uniformed Services.

Annually, the GSN reviews approximately 75 applicants and admits between 25 to 37 students. GSN students are full-time and retain their rank as officers. To sustain the GSN's high graduation rate, incoming students receive instruction on time management and test taking skills. Committed faculty promote student retention with both didactic and lab review sessions.

Class of 2004. The USU GSN welcomed the Class of 2004, 26 active duty officers, during June of 2002. Seven officers were enrolled in the Family Nurse Practitioner (FNP) Class of 2004, bringing the enrollment of the two FNP classes (First and Second Year) to a total of 21 students. Nineteen uniformed officers were enrolled in the Nurse Anesthesia Class of 2004, bringing the enrollment of the two Nurse Anesthesia classes (First and Second Year) to a total of 29 students.

Of the 26 uniformed officers enrolled as First-Year GSN students: eight are members of the Army; five are members of the Navy; 12 are members of the Air Force; and, one is a member of the Public Health Service. The GSN students range in grade from 0-2 to 0-6 with the majority at the 0-3 level. The student's service agreement following graduation is approximately two years of service for each year of education.

During June of 2002, the GSN also enrolled four commissioned Army officers into the resident, one-year, Post-Master Family Nurse Practitioner option. This option of the MSN Program prepares advanced practice nurses to broaden their scope of service to encompass care of the family, as required by their individual Service.

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

Background. Beginning in October of 1998 and continuing throughout 2002, 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: 1) advise the Dean, GSN, on matters of student interest and concern; 2) provide an active and visible means for the student body to communicate directly with the Dean; and, 3) serve as a process improvement mechanism and a forum for addressing student issues.

The Student Advisory Council (SAC) is an independent entity that exists to represent the GSN student body; it is not 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.

Composition. The GSN Student Advisory Council consists of the student president, secretary, one representative from each MSN option area and class (thus two each from Nurse Anesthesia and Family Nurse Practitioner), and one representative from the Post-Master (PM) Nurse Practitioner Class. All members of the SAC are voting members. The president of the SAC is ordinarily the second-year class president.

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 on schedule each academic year.

Functions of the Council. The Student Advisory Council meets six times during the academic year, or more frequently as required. Decisions on any issue discussed at a meeting require a majority vote of the attending members. 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 student president also met regularly during 2002 with the GSN Dean to discuss matters of interest to the student body. The SAC representatives act as advocates for the students in academic matters. They also act as a liaison between students and academic program areas and serve as the communication link for the students on such matters as changes in the academic schedule, rooms, etc. SAC representatives are responsible for writing an After Action Report at the conclusion of each academic semester, which is also discussed with the Dean. This report is a summary of student comments and feedback about each course, including faculty, books, and materials within the MSN Program options. Based upon its activities during 2002, the Student Advisory Council is serving as an excellent forum to ensure faculty/student involvement, communication, and on-going curriculum improvements.

GSN Class of 2002 Outstanding Student Awards. Annually, the GSN Students are recognized for excellence in academics and clinical practice. During 2002, the following awards were presented:

Family Nurse Practitioner - Outstanding Student Award. **Lieutenant Commander Dominic Weskamp, USPHS**, distinguished himself as a student in the graduating Family Nurse Practitioner Class. This award recognizes that LCDR Weskamp employed a sound scientific foundation, an inquiring mind, and a collaborative approach for the comprehensive care of his patients; and, he demonstrated personal initiative, perseverance, and outstanding characteristics throughout his academic endeavors at USU.

Family Nurse Practitioner - Academic Performance Award. **Captain Denise Lyons, AN, USA**, received the Distinguished Academic Performance Award, which recognizes the student having the most outstanding academic proficiency in the graduating Family Nurse Practitioner Class.

Family Nurse Practitioner - Distinguished Clinical Performance Award. **Captain Angelo Moore, AN, USA**, received the Distinguished Clinical Performance Award, which recognizes the student having the most outstanding clinical proficiency in the graduating Family Nurse Practitioner Class.

Family Nurse Practitioner - Esprit de Corps Award. **Captain Curtis Aberle, AN, USA**, was selected to receive the Esprit de Corps Award. The Esprit de Corps Award recognizes the graduating student from the graduating Family Nurse Practitioner Class 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.

Nurse Anesthesia - Outstanding Student Award. **Captain Mary Jo Burleigh, USAF, NC**, distinguished herself as a student in the graduating Nurse Anesthesia Class. This award recognizes Captain Burleigh for achieving high levels of academic performance while simultaneously demonstrating outstanding leadership qualities at USU.

Nurse Anesthesia - Esprit de Corps Award. **Captain Ronald Wyatt, USAF, NC**, was selected to receive the Esprit de Corps Award for the graduating Nurse Anesthesia Class. The Esprit de Corps Award recognizes the graduating nurse anesthesia 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 his classmates to enjoy their camaraderie, their profession, and their commitment to a life of service to mankind.

Nurse Anesthesia Presents the Agatha Hodgins Awards. **Captain Mary Jo Burleigh, USAF, NC**, was selected from the graduating Nurse Anesthesia Class to receive the Agatha Hodgins Award at the graduation

ceremonies in May of 2002. **Captain Annie Hall, USAF, NC**, received the award upon completing the 18-month clinical phase in December of 2002. 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. *Background.* 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.

Dean's Awards for Research Excellence. **Major Richard Prior, AN, USA**, and **Lieutenant Commander Dominic Weskamp, USPHS**, received the Dean's Awards for Research Excellence, Family Nurse Practitioner. **Captain Annie Hall, USAF, NC**, received the Dean's Award for Research Excellence, Nurse Anesthesia. These awards recognized the graduating students demonstrating the most outstanding proficiency in nursing research.

First-Year Outstanding Student Awards. **Captain Ann Nayback, AN, USA**, Family Nurse Practitioner, was selected to receive the First-Year Outstanding Student Award. **Lieutenant Victor Auld, USN, NC**, Nurse Anesthesia, was selected as the recipient of the First-Year Outstanding Student Award for 2002.

Two GSN Graduates Are Recognized by Who's Who Among Students in American Universities and Colleges. **Captain Curtis Aberle, AN, USA**, Family Nurse Practitioner, and **Captain Mary Jo Burleigh, USAF, NC**, Nurse Anesthesia, were recognized by Who's Who Among Students in American Universities and Colleges upon their graduation from the GSN.

GSN Students Participate at the American Association of Nurse Anesthetists (AANA) 69th Annual Meeting.

AANA Anesthesia College Bowl Runner Up. **Captain Annie Hall, USAF, NC**, was recognized as a member of the Runner-Up Team in the AANA Anesthesia College Bowl held at the 69th Annual Meeting of the American Association of Nurse Anesthetists. She received a plaque presented by Colonel Steve Janny, Nurse Anesthesia Consultant to the Surgeon General of the Army and Colonel Richardson, Office of Brigadier General William Bester, Director of the United States Army Nurse Corps.

Poster Presentations. Nurse Anesthesia students from the GSN also submitted poster presentations at the 69th Annual Meeting of the AANA. Of the total number of posters presented (56) at the meeting, GSN students represented 11 percent (6) of all posters presented. Twelve of the 13 GSN students in the Class of 2002 were involved in the projects that initiated these posters. Research topics are indicated below (presenter's name is underlined):

*Use of the Personal Digital Assistant by Medical and Graduate Nursing Students - GSN Student: **Captain Bradley R. Richardson, AN, USA.***

*Integrating Computerized Virtual Reality with Traditional Methods of Teaching - GSN Students: **Captain Lance S. Scott, AN, USA; Captain Michael A. Neal, AN, USA;** USU Faculty: Janet G. Agazio, Ph.D., RN; Howard J. Bryant, Ph.D.; Thomas S. Kaufman, Ph.D.; Leon Moore, Ph.D.; and, Donald D. Rigamonti, Ph.D.*

*The Effectiveness of the Human Patient Simulator in Teaching Anesthesia Pharmacology to First Year Nurse Anesthesia Students - GSN Student: **Captain Annie L. Hall, USAF, NC.***

*Integrating Computerized Virtual Reality with Traditional Methods of Teaching Skull Anatomy - GSN Students: **Captain Bruce D. Todd, USAF, NC; and, Captain Karla M. Atchley, USAF, NC.***

*What is the Effect of Fentanyl on the Bispectral Index (BIS) Values and Recall? - GSN Students: **Captain Ronald E. Wyatt, USAF, NC; Captain Toney Banks, USAF, NC; and, Captain Mary Jo Burleigh, USAF, NC;** with Major William J. Craig, USAF, NC; and, Major Lisa Petty, AN, USA.*

*Comparison of Levobupivacaine and Ropivacaine in Patients Undergoing Upper Extremity Surgery with Brachial Plexus Block - GSN Students: **Lieutenant Commander Dan Franz, USPHS; Lieutenant Robert D. Polley, NC, USN; and, Lieutenant Commander Erik C. Cline, NC, USN** (oral presentation); with Lieutenant Commander Joseph F. Burkard, NC, USN; Commander Joseph Pelligrini, NC, USN; and, Lieutenant Commander John P. Maye, NC, USN.*

GSN ALUMNI

I was the only anesthesia provider for about 900 people in the camp. We took care of military personnel from all Nations; they included Australians, French, Spanish, Dutch, Koreans, and many others. It was a wonderful experience to see the other cultures and to get to know them.

- **Major Kelley Moore, USAF, NC, CRNA, GSN Class of 1998, Anesthesia Element Chief, McGuire Air Force Base, deployed to Ganci Air Base, Kyrgyzstan, in support of Operation Enduring Freedom in 2002; currently preparing to deploy to Southwest Asia.**

Graduate Profile. The GSN has 183 uniformed graduates who have received the Master of Science in Nursing (MSN) Degree: Army - 41 (which includes seven Post-Master Graduates); Navy - 15; Air Force - 113; and, Public Health Service - 14. Eighty-two uniformed officers have graduated as Family Nurse Practitioners; ninety-four uniformed officers have graduated in Nurse Anesthesia; and seven from the Post-Master Family Nurse Practitioner Certificate option. As of April 2003, well over 80 percent of the 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. 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.

GSN Alumni Receive Outstanding Results on National Certification Examinations. The immediate measurable standard of success for GSN alumni is the passing of the National Certification Examinations. Over 97 percent of the GSN graduates have passed the National Certification Examinations at the upper percentile, on their initial examination. For example, credentialing scoring information released on February 26, 2002, by the American Nurse Credentialing Center’s Commission on Certification shows that of the 15 GSN Family Nurse Practitioner graduates who took the certification examination, all 15 passed with a mean score of 123.3, the highest ever achieved.

GSN Alumni and Supervisor Surveys Reflect Strengths of the GSN Program. Another short term measure is the graduate’s successful performance as an advanced practice nurse, as determined by the graduate’s immediate supervisor. One year after graduation, both GSN alumni and their supervisors are concurrently surveyed. Immediate supervisors, familiar with the day-to-day performance of the graduates, are queried regarding specific areas of GSN alumni strengths and weaknesses in clinical specialty performance. This information is collated and compared to the graduates’ self-performance ratings. In addition, the GSN asks its graduates to complete an end-of-program evaluation, followed by one-year and three-year (Family Nurse

Practitioner only) post-graduation evaluations. Information from the surveys is tracked and trended to identify any needed revisions or additions to course or clinical content or experiences.

The GSN Uses a Systematic Approach for the Evaluation of Students, Alumni, and Supervisors. The GSN Master Plan for Program Evaluation provides a systematic approach for the evaluation of the GSN's structure, processes, and outcomes. The plan identifies the focus of the evaluation, the individuals responsible for conducting the evaluation, the reporting chain, and the method and frequency of the evaluation. The overall responsibility for implementing the evaluation plan resides with the GSN Evaluation Committee. All GSN faculty participate in the acquisition, interpretation, and application of the resulting data. The committee has a central focus geared to the outcomes of the GSN, both short and long range. The program administrator is responsible for administering the didactic evaluation program to include maintaining the databases, posting the course evaluations, downloading and evaluating the data, and disseminating the data to the department chairs for final action. Faculty within the GSN make curricular modifications and course changes incorporating student comments and suggestions. Major changes are referred to the curriculum committee for oversight and approval. After changes are implemented, courses are conducted and evaluated again. The evaluation process is on-going as courses continually improve and students graduate with ever-enhanced preparation.

GSN Has Designed and Implemented Evolving Tools for the Effective Measurement of Alumni Performance. Members of Nursing Research, the Evaluation Committee, and faculty representatives from Family Nurse Practitioner and Nurse Anesthesia have designed and implemented tools to effectively measure alumni performance and to provide reports on such to the Dean, GSN, and to the Federal Nursing Chiefs. These assessment activities resulted in the publication of the GSN Evaluation Manual, in November of 2000; use of the additional tools found in the manual enable the timely completion of course, end-of-first-year, and end-of-second-year evaluations. The GSN Evaluation Committee Policy and Precedent Statement #95-07 was also amended on November 21, 2000, to ensure that outcomes of the GSN, both short and long range, are included in the content of all evaluation tools. As national program standards and the GSN program objectives have evolved, the GSN's outcome data collection tools and methods have also changed in order to collect data consistent with current standards and objectives. New surveys were deployed by the GSN in 2001, to increase congruency between the FNP and NA accreditation standards and the GSN terminal objectives and survey items. More extensive tracking is now possible among respondents to the surveys for graduates, alumni, and employers. In addition to rating performance levels for terminal objectives, graduating students, employers, and alumni are also asked to rate their level of satisfaction with other aspects of the MSN Program. Accomplishments and employment following graduation are also tracked through the one-year and three-year alumni surveys mentioned above. Selected items on the alumni survey request the following information: uniformed service status; professional activities; continuing education; current job position and specialty; employer type; and, employment responsibilities. End-of-program, alumni, and employer evaluation data, along with course evaluation data, are tabulated by Nursing Research and forwarded to the Evaluation Committee for tracking and trending as well as to the Dean and Chairs. Reviews of these reports by the GSN and the Federal Nursing Chiefs ensure that the GSN curriculum is meeting the requirements of the Uniformed Services.

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

GSN Class of 1999.

Major Brian Todd, USAF, NC, CRNA, GSN Class of 1999, Nurse Anesthesia, was deployed during 2002 to Southwest Asia, to include service in Oman. An expert in field equipment, he was one of the first USAF CRNAs to use specialized anesthesia equipment in an austere environment. Due to his expertise, he has been named to the prestigious *TriService Joint Readiness Clinical Advisory Board (JRCAB)* at Fort Detrick, Maryland. The JRCAB establishes equipment policy for the Services. Major Todd also serves as a staff CRNA at the United States Air Force Academy, Colorado.

Captain Wendy Aronson, USAF, NC, CRNA, GSN Class of 1999, Nurse Anesthesia, was deployed in 2002 to Southwest Asia from Elemendorf Air Force Base. Setting up operations at an austere location, Captain Aronson pioneered the modification of EMEDS supplies resulting in significant savings of compressed oxygen, a rare commodity in an austere environment. Her efforts led to Air Force-wide recognition; and, as a result, she has been appointed to the prestigious *TriService Joint Readiness Clinical Advisory Board (JRCAB)* at Fort Detrick, Maryland.

Major Adrienne Hartgerink, USAF, NC, CRNA, GSN Class of 1999, Nurse Anesthesia, was deployed in 2002 to the Philippine Islands in support of the War on Terror; Major Hartgerink cared for members of a TriService Task Force. While deployed, her anesthesia skills were tested during a mass casualty with her life-saving treatment contributing to the successful care of the casualties. She is currently a staff CRNA at Langley Air Force Base, Virginia.

GSN Class of 2000.

Captain Brian Estavillo, USAF, NC, CRNA, GSN Class of 2000, Nurse Anesthesia, was deployed to Southwest Asia during 2002. Captain Estavillo was with the Air Force Special Operations Command and is currently a staff CRNA at Travis Air Force Base, California.

Additional Deployments to Southwest Asia.

During 2002, GSN Alumni deployed to Southwest Asia also included **Major Maria Stanek, USAF, NC, CRNA, GSN Class of 1996, Nurse Anesthesia**, a staff CRNA at Travis Air Force Base, California; and, **Captain Geoffrey Kuzmich, USAF, NC, CRNA, GSN Class of 2001, Nurse Anesthesia**, a staff CRNA at the Wilford Hall Medical Center at Lackland Air Force Base, Texas.

FACULTY

Composition. The Graduate School of Nursing, as reported in the November 2002 faculty survey, has 19 full time faculty: nine civilians and ten uniformed officers. There are 87 off-campus/adjunct faculty: 41 civilians and 46 uniformed officers who assist in the programs of the GSN.

The GSN Faculty Develops a Signature Curriculum. To support the GSN mission and address changing societal and health care needs, the GSN is implementing a signature curriculum developed at the USU GSN Quarterly Retreat in August of 2002. The new curriculum is designed to support practice, research, and educational experiences relevant to both medical readiness, the MHS, the USPHS, and other Federal Health Systems. The GSN curriculum is positioned to prepare nurse scientists and leaders at the graduate level, with an emphasis on the Nation's Uniformed Health Systems. The signature curriculum has three focused research and practice areas: *Operational Readiness in Changing Environments*; *Population Health and Outcomes*; and, *Clinical Decision-Making in the MHS, USPHS, and other Federal Health Systems*, with cross cutting emphasis on patient safety, ethics, force protection, and international health.

Operational Readiness in Changing Environments. Graduates from the University often deploy to and provide care in support of geopolitical events including war, national and man-made disasters, peacekeeping missions, and humanitarian assistance. The ability to function effectively is dependent on the flexibility to adapt to changes in climate, culture, and mission. The operational readiness pillar of the GSN provides the necessary framework to prepare students to manage clinical, administrative and leadership demands specific to the mission during deployment.

Population Health and Outcomes. Population health refers to an approach to improve the health of a population and to reduce health inequities among population groups. The objective of population health is to examine and take action on a broad range of factors and conditions that influence health. The population health approach recognizes that health is a capacity or resource rather than a state, a definition, which corresponds more to the idea of being able to pursue one's goals, to acquire skills and education, and to grow. The broader notion of health recognizes the range of social, economic and physical environmental factors that contribute to health; the clear articulation of this concept of health is *the capacity of people to adapt to, respond to, or control life's challenges and changes*. Outcome evaluation is essential in a population health approach. It examines long-term changes in both health and the determinants of health. These include changes in knowledge, awareness and behavior, shifts in social, economic and environmental conditions, as well as changes in public policy and health infrastructure. Outcome evaluation seeks to measure reduction in health status inequities between population sub-groups. Longer-term outcome evaluation is essential for a comprehensive evaluation program, which also includes process evaluation (to determine whether a policy or program is meeting its goal and reaching its target population) and impact evaluation (to determine the affects of a program on the health of a population).

Clinical Decision-Making in the MHS, USPHS, and other Federal Health Systems. In the MHS, USPHS, and other Federal Health Systems, clinical decision-making includes the coordination of patient care services across the Nation to optimize the delivery of health care to its recipients. Ensuring seamless care across the health care continuum requires a unique understanding of health issues and the complexity of integrating services of the largest health care systems within the United States (the MHS and VA Medical Systems). The GSN curricula provide uniformed students with a framework to effectively function both clinically and administratively in the MHS, USPHS, and other Federal Health Systems.

Three Categories of Courses. Regardless of program specialty, all GSN students will graduate with an advanced understanding of Operational Readiness, Population Health and Outcomes, and Clinical Decision-Making in the MHS, USPHS, and other Federal Health Systems. Crosscutting emphasis will be placed on concepts related to *leadership; national and international political, cultural and environmental health care factors; safety; and, research.* At each nexus point (i.e., leadership and operational readiness; leadership and clinical decision-making; and, leadership and population health and outcomes) the content will be tailored to the level of the student. For example, when leadership and operational readiness concepts are first introduced, they will be offered at Level 1, forming a foundational knowledge base. Level 2 concepts will then be introduced, forming a more complex understanding of leadership and operational readiness; and, finally, highly advanced (Level 3) concepts will be introduced. Uniformed students will emerge from the GSN programs and return to the Uniformed Services workforce with a unique and highly complex understanding of: Operational Readiness; Population Health and Outcomes; and, Clinical Decision-Making in the MHS, USPHS, and other Federal Health Systems.

The process of integrating the GSN signature curriculum was made more complex with the concurrent addition of the MSN Degree in the Clinical Nurse Specialist track. Because the role of the clinical nurse specialist is different from the role of the family nurse practitioner and the nurse anesthetist, the GSN had to reconsider the focus and content of many of its existing core courses. Clinical nurse specialists differ in that their role is broader, spanning from the individual patient to the hospital system. Thus, the new GSN curriculum will focus on systems and population health *in addition to* the traditional care of the individual patient.

In order to address this new focus, the GSN curriculum task force first reviewed the AACN *Essentials of Master's Nursing Education* criterion. The following definitions were taken directly from the AACN *Essentials* document and have been adopted by the GSN as framing definitions for the three categories of courses taught within the GSN:

Graduate Nursing Core: Foundational curriculum content deemed essential for all students who pursue a Master of Science in Nursing Degree, regardless of specialty or functional focus, will be considered the Graduate Nursing Core. The Graduate Nursing Core Courses will include the following: Role, Role/Ethics/Public Policy, Research, and Healthcare in a Global Environment;

Advanced Practice Nursing Core: Essential content for providing direct patient/client services at an advanced level will be considered the Advanced Practice Nursing Core. The Advanced Practice Nursing Core Courses will include Health Assessment, Anatomy/Physiology, Pathophysiology, and Pharmacology; and,

Specialty Curriculum Content: Those clinical and didactic learning experiences identified and defined as essential by the specialty nursing organizations will be considered the Specialty Curriculum Content.

Using these criteria as a framework, all of the GSN courses currently being taught were critically examined. The GSN faculty determined that all master-prepared students should complete the courses identified within the Graduate Nursing Core. And, because the GSN graduates must be able to provide direct patient care in the MHS and USPHS, all GSN students are also required to take the courses identified within the Advanced Practice Nursing Core.

Over the next 12 months, all GSN (core and specialty) courses will be carefully reviewed, and revised as appropriate, in order to integrate the new GSN curriculum. The GSN faculty, in coordination with the Federal Nursing Chiefs, will gradually transition into providing the new core curriculum rather than implementing all of the required changes at once. It is anticipated that the new GSN curriculum will be completely in place during the Summer of 2004.

Leadership of the GSN.

Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN, Professor and Founding Dean Emerita. The Founding Dean of the Graduate School of Nursing, **Doctor Faye Glenn Abdellah** has long been recognized as a national pioneer in nursing, nursing research, long-term care policy, mental retardation, the developmentally disabled, home health services, aging, hospice and AIDS. She has been the recipient of 12 honorary degrees, over 90 major awards, authored or co-authored more than 152 publications, and authored six books, some translated into six languages, which have altered nursing theory and practice. Prior to assuming the post of Founding Dean, Rear Admiral Abdellah (0-8), United States Public Health Service, served as the Chief Nurse Officer and Deputy Surgeon General of the United States from 1981 until her retirement in 1989 (for more detail on Dean Abdellah's accomplishments, see Section I of the USU Journal, USU Honorary Degrees and the University Medal). On May 31, 2002, Dean Abdellah celebrated her retirement with distinguished participants including the University President, the Federal Nursing Chiefs, the Commanding Officer of the National Naval Medical Center, a former Surgeon General of the United States, senior Congressional staff, civilian nursing leaders, and over three hundred members of the USU community. Significantly, she also led the GSN in preparing for, and ultimately receiving full accreditation for, the maximum allowable terms from the National League for Nursing Accrediting Commission (NLNAC) and the Commission on Collegiate Nursing Education (CCNE). Before her retirement, she ensured that the preparation for reaccreditation by the American Association of Nurse Anesthetist Council on Nurse Anesthesia (COA) was well on track.

Patricia A. Hinton Walker, Ph.D., RN, FAAN, Professor and Dean. Following an extensive national search, **Doctor Patricia Hinton Walker** was selected, in June of 2002, to serve as the second Dean of the GSN. Dean Hinton Walker is nationally recognized as a leader in education and has been a strong advocate for health services research, specifically measuring cost and quality outcomes. After serving as the Dean of the Nursing School at the University of Colorado Health Sciences Center, Dr. Hinton Walker was selected as the American Academy of Nurses Senior Scholar in Research at the Agency for Healthcare Research and Quality (AHRQ) where she coordinated the extensive review of funded health sciences research used in determining health policy. During her distinguished career, Dean Hinton Walker served as an Associate Dean at two major research universities; a visiting professor in community based-care; a director of an entrepreneurial community-based practice organization; and, as a consultant on quality and cost-effective outcomes, faculty practice and community-based care, managed care, practice-based research, and organizational development in hospitals and schools of nursing. In addition to her more than 30-year teaching career, she has authored five books on nursing education and practice as well as 49 peer-reviewed professional articles. She has been recognized by the most prestigious organizations in the nursing profession. Her honors and awards include: the Distinguished Alumni of the Year by the University of Kansas Medical Center Nurses Alumni Association (1998); Who's Who in American Nursing (1993); Nurse of the Year for the Mississippi Nurses Association District #13 (1980); Member of the Board of Directors, Friends of National Institute for Nursing Research, from 1998 to the present; and, recipient of international invitations on educational consultation from the United Kingdom, Hong Kong, Thailand, Japan, Belgium, Poland, Spain, Sweden, and many others. Dean Hinton Walker's expertise in interdisciplinary practice, education, research, and health policy will ensure the continued progress of the GSN. She will continue her involvement in the nursing agenda at the AHRQ as a senior advisor with a focus on quality outcomes. Opportunities for research in the MHS, USPHS, and other Federal Health Systems will be utilized by the new GSN Dean for studying the areas of prevention, health promotion, and patient safety. Dean Hinton Walker understands the potential impact on policy that nursing research can have and will foster this through the development of a doctoral program. A dedicated believer in utilizing internal motivation, Dean Hinton Walker sees educators as people who guide learners toward missions or areas of interest rather than prescribing courses of action. She also advocates for exploring alternative means of learning, such as through the Internet. Following her arrival at the GSN in mid-2002, Dean Hinton Walker has carefully led the GSN faculty and staff through a transition period utilizing new initiatives and concepts to analyze systems, review curriculum, and enhance program development. Dean Hinton Walker's goal is a shared vision of the GSN that is flexible, responsive and on target with the needs of the Uniformed Services. Her vision is to continue to optimize the strengths and interests of the GSN faculty and staff, to enhance the research infrastructure, to continue the merging of technological advancements into the curriculum, and to support the provision of a flexible curriculum that addresses the educational requirements of the Uniformed Services, while ensuring that the infrastructure sufficiently supports both faculty and students.

GSN Faculty Is Recognized for Integration of Technology throughout the GSN Curricula. Since its inception, the GSN has actively participated in educational and research activities at the National Capital Area Simulation Center (SIMCEN). Over the past year, the GSN faculty has collaborated with the SIMCEN faculty and staff to enhance the GSN programs through: the development of clinical cases utilizing the SIMCEN technology; presentations of the use of SIMCEN technology in education at the national level; and, SIMCEN-related research activities. This active participation has been widely recognized; for example, the Dean of the GSN and the GSN faculty were invited to participate in high-level planning sessions during 2002 as the University reviewed its use of resources and support for the SIMCEN. In addition, the GSN was invited to present its SIMCEN-related technology initiatives for both its curriculum and research to the Centre for Medical Education located at the University of Dundee, Scotland (the Centre's leader, Doctor Ron Harden, is recognized as an expert in international medical simulation). Finally, in December of 2002, GSN faculty were invited to meet at the SIMCEN with members of the University of Michigan Consortium to discuss collaborative activities and possibilities for the future forging of technology/SIMCEN links between the disciplines of medicine, nursing, veterinary science, and dentistry. As noted in 2002, by the Evaluation Team from the Commission on Collegiate Nursing Education:

A state-of-the-art simulation center is available to the GSN and is equipped with 12 fully equipped patient treatment rooms with computer, video, and audio equipment. In addition, the simulation center has a distance education teleconference room, a computer laboratory, and an operating room simulation laboratory with manikin simulators and anesthesia equipment, which mimics that used in the military field. Virtual reality anatomy lectures are cutting edge and are available for approximately four anatomic systems. GSN students interviewed verbalized knowledge of the many resources available to them on campus and had overwhelmingly positive comments about the laboratories, libraries, simulation center, and virtual reality programs available to them for study.

Selected Profiles of Graduate School of Nursing Faculty.

Outstanding Uniformed Faculty Award. Lieutenant Colonel Marjorie Graziano, USAF, NC, MSN, CRNP, Assistant Professor, Family Nurse Practitioner, was selected by the GSN students to receive the Outstanding Uniformed Faculty Award at the May 2002 Graduation. The GSN students chose Lieutenant Colonel Graziano as the uniformed faculty educator who exemplified the highest qualities of a graduate nursing educator by personal example and performance.

Outstanding Civilian Faculty Award. Janice Agazio, DNSc, Assistant Professor, Nursing Research, was selected by the GSN students to receive the Civilian Faculty Award at the May 2002 Graduation. The GSN students selected Doctor Agazio as the civilian faculty educator who displayed the highest qualities of a graduate nursing educator by personal example and performance.

GSN Associate Dean Serves as the Ethics Consultant to the Air Force Surgeon General. Throughout 2002, Colonel Martha Turner, USAF, NC, RN, CNA, BC, Ph.D., Associate Dean, Graduate School of Nursing, continued her activities as the Ethics Consultant to the Air Force Surgeon General and as a member of the TriService Nursing Research Advisory Council. During 2002, she was recognized by the Secretary of Defense for her volunteer service at the Pentagon Family Support Center following the terrorist attacks on September 11, 2001. Colonel Turner continued her work with the Minnesota Nurses Association Ethics Committee through the development of position statements on the Ethical Perspectives of Clinical Practice and Workplace Issues. Colonel Turner's ethics consultation activities and lectures within the TriService Ethics Advisory Group have included workshops and conference calls on a wide range of policies for Military Treatment Facilities located in the United States and in deployment settings. This year, Colonel Turner's efforts resulted in research awards for two of her students, a field trip to the Holocaust Museum, USU Board of Regents' approval for the Nursing Doctoral Program, and the acceptance of the first students for the MSN Degree in the Perioperative Clinical Nurse Specialist track. In October of 2002, she was notified of her reassignment to the USAF International Health Specialist Program; during her farewell reception, she was recognized with the Defense Meritorious Service Medal and the USU Outstanding Service Medal for her accomplishments as Associate Dean of the GSN.

Acting Associate Dean Co-Authors a Symptom-Based Telephone Triage Protocol Book. **Patricia C. McMullen, DNSc, JD, CNS, CRNP, Associate Professor and Acting Associate Dean, GSN**, continued during 2002 to direct her research and publication efforts on the major areas for the improvement of health care as recommended by a United States Public Health Service Task Force. This year, she co-authored, Triage Protocols for Obstetrics and Gynecology, Lippincott, 2003, a symptom-based telephone triage protocol book for providers of women's health care. This publication was developed in response to research that indicates approximately 20-28 percent of all primary health care is handled over the telephone (Studdiford, Panitch, Synderman & Phass, 1996). Additionally, Doctor McMullen authored a chapter entitled, "Legal Issues in Critical Care," for the 8th edition of Critical Care Nursing: A Holistic Approach. The chapter outlines fundamental legal principles in critical care and offers advice on how to both improve the quality of care and diminish legal liability. She was invited to speak on legal issues in nursing for the Regional Perinatal Nursing Conference in Bangor, Maine, and for the South Carolina Nephrology Nurses Association Conference in Charleston, South Carolina. In addition, Doctor McMullen, Doctor Seibert and Ms. Laurie Lemieux presented advanced case studies in women's health care at the National Nurse Practitioner Conference in Baltimore, Maryland. Doctor McMullen was an invited lecturer for the Nurse Practitioner Program at George Mason University in Fairfax, Virginia. Since the last edition of this publication, Doctor McMullen completed her multidisciplinary research on conflict among older adolescents hospitalized as a consequence of violent incidents at a regional shock trauma center. Results of her research findings will be published over the course of the next year.

GSN Acting Chair Presents Research Findings to the National Organization for Nurse Practitioner Faculties. **Diane Seibert, Ph.D., CRNP, Assistant Professor, Acting Chair, Family Nurse Practitioner**, has research interests in Women's Health and in technology-assisted learning. She recently completed her Ph.D. from the University of Maryland, College Park; her dissertation examined the effect of an engagement intervention in a course conducted entirely via video teleconferencing. She presented her findings at the National Organization for Nurse Practitioner Faculties in the Spring of 2002. In addition to that presentation, she was invited to speak at the National Institutes of Health on Hormone Replacement Therapy shortly after the Women's Health Initiative results were released. Additionally, she was invited to speak on Pap Interpretation and co-lectured with Doctor McMullen on Advanced Case Studies in Women's Health at a regional Nurse Practitioner Conference. She and Doctor McMullen are also collaborating on a Cystic Fibrosis Project for the Department of Defense. Finally, Doctor Seibert has served as the Task Force Leader for the GSN Faculty Structure Task Force.

Chair of Nursing Research Involved in Funded Research Projects. **Barbara M. Sylvia, Ph.D., RN, Professor and Chair, Nursing Research**, is currently involved in several funded research projects. As the principal investigator on a USU intramural funded project, she is extending her work on prenatal care for military women from an earlier project funded by the TriService Nursing Research Program on which she was a co-investigator. Doctor Sylvia is examining and comparing the prenatal care of uniformed women within the continental United States (CONUS) versus care provided Outside CONUS (OCONUS). Using both qualita-

tive and quantitative approaches, she is examining prenatal care from the perspective of both the recipient and the provider. In addition, Doctor Sylvia is currently a co-investigator on a project funded by the TriService Nursing Research Program to compare the effects of two methods of diabetes care on glycemic control. This past year, Dr. Sylvia has published two research articles: "Prenatal Care-Needs, Availability, Accessibility, Use and Satisfaction: A comparison of Military Women Within and Outside of the Continental United States," in Military Medicine; and, "Exploration of Facilitators and Barriers to Prenatal Care Among Military Women" in Nurse Practitioner Forum.

Assistant Professor Is Principal Investigator in Funded Research Projects. Janice Agazio, D.N.Sc., Assistant Professor, Nursing Research, is currently involved in several funded research projects. She is the principal investigator on two new projects. The first, *Army Nursing Practice in Operations other than War*, was funded by the TriService Nursing Research Program and will describe needed competencies and skills for deployed nurses. The second, *Deployment of Military Mothers*, received intramural funding to describe the trajectory of the deployment experience (preparation through reunion and reintegration) for active duty women with children. Doctor Agazio continues as a co-investigator on a TriService Nursing Research Program funded study, *Ethical Issues in the Department of the Army Nursing Practice*, which will provide information about the ethical issues experienced in the workplace by military and civilian registered nurses and provide information regarding ethical education requirements. Doctor Agazio is completing an analysis on two unfunded studies, *Health Promotion in Military Women* and *Experiences of Medical Personnel in Operation Desert Shield/Storm*. This past year, Doctor Agazio had two research articles accepted for publication in Military Medicine: "Evaluation of a Virtual Reality Simulator in Sustainment Training" and "The Effects of Non-Local Geographically-Separated Hospitalizations Upon Families." Additionally, she presented her paper on the use of a VR Simulator in sustainment training at the national State of the Science Congress in September of 2002.

Chief of the Operating Room and Central Material Supply at the Landstuhl Regional Medical Center Joins the GSN Faculty. Lieutenant Colonel (P) Linda J. Wanzer, AN, MSN, CNOR, Assistant Professor and Director, Perioperative Clinical Nurse Specialist Track, joined the GSN faculty in September of 2002. Prior to her arrival, LTC Wanzer served as the Chief of the Operating Room and Central Material Supply for the Landstuhl Regional Medical Center. While serving in Europe, LTC Wanzer stepped into the role of Perioperative Consultant for Readiness Issues in support of the 212th MASH contingency and training missions - certifying surgical readiness prior to receipt of surgical patients to ensure that the standard of care was met throughout the field environment. Additionally, LTC Wanzer has led the way in patient safety innovation and productivity at the unit, institution, and regional levels. Her efforts at the unit level spearheaded institution and region-wide standardization efforts focused on the creation of a non-punitive environment for reporting medical errors and the establishment of a process for improving "systems/processes." Numerous perioperative risk aversion/patient safety initiatives instituted by LTC Wanzer were highlighted during 2002 in the book written by Jean Reeder - Patient Safety: A Perioperative Competency Module; her work was also published as a guide on the Association of Operating Room Nurses (AORN) web-page. Since 2001, LTC Wanzer has served as an advisor to the Army's Perioperative Consultant to the Surgeon General. She has

blended theory with practice in her review of new initiatives from MEDCOM as well as using metrics formulation related to access-to-care standards and patient safety metrics for the perioperative field. LTC Wanzer was selected to be a member of the AORN Presidential Commission for Patient Safety, serving since 2002. As such, she interfaces with the entire perioperative community inclusive of the American College of Surgeons and the American Nursing Association to develop and standardize patient safety initiatives.

Additional Faculty Research, Publications, and Presentations during 2002 are presented at Appendix C.

GSN GRADUATE PROGRAMS.

Beginning in the Summer of 2003, the GSN will offer two Graduate Programs at the Master and Doctoral Degree levels. The Master of Science Degree in Nursing Program will have three areas of focus: Family Nurse Practitioner, Nurse Anesthesia, and Perioperative Clinical Nurse Specialist. The Doctor of Philosophy in Nursing Program will prepare nurses in research, education, and leadership as required by the Military Health System, the United States Public Health Service, and other Federal Health Systems.

MSN Degree Program - Family Nurse Practitioner.

Background. The first formal training program to prepare advanced practice (pediatric) nurses was established in 1960. In 1967, public health nurses received advanced training to care for patients in their homes. Nurse practitioners 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, 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.

The American Association of Colleges of Nursing continues to report that the demand for advanced practice nurses is increasing. 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 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.

Program Assessment. The GSN curriculum is guided by the USU and GSN mission statements and the American Association of Colleges of Nursing's (AACN, 1996) *The Essentials of Master's Education for Advanced Practice Nursing*. Nineteen GSN terminal objectives are encompassed under six headings, applicable to both nurse anesthesia and nurse practitioner practice. The AACN *Essentials* document has identified core content areas for all Master Degree Programs as well as three additional areas specific to Master Degree Programs for advanced practice, direct-client clinical care. Because of the unique practice requirements for USU graduates as uniformed officers, the GSN faculty has included an additional terminal objective heading, "Readiness," not included in the AACN *Essentials* document. *The Essentials of Master's Education for Advanced Practice Nursing* articulates well with the *Domains and Competencies of Nurse Practitioner Practice*, as outlined by the National Organization of Nurse Practitioner Faculties (NONPF, 2000). The practice of the nurse practitioner is also reflected in a nationally accepted measure of quality of practice that is found in the NONPF, *Domains and Competencies of Nurse Practitioner Practice*. The GSN nurse practitioner curriculum is designed to prepare graduates to practice according to those specialty standards. Graduates from the GSN Master of Science in Nursing Program options of: Family Nurse Practitioner; Post-Master Family Nurse Practitioner; and, Post-Master VA/DoD Adult Nurse Practitioner are able to sit for all applicable nurse practitioner national certification examinations.

Family Nurse Practitioner - GSN MSN Program Option - One of the Nation's Best. The Family Nurse Practitioner (FNP) option within the GSN MSN Program has had eight graduating classes from 1995 through 2002, with a total of 82 graduates. FNP has grown in numbers of students, faculty, and clinical practice sites. The GSN FNP has established one of the strongest reputations in the country, as evidenced by the certification examination pass rate of its graduates. Over 98.9 percent of the GSN FNP graduates have passed the ANCC National Certification Examination on their first attempt, as compared to the national average of a 70 percent pass rate on the first attempt. FNP now has more than 90 clinical practice sites. The FNP option is currently 24 months in length and includes 58 academic credits and 945 hours of clinical experiences. (In June of 1999, FNP was increased from 21 to 24 months to allow for the integration of women's health competencies as recommended by the Federal Nursing Chiefs; initially, FNP was 21 months in length and included 720 hours of clinical experience.) There are currently 14 students in the Family Nurse Practitioner Class of 2003; and, 7 students in the Class of 2004. Of these 21 students, 19 student officers are from the Army; one student is from the Navy; and, one student represents the United States Public Health Service.

The GSN FNP Graduates are able to: assess, design and implement an appropriate plan for individualized patient and family care; collaborate within multi-disciplinary Federal health care environments; design and provide appropriate patient education; integrate research findings into clinical practice; utilize safe practices and ethical perspectives in their clinical practice; and, readily adapt to the changes and demands of individual and environmental health care. Students are able to pass certification examinations on their first attempt, as noted by the American Nurses Credentialing Center: "of the 15 Family Nurse Practitioners tested (in 2001), 15 passed with a mean score of 123. The national average for all tested reflects a mean score of 114.6; the passing score is set at 100."

Scholarly Project. Each graduate must complete an individual or group thesis or scholarly project before graduation from FNP. The student's research project generally has application to the practice of the nurse practitioner and includes 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; a

GSN research committee ensures that each scholarly project meets the USU requirements for a Master of Science Degree. All students are encouraged to publish their findings. During 2002, students were involved in a variety of scholarly projects; and, they were 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.

Simulated Patient Experiences. In addition to traditional classroom and clinical activities, FNP has partnered with the National Capital Simulation Center (SIMCEN) to integrate objective simulated clinical examinations into all major courses. These simulations have proven extremely beneficial on two fronts: they facilitate faculty evaluation of each student's mastery of critical clinical skills; and, they permit each student to develop and enhance necessary clinical skills in a non-threatening environment. The use of simulated patient experiences begins during the students' initial Health Assessment Course. In this course, students review foundational assessment skills, such as history-taking and the physical examination of all major body systems. Following didactic anatomy lectures and corresponding cadaver laboratories, students receive in-class instruction on the assessment of each of the body systems. They then proceed to the SIMCEN, where they practice their assessments in collaboration with specially trained patient-actors (simulated patients). During these experiences, faculty and peers use one-way mirrors and telemonitors to evaluate each student's performance. After each encounter, peers and faculty provide a critique resulting in immediate and valuable feedback. SIMCEN experiences are also videotaped so that students and faculty can review them and receive additional instruction and guidance. Over the course of the 24 months, students are exposed to additional simulation experiences in the form of Objective Simulated Clinical Evaluations (OSCEs) in their Adult Health, Pediatric, Women's Health and Practicum Courses. Over time, scenarios become increasingly more complex.

Clinical Sites at Military Treatment Facilities. Since its establishment, FNP has completed memoranda of understanding with 17 military treatment facilities: (**Army - 6**) DeWitt Army Community Hospital, Fort Belvoir, Virginia; Kimbrough Ambulatory Care Center, Fort Meade, Maryland; Walter Reed Army Medical Center, Washington, D.C.; Fort Carson Army Community Hospital, Fort Carson, Colorado; Womack Army Medical Center, Fort Bragg, North Carolina; Darnell Army Community Hospital, Fort Hood, Texas; (**Navy - 6**) Annapolis Naval Medical Clinic, Annapolis, Maryland; National Naval Medical Center, Bethesda, Maryland; Quantico Naval Medical Clinic, Quantico, Virginia; Naval Ambulatory Care Center, Groton, Connecticut; Portsmouth Naval Medical Center, Portsmouth, Virginia; Pensacola Naval Hospital, Pensacola, Florida; (**Air Force - 5**) Malcolm Grow Medical Center, Andrews Air Force Base, Maryland; 1st Medical Group, Langley Air Force Base, Virginia; 60th Medical Group, Travis Air Force Base, California; 10th Medical Group, Air Force Academy, Colorado Spring, Colorado; and, the 375th Medical Group, Scott Air Force Base, Illinois. Additionally, FNP has affiliations with 90 non-DoD, Federal and civilian treatment facilities. These facilities provide the backbone for the nurse practitioner student's clinical experiences.

Faculty Activities. FNP faculty maintain certification and clinical acumen by working one day each week in a clinical setting. By maintaining a clinical practice, FNP faculty remain current, expand their clinical skills and frequently have the opportunity to observe and mentor students. These faculty are also active within the GSN, the University, and their local communities. FNP faculty perform a myriad of services to outside

agencies by serving: on church advisory boards; in parent-teacher associations and Girl Scout Troops; as guest lecturers at local universities; and, as teachers of Lamaze Classes. In addition to their community service, FNP faculty maintain membership in many professional organizations, including the American College of Nurse Practitioners, the Commission on Collegiate Nursing Education (Site Evaluator), the Nurse Practitioner Association of Maryland, several State Bar Associations, the North American Menopause Society, the National Organization of Nurse Practitioners Faculties, and the Sigma Theta Tau Honor Society. For example, Lieutenant Colonel Margie Graziano, USAF (retired), serves in an elected position as the Air Force Director of the Uniformed Nurse Practitioner Association.

The Year 2002 was a “watershed” year for FNP as three faculty members completed their requirements for Doctoral Degrees. In May of 2002, Doctor Diane Seibert received a Ph.D. in Human Development from the University of Maryland, College Park. Doctor Patricia McMullen completed a DNSc from the Catholic University of America in November of 2002; and, Doctor Cindy Grandjean completed a Ph.D. in Human Development at the University of Maryland, College Park, in December of 2002.

MSN Degree Program - Nurse Anesthesia.

Background. Nurse anesthetists have faithfully served their Nation during all of its wars and conflicts and 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 Combat Clearing Stations near the front lines in France; they taught French nurses and physicians to do anesthesia, and with the concurrence of British physicians, taught British nurses to provide anesthesia; thereby 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, other drugs, food, and ammunition ran out. 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, Enduring Freedom, and other military missions requiring anesthesia capability. Throughout the past 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 advancing knowledge and technology that allow every one in the operating room, from the surgeon to the nurse anesthetist, to the technician, to perform his, or her, job more efficiently.

Program Assessment. The Terminal Objectives of the Nurse Anesthesia (NA) option in the MSN Degree Program are consistent with the missions of the USU and the GSN and with the *Essentials of Master's Education for Advanced Practice Nursing*, as accepted by the American Association of Colleges of Nursing (AACN, 1996). Additionally, the NA Terminal Objectives are in accordance with the American Association of Nurse Anesthetists' (AANA, 1996) *Standards of Nurse Anesthesia Practice*. The GSN graduates of Nurse Anesthesia are able to perform the following: a thorough pre-anesthetic assessment; obtain informed consent; formulate and implement a patient-specific plan for anesthesia care; collaborate with other members of the health care team; and, transfer the responsibility for care.

The GSN Nurse Anesthesia option within the GSN MSN Degree Program has had seven graduating classes from 1996 through 2002, for a total of 94 graduates. Twenty-nine students are currently enrolled; Nurse Anesthesia is 30 months long with 55 academic credits. Nurse Anesthesia students average 65 clock hours at clinical sites each week; and they complete 850 anesthetic cases during their program of study. In December of 2002, 13 students graduated from Nurse Anesthesia. All have passed the national certification examination for nurse anesthetists and are credentialed to practice in their respective Services. Two alumni from this group deployed within two months of their graduation to support the Armed Forces in Iraq. The Nurse Anesthesia Class of 2003 has 10 students; and, the Class of 2004 has 19 students. Of the 29 students, four students are Army officers; six are Navy officers; eighteen student officers are from the Air Force; and, one student officer represents the Public Health Service. It is anticipated that the next class will have 19 students.

Upon completion of the Nurse Anesthesia option, the NA faculty are committed that, either through the oral examination process or actual demonstration on any patient or selected pieces of equipment, the nurse anesthesia graduate will have the ability to: comply with USU GSN requirements for graduation; meet, or exceed, Council on Certification of Nurse Anesthetists Case Requirements; satisfy eligibility requirements to write the Certification Examination; obtain the academic capability to pass the Certification Examination; successfully master the Terminal Objectives; and, be able to meet the mission of Nurse Anesthesia at USU.

Clinical training was restructured within Nurse Anesthesia to ensure that all students are assigned to a military hospital as their primary clinical training site. A clinical coordinator is assigned at each site whose primary responsibility is to oversee student scheduling and to evaluate their progress; this oversight responsibility has increased consistency in the 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.

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. Students are encouraged to publish in peer-reviewed journals or to give poster and oral presentations on their findings. During 2002, students were involved in a variety of scholarly projects, including both clinical and bench research studies; and, increased emphasis was being placed on conducting quantitative studies. A search for a faculty member dedicated solely to student research is underway. Nurse Anesthesia students returning to campus prior to entering the last six months of their clinical rotations are encouraged to submit posters for presentation; and, students are required to present an oral defense of their research to meet the course requirements.

Simulated Patient Experiences. The use of a patient simulator and the instructions for using regional anesthesia and central line placement have been incorporated wherever possible into the Nurse Anesthesia curriculum. This has resulted in providing a bridge between the academic and clinical phases of the educational experience. By 2002, the use of the SIMCEN had been expanded to incorporate: 1) the use of standardized patients in the Health Assessment Course; 2) the use of simulator bronchoscopic stations in teaching airway management; and, 3) the use of the human patient simulator for teaching Basic and Advanced Principles of Anesthesia and Anesthesia Pharmacology. Other resources have allowed the use of virtual reality in teaching the Anatomy Courses; and, research studies are being conducted by the students and faculty to determine the quality of education utilizing virtual reality and the desirability for its use in the future. A faculty member of Nurse Anesthesia, in collaboration with faculty at the Medical College of Georgia, worked on the use of the Anesthesia Simulator; and, a second laboratory section of the Patient Simulator Laboratory was instituted in conjunction with the Advanced Principles Course, which allows an increase of individualized instruction through the use of this state-of-the-art simulator.

Clinical Sites at Military Treatment Facilities. Nurse Anesthesia has four primary military clinical training sites: 1) the Air Force Medical Center at Wright Patterson Air Force Base, Ohio; 2) the Walter Reed Army Medical Center/National Naval Medical Center (a joint site as is the Anesthesiology Program) in Washington, D.C.; 3) the Naval Medical Center at San Diego, California; and, 4) the Air Force Medical Center at Keesler Air Force Base, Mississippi. Nurse Anesthesia students also rotate to 21 Federal, civilian, and non-DoD health centers to obtain additional experience and complete required cases. A full review of all primary and non-primary clinical sites was completed during 2002. A package updating all related information was submitted to the Council on Accreditation of Nurse Anesthesia Educational Programs (COA); the initial response from the COA indicates that all sites are approved and are in full compliance.

Faculty Activities. Continuous changes have occurred over the past year to enhance Nurse Anesthesia at the GSN. Communication has been enhanced by the creation of web-based bulletin boards, which allow for seamless communication between the students, faculty, and staff. In addition, password-protected educational materials are also posted, which allow the students to access a variety of material from any Internet-capable

computer. The research component of the program is evolving from a thesis-based product to one more easily disseminated to the CRNA community. Increased emphasis is being placed on conducting quantitative studies and on presenting results through poster and oral presentations and publication in professional journals. A search for a faculty member whose position will be dedicated solely to student research is underway.

While Nurse Anesthesia graduates do well on their certification examinations, there are areas identified for enhancement. Two anesthesia simulators have been successfully integrated into the Principles of Anesthesia Courses. Both of the simulators located in the USU School of Medicine Department of Anesthesiology and at the SIMCEN are used many times per week to enhance student learning; and, changes in the curriculum, specifically regarding Pharmacology, were integrated during the Fall 2002 Semester. Computerized testing is being developed and will provide an inclusive review of the required material for students in their clinical phase. Other testing venues, such as oral boards, are also being developed. The Student Evaluation Examination (SEE) is being purchased for all students for use at two separate times during their training for assistance in determining future areas of concentration and study. In addition, numerous testing strategies have been incorporated by the faculty into both the clinical and didactic phases of Nurse Anesthesia. In appropriate courses, examination questions were converted to a format similar to that found in the certification examination; and, an Internet-based testing system has been adopted. Although the new testing system does not have the capabilities of a computer-adaptive examination, it is formatted similar to that found in the certification examination. For example, once a question is answered and submitted, the student may not return to it to change the answer. Test statistics and examination grades are provided immediately upon the completion of each examination.

The Nurse Anesthesia Curriculum Committee meets on a yearly basis and reviews all courses, course evaluations, and course content. Changes were recommended to further integrate the basic sciences, primarily Pharmacology, with the Principles of Nurse Anesthesia. Anesthesia Pharmacology will now be introduced during the second semester, vice the third; this will allow more depth of knowledge to be presented in the Basic Principles of Anesthesia Course. The Medical Pharmacology Course, taken with the medical students, will also be modified to include topics more specific to the practice of anesthesia.

A new educational experience for senior students has also been developed. During the Spring of their final year, GSN students return to the University for a series of seminars and workshops. Classes on regional anesthesia are conducted on cadavers in the USU Anatomical Laboratory. Advanced techniques are presented and students discuss difficult or significant cases they encountered at the clinical sites. An advanced airway workshop is presented; various adjunct equipment used for the management of the difficult airway is made available for practice on the patient simulator and other mannequins, to include the fiberoptic, Bullard laryngoscope, retrograde intubation, tube changers, the Combitube, and the Fastrach/LMA. Another laboratory allows students to practice emergency surgical airways such as jet ventilation, cricothyrotomies and tracheostomies. Crisis management is practiced and tested on the patient simulator. Students are given a series of scenarios to study prior to the testing period such as bronchospasm, MH, total spinal, and anaphylaxis. Students are then brought into the simulation area and experience a realistic scenario, which they must manage; immediate feedback is given to each student upon completion of the exercise.

MSN Degree Program - The Clinical Nurse Specialist.

Background. In June of 2001, a need for a Clinical Nurse Specialist (CNS) option in the GSN MSN Degree Program was identified by the Federal Nursing Chiefs; the groundwork was completed to begin the development of the first Clinical Nurse Specialist option with a focus on Perioperative Nursing. A feasibility study and development of a pilot program were completed and recognized by the Federal Nursing Chiefs. In January of 2002, Founding Dean Abdellah and the GSN Associate Dean presented the CNS option to the USU Executive Committee; that request was approved by the Surgeons General of the Army, Navy and Air Force. The CNS option was then approved by the USU Board of Regents during its meeting held on February 27, 2002. In the Spring of 2002, a selection process was initiated to identify the Clinical Nurse Specialist Director and supporting faculty from within the three Uniformed Services. The CNS Director arrived in the Fall of 2002. The program's curriculum and foundational structure was built around the American Academy for Colleges of Nursing publication on *Essentials of Masters Education for Advanced Practice Nursing*. The perioperative specialty content evolved from a comprehensive process of blending field research, program goals, and clinical expert interviews with the Federal Nursing Chiefs. Validation of the program's content/curriculum was accomplished through the process of merging program content with the published *Association of Operating Room Nurses Perioperative Clinical Nurse Specialist (PCNS) Competencies*. After minor adjustments were made, the "content map" was presented to key senior leaders within the perioperative community, both in the uniformed and civilian sectors, to ensure that the CNS option is congruent with the needs of the Uniformed Services.

Teaching Across Programs. Key to the success of the CNS option is the *leveling of course content* to ensure consistency with the GSN terminal objectives. Dean Hinton Walker maximized the faculty resources of the GSN by *actualizing* the faculty in terms of course development, thus fostering an organizational climate supporting the theory of *teaching across programs*. All CNS students will be assigned to a military hospital as their primary clinical training site. There, in consultation with their clinical preceptors, they will receive focused, clinical experiences and complete projects within the five CNS domains. A clinical coordinator will oversee student scheduling and evaluate progress. The primary military clinical training sites will be: 1) the Malcolm Grow Medical Center, Andrews Air Force Base, Maryland; 2) the National Naval Medical Center, Bethesda, Maryland; 3) the Walter Reed Army Medical Center, Washington, D.C.; 4) the Dewitt Army Community Hospital, Fort Belvoir, Virginia; and, 5) the Kimbrough Ambulatory Care Center, Fort Meade, Maryland. Additionally, a clinical experience in perioperative trauma management is being negotiated with the R. Adams Cowley Shock Trauma Center in Baltimore, Maryland. Eight uniformed officers will join the USU GSN students when the CNS Program is launched in June of 2003.

The Doctor of Philosophy Program.

Background. To meet an evolving requirement for nursing research relevant to the MHS, the USPHS, and other Federal Health Systems, in March of 2002, with the approval of the Federal Nursing Chiefs, the GSN Founding Dean began the process for the development of a Doctoral Program in Nursing. The GSN Doctoral Program will prepare nurses to be uniquely qualified as leaders in research, education, and clinical practice who will serve in the MHS, USPHS, and other Federal Health Systems. In the context of concerns over patient safety, nursing research must be conducted to assess the linkages between nurse staffing, safety, and outcomes assessment throughout the TRICARE Management Activities. Additionally, with the well-recognized national shortage of both staff nurses and nursing faculty, GSN doctoral graduates will be prepared to augment faculty requirements at educational organizations and to provide researchers for studying health care in the MHS, USPHS, and other Federal Health Systems. A doctoral program that has a focus on the MHS as well as the USPHS and other Federal Health Care Systems is not available at civilian universities; and, no other institution is better positioned than the USU GSN to provide a Doctoral Program with such a unique focus.

Dean Hinton Walker presented the GSN Doctoral Program to the USU Board of Regents (BOR) and received formal approval for the establishment of the Doctoral Program at the BOR meeting on October 24, 2002. In addition, the GSN held inclusive focus sessions to determine both the interest and support for its proposed doctoral program, to include the initiation of steps for the enrollment of its Charter Class during 2003. The Doctoral Program in Nursing will be open to DoD nurses (active duty, reserve, and civilian) and to nurses from other Federal Agencies who are nominated and supported by their Service or Agency. The new program will accommodate both full-time and part-time students and will incorporate aspects of both distance and alternative learning, as appropriate. The GSN will welcome its first doctoral students in the Fall of 2003, bringing to realization the vision of the Founding Dean.

The Doctoral Program in Nursing Science includes a common core of required courses and electives. The program consists of five areas of concentration: 1) *Nursing Knowledge*; 2) *Research Methods, Statistics, and Designs*; 3) *Cognate Courses*; 4) *MHS and Federal Health Care Policy and Issues*; and, 5) the *Dissertation*. The *Nursing Knowledge Core Content* consists of a sequence of courses focusing on the development and application of theory in nursing and related disciplines, and ethical conduct in nursing practice and research. *Research Methods, Statistics, and Designs Core Courses* will examine approaches in both qualitative and quantitative research. Advanced research methods core courses will address relevant issues of the MHS, the USPHS and other Federal Health Systems via existing large data sets, while assisting graduates to develop continuing programs of research. *Cognate Courses* will support and strengthen the selected research focus. *MHS and Federal Health Care Nursing Policy and Issues Core Courses* will focus on MHS-specific and Federal health care issues, thus preparing graduates to conduct research and to assume leadership roles in this area of study. These four components culminate in the fifth component, the *Dissertation*, which follows the successful completion of the qualifying and comprehensive examinations. A minimum of 96 semester hours is required to complete the program. The GSN doctoral program is comparable in structure and content hours to the existing USU School of Medicine Graduate Education Programs.

The curriculum has three focused research and practice areas. These include 1) Population Health and Outcomes; 2) Operational Readiness in a Changing Environment; and, 3) Clinical Decision-Making in the MHS, the USPHS, and other Federal Health Care Systems. There will be a strong cross-cutting emphasis on patient safety, ethics, force protection, and international health.

All doctoral students will participate in structured research assistantships to broaden and improve their research experience. Proposed practicum experiences include research-focused experiences in the National Capital Area at DoD, USPHS, or other Federal Agencies with uniformed nurse researchers or at civilian health care facilities. To address current and future nursing requirements, teaching assistantships will also be offered to prepare some GSN graduates as educators in response to the ever-increasing national shortage of doctorally-prepared faculty.

MSN Degree Program - Post-Master Certificates.

The Post-Master FNP Certificate. The Post-Master Certificate (PM) was established in 1999, primarily in response to the Army Nurse Corps' decision to transition from a specialty nurse practitioner to a family nurse practitioner focus. As the transition progressed, the number of students in the PM option varied, with the GSN annually awarding certificates to between one and four FNPs since 1999. To date, the USU GSN has awarded Post-Master FNP Certificates to 15 uniformed officers. The PM option varies in length from 9 to 12 months, depending on the student's prior education and experience; there are 31 academic credits with 562 hours of clinical experience. In August of 2002, two Post-Master students completed the PM option and four new students were enrolled. It is anticipated that this group of students (the Class of 2003) will be the last, as most of the Army's Specialty Nurse Practitioners have by now become FNPs, retired from the Army, or transitioned into a nursing administration or leadership role.

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

Background. The restructuring of the Department of Veterans Affairs (VA) Health Care System in the mid-1990's called for a 200 percent increase in the number of primary care providers throughout 155 VA Medical Centers. To achieve this goal, the VA determined that one effective solution would be to assist currently employed, Master Degree-prepared VA nurses to obtain new knowledge and skills as nurse practitioners. *Nearly 750 VA Master Degree-prepared clinical nurse specialists indicated interest in a post-degree, nurse practitioner certificate program if it were offered via distance education.* The USU Graduate School of Nursing (GSN) was selected by the VA to coordinate this effort. The USU GSN curriculum was unique and a national first because it was built on the excellent resources of the VA to implement well-defined, closely-monitored, clinical practica offered concurrently with didactic content provided by the fully-accredited USU GSN.

Responsibilities of the USU GSN. Under the direction of **Founding Dean Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN**, the USU GSN 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 the VA and the GSN to instruct in the Distance Learning Program (each had to hold at least a Master Degree, preferably in Nursing, be prepared in a nurse practitioner specialty, and be currently certified); 8) provide support staff; and, 9) pro-

cure resources for the new post-master certificate. The classes were 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.

Responsibilities of the VA. Charlotte Beason, Ed.D., RN, CNAA, Director, VA Nursing Strategic Healthcare Group of the Office of Patient Care, was the Project Coordinator with responsibility for ensuring that the VA 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 who would coordinate with the GSN in the Distance Learning Program; and, 6) provide the VA portion of the funding for the Project.

Responsibilities of the VA Medical Centers with Distance Learning Sites. The VA Medical Centers with distance learning sites agreed to provide the following: 1) an educational coordinator to administer the certificate program; and, 2) a Master Degree-prepared nurse practitioner preceptor to arrange and supervise the clinical aspects of the distance learning program.

During Late 1996, the GSN and the VA Nursing Strategic Healthcare Group Entered into a Working Partnership and Agreed to Conduct a Two-Phase Project. Phase I would consist of one course to test the feasibility of the project. Phase I, The Pilot Project Test Class, was initiated in early 1997. Following extensive evaluation, it was found that it successfully met the didactic and clinical requirements of both the GSN and the VA. Phase II contained the remainder of the curriculum study. Phase II, the Twenty-Month VA/DoD Distance Learning Program, was initiated in the Fall of 1997. Phase II included 35 students located at eight VA Medical Centers from California to New York; the certificate program was conducted in conference rooms on the USU campus that were fully equipped for teleconferencing. The curriculum developed by the GSN 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 distance learning program consisted of nine courses that 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.

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 USU'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. During the Twenty-Month Distance Learning Program, the VA 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 USU, and the confirmation of video conferencing capability at each site. All was accomplished.

The First Advanced-Level Virtual Graduation in the VA and the DoD. Twenty-six students graduated through a virtual commencement exercise 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 graduates in the first class. Outcome data from present students, alumni, and employers reflect extremely high levels of satisfaction with the distance learning program. The second virtual graduation took place on May 15, 2001, with thirty-three graduates. A third class of ten students, located at four sites in the Continental United States, Puerto Rico, and the Virgin Islands, graduated on May 13, 2003. **To date, 70 individuals have successfully graduated from this exceptional distance learning program.**

Summary. 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, VA/DoD Distance Learning Program. Outcome evaluations continue with the early graduates and their supervisors. The technology continues to evolve to reflect the rapid growth of the field. The difficulties faced by the project coordinators in creating a new distance learning program utilizing the latest technologies were numerous and challenging; the GSN and the VA Departments, faculty, staff, and students who succeeded in doing so, were well pleased with their initial results and continued to work to improve their educational efforts in distance learning. A report was also submitted to the Congress as the VA and DoD response to a legislative directive for a summary report on the VA/DoD Distance Learning Program. To ensure that other Federal entities could easily access the lessons learned during this Program, a joint report was issued by the GSN and the VA Nursing Strategic Healthcare Group in November of 2000. The report, The VA/DoD Post-Master Adult Nurse Practitioner Program: 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 evolution, assessment methodologies, clinical experiences, and the transmission effectiveness (computer technology and video conferencing) 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. **Future initiatives between the GSN and the VA are being considered with an emphasis on improving nursing practice and health care for veterans.**

The Establishment of a University Distant Education Policy. On November 6, 2001, following extensive coordination, the USU President approved a comprehensive Distant Education Policy, PPM-004-2001, for the University. The guidelines provided in the policy apply to courses and activities initially designed in the distance learning format as well as to courses and activities in which the method of delivery has changed significantly from that approved in the original curriculum proposal. These courses in distance learning may be either certificate courses or in conjunction with degree granting programs. Any department or faculty group offering distance education courses is expected to meet the recommendations of the Middle States Association of Colleges and Schools and five other accrediting groups for Distance Education Programs, dated March 23, 2001, and be guided by policies established by the University. The text of these guidelines is made available at <<http://www.wiche.edu/telecom/Article1.htm>> by the Chronicle of Higher Education. The current USU Distant Education Policy includes basic education principles, guidelines on the implementation of those principles, and identification of the responsibilities of all who are involved in distance education at the University.

IV. GRADUATE EDUCATION PROGRAMS

Graduate student contributions to research in their mentors' laboratories form an important contribution to the overall productivity of research programs. We do not have complete statistics on the papers from USU faculty in which graduate students are listed as co-authors, but some information is available. Six Graduate Program Directors responded to a request to identify peer-reviewed papers with publication dates from 1996 to 2002 by faculty in their programs in which students were identified as co-authors. *A total of 108 peer-reviewed publications were identified across the six programs, with 62 individual graduate students serving as co-authors.* Publication rates vary considerably among programs, reflecting the different search styles across biomedical research disciplines, and this is certainly an incomplete count of graduate student publications from USU. *The data support the contention that graduate students play an important role in maintaining and facilitating research productivity among USU faculty.*

The graduate programs at USU are important to the University for many reasons. They help to train a cadre of well qualified, experienced biomedical scientists and public health practitioners who will continue the tradition of scientific service to the Nation in the civilian and military worlds. Strong graduate programs are important because of the major effect active graduate programs have on the intellectual vitality of departments and programs. The presence of well-populated and thriving graduate programs is also an important factor in the recruitment of the best applicants for faculty positions at the University. USU graduate programs already serve these multiple needs.

- **VIII, Graduate Education in the Biomedical Sciences and Public Health**, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self Study, submitted in March, 2003, pages 6 and 9.

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 (SOM) 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 graduate programs in the basic medical sciences leading to the Doctor of Philosophy Degree or to appropriate degrees at the Master Degree level are essential components of a School of Medicine dedicated to excellence in medical education.

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 had 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 contributions 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 served in that position until August of 2001, when **Cinda J. Helke, Ph.D., Professor of Pharmacology and Neuroscience,** was appointed to the position.

Graduate Education Programs Provided at USU. The Doctoral and Masters Degree Programs available at USU are:

Interdisciplinary Ph.D. Programs in Emerging Infectious Diseases, Molecular and Cell Biology, and Neuroscience;

Departmentally-Based Ph.D. Programs in Clinical Psychology, Environmental Health Sciences, Medical Psychology, Medical Zoology, Pathology, and Applied Human Biology (Undersea Medicine);

Doctor of Public Health Program (DrPH);

Physician/Scientist (M.D./Ph.D.) Program;

Masters of Science Programs in Public Health, Molecular and Cell Biology, and Applied Human Biology (Undersea Medicine and Aerospace Physiology);

Master of Comparative Medicine (MCM) Program;

Master of Public Health (MPH) Program;

Master of Tropical Medicine and Hygiene Program (MTM&H); and,

Master of Military Medical History.

Graduate Education Programs Generate Cost Avoidance for DoD during 2002 - \$1,300,000. Since the establishment of the USU SOM Graduate Education Programs in 1977, through April of 2003, a total of 727 advanced degrees have been granted by the University: 229 Doctors of Philosophy; 11 Doctors of Public Health; 69 Masters of Science; 386 Masters of Public Health; 4 Masters of Science in Public Health; 25 Masters of Tropical Medicine and Hygiene; and, 3 Masters of Military Medical History. During 2002, 35 uniformed officers received advanced degrees (30 Masters Degrees and 5 Doctoral Degrees); at an average cost of \$30,000 per Master Degree (30 x \$30,000 = \$900,000) and \$80,000 per Ph.D. or DrPH Degree (5 x \$80,000 = \$400,000), the USU SOM Graduate Education Programs generated \$1,300,000 of cost-avoidance for the DoD during 2002. (Note: The average costs were estimated based on tuition and fees in biomedical graduate programs associated with medical schools in the National Capital Area (George Washington University, Georgetown University, University of Maryland at Baltimore, and John Hopkins University).

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.

- DoD Directive 5105.45, dated March 9, 2000, page two.

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 in the biomedical sciences and public health. 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 Education Programs in the basic medical sciences benefit the USU and the Military Medical System (MHS) as follows: 1) the Graduate Education 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 on-going in the Department of Defense laboratories located throughout 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' interactions at USU; 3) the academic environment of the SOM is maintained at a high level exposing the uniformed physicians-in-training to the disciplined methods of critical scientific inquiry, which are the rational basis of problem solving in medical science; 4) graduate students participate as teaching assistants and assist in the performance of instructional and investigative efforts, which are essential to the mission of the SOM and significant to the MHS; and, 5) doctoral programs and students are essential to attract and retain outstanding research faculty at USU.

Responsiveness to the Needs of the Services.

Master of Military Medical History. A specific example of the USU Graduate Education Programs' direct response to the needs of the Surgeons General is the creation of a new program for the Master of 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 the preservation of lessons learned and history education assignments by teaching at the Army Academy. Thus, the program was designed to meet the needs of Army officers in the Medical Service Corps Military Occupational Specialty (MOS) 70H, to prepare the officer to be an instructor in professional military medical education programs and for utilization as a field historian for specific military medical issues. The program of study is currently limited to officers in the Medical Service Corps of the Army; three degrees were granted in 1997, 1998, and 2001. The Program Director can be contacted by e-mail at <dcsmith@usuhs.mil> or at <www.usuhs.mil/meh/gradprog.html>.

The Graduate Program in Clinical Psychology Trains Clinical Psychologists to Serve in the Uniformed Services. The Graduate Program in Clinical Psychology is designed to train clinical psychologists to serve in the Uniformed Services. Students earn Master of Science (with master thesis) and Doctor of Philosophy (with doctoral dissertation) Degrees. This program is open to individuals who currently are serving in, or who are eligible and willing to join, the Uniformed Services. A year-long, full-time clinical internship is also required for graduation; and, the program is fully accredited by the American Psychological Association (also discussed under the Accreditation section, which follows). This graduate program is designed to prepare broad-based Ph.D. clinical psychologists and to emphasize both an appreciation for, and an understanding of, the special needs of the Uniformed Services and public health. The program trains clinical psychologists to be: effective providers of mental health services; creative problem solvers; critical thinkers sensitive to organizational needs and constraints; effective managers and communicators; and, professionals with the ability to evaluate processes and outcomes designed to improve the quality of health care. To accomplish these goals, the Ph.D. Program in Clinical Psychology follows the scientist-practitioner model of training. The program strongly values the development of knowledge and skills in applied clinical psychology and trains students to apply critical thinking skills to real world patients and situations, particularly in military and public health settings. The Ph.D. Degree requires independent scholarly work, comprehensive clinical training, a strong base in the foundations of psychology, and specialty training in uniformed clinical, health, and organizational psychology. The Program Director can be contacted by e-mail at <tsbrocco@usuhs.mil> or at <www.usuhs.mil/mps/Psychology/index.html>.

Masters and Doctoral Programs in Operationally-Oriented Applied Human Biology. Another example of the University's response to the needs of military medicine has been addressed by the Department of Military and Emergency Medicine. The genesis of the new program came when the medical and operational communities across the Services expressed an operational need to train personnel in Undersea Medicine, Aviation Physiology, and other areas of Applied/Operational Physiology. These fields are unique to the military communities and demand specialized training. As such, the program will unify a diversity of disciplines requisite for exploring questions relevant to these operational activities and applied situational outcomes. In the area of Undersea Medicine, the driving force was derived from two specific concerns: a lack of adequately trained personnel (118 researchers in 1990 and less than 46 in 2000; of the 46 researchers, over 60 percent are 50 years or older); and,

operationally critical biomedical research requirements (i.e., CO₂ detection and removal; hyperbaric oxygen toxicity; decompression; improved thermal protection; escape and rescue from a disabled submarine; physiological effects of underwater sound; fluid/hydration during operations; and, the psychological effects of submarine operations; etc.). In Aviation Physiology, the impetus behind the drive for the new program resulted from a requirement for the following: the provision of consistent and similar training for all uniformed aviation physiology communities; the preparation of graduates qualified to fill open aviation billets in any of the Services; and, the centralization of all aviation training. These requirements led to the development of a Graduate Program in the Department of Military and Emergency Medicine with emphases in Undersea Medicine and Aviation Physiology. The program of study was approved on June 20, 2001 by the Graduate Education Committee, received final approval from the Board of Regents (BOR) during August of 2001, completed curriculum development by mid-2002, and began requesting student training billets from the Services in September of 2002. In September of 2002, the Associate Dean for Graduate Education reported to the BOR that one student had matriculated into the new program in August of 2002. The program recognizes the broad range of techniques and disciplines spanned by operationally-oriented applied human biology that affect military missions, deployability, and the readiness of military personnel. Programs of study, available to Uniformed Service members, will lead to a Master of Science or a Doctor of Philosophy in Undersea Medicine, and a Master of Science in Aviation Physiology. The new program provides students with the unique opportunity to pursue an academic degree, which includes a core background in the basic sciences and other disciplines essential to applied research, coupled with experience in advanced laboratory and field studies. In sum, graduates will be prepared to understand, evaluate, and counter operational and environmental threats from the cell to the whole body level, all of which are critical to the foundations of operational medicine and applied physiology. The Program Director can be contacted by e-mail at <pdeuster@usuhs.mil> or at <www.usuhs.mil/mim/gradprog.html>.

The Physician Scientist Training Program (Medical Doctor/Doctor of Philosophy Program). The Medical Doctor/Doctor of Philosophy Program at USU was established during 2002, to train outstanding, dedicated, military officers as independent physician-scientists to carry out both clinical investigations and biomedical research in the basic sciences. There is currently one student in this program who matriculated in the Neuroscience Program in August of 2002. The program combines a rigorous basic science graduate curriculum with outstanding clinical training, and uniquely integrated Medical Doctor/Doctor of Philosophy activities that qualify students for careers in academic medicine, biomedical and clinical research, as well as clinical practice. The decision to enter this program is formidable and requires the student to dedicate seven to eight years toward completing this challenging combination of medical and scientific training. Entering students must demonstrate a high level of preparedness, outstanding academic credentials, motivation, and commitment to the goals of the program. Matriculants to the program must maintain all requirements necessary to be commissioned into the Uniformed Services throughout the Doctor of Philosophy portion of his or her training. The student will complete all required courses for the Doctor of Philosophy during the first and second years, to include many of the courses required for the first two years of the SOM curriculum. The qualifying examination for advancement to candidacy will be taken at the end of the second year and a doctoral thesis proposal must be subsequently submitted. The third year will be a research year. The transition phase begins after the third year and lasts two years. The student must complete all requirements to be commissioned in the Uniformed Services and attend Officer Basic Training; and, the student will complete the remaining requirements of the first and second years of SOM curriculum as a uniformed officer. The student will also continue to spend significant time on thesis research, finalizing the thesis project, and preparing and defending his/her doctoral dissertation. The Office of Student Affairs will share supervision of the student with the Graduate Education Office during this phase of training. The final component of the program is the clinical phase during the sixth and seventh years; the student will begin full-time participation

in the SOM curriculum under the guidance of the Office of Student Affairs and complete all required clinical rotations and clerkships. Subsequent to the completion of all requirements, the student will be awarded both the Medical Doctor and the Doctor of Philosophy Degrees and commissioned as an active duty officer (0-3) at commencement. Information can be accessed at <admissions@usuhs.mil> or <graduateprogram@usuhs.mil>.

The Master of Comparative Medicine (MCM) - An Interdisciplinary Program. This interdisciplinary graduate program, Comparative Medicine, offers a new degree, the Master of Comparative Medicine. The MCM Program falls within the scope of graduate programs defined as appropriate for the University, responds to a specified need of the Uniformed Services, and fosters a positive collaborative relationship with USU, the National Institutes of Health, the United States Public Health Service, and the Department of Army Medicine. The program will continue to fulfill the obligation undertaken by USU in 1993 to build a graduate degree program in support of Laboratory Animal Medicine (LAM) residency training. The new degree program was approved by the Graduate Education Committee on April 9, 2002, and submitted for approval to the Board of Regents in May of 2002; it received final approval from the BOR in August of 2002. This Master Degree Program is the redesignation of graduate courses approved by the Graduate Education Committee for the USU Master of Public Health Degree Program in the Department of Preventive Medicine and Biometrics. The Comparative Medicine faculty will consist largely of non-billeted LAM veterinarians and other USU faculty who qualify for secondary faculty appointments in the MCM Program under the terms of USU Instruction 1100, The Appointment, Promotion, and Tenure of the Faculty. The leadership of the program, pending adequate senior faculty in Comparative Medicine, will be provided by a committee of USU senior basic science faculty familiar with the issues of graduate education and the use of laboratory animals in medical schools. This committee, called the Academic Administrative Committee, will consist of at least three professorial faculty and will evaluate candidates for matriculation, approve graduate programs of study, counsel students in difficulty, and recommend students for the awarding of the degree on completion of an approved program of study. Until such time as the Comparative Medicine Program achieves mature status with a critical mass of senior faculty principally interested in the program, it will not have independent representation on SOM committees, but will report *ad hoc* as needed. Since the program is a redesignation of existing student programs and course work, no new space or faculty resources are required. While the primary motivation for establishing the Comparative Medicine Residency Program, of which this Master Degree is a part, is collaboration with other Federal health agencies, there are potential benefits to USU and its graduate programs. While working with the students from this program, USU faculty and graduate students will share their interests and scientific work. And, the alumni of this program will return to animal facilities in the Department of Defense, the National Institutes of Health, or elsewhere, where they will be in an ideal position to foster collaboration among interested research workers in similar areas.

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 faculty members whose primary appointments are established throughout the SOM departments. It provides a seminar series and a flexible program of courses and research areas for graduate students and postdoctoral fellows who have strong training in the biological, behavioral, and/or physical sciences. Research areas strongly represented by faculty include: development, regeneration, and plasticity in the nervous system; molecular neurobiology; and, adaptive responses of the nervous system to stress, injury, and a changing environment. Integrated interdisciplinary instruction in the development, structure, function, and pathology of

the nervous system and its interaction with the environment is also included. Three students entered the program, including one Medical Doctor/Doctor of Philosophy student, in the Fall of 2002; the Program Director can be contacted by e-mail at <rarmstrong@usuhs.mil> or at <www.usuhs.mil/nes/home.html>; 2) **Molecular and Cell Biology.** An Interdisciplinary Program in Molecular and Cell Biology (including Genetics) has been developed to contribute to cross-disciplinary interactions and to develop the critical skills needed for data presentation and analysis; the program also includes a seminar series and a journal club, all of which support the Ph.D. Degree Program. This interdisciplinary Ph.D. Degree Program offers training to address many of the fundamental questions of modern biology ranging from protein-nucleic acid interactions to cytokines, growth factors, and developmental recombination. Seven students entered the program in the Fall of 2002; the program consists of faculty mainly from six SOM departments. The Program Director can be contacted by e-mail at <jharmon@usuhs.mil> or at <www.usuhs.mil/mcb/index.html>; and, 3) **Emerging Infectious Diseases.** Initially, a special interest group from the USU SOM Departments of Microbiology and Immunology and Preventive Medicine and Biometrics, to include faculty from other departments who were interested in infectious diseases, began meeting and successfully submitted a proposal for an NIH training grant in this area. This effort led to the establishment of the Emerging Infectious Diseases (EID) Graduate Program in 2000. The EID Program has three academic tracks within the field of emerging infectious diseases: microbiology and immunology; pathology; and, preventive medicine/parasitology, with primary interest in the pathogenesis, host response, pathology, and epidemiology of infectious diseases. The research training emphasizes modern methods in molecular biology, cell biology, and interdisciplinary approaches. Ten students entered the EID Program in the Fall of 2002 (a description of the program follows). The Program Director can be contacted by e-mail at <emetcalf@usuhs.mil> or at <www.usuhs.mil/mic/eid.html>.

Additional academic departments that contribute extensively to the teaching and research training of doctoral and master degree students through interdisciplinary programs include: Anatomy, Physiology and Genetics; Biochemistry; Microbiology and Immunology; Pharmacology; and, many clinical departments such as Medicine, Neurology, Pediatrics, and Psychiatry.

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 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 September of 1999, **Eleanor S. Metcalf, Ph.D., Professor of Microbiology and Immunology**, was selected as the Program Director; and, she continues to serve in that position.

Both Military and Civilian Students Are Matriculants in the EID Program. The inaugural graduate student class of 10 matriculated in the Fall of 2000. This class consisted of seven full-time and three part-time students; two of the three are in the Uniformed Services. This class took its Qualifying Exams in June of 2002. These students are now conducting their thesis research on a full-time basis. In the Fall of 2001, 10 new students entered the EID Program. Two of these students are in the Uniformed Services; one is in the Army Medical Corps and the other is in the United States Public Health Service. These students have now selected their academic track and thesis mentors and are taking advanced courses. They will take their Qualifying Exams in June of 2003. The 11 students, who entered the EID Program in the Fall of 2002, are in the process of completing the first year of their Core Curriculum and have begun to take track-specific courses and laboratory rotations. Two of these students are full-time uniformed officers serving in the Army and the Navy. Army Captain Tim Straight is a graduate of the USU SOM and he is also an Adult Infectious Disease Fellow at the Walter Reed Army Medical Center. The EID Program Director is enthusiastic over his participation and the potential precedent that this occasion will set. The EID program-unique course, "Models of Emerging Infectious Diseases," is underway, and both second and first-year EID students take this course together; a situation designed to promote both academic and informal interactions between the two classes. In addition, one military Pediatric Infectious Disease Fellow is attending. The number of applicants increased by 40 percent during the past year, and the EID Program now has more outstanding applicants than it has stipends.

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 also serves 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 molecular biology, pathogenesis, and host responses within the context of emerging infectious diseases. The establishment of this 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. This situation is particularly critical and important given the recent events of bioterrorism. As part of the EID Program, courses on the agents and effects of bioterrorism are offered. To date, this program is one of the only graduate programs in the country to offer formal training in this critical area. 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. Since USU has the only school of medicine that offers a formal program in EID, the University plans to be at the forefront of training broadly-based military and civilian infectious diseases scientists for the future. As indicated above, the Program Director can be contacted by e-mail at <emetcalf@usuhs.mil> or at <www.usuhs.mil/mic/eid.html>.

Graduate Education Programs in Preventive Medicine and Public Health Address the Special Needs of the Military Health System. The Department of Preventive Medicine and Biometrics (PMB) offers graduate education 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. Between 1983 and April of 2003, 436 individuals have graduated from these degree programs and earned the following degrees: 386 MPH, 4 MSPH, 25 MTM&H, 1 MS, 11 DrPH, and 9 PhD. During 2002, 36 Preventive Medicine and Biometrics students were awarded advanced degrees: 1 Doctor of Philosophy; 4 Doctors of Public Health; 29 Masters of Public

Health; and, 2 Masters of Science in Public Health. The PMB Graduate Programs have undergone considerable growth over the past several years and have approximately 60 students currently enrolled in the Master and Doctoral Programs. With its stated mission “to produce knowledgeable and highly skilled public health professionals in support of the health and global mission of the Uniformed Services,” the PMB Department has sought to be responsive to the needs of its customers; and, this is reflected in the types of programs and training offered. During 2002, PMB continued its collaborative educational agreements with the Walter Reed Army Medical Center Preventive Medicine Residency Program and Internal Medicine Fellowship Program, the Army Program for Training in Health Services Administration, the United States Army and United States Public Health Service Laboratory Animal Medicine Program, the Navy Dental Research Institute Program in Dental Public Health, and the Indian Health Service Environmental Health Training Program. In addition, the PMB Department is affiliated with the United States Army and Navy Biomedical Research Laboratories located in: Bangkok, Thailand; Rio de Janeiro, Brazil; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and, Lima, Peru. The MTM&H Program includes a six-week overseas clinical experience in tropical medicine; the students find excellent opportunities at these overseas laboratories. A research program also exists under an agreement with the Ministry of Health in Belize. Several doctoral students have found opportunities to do research in these various locations.

Two new programs expanded the graduate education enterprise at USU. The Occupational Ergonomics Program was jointly developed by the PMB Department and the United States Army Center for Health Promotion and Preventive Medicine and brought one graduate student to this new area of concentration in the MPH Program. Additionally, four graduate students were the first to be enrolled in the Air Force-sponsored International Health Specialist Program.

The current Graduate Program in Public Health, as of March 2003, has 48 students at the Master Degree level (MPH, MTM&H, and MSPH); these programs are designed for students with at least three years of experience in a health-related field. Forty-four of these students are in the Uniformed Services and four are civilians. These students include 19 physicians, 12 veterinarians, 3 dentists (including a member of the Canadian Forces); 2 nurses; 1 physical therapist; 1 dietitian; 1 statistician; 1 engineer; 4 environmental science and industrial hygiene officers; 3 Air Force Biomedical Science Corps officers (health physics and international health specialist tracks); and, 1 health services administrator. First-year residents in General Preventive Medicine/Public Health and Occupational and Environmental Medicine take courses and meet all of the requirements for the MPH or MTM&H Degrees as part of their residency training. At the doctoral level, 8 individuals (3 uniformed officers; 5 civilians) are Doctor of Public Health students and four individuals (3 uniformed officers; 1 civilian) are Doctor of Philosophy candidates. The Doctorate in Public Health Program prepares individuals for leadership roles in research, teaching, or policy development in the field of public health. Two additional Ph.D. Programs are: Medical Zoology, for students with a Master Degree in Entomology or Parasitology who wish to pursue further study in field-oriented medical parasitology or vector biology; and, Environmental Health Sciences, which includes environmental health science research particularly in the area of military-relevant exposure assessment. Four individuals (3 uniformed officers; 1 civilian) are Doctor of Philosophy candidates. The Program Director can be contacted by e-mail at <ggackstetter@usuhs.mil> or at <www.usuhs.mil/pmb/pmb.html>.

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 Sciences*** was recently established in response to identified needs within the Uniformed Services; it currently

has two military students, both active duty Naval officers, enrolled in the program; 2) ***the Master of Science in Public Health (MSPH)*** has graduated four degree candidates between 2000 and 2002, with one other individual expected to complete the program in June of 2003. The two-year MSPH Program is designed for the non-physician public health practitioner planning a career in one of four specialty areas of public health: *environmental health; industrial hygiene; health physics; or, medical entomology*. Students have the opportunity to design and develop research protocols leading to a Master's Thesis. *Following the attack at the Pentagon on September 11, 2001, two MSPH students and one Ph.D. student, as well as their PMB Department staff, assisted the United States Army and the Environmental Protection Agency (EPA) to set up a command unit for chemical detection at the site of the disaster;* 3) ***the Occupational Ergonomics Concentration*** was recently established in response to the Army's request for specialty training in occupational ergonomics within the MPH Program. The first student entered this program in July of 2002 and will graduate in June of 2003; 4) ***the International Health Specialist Program*** was added as an additional area of concentration with the MPH Program in response to a request from the Surgeon General of the Air Force. Four students entered the program in July of 2002 and will receive their MPH Degrees in June of 2003; 5) ***the TriService Advanced Military Tropical Medicine Course*** has been offered at USU, beginning in 1996, through the Summer of 2002. During 2002, 75 military medical officer students were trained in operational military medicine, consisting of four weeks of lectures and laboratories in the advanced diagnosis and treatment of tropical diseases. Approximately 70 lecturers provided 106.5 hours of didactic instruction. *To date, approximately 375 students have completed the course;* 6) ***the Tropical Medicine and Travelers' Health Course*** is offered as a 12-week course during the Spring Quarter of the MPH Program. It includes a comprehensive lecture, seminar, laboratory and case-based curriculum approved by the American Society of Tropical Medicine and Hygiene and leads to eligibility for the qualifying examination in Tropical Medicine and Travelers' Health. To date, 27 medical officers have completed the course, including 16 who have subsequently taken and passed the certification examination; 7) ***the Diagnostic Parasitology Course*** is offered as a series of lectures and hands-on laboratory sessions for individuals wishing to study parasitic infections in humans. Military and civilian medical technologists and physicians from all parts of the world have completed this course. *Since 1988, over 263 individuals have taken the course, to include the 27 individuals who took the course during 2002;* and, 8) ***Medical Executive Skills Training -Integrating Clinical Managerial Decisions to Improve Population Health***, a five-day training course held four times each year, responds to the Congressional mandate that current and prospective DoD health care leaders receive training in health care management and administration. *To date, 24 sessions have been held in the TRICARE Regions and approximately 700 senior officers have been trained for the MHS.* (See Section II of this document, The USU SOM Department of Preventive Medicine and Biometrics and the Centers for Preventive Medicine and Public Health, for further discussion.)

ACADEMIC REQUIREMENTS AND 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 graded credit hours and the minimum for total academic credit is 144 credit hours. A qualifying examination (comprehensive examination) 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 within the last 5 years 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 departments' Ph.D. Programs of Study encompass an independent project whereby the student will receive a Master 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 these degrees.

The Graduate Education Committee and Department Reviews Ensure the Quality of the Programs. Each Graduate Education Program is managed by a Program Director. The Graduate Education Committee (GEC) is composed of the Graduate Program Directors, representatives from the Basic Science Departments, 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 350 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. Departmental faculty annually review and update the graduate course offerings for each program. Some departments rely upon SOM course offerings for their Graduate Education Program curricula, supplemented by graduate course offerings. Some SOM 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. Currently, the Self-Study for the

Middle States Association points out that “the USU graduate programs have continued to mature and develop with new interdisciplinary programs (e.g., Emerging Infectious Diseases) and programs targeted toward military needs (Undersea Medicine, Aviation Physiology) being initiated in the past five years. These programs take advantage of unique faculty expertise and other resources and opportunities unique to a Federal health sciences university. In addition, the Office of Graduate Education implements a regular formal process of external review of its graduate programs to assure that high quality programs are fostered and maintained” (*VIII, Graduate Education in the Biomedical Sciences and Public Health*, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self Study, submitted in March, 2003, page 8).

Within the last two years, each of the established Graduate Degree Granting Programs, subsequent to the preparation of a detailed self-study, was site-visited and reviewed by an external team of graduate educators. During the initial review cycle, the Neuroscience Program, Programs in the Medical and Clinical Psychology Department, the Anatomy, Physiology and Genetics Department, and the Pharmacology Department were evaluated. In 2001, the Molecular and Cell Biology Program and the Programs of the Pathology Department and the Department of Microbiology and Immunology were externally reviewed. Constructive improvements to the Graduate Education Programs have resulted from these external reviews. Newer programs, including the Emerging Infectious Disease Program, the Applied Human Biology Program, and the Master of Comparative Medicine Program will be externally reviewed within the next few years. This external review process is intended to bring attention to the strengths and weaknesses of the programs and to appropriately focus institutional resources for graduate education.

Accreditation of USU Graduate Programs in Public Health Is Extended through December 31, 2005. The Graduate Education Programs offered by the Department of Preventive Medicine and Biometrics (PMB), as an integral part of the SOM and the SOM Office of Graduate Education, are included in the full accreditation granted by the Commission on Higher Education of the Middle States Association of Colleges and Schools to the University. 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. In addition to accreditation by the Middle States Association as a Department within the SOM, the PMB graduate programs are nationally accredited by the Council on Education for Public Health (CEPH). CEPH is the recognized accrediting body for graduate schools of public health and graduate programs in community health education and community health/preventive medicine. The program was initially accredited in 1985 and was last reviewed in 1998. The CEPH report, following the June 1998 site visit by a team of external evaluators, noted that “the values of the institution and the philosophy of military medicine are an exceptionally ‘good fit’ with the values and philosophy which 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.” The PMB Graduate Programs in Public Health are fully accredited through 2005.

Following the CEPH accreditation process in 1998, an *ad hoc* committee was established to articulate the mission, goals, and objectives of the Preventive Medicine and Biometrics Graduate Programs. The PMB Department has continued to use this document as part of a dynamic process of program review and evaluation for continuous quality improvement, including efforts to identify measurable program outcomes. In addition to

the rigorous, quantitatively focused curriculum (60 credit hours), students are required to complete a 108 hour practicum experience, as well as an independent project. Greater emphasis has been placed on basic research methodology, and students are encouraged to present their research results at scientific meetings and to submit manuscripts to peer-reviewed journals for publication. The Program Director can be contacted by e-mail at <ggackstetter@usuhs.mil> or at <www.usuhs.mil/pmb/pmb.html>.

Clinical Psychology Program Receives Accreditation. The Department of Medical and Clinical Psychology's Clinical Psychology Ph.D. Program has received full accreditation from the American Psychology Association's 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." Doctoral programs and research in this area emphasize the application of psychology to behavioral medicine and to clinical psychology. Study in applied areas on the interface of health, psychology, and behavior, and in the basic areas of psychology is offered. This American Psychological Association-accredited Clinical Psychology Ph.D. Program is offered to selected members of the Uniformed Services. The Program Director can be contacted by e-mail at <tsbrocco@usuhs.mil> or at <www.usuhs.mil/mps/Psychology/index.html>.

ACADEMIC RESOURCE FOR THE UNIFORMED SERVICES

The Development of Independent Scholarship. The goal of graduate study in the biomedical sciences and public health 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 toward 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 350 individual graduate education courses have been established by the participating faculty at 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 that 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 Military Health System.

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; and, large numbers of both basic science and clinical science faculty members are involved in the didactic and research training of USU graduate students. *Currently, there are 200 civilian and 110 uniformed faculty members in the USU SOM and over 150 of those 310 SOM faculty members are actively supporting the Graduate Education Programs, which include approximately 160 graduate education students.* Formal occasions for faculty and graduate student interactions 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 at the University, but also for the future of medical research and education. The SOM Graduate Education Programs are clearly 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.

2002 School of Medicine Biomedical Graduate Educator Award. As part of the 2002 USU Graduation Ceremonies, **Regina Armstrong, Ph.D., Director of the Neuroscience Program**, received the Biomedical Graduate Educator Award. This award recognizes excellence in teaching, the mentorship of graduate students, the administration of graduate programs, and the promotion of the interests of graduate education. Doctor Armstrong was selected to receive this award because of her demonstrated commitment to graduate education through her extensive and outstanding contributions to the education of the graduate students at USU. Dr. Armstrong has provided outstanding leadership to the Graduate Education Programs of USU as the Director of the Neuroscience Program; and, she has served on multiple School of Medicine Committees in addition to providing on-going dedicated expertise to the Graduate Programs.

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, state-of-the-art laboratories are available to support the wide variety of research projects directed by the faculty in the basic medical sciences. Individual laboratories and core facilities are well-equipped with the instrumentation required for modern biomedical research. Special resources include the following: 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. Students can enhance their educational experiences at USU through collaboration with the National Institutes of Health, the Library of Medicine, the Naval Medical Research Command, the Walter Reed Army Institute of Research, the Armed Forces Institute of Pathology, the Armed Forces Radiobiology Research Institute, the National Institute of Standards and Technology, numerous biotechnology companies, and other major institutions in the area.

The Graduate Student Colloquium. The Graduate Student Research Colloquium was begun in 1980 to promote scholarly interchange between graduate students and the academic community at USU and to recognize the research achievements of USU graduate students. The 2002 Graduate Student Colloquium featured a career workshop organized by the students, platform and poster presentations given by students, and *the John W. Bullard Lecture*. The Career Development Workshop consisted of seven presentations by accomplished individuals working in various aspects of the scientific enterprise. These ranged from medical school faculty, to scientific review administrators, to patent lawyers involved with biotechnology, to a study director at the National Academy of Science. Nine scientific poster presentations by students were followed by a lunch, which included the Bullard Lecturer and six oral presentations by students. The 2002 Bullard Lecture was presented by **Marc K. Jenkins, Ph.D., Professor, Department of Microbiology, University of Minnesota**, on *Tracking the Generation of Memory CD4 T Cells in vivo*. Awards were given for the best poster and platform presentation.

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 15th for programs beginning in the following August. Applicants must have completed a Baccalaureate Degree Program from an accredited academic institution and have taken 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.

Demographics and Qualifications of the Student Body. Sixty-six new students matriculated into the Graduate Programs of the SOM during August of 2002. Of these, 28 were admitted to Ph.D. Degree Programs and 38 were admitted to Masters Degree Programs. Of the Ph.D. matriculants, the greatest number enrolled in the interdisciplinary programs: Emerging Infectious Disease Programs - 10 students; the Neuroscience Program - 3 students; and, the Molecular and Cell Biology Program - 7 students. Departmentally-based programs in Medical and Clinical Psychology enrolled 4 students; Preventive Medicine and Biometrics enrolled 2 students; and, Pathology and Military and Emergency Medicine each enrolled one student. The students in Masters Degree Programs are almost entirely enrolled in the graduate programs of the Department of Preventive Medicine and Biometrics Master of Public Health Program - 32 students; the Master of Science in Public Health - 5 students; and, the Master of Tropical Medicine and Hygiene - 1 student.

The 164 students currently enrolled in the Doctoral and Masters Degree Programs at USU come from all parts of the country, from all types of undergraduate academic institutions, and from many different career-paths. *Of these individuals, 108 are Ph.D. or DrPH students, while 56 are Master Degree candidates. Approximately 50 percent of the graduate students attend USU as active duty members of the Uniformed Services, to include the United States Army, Navy, Air Force, and Public Health Service (77 uniformed officers/87 civilians).* Most students are enrolled on a full-time status; however, a few exceptional students are accepted into degree-granting programs as part-time students. The MPH Program is generally completed in one year (as a full-time student); the Masters Degree Programs take approximately two years to complete; and, the Doctoral Programs take from three to seven years to complete (four to five years is the average time for the Ph.D. Program).

Active-duty military personnel accepted to study full-time must have the consent and sponsorship of their parent Services and incur a service obligation to the United States Government after the completion of their graduate training programs. The University offers USU-supported stipends on a competitive basis to civilian doctoral students who are United States Citizens or resident aliens. Forty-nine of the civilian Ph.D. students receive user-supported stipends; other civilian doctoral students receive stipend support from other sources. All but seven of the 164 students are United States Citizens or Permanent Residents.

Applicants must have completed a Bachelor Degree from an accredited academic institution prior to enrollment; they must arrange for: official transcripts of all prior college-level courses; GRE scores taken within the last two years; and, letters of recommendation from three individuals who are familiar with their academic

work. Information and application forms can be downloaded from <http://www.usuhs.mil/geo/gradpgm/index.html>. Completed applications must be received before January 15th for matriculation in late August; there is no application fee.

23rd Commencement - May 18, 2002. Well over 2,000 family members and guests attended the 23rd Commencement Ceremony at The Daughters of the American Revolution Constitution Hall in Washington, D.C., on May 18, 2002. At the graduation ceremony, the following School of Medicine Graduate Education Programs were recognized in the commencement program: 11 Doctor of Philosophy Degrees; 4 Doctor of Public Health Degrees; 2 Masters of Science Degrees; 1 Master of Military Medical History; 2 Masters of Science in Public Health Degrees; and, 29 Masters of Public Health Degrees.

The USU Graduate Education Programs Have Granted a Total of 727 Degrees. Since the establishment of the USU SOM Graduate Education Programs in 1977, through April of 2003, the Graduate Education Programs have granted a total of 727 Doctoral and Master Degrees in the Biomedical Sciences and Public Health: 229 - Doctor of Philosophy; 11 - Doctor of Public Health; 69 - Masters of Science; 386 - Masters of Public Health; 4 - Masters of Science in Public Health; 25 - Masters of Tropical Medicine and Hygiene; and, 3 Masters of Military Medical History. During 2002, 35 uniformed officers received advanced degrees (30 Masters Degrees and 5 Doctoral Degrees).

The 2002 Graduate Student Award. The Graduate Student Award was presented to **Sara Newman, Dr.Ph.** This award was presented during the 2002 USU Graduation Ceremonies to recognize this graduating student for her outstanding and exceptional service rendered to the student body, medical school, and the University. During the graduation ceremonies, Ms. Newman received a Doctor of Public Health Degree for her work in a Department of Preventive Medicine and Biometrics Graduate Program. This award recognizes Doctor Newman's academic achievements, participation in the academic and intellectual life of the community, and contributions to the welfare and morale of other graduate and medical students. Doctor Newman also presented the Graduate Student Farewell remarks during the 2002 USU Commencement Ceremonies.

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. This Fellowship is awarded annually to a USU graduate student who is expected to complete his/her research and defend his/her dissertation in sufficient time to participate in commencement activities. The 2002 Award was presented to **Sara Newman, DrPH, Department of Preventive Medicine and Biometrics.**

ALUMNI AFFAIRS

Overview of the Preparation of Graduate Students for Appropriate Career Opportunities. (The following is taken from the *VIII, Graduate Education in the Biomedical Sciences and Public Health*, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self Study, submitted in March of 2003, pages 3-5.)

Graduates of USU Ph.D. Programs, as with Biomedical Ph.D. Programs everywhere, usually enter post-doctoral programs immediately after graduation, and many take a second post-doctoral position before finding a career level position. Program Directors and the major advisors of most USU graduates are generally aware of the first appointment obtained by graduates, but have much less complete information about the graduates' activities subsequent to their first postdoctoral appointment. Informal discussion with Program Directors suggests that USU graduates appear to have no difficulty in obtaining good post-doctoral appointments. Many of the post-doctoral appointments taken up by USU graduates are obtained in response to letters to USU faculty mentors from schools seeking USU graduates for position vacancies. These letters reflect the high standing in their professional field that many USU faculty mentors hold; they also indicate that USU SOM Graduate Education Programs are regarded as a source of productive post-doctoral fellows.

Following post-doctoral appointments, USU Program Directors are aware that graduates of USU Doctoral Programs enter a wide range of positions. The University's location in Bethesda, Maryland, leads to appointments in government research laboratories. Thus, of 25 Ph.D. graduates of the Microbiology and Immunology Program whose positions were known at five years after graduation, 32 percent (9) held career positions in Federal or state research laboratories or research regulatory and management agencies; and, 55 percent (11) of the graduates of the Medical Psychology Program held similar appointments. Graduates of the smaller graduate programs also held appointments in government research and regulatory agencies. These positions are held in a diverse range of research, research management, or regulatory affairs positions within Federal or state research organizations. They include the National Institutes of Health and the Virginia State Department of Agriculture and Consumer Services Disease Center located in Ames, Iowa, and the Virginia State Department of Agriculture and Consumer Services in Warrenton, Virginia. Others have positions with non-profit agencies, such as the American Red Cross in Rockville, Maryland; the Henry M. Jackson Foundation for the Advancement of Military Medicine (with graduates located as far afield as the United States Government HIV/AIDS Program in Uganda); and, with the Scripps Research Institute in La Jolla, California.

Several USU graduates hold appointments as civilians with DoD clinical and research organizations, including the Walter Reed Army Medical Center (WRAMC); the Walter Reed Institute of Research; the United States Army Medical Research Institute of Infectious Diseases located in Frederick, Maryland; the Aberdeen Proving Ground; the Army Medical Department Center and School at Fort Sam Houston, Texas; and, other DoD facilities. Military graduates of USU Graduate Programs have a commitment to continued service in their military Service, where they often hold a variety of positions with research, research management, teaching, or clinical responsibilities. A few hold educational positions in military establishments. Graduates of both the Pharmacology and Neuroscience Graduate Education Programs have held academic positions in the United States Army Nurse Anesthesia Training Programs at WRAMC; San Antonio, Texas; and, Hawaii. More than 90 percent of the graduates of the Master of Public Health Program (a program that largely accepts military applicants) return to their individual Services and continue to hold public health related positions.

A number of USU Ph.D. graduates have entered medical school. Some are still in training, with two or three currently holding internships at various hospitals. A few are already in career positions. A Pathology Ph.D. graduate, trained in medicine at Johns Hopkins, is now the Chief of Neurosurgery at the William Beaumont Army Medical Center located in El Paso, Texas; and, a Microbiology graduate is now a pediatrician at the Greater Dundalk Medical Center in Baltimore, Maryland.

A fairly high percentage of USU graduates have moved from post-doctoral appointments to academic positions; 43 percent of the Microbiology and Immunology Graduate Education Program graduates and 16 percent of Medical Psychology Graduate Education Program graduates hold appointments in academic departments at the level of research associate or higher, with many in tenure track positions. Graduates from the Clinical Psychology, Pathology and Pharmacology Graduate Education Programs also hold appointments in the professorial track. These academic appointments are held at well recognized institutions, including the Johns Hopkins University School of Medicine, the University of Maryland School of Medicine, the Yale University School of Medicine, the Albert Einstein School of Medicine in New York, the Mahindol University in Bangkok, as well as USU. Most of the academic appointments are in medical schools, but USU graduates are also represented on non-medical faculties such as the Department of Psychology at Ohio University, the Department of Zoology at Louisiana State University, and the Department of Biological Sciences at California State University located in Sacramento, California. And, a Microbiology graduate holds an assistant professorship at the Northwestern School of Law, at the Lewis and Clark College located in Portland, Oregon.

A smaller, but not insignificant, percentage of USU Graduate Program alumni have taken up positions with research organizations in the private sector of the economy, usually after having first completed at least one post-doctoral position in an academic department. Alumni of the Pharmacology and the Pathology Graduate Education Programs hold research positions at Abbott Laboratories; and, alumni of the Microbiology Graduate Education Program hold positions with the Pharmacia Corporation located in Kalamazoo, Michigan, and with SunModics, Inc., located in Eden Prairie, Minnesota. A Biochemistry Graduate Education Program graduate holds a position with Curragen, a biotech company; and, a Pharmacology Graduate Education Program graduate has just left a major drug company to join an, as yet unnamed, start-up drug development biotech company.

A few graduates have taken up positions outside of their area of initial training. A Neuroscience Graduate Education Program graduate is a Master Control Operator in Ontario, California, for a national radio station group; a Microbiology Graduate Education Program graduate is a partner in a law firm; and, a Biochemistry Graduate Education Program graduate is a consultant with Booz-Allen Hamilton, Inc., a law firm. A few graduates have indicated that they are self-employed or working in their homes.

While the USU Graduate Education Program Directors do not have complete statistics on the careers of their graduates, the brief survey described above suggests that alumni of all USU Graduate Programs are reasonably successful at obtaining and advancing in career level positions in their chosen disciplines. Since USU is a DoD institution, and part of its mission is to advance military medicine through research, it is particularly gratifying to note that a sizeable number of USU Graduate Program alumni hold career level appointments in DoD research, clinical, and educational agencies. Furthermore, a sizeable group of other graduates occupy responsible positions in other Federal government agencies concerned with the general maintenance of the Nation's health. The career successes of alumni of the USU Graduate Education Programs in public service and the military indicate that the University is moving forward in its goal of becoming a national health university dedicated to government service.

V. GRADUATE MEDICAL EDUCATION

ESTABLISHMENT

Background - Graduate Medical Education Programs in the Military Health System. Graduate medical education (GME) comprises the second phase of the formal educational process that prepares physicians for medical practice. GME is required of all medical school graduates seeking full medical licensure and board certification in one of the specialties and/or subspecialties of medicine. This phase of medical education is, of necessity, conducted primarily in clinical settings, and requires direct participation by residents in the delivery of patient care services. Conducting high quality GME has always been a demanding undertaking. Ensuring an optimal learning environment and creating a proper balance between education and patient care activities have been the principal challenges to medical educators. In recent years, those challenges have become increasingly formidable due to the impact that the tremendous changes in the health care delivery system have had on the patient care environments in which GME is conducted. Certain of these changes have presented particularly difficult challenges for GME. Of special note, the shortened length of hospital stays, the increased emphasis on ambulatory care, the reductions in support staff, and the increased acuity of the average in-patient have placed increased demands on residency programs across the United States. The military GME programs in the National Capital Area have addressed many of these concerns through the use of simulated patients and virtual clinical experiences as discussed later in this section.

Following their graduation from the USU School of Medicine (SOM), the USU physician-graduates become 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 area. Residents in the MHS enjoy unique educational advantages. For example, the uniformed faculty members at the military teaching hospitals are present on a full-time basis, 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. And, as mentioned above, the NCC resident also has the advantage of participating in state-of-the-art simulated education and training.

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 residents' training as they observe and participate in conferences, activities and clinics directed toward their education.

Simulated Operating Rooms for Specific Specialties Are Available on the Main USU Campus. Advanced training is provided by the USU Clinical Simulator and Patient Simulation Laboratory (PSL), which is fully equipped with all of the functional equipment of an operating room, to include standard monitoring equipment, a

life support system (anesthesia machine and ventilator), a defibrillator, and instruments used in treatment. The PSL also includes complete audio/video recording and playback equipment. Training sessions are recorded; and, immediately following, the residents review their performance with their 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. Residents from the NCC GME Anesthesiology Program, receive intense training. Scenarios are designed to present specific patients who provide complex clinical problems; thus, critical experience is acquired without putting human patients, or the residents, at risk.

The National Capital Area Medical Simulation Center Offers State-of-the-Art Simulated Training.

Following collaborative efforts that began in 1995, USU and the Surgeons General of the Army, Navy and Air Force instituted a new teaching facility, the National Capital Area Medical Simulation Center (SIMCEN), in support of numerous and distinct medical education programs. The SIMCEN, a satellite facility located in Silver Spring, Maryland, began initial operations in the Fall of 1999, and remains one of the few places in the United States that combines multi-simulation techniques under one roof. 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 uses technology and actors posing as patients to teach the NCC GME residents about situations that they may encounter as practitioners but might not otherwise experience while training in hospital wards. The SIMCEN also provides the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions. During 2002, the SIMCEN supported over 14 GME educational activities (the SIMCEN is described at length in Section I of this report).

The USU School of Medicine Office of Graduate Medical Education (GME). The USU 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.

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 on 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) provision of consultation and advice for the Dean, School of Medicine, the President, USU, and others on military-unique medical curricula.

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.

Graduate Medical Education 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 to 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.

Army Graduate Medical Education (GME) Programs are the keystones to the quality of Army Medicine. Our GME Programs include military-unique aspects of a given specialty, which prepare physicians for the rigorous demands of practice in a wartime or contingency environment. Residents receive orientations and lectures concerning war zone injuries, trauma, and military deployments. Additionally, they attend formal training which includes a centralized combat casualty care course, advanced trauma life support, and medical management of chemical and biological casualties. After completing an Army Graduate Medical Education Program, a physician is uniquely qualified to deploy at all levels within the theater of operations to support the military medical mission. We now place board-certified physicians in our brigade and division surgeon positions to ensure that our divisional soldiers receive the highest levels of care regardless of where they are in the world.

- Testimony by **Lieutenant General James B. Peake, the Surgeon General of the Army**, before the House Committee on Armed Services, Subcommittee on Defense, April 10, 2002.

Each Program Must Include a Military Unique Curriculum that is Standardized and Specialty Specific. The GME Policy Memorandum of June 28, 1999, specified that at the entry level, each GME program must incorporate a standardized curriculum, which 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.

USU School of Medicine Office of Graduate Medical Education Coordinates the Development of Curricula. The USU School of Medicine Office of Graduate Medical Education was 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 both 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.

NATIONAL CAPITAL CONSORTIUM

Development of the National Capital Consortium. In 1993, the Assistant Secretary of Defense for Health Affairs directed that duplicative GME programs in the National Capital Area and San Antonio must be integrated or closed. This led to the establishment, in January of 1995, of the National Capital Military Medicine Education Consortium consisting of the Walter Reed Army Medical Center (and its subordinate command, the Dewitt Army Hospital located at Fort Belvoir, Virginia), the National Naval Medical Center, the Malcolm Grow Medical Center, and the USU School of Medicine. At that time, there were 86 programs located at five sites.

Ten GME programs were integrated into five during the first year of the Consortium's existence. In 1997, the Consortium was site surveyed by the Accreditation Council for Graduate Medical Education (ACGME) and received a "favorable decision" by the ACGME as an institutional sponsor. Later that year, the administrative headquarters was relocated to USU and the Associate Dean for Graduate Medical Education, **Dr. Howard E. Fauver, Jr., M.D.**, became the Administrative Director. Also during 1997, the name was changed to the National Capital Consortium (NCC). Growth of the NCC continued sporadically over the next few years; and, it was not until 2002, that the last of the GME programs in the National Capital Area came under the sponsorship of the NCC, bringing the current total to 65 programs. During 2001, the NCC was again approved by the ACGME as an institutional sponsor for the maximum period of five years.

Mission of the National Capital Consortium. The National Capital Consortium (NCC) serves as the institutional sponsor for the GME 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. The USU Office of GME also serves as the Administrative Office for the NCC.

The mission of the NCC is to educate physicians, dentists, and other health care professionals who provide care for the soldiers, sailors, airmen, and marines of all ages, throughout the Military Health System, to include their families. The NCC provides a scholarly environment and is dedicated to: excellence in both education and health care; and, 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. Information about the NCC programs, governance, Bylaws, and NCC Administrative Handbook can be accessed via the NCC web site: *<<http://www.usuhs/mil/gme/NCC.htm>>*.

Accreditation. The Accreditation Council for Graduate Medical Education (ACGME) is responsible for the accreditation of post-medical doctorate (M.D.) physician training programs within the United States. Accreditation is accomplished through a peer review process and is based upon established standards and guidelines. The mission of the ACGME is to improve the quality of health care in the United States by ensuring and improving the quality of graduate medical education experiences for physicians in training. The ACGME established national standards for graduate medical education by which it approves and continually assesses education programs under its aegis. It uses the most effective methods available to evaluate the quality of graduate medical education programs; and, it strives to improve evaluation methods and processes so that they are valid, fair, open, and ethical. In carrying out these activities, the ACGME is responsive to change and innovation in education and current practice; it promotes the use of effective measurement tools to assess resident physician competency; and, it encourages educational improvement.

The National Capital Consortium (NCC), by supplying leadership and resources, complies with the ACGME Institutional Requirements and ensures that Consortium-sponsored programs comply with ACGME program requirements. All Consortium-sponsored GME programs comply with ACGME program requirements; Consortium-sponsored GME programs operate under the authority and control of the Consortium. And, the Consortium regularly assesses the quality of the NCC educational programs.

New Programs. In 2002, the NCC added a new program sponsored by the USU SOM Department of Psychiatry. The program, *Disaster/Preventive Psychiatry*, is an advanced fellowship designed to produce leaders in population-based psychiatry. The program combines a Master of Public Health (MPH) Degree with a second year of practical experience at the USU Center for the Study of Traumatic Stress. During the latter year, the fellow will be on call to respond to disasters worldwide with teams from the USU Center. Although not eligible for ACGME accreditation, the program is degree-producing and is well suited to the needs of the Military Health System.

This year also saw the creation of a fellowship program in *Female Reconstructive and Pelvic Surgery*, formerly Urogynecology, at the Walter Reed Army Medical Center. The program had previously been located at the Madigan Army Medical Center in Tacoma, Washington. A three-year program, the fellowship will be accredited by the American Board of Obstetrics and Gynecology.

NCC/GME Awards and Distinctions (2001-2002). As in previous years, the residents, fellows and faculty in the NCC GME Education Programs garnered numerous distinctions and awards. The *American Academy of Dermatology Presidential Award* was given to **Lieutenant Colonel (P) Scott Norton, MC, USA**, Chief of Dermatology at the Walter Reed Army Medical Center (WRAMC) and member of the NCC faculty. And, again, three residents of the NCC WRAMC Internal Medicine Program had *presentations accepted at the National American College of Physicians Meeting*; all were in the Research Poster Sessions. An NCC fellow in the General Internal Medicine Program was also a finalist for the *Lipkin Research Award of the Society of General Internal Medicine*. **Lieutenant Colonel Andrew Satin, USAF, MC**, Director of the NCC Obstetrics and

Gynecology Program, was the *2001 ACOG Armed Forces District Professor of the Year*, topping his achievements by receiving a maximum five-year accreditation for his GME program. **Colonel Martin Ottolini, USAF, MC**, Program Director in the NCC Pediatric Infectious Disease Fellowship, was named the *Air Force Surgeon General's Consultant* and demonstrated his expertise in presentations at Mt. Sinai in New York and at the Virological Institute at the University of Wurzburg. The faculty and residents of the NCC's Psychiatry, Child and Adolescent Psychiatry, Forensic, and Geriatric Psychiatry Programs received military awards for the *post 9/11 support* they provided, and are still providing, at the Pentagon.

Scholarly Activity. The faculty of the NCC produced over 884 articles, 554 abstracts, and 227 book chapters. The residents and fellows have contributed, or co-authored, 373 articles, 387 abstracts, and 39 book chapters.

VI. THE OFFICE OF CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

Assess the continuing education activities of the school in the context of the institution's mission and objectives. Are programs adequate to meet the continuing educational needs of military health care professionals within the university?

SUMMARY: The Office of Continuing Education for Health Professionals (*CHE*) fulfills its mission and strongly supports USU in sponsoring continuing education for members of the Federal health care delivery system. *CHE* continually fosters the educational quality of its offerings and promotes "state of the art" health care education. Future endeavors will move toward broadening USU and *CHE*'s scope to reach new communities of participants; strengthen and expand educational evaluation systems; and, explore electronic media as an alternate delivery mode to meet customer needs, contributing to the quality of patient care delivery thereby enhancing performance outcomes.

- **XI. Continuing Health Professional Education,** Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self Study, October 29, 2002, page 11.

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 web-based continuing education (*CE*). 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 has always been recognized as an essential component of the continuum of education for health professionals. Current educational, social, and political factors that highlight the critical role of CE in the educational spectrum follow:

- Enhanced awareness of the role of health care providers during the threat of, or response to, a terrorist event;
- Incorporation of evidence-based medicine, clinical practice guidelines, and accountability into daily medical practice;
- Heightened patient safety concerns;
- Recognized CE value for provider skill level competency for readiness mobilization, relicensure, privileging, credentialing, specialty re-certification, professional society membership, and selected other requirements;
- Increased demand to deliver cutting-edge CE and rapid advances in biomedical knowledge, clinical practice guidelines, and health care technology; and,
- Focused partnerships between military medicine, other Federal, and private sector medicine.

CHE Must Ensure Academic Involvement in all Phases of Educational Activities 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 the educational activities designated for credit to include:

- Educational needs assessment, planning, implementation, and evaluation of continuing education activities for members of the health professions serving in the Uniformed and other Federal Services. The topics for continuing education activities are based on formal surveys, structured interviews, current professional topics, and those activities directed from higher authority. In every case, the particular interest and needs of a specific audience are considered during planning, preparation, delivery, and evaluation;
- Acquisition and maintenance of continuing education accreditation at USU; attendance at professional conferences and meetings conducted by the accrediting agencies or peer groups to ensure compliance for 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;

- Administrative and logistical support and determination of budgetary requirements for continuing education activities 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 using evaluative data and research findings to improve the quality of those activities at the University. (Annual total program evaluations identify areas where improvement could enhance the continuing education services provided by the University. Mechanisms, such as the evaluation of events by participants, by faculty, and by office staff, help to improve the quality of similar future events. 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. Continuous quality improvement is active in all areas of the Office of CHE.)

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, health care executives, and social workers through its accreditation by: 1) the Accreditation Council for Continuing Medical Education (accredited through July of 2005); 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing (accredited through August of 2007); 3) the American Psychological Association (accredited through March of 2003/currently awaiting notification of reaccreditation); 4) the American College of Healthcare Executives (ACHE) authorized USU 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 exceptionally 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 educational needs, planning, implementation, and the evaluation of continuing education activities and outcomes 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.

The Continuing Health Education Committee. The Continuing Health Education (CHE) Committee serves as an approving 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 committee activities on an *ad hoc* basis. The committee membership, across all disciplines and departments, facilitates communication and provides a forum for planning education activities and for the discussion of issues and policies that affect continuing medical education. "Recently, the Accreditation Council on Continuing Medical Education (ACCME) sent out a request for feedback on validating continuing medical education and the American Academy of Family Physicians (AAFP) requested feedback on evidenced-based medicine requirements for continuing medical education. In both instances, reading materials were provided to the CHE Committee members. Lively topical discussions were held at CHE Committee meetings, where faculty expressed their opinions. This interchange provided a tool for valuable idea exchange. CHE Committee members were also encouraged to formulate and forward their individual responses to CHE. The Office of CHE collated all input and submitted formal USU responses to the respective accrediting agency. In both cases, the accrediting agency expressed thanks for USU's input. AAFP praised USU's depth of interest in their topic and requested permission to post USU's input on their web-site."

INCREASED SUPPORT FOR THE MILITARY HEALTH SYSTEM

CHE Support for Graduate Medical Education Programs. In conjunction with the National Capital Consortium (the institutional entity for the National Capital Region's GME-integrated programs offered by the Walter Reed Army Medical Center, the National Naval Medical Center, and the Malcolm Grow Medical Center), the Office of CHE's involvement has greatly increased through the sponsoring of on-going continuing medical education (CME) activities such as Grand Rounds in Cardiothoracic Surgery, Faculty Development, General Thoracic Surgery, GYN Oncology Tumor Planning, Ophthalmology, Pediatrics, and Psychiatry.

CHE Support for TRICARE/Health Affairs Initiatives. During Fiscal Year 2002, the USU Office of CHE supported the Office of the Secretary of Defense (OSD), Health Affairs (HA) with the following activities: DoD Patient Safety Program Training (six iterations); the DoD Ergonomics Conference; the TRICARE Winter Conference plus several other regional TRICARE conferences; the Health Information and Management Systems Society Conference; five Medical Executive Skills Courses; 25 Medical Effects of Ionizing Radiation (MEIR) Courses both within the continental United States and overseas; a videotaped MEIR Course; the Interagency Institute for Federal Health Care Executives (two iterations); and, the Women's Memorial Health Care Symposium.

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 2002.

Medical Readiness - The Military Medical Humanitarian Assistance Course. The Military Medical Humanitarian Assistance Course is a two-day interactive course designed to train United States 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 United States 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, which 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. All clinical instructors 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. During 2002, the course was held 13 times for 219 physicians, 19 nurses, and 25 others.

Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror, Part I and Part II. In 2002, CHE supported two courses, Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror: Part I and Part II, provided by the USU SOM Department of Pathology. Part I (first offered in the Spring of 2001 without CE credit) provides an understanding of the medical features and medical countermeasures for living agents or organic products that have potential use in warfare, terrorism, or criminal activities in the context of the political implications of such weapons of mass destruction. Also incorporated into the course is a hands-on training phase conducted in the USU Patient Simulation Laboratory (PSL). The PSL includes a mannequin, operated through computers and attached to standard clinical monitors; it is used as a teaching tool for medical, nursing, and graduate students, as well as for residents, physicians, and others. Scenarios of medical disasters can be scheduled and students can practice repetitively until they gain familiarity, competence, and poise with the unexpected. The PSL, in conjunction with these courses, has produced inhalational anthrax, pneumonic plague, and marine toxin exposure scenarios, with another featuring smallpox currently in development. Part II (first offered in the Fall of 2001) focuses on nuclear, radiological, high explosives, chemical agents, and unusual weapons; these scenarios are also acted out during hands-on training sessions through the PSL.

Other Courses/Activities Sponsored by CHE During 2002:

- The International Spine Workshops (Cervical, Peripheral Nerve, Thoraco-Lumbar);
- The Capital Conference Family Practice Review;
- Surgical Topics (Advanced Gynecological Laparoscopy and Hysteroscopy (two courses), Video-Assisted Thoracic Surgery, Hand-Assisted Laparoscopic Nephrectomy, the 29th Military Vascular Surgery Symposium, and the 16th Annual Pediatric/Pediatric Surgery Symposium);
- Three courses on TriService Video Endoscopy for Perioperative Nurses were held, two at the USU campus and one in San Antonio, Texas;
- The Toolbox for Ethics Program Development was held in Mississippi; and,
- The Sixteenth Conference on Military Medicine, *Enhancing Readiness: Implementing Change in Military Medical Education*.

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 United States Army, Navy, Air Force, and Public Health Service, and the Department of Veterans Affairs. For Fiscal Year 2001, the Department of Veterans Affairs hosted the 107th Annual Meeting, *Information Management: One Key to Healthcare Success* held on November 5 - 10, 2000, in Las Vegas, Nevada. The agenda emphasized Federal medicine and took full advantage of the unique forum offered by the meeting and the 6,710 attendees. During Fiscal Year 2001, the USU Office of CHE offered 206 sessions for continuing education credit in four disciplines (a significant increase from the 47 sessions offered in two disciplines during Fiscal Year 1993. Due to the aftermath of the events of September 11, 2001, the Annual Meeting for Fiscal Year 2002 was cancelled.

Women's Memorial Health Symposium. 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. There were seven seminars in Fiscal Year 2001. Sixty-eight certificates were presented to nurses, 16 to physicians, and 34 to others. In 2002, a research symposium was held to highlight the research achievements and challenges related to the health of military and veteran women. Twelve physicians, 52 nurses, and 12 others attended *Health Issues of Military and Veteran Women: A Research Symposium* at the Women's Memorial, on June 6-7, 2002.

GENERATED COST AVOIDANCE FOR DOD BY CHE

CHE Generates Cost Avoidance for DoD - \$2,653,448. In carrying out its principal responsibilities during Fiscal Year 2002, CHE sponsored continuing medical education for 719 activities with an attendance of 5,208 physicians; provided continuing nursing education for 62 activities with an attendance of 1,378 nurses; and, approved Category II (non-ACHE) continuing education credit for 25 programs for 480 members of the American College of Healthcare Executives, and one continuing education activity for 4 psychologists. Because the USU Office of CHE brings medical training to the medical health care professionals, an estimated cost avoidance of \$2,653,448 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 (\$3,506,670 - \$853,222 = \$2,653,448).

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 2002, topics included mental health, surgical techniques, infectious diseases, pediatrics, orthopedics, and internal medicine. Seventy-eight physicians and 57 advanced practice nurses were able to earn up to 31.25 hours of CME or 36.3 nursing contact hours. Twenty-nine others also attended. A two-day course, *Health Care Response to Weapons of Mass Destruction*, was presented during each iteration.

NASA Teleconference Continuing Education Series. Another example of service to other Federal agencies were the three NASA series on *Occupational and Environmental Health & Safety, Nuclear Terrorism, and Chemical Terrorism*. Video-teleconferencing systems connected live seminars to: the Institute for Biomedical Problems located in Moscow; the Institute of Telemedicine in Toulouse, France; the Medical Informatics Center at the Medical College of Virginia; the Robert Byrd Health Sciences Center at West Virginia University; the USU campus; and, the 14 NASA Centers. These seminars are part of the continual initiative of the NASA Office of Life and Microgravity Sciences and Applications to provide continuing education for the NASA employees and contractors and to promote international understanding and interactions among the international Space Station Project Partners. USU has provided CME, CNE, and ACHE continuing education support for the NASA seminar series since 1998. USU also provided CME, CNE, ACHE, and APA continuing education support for the NASA Occupational Health Conference held on July 7-12, 2002, in Washington, D.C. The conference provided attendees with the latest relevant information from acknowledged experts on health threats applicable to the NASA work environment and a forum for the interactive exchange of work experience. Twenty physicians, seven nurses, and four psychologists were awarded continuing education credit.

MILITARY TRAINING NETWORK

Mission. The mission of the Military Training Network (MTN) is to develop and implement policy guidance and ensure compliance with curricular and administrative standards for resuscitative and trauma medicine training programs for the Uniformed Services and Department of Defense affiliates. The MTN supports medical readiness through continuing health professional resuscitative and trauma education for service members world-wide. The TriService MTN staff provides service-specific expertise, central record keeping, and world-wide coordination of training programs.

Background. The MTN was established in 1982 by the DoD Health Council for the purpose of training, registration, coordination, and centralized record keeping for resuscitative medicine programs. The MTN falls under the purview of USU, and is organized under the Senior Executive Director, USU Office of Continuing Education for Health Professionals.

The MTN has been recognized as an American Heart Association (AHA) Regional Training Center since 1984 and as the American College of Surgeons (ACS) Region 13 Program Coordinator since 1996. Over the past six years, more than one million service members have attended MTN training programs.

The MTN is billeted and resourced equally by the Surgeons General of the United States Army, Navy, and Air Force. The operation of the MTN would not be possible without the additional resources provided by the University.

Strategic Goals. The MTN has identified seven goals for its strategic focus:

- Promote quality resuscitative training programs to ensure optimal Medical Readiness for the DoD;
- Provide top-notch customer service by expanding on-line information and continuously providing resources 24 hours per day, all year long;
- Quantify MTN-affiliated training sites compliance with American Heart Association Guidelines through site visits and recorded audits;
- Enhance administrative operational processes by upgrading automation systems (during 2002, the MTN requested and received approval from the USU Executive Committee to recognize self-paced, interactive computer-based training for ACLS and BLS renewal and to provide cards for personnel who successfully completed the courses);

- Preserve fair cost structures from vendors and international and national organizations that support MTN training sites;
- Promote the benefits of an MTN affiliation to eligible DoD units including the Reserve and Guard Components (during 2002, the MTN requested and received approval from the USU Executive Committee to include the DoD Education Activity (DoDEA) in the Military Training Network. DoDEA will teach Heartsaver CPR to its DoD dependents in high school health classes; school nurses or staff from the local Medical Treatment Facility (MTN) will provide the instruction and evaluation; the MTN will provide course completion cards); and,
- Incorporate DoD Education Activity faculty and staff into the MTN training programs.

World-Wide Capabilities Essential to Medical Readiness. The American Heart Association and the American College of Surgeons recognize the USU MTN as a Regional Training Center/Region Program Coordinator through written agreements. The resuscitative and trauma medical training programs administered by the MTN include: Advanced Cardiac Life Support (ACLS); Advanced Trauma Life Support (ATLS); Pediatric Advanced Life Support (PALS); and, Basic Life Support (BLS).

As an AHA Training Center and ACS Program Coordinator, the USU MTN provides transportable, world-wide training reciprocity for service members. In addition, the MTN structure provides training in strategically critical areas throughout the world (e.g., Bosnia, Korea, and Turkey), on operational platforms (e.g., aboard aircraft carriers), and at remote sites where civilian training would not be available. These capabilities are essential to military medical readiness. The USU MTN is the only American Heart Association affiliate with world-wide reciprocity for its health care providers.

MTN Generates Estimated Savings for DoD - \$13,007,208. 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 for 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 2002, 223,735 defense personnel were trained through the USU MTN (an increase of 32% from 2001). The average commercial cost for providing this training is conservatively estimated at \$13,655,590. The cost avoidance generated for the DoD during 2002, an estimated total of \$13,007,208, 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 (\$13,655,590 - \$648,382 = \$13,007,208).

VII. THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

I want to thank you personally for the help we at CIA have received from AFRRI. CIA has been committed to ensuring the safety of our mail and AFRRI has been absolutely essential in our efforts. The assessment of the effectiveness of our mail treatment processes would be impossible without your help. Specifically, I want to point out the following individuals for their superb effort: Gregory Knudson, Ph.D.; Mike Shoemaker, Ph.D.; and, Thomas Elliott, Ph.D. They have been most gracious and accommodating to our needs at the CIA. Without the help of these individuals, we at CIA would not have been able to achieve our goals as quickly. It has been and will continue to be a pleasure to work with these individuals. (Prior to September 11, 2001, and the distribution of anthrax through several United States Post Offices, AFRRI researchers had studied the effects of irradiation on biological agents and had established a standard dosage of radiation necessary to eradicate anthrax spores. The researchers used a harmless surrogate spore that mimics the biological properties of live anthrax spores. This non-toxic spore can easily be placed in an envelope, and then tested after irradiation procedures at a specific mailing distribution area; the spore allows extensive testing for quality assurance to ensure the safety of those individuals who will handle the mail. Since September 11th, AFRRI scientists have provided relevant information and briefings to numerous entities such as the White House Medical Unit, the House Science Committee, Senate and House professional staff, the Department of Homeland Security, the Centers for Disease Control, the Armed Forces Institute of Pathology, the General Accounting Office, and the Federal Bureau of Investigation.)

- Letter to **Colonel Robert Eng, Director, AFRRI**, from **Dr. Brian Hollibush, Environmental Health and Preventive Medicine Officer, Central Intelligence Agency**, dated May 8, 2002.

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 weapons, nuclear reactors, 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 up to 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 doses of gamma and neutron radiation from the detonation of a nuclear weapon, and its two exposure rooms that can accommodate experimental work involving large-animal models and other large irradiation studies. 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 USU President approved the plan in October of 2000. The Office of the Director, Defense Research and Engineering (DDR&E) directly funded AFRRI's programs and provided management oversight of its research programs through the Director, Bio Systems.

On August 17, 2000, the DDR&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). Once funding and governance issues have been resolved, 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.

Mission. AFRRI must 1) conduct applied radiobiological research to develop militarily relevant medical countermeasures against radiation injuries; 2) maintain a Medical Radiobiology Advisory Team to support accidental or premeditated events involving nuclear weapons, nuclear reactors, 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 Forces Command; and, the Surgeons reporting to the Combatant Commanders on medical nuclear defense; and, 4) train DoD medical personnel on the management and treatment of radiation casualties (Medical Effects of Ionizing Radiation [MEIR] 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 tissue damage in radiation therapy patients, no other program exists to address the spectrum of radiological injuries anticipated under combat situations involving the use of nuclear or radiological weapons. 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. The TRIGA nuclear reactor provides 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 for medical readiness. AFRRI's second major source is a cobalt-60 irradiation facility. It is designed to safely hold up to 500,000 Curies of cobalt-60, but is currently licensed for 400,000 Curies. Because this source can produce a high exposure rate with monoenergetic gamma-rays, it is ideally suited for the high-energy photons needed in applied military radiobiology research.

Documented Relevance. Following the terrorist attacks of September 11, 2001, it has become apparent that the risk of deliberate attacks involving the use of radiological or nuclear devices is on the rise. A growing threat exists 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, posing a challenge on the battlefield and to homeland security. Unlike a strategic nuclear exchange, which would devastate infrastructure and all but eliminate prospects for the delivery of any remaining health care resources, casualties of nuclear/radiological incidents in today's threat environments will 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 systems that must respond to such disaster scenarios. The military has a clear need for information on the sources and complicating effects of radiation during 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. AFRRI's provision of direct support to the Office of the Secretary of Defense (OSD) and Joint Chiefs of Staff (JCS) validates its mission relevance and its value to national defense. 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 during the week of February 26, 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 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 an enhanced medical readiness posture that will save lives and reduce injuries in nuclear/radiological and combined NBC threat environments.

TIMELINESS

Doctor Marburger, President Bush's Science Advisor, sent a six-person team, including two AFRRRI scientists to the Lima, Ohio plant to evaluate the mail irradiation facility and process. AFRRRI scientists, working with National Institutes of Standards and Technology personnel, assembled a container of mail with dosimeters and surrogate spores, took it to Lima, had it irradiated as a quality assessment check, and briefed Doctor Marburger on the results, which found no growth spores at the radiation dose recommended by AFRRRI. Dr. Marburger will later brief several government agencies, including the Office of Homeland Defense, at the White House on the results.

- Weekly Activities Report, Health Affairs, Office of the Secretary of Defense, Uniformed Services University, November 5-9, 2001.

An Impressive Response. AFRRRI 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 Surgeons of the Combatant Commands 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 AFRRRI-sponsored accredited course on the Medical Effects of Ionizing Radiation (MEIR), 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 AFRRRI 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 AFRRRI 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 that (in addition to on-going nuclear threats from terrorist activities) involve low doses and possible low dose rates.... AFRRRI 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 AFRRRI, dated July of 1996, page 2).

AFRRI Fields Medical Training and Provides Rapid Response in Support of DoD Missions.

Medical Radiobiology Advisory Team. The AFRRI Medical Radiobiology Advisory Team (MRAT) provides medical and health physics consultation and dose assessment capabilities to the United States military and private sectors around the world for contending with a broad spectrum of nuclear or radiological accidents, incidents, or injuries. For example, the team was on full alert after the terrorist attacks at the World Trade Center and at the Pentagon and during the crisis between India and Pakistan. The AFRRI MRAT is a critical arm of the Defense Consequence Management Advisory Team, fielded by the Defense Threat Reduction Agency, and is called upon to deploy worldwide in response to incidents involving nuclear weapons, radiological devices, or nuclear power reactor emergencies (an article in U.S. News and World Report, during February of 2001, illustrated 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. AFRRI 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. AFRRI also provided guidance to the United States Army Japan on measures to reassure the United States military members and their families that they were not in harm's way, to include the monitoring of food sources for the United States community.

August 14, 2000 Response Capability to the Accident of the Russian Submarine Kursk. During the aftermath of the Russian submarine accident, AFRRI was asked by the Defense Threat Reduction Agency for medical capabilities that could be offered to the Russians in anticipation of an official Russian request. AFRRI immediately responded with radiation biodosimetry support to assess the radiation dose to the surviving Russian sailors.

January 8, 2001 Response to a Request from the German Ministry of Defense. The 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 AFRRI's support in dispelling such claims. The request recognized AFRRI's worldwide leadership role and scientific expertise in studies on the health effects of chronic exposures to DU. Through AFRRI'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, AFRRI 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.

Support to the President of the United States. On November 19, 2001, members of AFRRRI's Military Medical Operations Department spent the morning at the White House training the President's medical unit personnel on the medical effects of ionizing radiation and the latest preventive, assessment and treatment measures that can be applied to mitigate radiation-induced injury.

Support to United States Forces Command. On February 12, 2002, the AFFRI Director briefed the principal flag officer staff and Command Surgeon of the United States Forces Command (USFORSCOM) on the radiological risks from potential attacks on, sabotage of, or accidents involving nuclear power plants in areas of operation. The briefing included a review of the Food and Drug Administration (FDA) and DoD policies on the stockpiling and use of potassium iodide for the emergency treatment of personnel exposed to radioactive iodine that can be released during events involving nuclear power reactors.

Training for National Guard Civil Support Teams. A Presidential Directive following the incidents of September 11, 2001, established National Guard Civil Support Teams to provide State Governors with cadres of first responders specifically trained and equipped to deal with terrorist incidents involving chemical, biological, radiological, nuclear or explosive (CBRNE) incidents. In March of 2002, AFRRRI's Medical Radiological Advisory Team (MRAT) hosted a two-week conference to train personnel assigned as first responders to the newly established civil support teams. The training included lectures on operational health physics, Federal/DoD regulations, risk analysis, radiological instrumentation, DoD and non-DoD radiological assets, and design characteristics of nuclear power plants, radiological dispersal devices and nuclear weapons. Learning objectives focused on decision-making during the crucial first 12 hours following a nuclear/radiological event. The conference was highly successful. As a consequence, the National Guard Bureau of Washington, D.C., has requested the AFRRRI MRAT to provide training on an annual basis.

Support to the Combatant Commander, United States Southern Command, and the Department of State. On January 30, 2002, members of AFRRRI's MRAT provided a briefing to the Acting Combatant Commander, United States Southern Command (USSOUTHCOM), and six other flag officers and representatives from the United States Department of State on the medical and psychological consequences of a radiological dispersal device (RDD) detonation in a foreign country. The DoD, in conjunction with the State Department, is using the information to develop emergency response plans for personnel assigned to United States embassies located around the world. On March 14, 2002, AFRRRI personnel participated with the State Department in an exercise simulating the detonation of an RDD in a foreign embassy. The goal of the exercise was to educate participants on the threats and procedures for providing prompt medical assessment, triage and treatment. AFRRRI continues to provide medical and health physics support to the Department of State by serving on its Weapons of Mass Destruction (WMD) Incident Planning and Coordination Committee and its WMD Response Operations Control Group.

Support to the President's Science Advisor and Office of Science and Technology Policy. On March 12, 2002, the AFRRRI Director and the head of AFRRRI's Military Medical Operations Department briefed the Radiological, Nuclear and Conventional Threats Detection and Response R&D Working Group of the Office of Science and Technology Policy (OSTP) on the capabilities of AFRRRI's Medical Radiological Advisory Team.

Support to the Vice President of the United States. On February 7, 2002, the AFRRRI Director and other AFRRRI staff briefed the Vice President's Senior Advisor for Medicine and Public Health and the Senior Advisor for Biodefense on the medical consequences of terrorist use of improvised nuclear weapons and RDDs.

Support to the Centers for Disease Control and Prevention. On July 18, 2002, AFRRRI staff provided senior representatives of the Centers for Disease Control and Prevention (CDC) with presentations covering the threats posed by RDDs, surreptitious planting of radiation sources, improvised nuclear weapons, and sabotage of nuclear power reactors. The presentations included discussions on the appropriate use of potassium iodide to mitigate risks of thyroid cancer from exposure to radioactive iodine and an overview of AFRRRI's role in emergency response, medical training, and research and development.

Support to the European Union on Medical Preparedness for Nuclear/Radiological Events. As a result of AFRRRI's participation in NATO's Research Technology Agency and its research and development programs for radiation medical defense, in October of 2002, AFRRRI reported that it had been invited to participate in the European Union (EU) initiative entitled, *Medical Preparedness for Nuclear/Radiological Events*. The recently formed EBMT Nuclear Accident Subcommittee has three objectives: 1) assessments of EU medical resources to effectively manage radiation-associated mass casualties; 2) guidance to EU members concerning current capacities and the requirements for extended capacities; and, 3) development of a robust network of cooperating EU medical facilities and trained personnel in order to better deal with future nuclear/radiological contingencies.

Support Provided to the Interagency Working Group on Test Methods and Surrogates for *Bacillus anthracis*. Senior AFRRRI investigators were key participants by invitation for an October 9-10, 2002 Interagency Workshop sponsored by the Environmental Protection Agency (EPA). The workshop's goals were to identify the best non-harmful surrogate bacterial organisms to mimic the biological characteristics of *B. anthracis*, the bacterial agent of anthrax, and to establish collaborative research activities needed to assist the EPA in developing scientifically-based guidance on test methods and performance standards for the inactivation of *B. anthracis* spores. Other noted agencies participating in the workshop included the Centers for Disease Control and Prevention, the Defense Threat Reduction Agency, the Naval Surface Warfare Center, the Department of State, the Department of Energy, the National Institutes of Health, the National Institute of Standards and Technology, the Department of Justice, the Federal Drug Administration, the Lawrence Livermore National Laboratory, the Argon National Laboratory, the Department of Homeland Security, the University of Ottawa, and the Dugway Proving Ground.

Support to the National Pharmaceutical Stockpile Program. An AFRRRI physician serves as the co-chair of a joint Centers for Disease Control and Prevention/Department of Defense working group that is chartered to identify pharmaceutical agents for incorporation into the Nation's strategic stockpile to be available for emergency use in the event of nuclear or radiological disasters.

SCIENTIFIC MERIT

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.

Strategic Approach to Program Management. AFRRI management has implemented a three-tiered hierarchy of management controls to provide a clear picture of all funded work in the context of logical levels of effort. The system provides a road map showing how the over-arching 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 time frames 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 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 AFRRI Director before the start of work. The Study may 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 three-part quality assurance mechanism to monitor program execution using the tiered management process as a basis for oversight review.

A Three-Part Approach for Quality Assurance. In response to a direction from the USU President, from April through October of 2000, the senior management of USU and AFRRRI coordinated and developed an administrative operation plan for the integration of AFRRRI 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 AFRRRI finalized a three-part process already initiated by AFRRRI for quality assurance for the AFRRRI research programs. The three-part process includes a planning phase for the 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 merit review of written protocols prior to the funding and initiation of new studies. All funded work must be approved in this manner as the basis for the rest of the management process. This up-front critical look ensures that the scientific merit and program relevancy of the work meet the program's needs. It serves 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. As previously mentioned, this takes the form of annual, in-house, self-examinations by an In-Process Review mechanism. Capping the In-Process Review is an independent extramural assessment of the kind that many DoD organizations commission the American Institute of Biological Sciences (AIBS) to do. Panels of subject matter experts are selected by the AIBS to provide an unbiased assessment of the program; such reviews are generally conducted every three to five years, or as deemed appropriate. 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 AIBS program assessment, which focuses primarily on review and analysis, also takes into consideration how effectively AFRRRI/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 the funding and commencement of work, the protocols must be subjected to critical review as noted above. 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. The Joint Technology Coordinating Group-7 (JTTCG-7), under the auspices of the Armed Services Biomedical Research Evaluation Management (ASBREM) Committee, evaluates the program's military relevancy.

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 the continuation of the effort. The reviews provide program managers, the Scientific Director, and the AFRRRI Director assurances that Studies, Tasks, and Projects are on course and properly resourced. Reviews have also provided the basis for annual reporting requirements and budget submissions to DDR&E.

Part III - Independent Peer Review. Capping the three-part quality assurance review process is the 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 goes to the Bio Systems Director of DDR&E in addition to senior AFRRRI and USU management. The next AIBS review is scheduled for the end of Fiscal Year 2004.

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 AFRRRI agree that, if possible, the AFRRRI Scientific Director should also serve as the Chair of the new department. The SOM Department of Radiobiology would have a basic research foundation oriented to support AFRRRI's Medical Radiological Defense Research Program mission. The Chairman of the Department of Radiobiology would directly report to the Dean of the School of Medicine.

The Quality of AFRRRI'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 AFRRRI'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."

AFRRRI Publications in Peer-Reviewed Journals. The quality and productivity of AFRRRI's science is reflected in its record of peer-reviewed publications and other printed materials. (A Record of AFRRRI Publications, for 1999-2002, is provided at Appendix C.)

Recent Endorsements of the Quality of the AFRRRI Research Programs. AFRRRI's research programs are 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 AFRRRI's senior scientists was 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 was an international meeting held at the University of Ulm, in Ulm, Germany, on May 14 -17, 2001; it was sponsored by the European Commission Directorate for General Research and Technical Development, the International Searle Foundation, and the University of Ulm;

- AFRRRI's Radiation Casualty Management Team Leader holds the Chair of the 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 AFRRRI senior scientist serves as the United States Representative to the International Standards Organization (ISO) Working Group #18, tasked to develop performance standards for specialized laboratories performing radiation dose assessments using cytogenetic procedures;

- AFRRRI 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 were published in a special issue of Military Medicine, the International Journal of AMSUS, Supplement to Military Medicine, Volume 167, No 2, in February of 2002;

- AFRRRI 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, released in 2001, includes, for the first time, reference to the premature chromosome condensation assay pioneered and published by the AFRRRI Biodosimetry Team;

- Members of the AFRRRI Depleted Uranium (DU) Team were invited on June 14, 1999, to make formal presentations in Washington, D.C., on AFRRRI's DU research findings to the National Academy of Sciences, Institute of Medicine, Committee on Health Effects Associated with Exposures during the Gulf War. Information presented by the DU Team was 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 AFRRRI 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 of 2001 and addressed issues and current advances in the management of acutely irradiated or contaminated patients. The AFRRRI Biodosimetry Team also organized and hosted a workshop, "Updates on the Current Dose Assessment Techniques: Biological," in conjunction with the REAC/TS Conference;

- AFRRRI planned, organized, and hosted a highly successful International Conference on the Operational Impact of Psychological Casualties from Weapons of Mass Destruction 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 for Chemical and Biological Defense;

- An AFRRRI senior scientist was invited to present an abstract entitled, "Radiation Biodosimetry: Applications for Space Flight," at The World Space Congress 2002/34th Committee on Space Research Scientific Assembly in Houston, Texas; and,

- Two AFRRRI scientists were invited speakers at the 11th Annual Meeting of the Council on Ionizing Radiation Measurements and Standards at the National Institute of Standards and Technology held in October of 2002. The Council provides leadership and dissemination of information on a wide range of topics dealing with ionizing radiation measurements and standards.

TECHNICAL QUALITY

The Transition of New and Improved Medical Technologies. AFRRRI's Science and Technology Programs are soon expected to transition new and improved medical technologies into advanced development with Food and Drug Administration (FDA) approval and eventual fielding.

Four Defense Technology Objectives (DTOs) Guide the Thrust of AFRRRI's Research. AFRRRI's research programs present a strategic commitment that 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 FDA approval, and eventual fielding.

Since 1998, AFRRRI 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. Each of the four DTOs supports the Quadrennial Defense Review (QDR) transformation operational goal of *Project and Sustain U.S. Forces*.

Four Research Thrusts. There are four major AFRRRI research thrusts, each carried out by a team of AFRRRI investigators:

The Radiation Casualty Management Team. The Radiation Casualty Management Team investigates the full spectrum of medical countermeasures for an external exposure to ionizing radiation. Drug compounds are under development that can potentially elevate tolerable thresholds of ionizing radiation, leading to injury reduction and saved lives. The team investigates compounds that carry anti-oxidant or DNA damage surveillance and repair stimulating properties, or compounds that 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 and the lungs. AFRRRI investigators have 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. On-going research includes attempts to deliver similar protective efficacy by the oral route of administration and should lead to a product that can be more easily managed logistically and used by deployed military troops. In October of 2001, AFRRRI investigators and representatives from its corporate partner presented preliminary data and a research plan for clinical trials of 5-AED at a pre-investigational new drug meeting before the FDA. The plan was favorably received and the FDA provided valuable guidance on how to proceed with pre-clinical trials toward an IND application.

The Biological Dosimetry Team. The Biological Dosimetry Team has made important technical achievements, which significantly advance the science and medical application of cytogenetic-based methods of radiation dose assessment. The purpose of this research is to: develop rapid assays to measure radiation exposure to casualties; enhance both treatment and management; and, distinguish the “worried well” from those with radiation injuries. 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 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 the 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 has drawn considerable attention from around the world to AFRRRI and its Biological Dosimetry Team. AFRRRI 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 during field operations. The PCC assay and a software package for biodosimetry assessment are expected to transition within the next three to five years. During 2001, the United States Joint Standing Committee on Nuclear Energy Cooperation (JSCNEC) requested discussions on training and consultation in the areas of emergency radiological medical response and biodosimetry. Dr. Chong-Won Cho, Director General of South Korea’s Atomic Energy Bureau, Ministry of Science and Technology, and a principal participant in the United States discussions with North Korea on the construction of nuclear power plants in North Korea, made the request following AFRRRI’s presentations at the State Department’s 22nd JSCNEC Meeting on May 16-18, 2001.

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, which calls for a more aggressive removal of DU shrapnel fragments. The AFRRRI team also works closely with the Office of the Special Assistant for Gulf War Illness as subject matter experts and consultants on DU issues, and collaborates with the Department of Veterans Affairs in its 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. The 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 AFRRRI’s being recognized as a center of excellence in DU studies. The development of a simple chemical assay for DU, which 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 AFRRRI 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. As discussed earlier, on January 8, 2001, AFRRRI's consultation and expertise greatly helped to defuse the crisis within the NATO alliance, stemming from claims by some allied forces that DU exposures during operations in the Balkans were the cause of serious personal illness. In addition, on January 10, 2001, AFRRRI provided the Office of the Secretary of Defense with the most current scientific information on the human bioeffects of DU resulting from various sources of exposure.

The Radiation Infection Treatment Team. Following the direction of the Director, BioSystems, Office of the Director, Defense Research and Engineering, the Nuclear, Biological and Chemical Interactions and Countermeasures Team's scope of effort was considerably narrowed and shifted to a new area of concentration. The newly named Radiation Infection Treatment Team now focuses on the problem of understanding and developing medical countermeasures against the radiation-induced translocation of intestinal bacteria into the bloodstream, and other naturally occurring infectious sequelae that accompany higher doses of ionizing radiation. Its staff of highly trained and experienced microbiologists extend the work of the Radiation Casualty Management Team by concentrating on studies to develop preventive and treatment measures for polymicrobial sepsis. Ionizing radiation damages the cellular components of the immune system and the epithelial linings of the intestinal track and respiratory system. The damage to epithelial tissues creates portals of entry into the circulatory system for microbial agents. This, combined with an impaired immune system leads to the polymicrobial sepsis that is the leading cause of death due to radiation injury. The team's initial objectives are to establish animal models, which appropriately represent radiation-induced microbial sepsis, and then to begin examining several proposed prophylactic and treatment measures that include the use of new-generation antimicrobial agents, biological response modifiers and probiotic agents. The awarding of a new Defense Technology Objective covering this area of efforts attests to its timeliness and relevance.

RESPONSE TO THE SPECIAL REQUIREMENTS OF MEDICAL READINESS

AFRRI Projects Address Requirements of Military Operations and Homeland Security. AFRRI's portfolio of current and planned projects adequately addresses needs related to military operations and homeland security 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.

- AIBS Peer Review on AFRRI, dated July of 1996, page 29.

Five Entities Guide Research Thrusts or Provide Oversight and Review. Five entities provide guidance on program objectives and product development based on specific military requirements or provide oversight and review of AFRRI's research programs.

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.

On October 17, 2001, the AFRRI Board of Governors met and discussed four issues following an overview briefing by the Director of AFRRI. *The first issue* was the Service support needed for medical nuclear/radiological defense requirements. The Board recommended that the Joint Staff articulate Joint Service Operational Requirements; and, DDR&E would ascertain which OSD office would oversee the proposed transition to the P6.4 and P6.5 Advanced Development of AFRRI's products. *The second issue* was the Service policy for the Medical Effects of Ionizing Radiation (MEIR) Course; the Board recommended that AFRRI develop an Advanced Distance Learning interactive training module. *The third issue* was the replacement of the AFRRI Board of Governors with an AFRRI Board of Advisors; this concept was approved, together with a Council of Colonels/Captains; the DDMRD J-4 would chair the Board of Advisors. *The fourth issue* was the selection of the next Director of AFRRI; DDR&E noted that if a qualified candidate could not be identified, that the current Director should be extended for an additional year (the recommended extension took place). And, there was a new business discussion on the suitability of the use of AFRRI to sterilize mail.

The United States Army Nuclear Chemical Agency. Every two years, the United States Army Nuclear Chemical Agency (USANCA), with the assistance of AFRRI subject matter experts, publishes its 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 to establish and prioritize joint service mission needs and operational requirements. The mission needs and requirements documents, thus developed, guide 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 time spent on active duty, and following the service member's 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.

The Office of the Director, Defense Research and Engineering. The Office of the Director, Defense Research and Engineering (DDR&E) conducts a technology area review and assessment (TARA) every two years. The TARA process includes, but is not limited to, a comprehensive review of AFRRI's four DTO's (Defense Technology Objectives) relative to each DTO's stated milestones and metrics, and whether the DTO objectives adequately focus on requirements. A program overview sponsored by DDR&E was held on June 25-27, 2001. AFRRI presented each protocol related to four main program areas: Biological Dosimetry; Depleted Uranium; Radiation Casualty Management; and, NBC Combined Effects and Countermeasures. The main finding was the requirement to define a process to transition products from the Science and Technology P6.3 Program to the Advanced Development Programs, P6.4 and P6.5.

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, which 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) all contracts and maintenance agreements will be frequently reviewed for cost avoidance and 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 AFRRI contracting/support requirements; 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 on-going 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.

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 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 by AFRRI in the areas of Security, Facilities, and Research Administration. The inclusion of the funding for these additional five hires (**\$262,000**) was included in the estimated cost of staffing AFRRI during FY2002 and beyond.

One-Time Property Renovation Costs. AFRRRI'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 AFRRRI 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 AFRRRI's 173,000 square foot complex; the costs have been discussed with the Office of the Director of Defense Research and Engineering. These projects include: the building of firewalls; the renovation of the heating, ventilation, and air conditioning systems; major laboratory upgrades; and, the renovation of elevators. All of these projects are five to ten years beyond the recommended timeframes for implementation. (The \$4,000,000 total reflects DDR&E input on the original October 2000 submission of \$4,500,000.)

AFRRRI's Internal Response to Budget Deficiencies.

AFRRRI's Internal Program Management. Due to consistent budgetary reductions, in order to maintain a vibrant and productive program, AFRRRI has re-engineered 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 AFRRRI to Obtain Higher Level Programmed Funding Lines. To date, DoD supports AFRRRI's Medical Radiological Defense Research Program (MRDRP) initiatives up to, and including, pre-clinical non-cGLP (current Good Laboratory Practices) studies for safety and efficacy in surrogate animal model systems (P6.2/P6.3 funding lines). Conducting pre-clinical safety trials under cGLP and transitioning products into advanced development involving clinical studies in humans requires higher level programmed funding lines (P6.4/P6.5), that currently do not exist for medical radiological defense. Also needed is a sophisticated project management process compliant with Food and Drug Administration (FDA) regulatory affairs, which AFRRRI does not have. In order to partially meet this requirement, a memorandum of agreement between AFRRRI and the United States Army Medical Research and Material Command (MRMC) was signed in 2000. The United States Army Medical Material Development Activity (USAMMDA) mission within MRMC is to provide project management and regulatory affairs support for moving new medical technologies through cGLP pre-clinical studies and human trials towards newly licensed medical products. Funding constraints at this level of effort are a serious detriment to the transitioning of medical products into advanced

development and the obtaining of FDA approval. One approach, though not the total solution, is to partner with pharmaceutical companies to develop products with dual military and civilian applications and to share in both the cost of obtaining FDA approval and intellectual property rights.

Products Identified for Transition. AFRRRI has identified numerous candidate products for transition within the next ten years. With funding projections in hand, AFRRRI has identified the unfunded requirements. Products include true radiation radioprotectant drugs to help prevent radiation injuries in service members and emergency response personnel, who may be called upon to operate in nuclear or radiological environments. They also include treatment drugs for radiation injuries that enhance immune system function and accelerate recovery of the blood-forming system and, drugs for treating radiation-induced infections. There are treatment strategies being developed to replace the trauma of bone marrow transplants and the complications of transplant rejection. In addition, procedures for the rapid biological assessment of radiation dose are being developed that will contribute to the delivery of more timely and effective triage and medical management of the radiation-injured, and that will help to distinguish between the truly physically injured and the “worried well.” In the event of a serious incident, radiophobia and psychologically stressed populations would be significant and must be quickly dealt with in order to reassure the general public and to effectively manage the response. Operational requirements for these products are being promulgated through the Medical Programs Sub-Panel of the Joint Service Integration Group under the Joint NBC Defense Board and other requirements processes.



Department of Defense
DIRECTIVE

NUMBER 5105.45

March 9, 2000

DA&M

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 1997¹
- (d) Program Budget Decision 711R, "Defense Reform Initiative - Office of the Secretary of Defense and the Defense Agencies," December 17, 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.

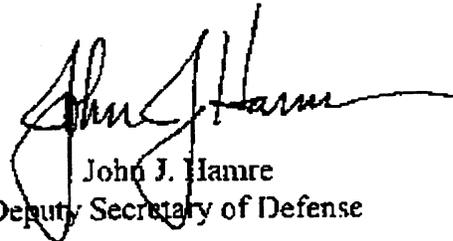
9.2. Communicate directly with appropriate representatives of the DoD Components and other Executive Departments and Agencies, and members of the public, as appropriate, on matters related to the mission and programs of the USUHS.

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.



John J. Hamre
Deputy Secretary of Defense

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
- (g) DoD Directive 8910.1, "Management and Control of Information Requirements," June 11, 1993

E2. ENCLOSURE 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, "Department of Defense Federal Advisory Committee Management Program," September 5, 1989.

E2.1.1.7. In accordance with Executive Order (E.O.) 10450, "Security Requirements for Government Employment," April 27, 1953; E.O. 12333, "United States Intelligence Activities," December 4, 1981; and E.O. 12968, "Access to Classified Information," August 4, 1995; and DoD Directive 5200.2, "DoD Personnel Security Program (DoDSP)," April 9, 1999, as appropriate:

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 JTR, Volume 2, "DoD Civilian Personnel," current edition.

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 U.S.C. 412 and 5 U.S.C. 4110 and 4111.

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, "DoD Records Management Program," April 11, 1997.

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 Procedures," August 1994, authorized by DoD Directive 5025.1, June 24, 1994.

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 DoD Directive 5200.8, "Security of DoD Installations and Resources," April 25, 1991.

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 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, 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: \$186,700.00; 2.2 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, 2003

**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.

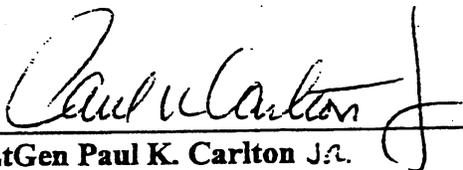
F. **Signature Authority:** The Chair has authority to transmit decisions upon which the Executive Committee has reached unanimity. In the absence of a member of the Executive Committee, the representative of a Surgeon General is authorized to participate in the decision-making process.

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



Uniformed Services University

Strategic Plan

A Message from the President

The University Strategic Plan has become the core document with which the University is formulating its future. In accordance with good management practices, we have aligned our plan with the Department of Defense Medical Health System (MHS) Business Plan.

In April 2001, the University senior staff, teaching hospital representatives, Chair of the Board of Regents, and representatives of the Surgeons General held a very productive three-day retreat to review our strategic plan. We examined our strengths, weaknesses, opportunities, and threats. As a result, we identified seven new goals and over forty objectives, of which 28 were selected to be worked on in FY 2002. Since last year, over 200 people have been working on these objectives to meet our mission of "Learning to care for those in harm's way."

Listed below are the University's seven goals with their respective goal champions. I invite you to click on each goal to view the objectives and strategies that are being worked on in FY 2002.

Goal 1: We will enhance the reputation of USU as a premier health sciences academic institution with a unique global and military perspective.

Goal Champions:

Mr. Peter Esker, pesker@usuhs.mil
Lt Col Carolyn Miller, cmiller@usuhs.mil

Goal 2: We will anticipate changes in society, medicine and the military to meet the academic and unique needs of health care delivery in the MHS.

Goal Champions:

Dr. Emmanuel Cassimatis, ecassimatis@usuhs.mil
Col Martha Turner, mturner@usuhs.mil

Goal 3: We will optimize resources to efficiently and effectively implement USU core capabilities.

Goal Champions:

Mr. Steve Rice, srice@usuhs.mil

Goal 4: We will build a sustaining financial base.

Goal Champions:

Mr. Charlie Mannix, cmannix@usuhs.mil

Goal 5: We will optimize our role in military and federal medical education and research.

Goal Champions:

Dr. Val Hemming, vhemming@usuhs.mil

Dr. Steve Kaminsky, skaminsky@usuhs.mil

Goal 6: We will create a powerful, committed and energized University family.

Goal Champions:

Mrs. Mary Dix, mdix@usuhs.mil

Dr. Richard MacDonald, rmacdonald@usuhs.mil

Goal 7: We will effectively communicate the right information to the right people at the right time.

Goal Champions:

Dr. Vernon Schinski, vschinski@usuhs.mil

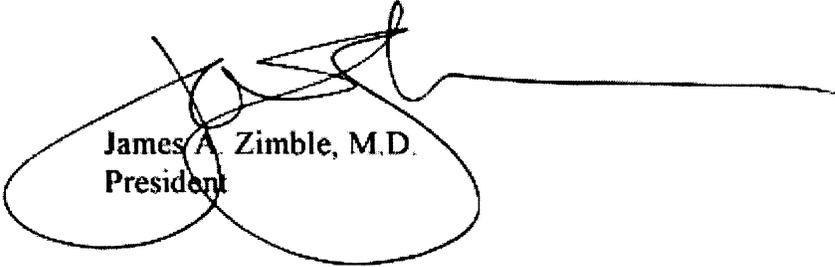
COL Charles Serio, cserio@usuhs.mil

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 objectives and strategies are added. I also encourage you to engage in discussions with the Goal Champions--a link is located at the bottom of each goal that will connect you with their email address. Please feel free to 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, welcomed, and appreciated.



**James A. Zimble, M.D.
President**



Uniformed Services University

Strategic Plan

GOAL 1

We will enhance the reputation of USU as a premier health sciences academic institution with a unique global and military perspective.

Goal Champions:

Mr. Peter Esker, pesker@usuhs.mil, 301-295-1219

Lt Col Carolyn Miller, cmiller@usuhs.mil, 301-295-9560

***1.1: Public understands the unique roles and values of the Uniformed Services University.**

1.1.1 Public relations and other announcements and press releases have USU and its success stories.

*Integrated Action Team Leader: Mr. John Frankenburg,
jfrankenburg@usuhs.mil, 301-295-3665*

***1.2: Military and civilian leadership recognize the University's role in military medicine and preparation for operational missions.**

1.2.1 Military and civilian leadership recognize the University's role in military medicine and preparation for operation missions.

*Integrated Action Team Leader: Dr. James Smirinotopolus,
jsmirnio@usuhs.mil, 301-295-3145*

***1.3: The University is a prized and career-enhancing assignment for both military and civilian health care professionals.**

1.3.1 The University is a prized and career-enhancing assignment for both military and civilian health care professionals.

*Integrated Action Team Leader: CDR Barry Wayne,
bwayne@usuhs.mil, 301-295-3019*

***1.4: The University actively recruits under-represented minorities in order to attain a diverse faculty and student body in proportion to the population of the MHS.**

1.4.1 Active recruiting efforts to raise the total applicant pool: target under-represented minorities, women, military personnel, and all prospective applicants.

*Integrated Action Team Leader: Mr. Peter Stavish,
pstavish@usuhs.mil, 301-295-3198*

***1.5: Alumni are proud to serve as University ambassadors for recruitment and public relations.**

1.5.1 Contact alumni; donations increased by 10% per year for three years.

*Integrated Action Team Leader: Mrs. Helaine Ahern,
hahern@usuhs.mil, 301-295-3094*

1.5.2 Contact alumni to attend recruitment fairs in their local area, and to coordinate presentations at local military installations.

*Integrated Action Team Leader: Dr. J Mauri Hamilton,
hamilton@usuhs.mil, 301-295-9561 and
Mrs. Sharon Willis, swillis@usuhs.mil, 301-295-3578*

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 2

We will anticipate changes in society, medicine and the military to meet the academic and unique needs of health care delivery in the MHS.

Goal Champions:

Dr. Emmanuel Cassimatis, ecassimatis@usuhs.mil, 301-295-1917
Col Martha Turner, mturner@usuhs.mil, 301-295-1009

***2.1: The University is an active and valued participant in professional, academic and military organizations.**

2.1.1 The USU is an active and valued participant in professional, academic and military organizations.

*Integrated Action Team Leader: Lt Col Paul Austin,
paustin@usuhs.mil, 301-295-1206*

***2.2: The University strongly advocates for the direct care component of the MHS.**

2.2.1 Education - and knowledge - of USU students and faculty about the direct care systems.

*Integrated Action Team Leader: Dr. Galen Barbour, gbarbour@usuhs.mil,
301-295-3832*

***2.3: The University serves as a think tank to address new issues as they emerge.**

2.3.1 The University serves as a "think tank," or intellectual resource.

Integrated Action Team Leader: Dr. Geoff Ling, gling@usuhs.mil, 301-295-3683

2.4: The University is fully integrated into the MHS.

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 3

We will optimize resources to efficiently and effectively implement USU core capabilities.

Goal Champion:

Mr. Steve Rice, srice@usuhs.mil, 301-295-3896

***3.1: Best business practices are implemented.**

3.1.1 Consolidation of University Space Committee's.

Integrated Action Team Leader: Dr. Richrd Andre, randre@usuhs.mil, 301-295-3024

3.1.2 Implement the use of a business plan for all University projects.

*Integrated Action Team Leader: Dr. Vernon Schinski, vschinski@usuhs.mil,
301-295-3700*

3.1.3 Increase ordering ceiling on IMPAC card for certain departments, e.g. LRC, UIS.

*Integrated Action Team Leader: LTC James Swearengen, jswearengen@usuhs.mil,
301-295-1910*

3.1.4 Indirect Funds/Support Cost Recovery distribution.

*Integrated Action Team Leader: Mr. Norman Qualtrough, nqualtrough@usuhs.mil,
301-295-3443*

3.1.5 Improve civilian personnel hiring process within USU by improving/modifying the SF-52 tracking system.

*Integrated Action Team Leader: Mr. Joe Piemontese, jpiemontese@usuhs.mil,
301-295-3412*

3.1.6 Improve the USU Instruction Review process.

*Integrated Action Team Leader: Mrs. Patricia Burke, pburke@usuhs.mil,
301-295-3032*

3.1.7 Obtain the most up-to-date financial/purchasing/logistical software to replace or update the CUFS software.

*Integrated Action Team Leader: Mr. Robert Parker, rparker@usuhs.mil,
301-295-3287*

***3.2: Facilities and infrastructure are state-of-the-art.**

3.3: Salaries, benefits and compensation plans are competitive.

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 4

We will build a sustaining financial base.

Goal Champion:

Mr. Charlie Mannix, cmannix@usuhs.mil, 301-295-3981

- *4.1: Research and resource funding is increased.**
- *4.2: Endowments are developed in concert with strategic plan objectives.**
- 4.3: All cost centers are actively engaged in POM process.**
- 4.4: Synergy between USUHS and HJF is increased.**
- 4.5: Tech transfer/CRADA is used to fullest extent.**
- 4.6: Directed entrepreneurial activity is fostered.**
- 4.7: Flexible long term funding is secured.**
- 4.8: The University receives significant external private financial support including alumni contributions.**

4.1.1 - 4.4.1 Increase research and resource funding is predicated on the growth of its components.

Integrated Action Team Leader: Mrs. Helaine Ahern, hahern@usuhs.mil,
301-295-3094

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 5

We will optimize our role in military and federal medical education and research.

Goal Champions:

Dr. Val Hemming, vhemming@usuhs.mil, 301-295-3017

Dr. Steve Kaminsky, skaminsky@usuhs.mil, 301-295-9440

***5.1: Educational programs promote military medical readiness, public health, and force protection.**

5.1.1 Educational programs promote military medical readiness, public health, and force protection.

Integrated Action Team Leader: CDR Barry Wayne, bwayne@usuhs.mil, 301-295-3019

5.2: Educational programs meet accreditation standards.

5.3: Educational and research programs set new standards for knowledge and skills in contingency medicine.

5.4: Programs teach professional values and behavior including culture and heritage.

5.5: Educational processes develop leadership professional and administrative skills for medical professionals.

***5.6: Research and development focuses on military relevant outcomes.**

5.6.1 Research and development focuses on military relevant outcomes.

*Integrated Action Team Leader: CAPT Larry Laughlin, lLaughlin@usuhs.mil,
301-295-3170*

5.7: Partnerships are established to enhance collaborative research, education and tech transfer.

***5.8: Compliance in research is assured.**

5.8.1 Define policy/process for University wide research compliance.

*Integrated Action Team Leader: Dr. Steve Kaminsky, skaminsky@usuhs.mil,
301-295-9440*

5.9: Education and research in patient safety are carried out.

5.10: University graduates exceed our customer's expectations.

5.11: Our graduates serve as a continuous source of career medical officers.

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 6

We will create a powerful, committed and energized University family.

Goal Champion:

Mrs. Mary Dix, mdix@usuhs.mil, 301-295-1958

Dr. Richard MacDonald, rmacdonald@usuhs.mil, 301-295-3185

***6.1: Staff and faculty are satisfied and productive.**

6.1.1 Faculty, staff, and student welfare and satisfaction are continuously monitored within the University.

*Integrated Action Team Leader: CAPT Jane Mead, jmead@usuhs.mil,
301-295-0962*

***6.2: Strategic thinking is imbedded in the organizational culture of the University.**

6.2.4 All of the USUHS community must share a vision that all employees, working as one team, can accomplish.

*Integrated Action Team Leader: Chaplain Evans, jevans@usuhs.mil,
301-295-9193*

***6.3: Alumni are active and engaged in the University.**

6.3.1 Information will be provided to USUHS Alumni that will promote the development of academic, clinical, and management skills.

*Integrated Action Team Leader: COL George Fuller, gfuller@usuhs.mil,
301-295-3632*

***6.4: Communication will be enhanced throughout the University community both on-site and off-site.**

6.4.2 USUHS faculty, staff, students, and alumni, both on-site and off-site, will be provided information relevant to their career enhancement, mission, and interests.

*Integrated Action Team Leader: Dr. Neil Grunberg, ngrunberg@usuhs.mil,
301-295-3270*

** These objectives will be worked in FY 2002*



Uniformed Services University

Strategic Plan

GOAL 7

We will effectively communicate the right information to the right people at the right time.

Goal Champions:

Dr. Vernon Schinski, vschinski@usuhs.mil, 301-295-3700

COL Charles Serio, cserio@usuhs.mil, 301-295-2690

7.1: Every user is educated and trained in appropriate use of information media.

7.2: "Push technology" is provided for critical information.

7.3: Every user has a valid e-mail address.

***7.4: Tools are available and utilized for off-site communications.**

7.4.1 Improve off-site communication.

*Integrated Action Team Leader: Ms. Emma Ford, eford@usuhs.mil,
301-295-9800*

7.4.2 Revise mail codes for distribution of correspondence at the University and its associated activities, including AFRRI.

*Integrated Action Team Leader: Mrs. Jane Bradley, jbradley@usuhs.mil,
301-295-3701*

***7.5: A robust array of communication mechanisms is maintained.**

7.5.1 Establish an electronic communication policy for all of the University and its subordinate activities.

*Integrated Action Team Leader: Mr. Pete Esker, pesker@usuhs.mil,
301-295-1219*

7.5.2 Establish policies/procedures for the use of voice mail as a communication mechanism at the University and its activities.

*Integrated Action Team Leader: Mr. Dennis Stutz, dstutz@usuhs.mil,
301-295-3301*

7.5.3 Provide a flexible means for electronic distribution of official communication at the University.

*Integrated Action Team Leader: Mrs. Royce Lewis, rlewis@usuhs.mil,
301-295-9800*

*** These objectives will be worked in FY 2002**

USU STRATEGIC PLAN

New Goals for USU

- Education
- Military Service
- Research
- Leadership
- Stewardship

Education

To meet the Nation's needs as the preferred source for uniformed healthcare education and training.

- USU programs will meet or exceed national standards and will earn the maximum duration of accreditation at each accreditation cycle.
- USU will develop a center of excellence for the study of Emerging Infectious Disease (EID) in conjunction with USAMRIID and WRAIR.
- USU will partner with senior service colleges to create a School of Leadership and Professional Development.
- USU will develop and deploy Continuing Health Education and distance learning programs to enhance the competency of Military Healthcare professionals in areas of the Military Unique Curriculum.

Military Service

To provide graduates and faculty, who are expert in responding to threats from Weapons of Mass Destruction (WMD); disaster and humanitarian relief; traumatic and post-traumatic stress; and all aspects of preventive healthcare.

- USU will train professionals to the highest levels of skill with special orientation to those aspects of Medicine, Science, and Nursing important to the needs of the military and federal services.
- USU will coordinate with other agencies to develop and conduct training for health care professionals in disaster and humanitarian relief; weapons of mass destruction; traumatic and post-traumatic stress; and preventive medicine for mission readiness

Research

To be a leader in basic and clinical research to improve healthcare, to protect, sustain and enhance the fighting force and to secure the public's health.

- USU research and development will emphasize issues relevant to military, federal, and homeland security.
- USU will develop interdisciplinary programs focused on outcomes research.
- USU will develop a repository for collecting and analyzing combat casualty data.
- USU will emphasize research objectives established by service and Joint Service medical requirement documents.
- USU will ensure regulatory compliance in all aspects of healthcare and basic science research.

Leadership

To develop and provide uniformed and federal leaders for national healthcare service focused on mission readiness and homeland security.

- USU will mentor and train our students to become military and federal healthcare leaders.
- USU Faculty and Alumni will achieve positions of leadership in professional and scientific organizations.
- USU Alumni will achieve positions of Leadership in the Department of Defense and in the Federal Government.

Stewardship

To protect and enhance the human and physical resources of the University and optimize productivity while promoting a sense of family and community.

- USU will recruit, reward, and retain outstanding Faculty and Staff.
- USU will have a comprehensive faculty mentoring program
- USU will work to ensure that everything that we do is characterized by the principles of ethics and accountability.
- USU will aggressively seek to secure financial and institutional support to achieve the goals and objectives of this strategic plan as outlined in the above sections on education; military service; research; and leadership