Uniformed Services University
of the Health Sciences

Catalog 2008-2010

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Published: August 2007

Previously published as USU's
- Bulletin 2004-2006 of the F. Edward Hébert School of Medicine, Volume 23, Number 1
- Catalog 2004-2006 of the School of Nursing, Volume 4, Number 1
- Graduate Programs in the Biomedical Sciences booklet

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Message from the President

The Uniformed Services University of the Health Sciences (USU) offers something found nowhere else—a unique combination of education, research, and military and public service. It is the very special nature of this university that attracts a distinctive group of faculty, students and staff, all of whom share the common goal of providing good medicine in bad places.

Charles L. Rice, M.D.

This institution is singularly charged with teaching its students to care for those in harm's way. The USU faculty, students, staff, administration and alumni embrace a shared mission, and each brings distinct strengths and talents to this pursuit. In large measure, it is this clarity of commitment and shared vision that makes the people of USU exceptional.

Our students learn in a multiservice environment—one that emphasizes and capitalizes on the strengths of each service. Throughout their education, they discover what it means to be a military or Public Health Service officer and how to interact with the other services. Through training exercises and daily interactions with our enlisted men and women in the USU Brigade, our students learn to become better officers.

Our faculty members serve as educators, clinicians and scientists. From developing vaccines for lethal viruses to conducting fundamental research in radiation biology, they advance the boundaries of science.

Faculty and students take part in special research relationships afforded by our interactions with other federal agencies, including the National Institutes of Health, the National Science Foundation, the U.S. Army Medical Research and Materiel Command and the Naval Medical Research Center. Our accomplished alumni serve their country around the world. These men and women practice

the clinical skills that we teach and advance medical knowledge and capabilities through their research. They continue a tradition of excellence in military and public health medicine.

A key element of our unique environment is our affiliation with the local military hospitals with whom we are about to embark on a transformative journey. At the core of any quality health sciences center is a healthcare delivery system, and the U.S. military has the largest system in the country. Looking ahead, this university will play a key role in the delivery of that healthcare and in advancing militarily relevant clinical research. USU will be at the core of the new Walter Reed National Military Medical Center, the new world-class academic health center being constructed on the Bethesda, Maryland, campus adjacent to the university.

I am particularly proud that the university is an integral part of this ambitious and far-reaching plan. USU is embarked on a shared mission to expand and strengthen our partnerships within the military health system, with other federal agencies and with our nation's great universities. We also are working with the U.S. Public Health Service to educate a cohort of officers prepared to better respond in emergency situations and times of national crisis. We will serve as a resource to the nation on military medical matters, and our role in international relations, through medical diplomacy, will increase as we provide support for and strengthen our relationships with partners worldwide.

I am proud to serve as the fifth president of this university, especially at such a critical time for our military and our country. My goal is to maximize our contribution to the military, the nation and the world by advancing military medicine and improving health worldwide.

Charles L. Rice, M.D.

Limitations

Discussions in this catalog of statutes, regulations, and policies are informational only and do not confer any rights or benefits on applicants, students, or graduates. The Uniformed Services University of the Health Sciences reserves the right to effect regulatory and policy changes at any time. Every effort will be made to provide those affected by changes with advance notice. Changes in curriculum or in graduation requirements will take into account disadvantage to students and will not be made retroactively unless they can be accommodated within the remaining time before graduation.

Changes in statutes and in the separate policies of each of the uniformed services may affect the rights and obligations of students and graduates. The *Catalog* attempts to provide a general summary of the uniformed services' policies that affect students and graduates and that are in effect at the time of publication. An individual service policy may differ from the *Catalog* summary, in which case the service policy governs. Individual student contracts may vary from service to service and year to year and should be read carefully before they are signed.

United States Capitol: The 1972 Congressional act that established the Uniformed Services University of the Health Sciences directed that it be near the Nation's seat of government in the District of Columbia.

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1. General Information

The Uniformed Services University of the Health Sciences (USU), established by Congress in 1972, specializes in educating physicians, nurses, and researchers to serve the needs of the military health system and public health community.

Military healthcare professionals must understand and treat syndromes and injuries that often are rare and require knowledge of tropical medicine and hygiene, parasitology, epidemiologic methods and preventive medicine. Healthcare professionals in the U.S. Public Health Service rely on much the same education and training to acquire the expertise needed in their fields, including providing health interventions for natural disasters.

USU faculty, staff and students remain deeply committed to developing the skills, technologies and knowledge necessary to provide the best possible care for those in harm's way. It is our job to educate those who protect the health of our soldiers, sailors and airmen; to develop the next generation of medical research; and to ensure that healthcare practitioners are equipped to deal with the unique challenges of military medicine and public health.

The university's worldwide reputation as a center of excellence for education and research was set in motion with USU's first class, which matriculated in 1976 and graduated in 1980. That reputation continues today with typical enrollments of more than 650 medical students, 170 graduate students, and 150 nursing students.

The F. Edward Hébert School of Medicine has a year-round, four-year curriculum that is nearly 700 hours longer than that found at other U.S. medical schools. These extra hours focus on subjects that relate to the unique requirements

Mission

The Uniformed Services University of the Health Sciences is the Nation's federal health sciences university and is committed to excellence in military medicine and public health during peace and war. We provide the Nation with health professionals dedicated to career service in the Department of Defense and the United States Public Health Service and with scientists who serve the common good.

We serve the uniformed services and the Nation as an outstanding academic health sciences center with a worldwide perspective for education, research, service, and consultation; we are unique in relating these activities to military medicine, disaster medicine, and military medical readiness.

of career-oriented military and public health physicians.

The Graduate Education in the Biomedical Sciences and Public Health program awards doctoral and master's degrees through interdisciplinary and department-based graduate programs within the School of Medicine. Program strengths include infectious disease, neuroscience, and preventive medicine research. A large number of graduates serve the federal biomedical research enterprise.

The Graduate School of Nursing (GSN) has a year-round curriculum that focuses on preparing graduate nursing students to provide care, to teach, and to conduct research for the uniformed services and the federal healthcare sysem during peace, disasters, war, and other contingencies.

The GSN offers the Doctor of Philosophy in Nursing Science in its Ph.D. program and four Master of Science in Nursing program options: Nurse Anesthesia, Family Nurse Practitioner, Perioperative Clinical Nurse Specialist, and Psychiatric Mental Health Nurse Practitioner. The GSN's signature curriculum integrates operational readiness in a changing environment, clinical decision making in the federal healthcare delivery system, and population health and outcomes.

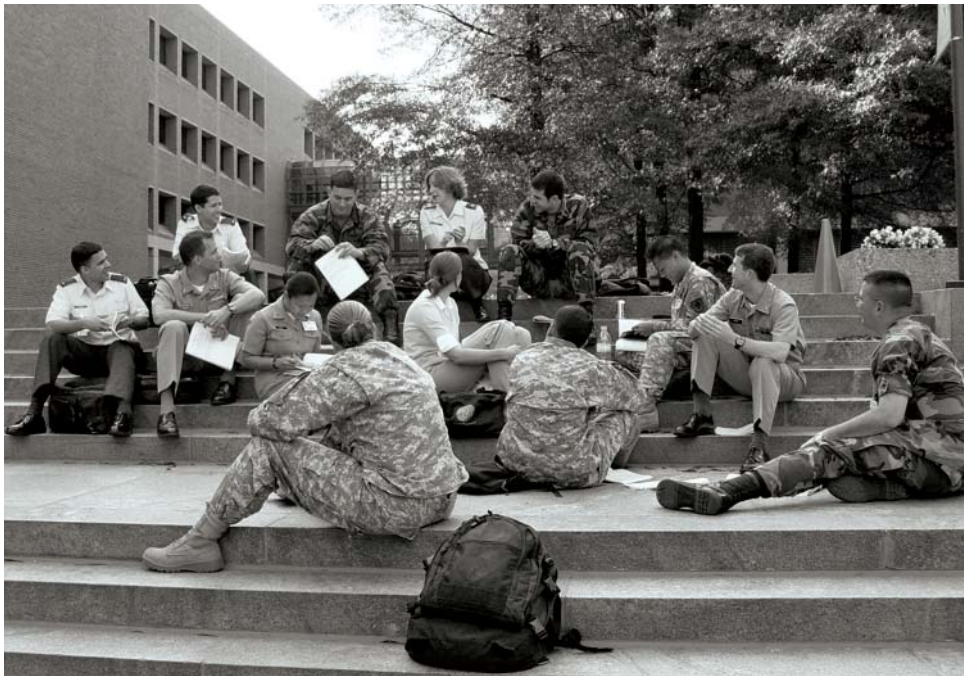
Through its extensive continuing education program, the university serves and sustains the professional and readiness requirements of the Defense Department's worldwide military healthcare community through on-site and distance education.

The university's nationally ranked military and civilian faculty conduct cutting edge research in the biomedical sciences and in areas specific to the Department of Defense healthcare mission, such as combat casualty, infectious diseases, and radiation biology. The university, which holds more than 289 patents or pending patents, is committed to technology transfer to ensure that the results of its research are made widely available.

The Armed Forces Radiobiology Research Institute (AFRRI), which became a part of the university in March 2006, offers research opportunities to understand the biological effects of ionizing radiation and to develop means of protecting against the effects, determining levels of exposure, and assessing risks associated with radiation injury combined with other battlefield threats.

1-1. Unique Community

Students attending USU can focus on their education without the worry of incurring debt. Medical students enter the university as commissioned officers in one of the four uniformed services: U.S. Army, U.S. Navy, U.S. Air Force or U.S. Public Health Service. No prior service is required for admission. Students pay no tuition or fees and, in fact, receive the full salary and benefits of a uniformed officer throughout their four years at the university in exchange for a seven-year active duty service commitment. Students in the Graduate Education programs,



a mix of civilians and uniformed officers, also pay no tuition or fees. Civilian students may receive stipends, and uniformed graduate students continue to receive their active duty pay and benefits while attending USU. The Graduate School of Nursing (GSN) master's students are all active duty, uniformed nurses. GSN doctoral students are all active duty, uniformed nurses or work in federal civilian service. GSN students pay no tuition or fees and continue to receive their regular salaries while students at the university.

The university gives careful consideration to all available information about each applicant and selects students on a competitive basis without regard to race, color,

gender, creed or national origin. Minorities underrepresented in science are encouraged to apply. USU is an equal opportunity employer.

Student Government

Each class of the School of Medicine, its Graduate Education program, and the Graduate School of Nursing elects officers to manage class business and activities and to represent and advocate student interests in the USU community. Class elections are conducted on an annual basis. The Student Advisory Council is the student forum designed to study issues across class lines and provide a student body consensus, which may be communicated to responsible USU officials. Within the medical school, a particularly important part of student government is the Academic Council in each class, which consists of approximately 12 students who gain exposure to every course and interact with every course director throughout the School. This system facilitates and augments communication and mutual understanding between faculty and students.

Chaplain Services

The free exercise of religion is a constitutional right of United States citizens. The Office of the Chaplain facilitates the free exercise of religion within the university community. The goal of the university chaplain and staff is to support and enhance the quality of life for military personnel and their families through spiritual development. Chaplain ministry is needs based, performed cooperatively, and executed within a pluralistic environment. The chaplain and staff members help students by the following actions:

- Publicizing locations for places of worship—military chapel or civilian church, synagogue, or mosque
- Performing religious sacraments/ordinances, rites, and ceremonies
- Providing religious education and instruction
- Contributing pastoral care—visiting the hospitalized and confined
- Offering pastoral counseling—moral, ethical, religious, crisis, grief

The USU mission revolves around students, as does the design of its religious program. Faith-specific student associations are formed as needs arise. Faculty and staff are encouraged to participate in the student association of their choice and to support/mentor students' spiritual formation in a manner similar to that used to foster academic excellence. Within regulations under the university presi-

dent and the brigade commander, and administered by the Office of the Chaplain, the student associations are self-governed to meet the needs and interests of their constituents. USU has the following faith-specific groups:

- Protestant Student Association
- Catholic Student Association
- Latter-Day Saint Student Association
- Jewish Student Association
- Islamic Student Association

Others can form as needed. Further information on these groups can be obtained by contacting the Office of the Chaplain. Students do their best in medical school when they feel their best. If something distracts a student from his or her studies, the chaplain's office is a safe and caring place to seek aid and counsel with plenty of potential resources, regardless of faith. The Office of the Chaplain is near the student lounge, room C1090, telephone (301) 295-9658/3193. To obtain more information or to e-mail the chaplain for an appointment or with questions, visit the office's website at http://www.usuhs.mil/chaplain/index.shtml.

USU Alumni Association

The USU Alumni Association was created in 1978 by students interested in building a special network for uniformed physicians, nurses, and scientists by providing opportunities for USU graduates to build relationships with colleagues, to represent alumni views, and to encourage alumni goodwill and intentions to further strengthen USU, its faculty, and student body.

The association sponsors alumni reunions and provides support for various student activities including graduation ceremonies. It operates the Alumni Store (tel.: 301-295-3686; fax: 301-295-6879; website: http://www.usualumnibookstore.org), which sells specialized USU clothing as well as items like reference books for students, faculty, and alumni. The association also aids in providing information for the Class Notes section of the *USU Medicine* magazine.

1-2. Academic Environment

The university, located on the grounds of the National Naval Medical Center in Bethesda, Maryland, is close to major federal health facilities. Cooperative

agreements between these facilities and the university allow for expanded placements and additional resources that enhance the educational experience of USU students.

Teaching Support

The university complex, completed in 1979, contains 500,000 square feet of space and has a full range of modern laboratories, teaching halls, seminar rooms, student study areas, and faculty and staff offices. The lecture halls have recently undergone an extensive renovation, including the installation of state-of-the-art presentation equipment for use by faculty and students.

Multidisciplinary Laboratories

The Multidisciplinary Laboratories (MDL) facility houses a complex of laboratory/teaching rooms in which USU students spend a great deal of time while at the university. For example, in most schools, students report to the physiology department for laboratory exercises. At the university, every student goes to the MDL for all departmental laboratory exercises; MDL staff members set up the equipment and supplies used in these exercises. In addition, the MDL facility is open 24 hours a day, except when committed for teaching purposes.

Anatomical Teaching Laboratories

The Anatomical Teaching Laboratories (ATL) facility, traditionally called "gross anatomy lab," provides laboratory teaching support of the anatomical sciences. The ATL is a branch of MDL under the direct supervision of the anatomical curator, who is responsible to the MDL director.

The ATL provides cadavers/anatomical materials for dissection, osteological study sets, instruments, instructional aids (anatomical models, charts, embedded cross-sections), audiovisual materials (videotapes and slides), and protective clothing for all anatomical-related laboratory teaching. The ATL also provides support for anatomical-related research protocols. A wide range of courses and conferences are held in the ATL to take advantage of the unique setting for utilization of cadaveric material and lecture-setting instruction. In addition, the ATL is responsible for overseeing the USU Anatomical Gift Program (whole-body donations).

Learning Resource Center

The James A. Zimble Learning Resource Center (LRC) supports the information needs of the university community. In keeping with the USU health sciences mission, the LRC houses books, journals, audiovisual materials, a collection on the history of military medicine, and computer resources. Its facilities include computer classrooms and study areas as well as rooms for small study groups. The LRC webpage (http://www.lrc.usuhs.mil) provides a guided tour of the center and features its online catalog.

Through the LRC site, remote users can access much of the LRC's collection, including electronic books, journals, and indexes as well as other useful resources for the health sciences professional. Students and faculty receive comprehensive assistance in accessing information through the LRC's mediated literature search and interlibrary loan services through which they can access local, national, and international resources as well as other information available at U.S. universities and federal agencies. Washington, DC, has a wealth of science and medical libraries, including the Library of Congress, the National Library of Medicine, and the National Agricultural Library.

Center for Informatics in Medicine

The Center for Informatics in Medicine is the School of Medicine's newest academic department. Organized in 1999, it is a focal point for academics related

to information technology, education, healthcare and research. It has a twofold mission: to promote application of information technology for the betterment of the educational mission of the university and to improve education and research in medical informatics through collaboration and exchange of information.

Biomedical informatics is an increasingly important component of preprofessional and graduate education across the health sciences. Working with the LRC and dean's office, the department introduces students to USU information resources. The center's personnel also integrate the Association of American Medical Colleges' learning objectives for medical informatics across the curriculum.

The center maintains and publishes a range of information resources, including the following:

- Information about upcoming events—local, national and international—in informatics
- Technical reports and documents from informatics groups
- Technical reports from the LRC and other U.S. Department of Defense components
- Support for the USU medical personal digital assistant (PDA) initiative

Environmental Health and Occupational Safety

The mission of Environmental Health and Occupational Safety (EHS) is to provide the USU students and staff with the optimal healthful work environment by controlling health hazards, promoting safety, providing occupational health support and protecting the environment through compliance with military, federal, state and local regulations.

To accomplish this mission, EHS has three divisions: Radiation Safety, Industrial Hygiene and Environment and Occupational Medicine. The university safety officer works for the director of EHS and can address any general safety questions. EHS performs regular radiation safety and industrial hygiene surveys throughout the university. Additionally, EHS performs annual health and safety inspections of university spaces to include research laboratories.

Each division is dedicated to optimizing safety and the prevention of occupational injury and illnesses. Additional EHS program elements include biological and chemical waste management, medical surveillance for various occupations

and positions, laboratory safety and hazard communication to include several and varied training sessions offered by EHS.

Urgent safety issues or questions regarding how to perform a task safely, especially involving work in laboratories, should be immediately brought to the attention of the work center supervisor, instructor, professor, and/or principal investigator. To discuss urgent or routine issues with EHS directly, contact any EHS staff member or the director of EHS. The EHS main office is in building A, room A-2020. The phone number is (301) 295-9443. You may request that your name be kept confidential.

Safety is everybody's business. In addition to EHS staff, responsibility for safety falls with everyone working at the university to include all students, faculty and staff. There are no silly questions. Please ask your supervisor, instructor or a member of the EHS staff should you have any safety questions regarding your work at the university.

Information Technology Management

Information Technology Management provides computer support for all university information services. It comprises the Customer Support and the Operations divisions. Customer Support includes the Help Desk Services branch, which has direct responsibility for microcomputer systems and desktop software support, and the Information Engineering branch, which conducts systems analysis and software development.

The Operations division manages the local area network, including several file servers, electronic mail, and mainframe operations. The university's network infrastructure and Internet connectivity are managed by the Telecommunications branch, which has implemented a state-of-the-art infrastructure that provides high-speed Internet access and focuses on overall connectivity performance issues.

Information Technology Management's responsibilities also include administrative projects such as technical training of incoming students, employees, and staff. In addition, it oversees many technical contracts for computer hardware and software support and contracts providing for the upgrades of desktop computers within the university through a governmentwide leasing program.

Blackboard Learning System

The Blackboard Learning System family of software applications enhances teaching and learning. Built on a scalable enterprise technology foundation, it augments didactic learning with custom learning paths for individual courses or students. It facilitates student participation, communication, and collaboration via the Internet.

National Capital Area Medical Simulation Center

The National Capital Area Medical Simulation Center uses modern technologies such as computers and simulated patients to teach clinical problem-solving techniques to medical and nursing students, postgraduate trainees, and practicing physicians. Opened in 1999, the 11,000-square-foot center supports USU and the three military medical facilities located in the Washington metropolitan area. The center is the first single location to integrate the use of virtual reality technology, computer-controlled mannequins, and human simulated patients under one roof.

The Medical Simulation Center is divided into several functional areas. The Clinical Skills Teaching and Assessment Laboratory, the VTC Room and Computer

Laboratory, and the Surgical Simulation Laboratory are each divided into distinct sections that sustain and, when necessary, integrate the operations of the entire center. The Clinical Skills Teaching and Assessment Laboratory is an ideal setting for simulated patient encounters. The VTC Room functions as both a tool for distance learning and a conference room.

The Computer Laboratory is designed for the development of medical education software and the administration of clinical examinations. The Surgical Simulation Laboratory uses a full-scale operating room mock-up and virtual reality to provide highly realistic scenarios for surgical training.

1-3. Research

Research at USU is administered through the Office of Research or by grant agreements with the Henry M. Jackson Foundation for the Advancement of Military Medicine or other not-for-profit foundations.

Office of Research

The Office of Research reviews and monitors all matters dealing with research at the university. These functions include identification of potential funding sources, pre-award administration, post-award administration, grant award and receipt, administration of the Program for the Protection of Human Participants in Research including Institutional Review Board review and approval, and monitoring of compliance with all federal regulations regarding the conduct of research.

Thus the research office staff members serve three communities: faculty and student investigators, the university, and the approximately 80 funding organizations that support university research.

The roughly 500 active research protocols at USU cover a variety of scientific areas, including basic biomedical areas central to the mission of the Military Health System, such as the following:

- Mechanisms and control of a wide range of infectious diseases
- Molecular mechanisms of disease
- Topics in combat casualty care, operational medicine, and health education and promotion
- Women's health and minority health issues
- Warfighter performance factors
- Responses to the various stresses of military life

The USU intramural grant program is administered through the Office of Research, including staffing support for the School of Medicine's Research Merit Review committee, which reviews faculty applications for intramural funds. In fiscal year 2006, faculty research under the USU intramural program consisted of approximately 90 militarily relevant protocols, 70 clinical research awards, and 7 educational projects. Student research grant programs support the work of medical students, master's and doctorate candidates. Student applications are reviewed by faculty in the student's division and by the appropriate dean and are administered jointly by the research office and the graduate program offices.

The research office's home page (http://www.usuhs.mil/research) provides pertinent, up-to-date, user-friendly information on both intramural and extramural grant opportunities as well as a range of downloadable application and assurance forms. Through the Research Development program, the research office offers support to both new and senior researchers in search of new funding opportunities, assistance with grant writing, and contact with other USU investigators with similar interests. The Research Development program also provides access to ResearchResearch®, a database listing hundreds of funding opportunities worldwide available to faculty, postdoctoral fellows, clinical fellows, and students. In addition, ResearchResearch® includes tips on grantsmanship, from matching research interests with a wide range of appropriate funding agencies to writing successful applications.

Many of the university's workshops and symposiums on research-related issues are offered through the Office of Research. Three to four times each year the vice president for Research offers a 12-week grant-writing workshop for new investigators. The office also sponsors IRB 101, a full-day course that combines lectures

and small-group workshops for investigators who perform research involving human volunteers. Other workshops, panels, and speakers sponsored by the office have addressed topics in military research, effective communication of scientific hypotheses and results, technology transfer, military medicine, and emerging issues regarding the protection of the human participants in research.

Faculty Senate Research Day, conducted each year in conjunction with the Graduate Student Colloquium, also is coordinated through the Office of Research. This two-day event includes more than 100 faculty and student poster presentations, several panel discussions featuring a mix of USU investigators and investigators from outside the university, and two nationally prominent keynote speakers.

Research Program

The university's research program is administered through the Office of Research, in conjunction with the Henry M. Jackson Foundation and other not-for-profit foundations. It covers a range of clinical and other topics important to both the military and public health. Infectious diseases, trauma medicine, health maintenance, and cancer are areas of particular strength. Researchers also are making important new efforts in state of-the-art fields that cut across disciplines, such as genomics, proteomics, and drug delivery mechanisms.

Infectious Diseases

USU researchers conduct protocols on infectious diseases in the United States and across the globe, developing effective treatments, vaccines, and other preventive measures to contend with an array of pathogens. Technological advances by university researchers have made possible the accurate prediction of mosquito population level and transmission risk for a wide variety of mosquito-borne diseases. By using satellite imaging and remote sensing devices, these researchers assist health-related government agencies

around the world in predicting and containing high-risk conditions for malaria and similar diseases. Disease-control programs also include work on Venezuela equine encephalitis (VEE), leishmaniasis and bartonellosis. Basic science investigations of the mechanics of common bacterial infections, such as *E. coli* and *H. pylori*, are uncovering new information about their virulence genes, invasion mechanisms, and countermeasures. Larger, long-range programs focus on understanding and managing HIV, developing effective vaccines for a variety of pathogens, and combating the development and spread of hepatitis C. These programs are funded through a recent, highly competitive National Institutes of Health (NIH) process and by direct federal legislation; they involve collaborations with researchers both within the university and at other research institutions across the country.

Trauma Care

Investigators at USU and its affiliated treatment facilities are working on a wide range of advances in trauma care for both combat casualties and accidental injuries here in the United States. Most efforts fall into one of five areas: (1) control of hemorrhage and attendant shock; (2) blood preservation and delivery (e.g., the effects of cross-linked hemoglobin in traumatic brain injury, global and local responses to profound hemodilution; the effects of various environmental hazards on heme regulation); (3) treatment of nerve injuries and neural healing (e.g., low-power laser irradiation on nerve regeneration *in vivo*; the role of neurocytokines and plasticity in injury and healing in sensory nerves); (4) the mechanisms, treatments, and preventive strategies for endotoxic shock; and (5) wound healing and sepsis control (e.g., characterization of inflammation and its intracellular mediators, and the use of prophylactic intravenous antibiotics for penetrating eye injuries). The larger, long-range programs in trauma care include a Congressionally funded program, administered at the university, on the diagnosis and treatment of injuries to the head, neck, brain, and spinal column (Defense Brain and Spinal Cord Injury Program or DBSCIP).

Health Maintenance and Enhancement

University research on effective means of maintaining and enhancing health status focuses on military operational medicine as well as TRICARE and civilian concerns about proper exercise, diet, and sleep habits. Behavioral and psychological research also falls under this category. The university has a nationally recognized, interdepartmental research program for the study and treatment of

posttraumatic stress disorder (PTSD), which includes studies of endocrine and physiologic responses in addition to behavioral and psychological investigations. A separate interdepartmental program includes investigations of neurological stress and dysfunction, novel treatments for seasonal affective disorder (SAD), and psychological consequences of physiological stressors such as cardiac surgery. The Human Performance Laboratory, part of the department of Military and Operational Medicine, uses human performance models to investigate the physiological consequences of exercise and physical stress, several endocrine factors that affect performance, and environmental factors such as temperature and pressure (e.g., functional consequences of operations in mountainous regions, deep-sea diving, or prolonged immersion in cold or warm water). Several projects designed to identify and analyze deployment stressors and similar issues related to maintaining and deploying troops are conducted by the Graduate School of Nursing as well as the School of Medicine's departments of Medical and Clinical Psychology, Preventive Medicine and Biometrics, and Military and Emergency Medicine. Long-term programs, often conducted in collaboration with investigators at USU affiliates in the Washington, DC, area, include several projects under Congressionally funded efforts, the Triservice Nursing Research Program (TSNRP) and the Coronary Artery Disease Reversal (CADRe) Program, both administered through the university. CADRe consists of an array of studies on the promotion of healthy behavior and lifestyle changes to reduce coronary artery disease and related health problems.

Cancer

The university boasts many cancer-related studies, primarily in the basic sciences but also on the clinical level in conjunction with Walter Reed Army Medical Center. Major programs administered by the university include the Center for Prostate Disease Research, the Clinical Breast Care Project, and the Military Cancer Institute, all of which also fund investigators across the Nation. University investigators conduct basic research in the genomics, proteomics, and other basic science aspects of cancer development, diagnosis, and treatment for multiple forms of cancer, including lymphoma, stomach cancer, thyroid cancer, kidney and liver cancer, melanomas, and cancer of the brain.

Radiobiology

The university encompasses the Armed Forces Radiobiology Research Institute (AFRRI), the Department of Defense's preeminent center for radiation biology

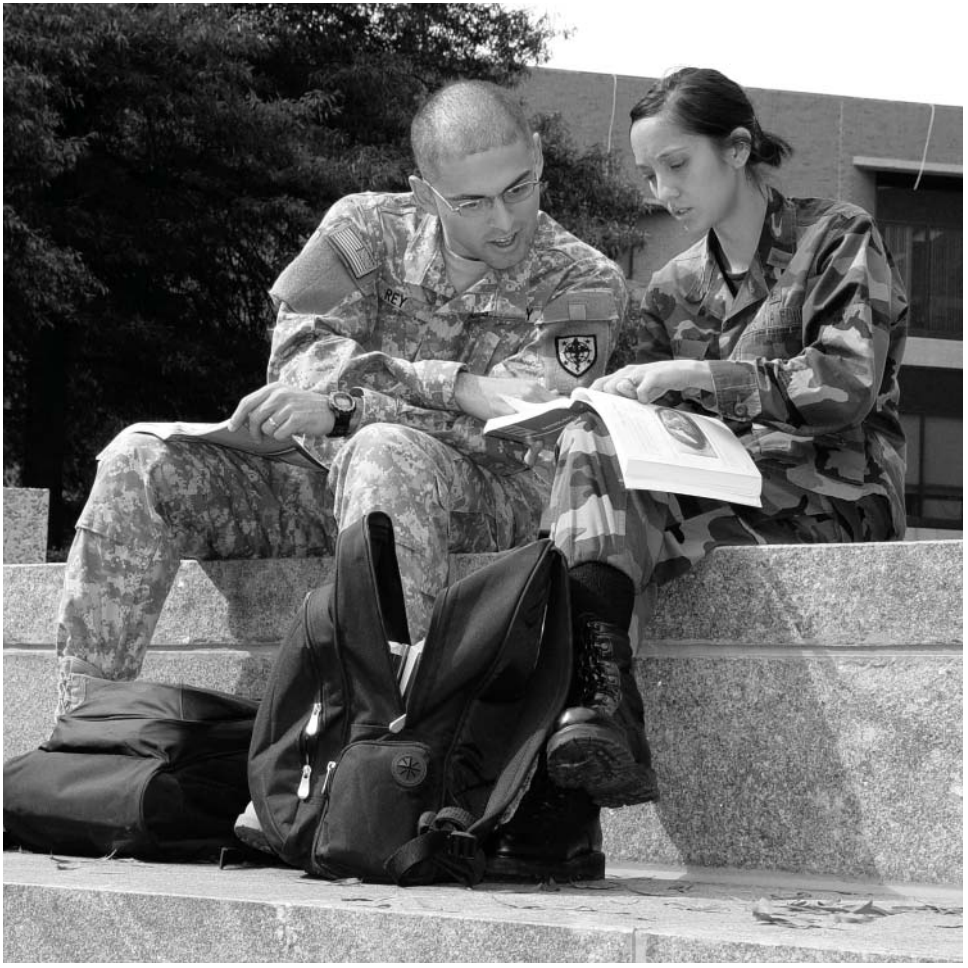
research. Its civilian and military scientists conduct basic and applied research focused on methods to prevent, assess, and treat injuries resulting from the effects of ionizing radiation. With an understanding of the mechanisms of radiation damage, AFRRI investigators are pursuing new and improved pharmacological approaches to prevent the life-threatening and health-degrading effects of ionizing radiation. Using novel cellular and molecular approaches and animal models, they move these potentially life-saving drugs from discovery through the Food and Drug Administration approval process. The program also seeks to develop rapid, high-precision analytical methods that assess radiation exposure doses from clinical samples and thus aid in the triage and medical management of radiological casualties. Researchers are developing dose-assessment assays that test easily obtained samples such as a drop of blood, urine, or hair with transportable equipment. With innovative approaches, they also are improving the accuracy, dose range, ease of use, and speed of classical biodosimetry, which is based on cytogenetic damage. AFRRI research examines the impact of combining radiation injury with other battlefield challenges such as trauma, disease, and chemical exposures. Investigations also assess the potential health effects of militarily relevant metals that may become embedded as shrapnel, such as depleted uranium and tungsten alloys.

Armed Forces Radiobiology Research Institute

The Armed Forces Radiobiology Research Institute (AFRRI), part of the university since March 2006, is charged with executing the DoD Medical Radiological Defense Research Program through its civilian and active duty military scientists and healthcare professionals. In addition, the physicians, health physicists, biodosimetrists, and nuclear engineers, as part of the Medical Radiobiology Advisory Team and in conjunction with the Defense Threat Reduction Agency, respond to radiological crises and consequence management missions. Their expertise is available to Defense Department and other federal, state, and local activities following a nuclear or radiological accident or incident.

Henry M. Jackson Foundation for the Advancement of Military Medicine

The Henry M. Jackson Foundation is a private, not-for-profit organization chartered by Congress in 1983 to support medical research and education at USU and throughout the military medical community. The foundation was named in honor of Sen. Henry M. "Scoop" Jackson (1912–1983; D-Washington). The foundation administers more than 150 research and clinical investigation projects in collaboration with university academic departments. To assist investigators, foundation staff members identify funding sources and prepare proposals, purchase supplies and equipment, hire research personnel, and provide financial reports and projections. The foundation employs nearly 200 personnel who work at the university directly on research grants and other programs. The foundation also drafts and negotiates research and licensing agreements and assists with identifying and patenting intellectual property. Technology transfer provides support for additional research and development while promoting the development of new medical technologies. The foundation also may offer the university and its faculty financial rewards and recognition. To help support medical education and training at the university, the foundation secures and administers funds from private sources to meet special nonbudgeted needs. The foundation has more than 50 special project funds and 30 endowment funds established for the university's benefit. These funds foster graduate and continuing medical education by supporting visiting speakers, seminars, and other events. The foundation supports research and education at the university and at more than 60 military medical facilities and research institutions across the country. Any qualified researcher may become a foundation guest scientist and have access to its services. All university faculty members are considered guest scientists.


REY

F. Edward Hébert School of Medicine

Admissions Office contact information

By mail: Admissions Office
F. Edward Hébert School of Medicine
Uniformed Services University
4301 Jones Bridge Road, Room A1041
Bethesda, MD 20814-4799

By phone: Toll free: 1-800-772-1743
Commercial: (301) 295-3101
DSN: 295-3101

By fax: (301) 295-3545

By e-mail: admissions@usuhs.mil

At website: http://www.usuhs.mil

"When my service is ended and I look back over the milestones of my career, I want most to be remembered for the military medical school."—F. Edward Hébert
House of Representatives
4 January 1941 to 31 December 1976

F. Edward Hébert

In 1972, under the sponsorship of the late U.S. Congressman from Louisiana, Rep. F. Edward Hébert (pronounced *A-bear*), Congress enacted the Uniformed Services Health Professions Revitalization Act, authorizing the establishment of the Uniformed Services University of the Health Sciences (USU).

The act directed that the university be organized under the U.S. Department of Defense and located within a 25-mile radius of the District of Columbia. It further stipulated that a Board of Regents, appointed by the president of the United States with the advice and consent of the Senate, be responsible for the governance of the institution.

In addition, the founding legislation authorized the university to develop advanced degree programs in the various health sciences. It placed a priority on medicine and required that the university be organized to graduate no fewer than 100 medical students by the year 1982.

In 1983, Congressional legislation officially designated that the USU School of Medicine be named the F. Edward Hébert School of Medicine, hereafter referred to as the School of Medicine or the School. The USU School of Medicine is a tuition-free institution.

F. Edward Hébert School of Medicine Administration

Dean
Larry W. Laughlin, M.D., Ph.D.

Vice Dean
Col John E. McManigle, USAF, MC

Commandant
Col Ken M. Tashiro, USAF, MC

Associate Dean, Graduate Education
Eleanor S. Metcalf, Ph.D.

Associate Dean, Clinical Affairs
Emmanuel G. Cassimatis, M.D.

Associate Dean, Faculty Affairs
Eric S. Marks, M.D.

Associate Dean, Faculty Development
William H. J. Haffner, M.D.

Associate Dean, Graduate Medical Education
Howard E. Fauver, Jr., M.D.

Associate Dean, Medical Education
Donna M. Waechter, Ph.D.

Associate Dean, Recruitment and Admissions
CDR Margaret Calloway, MC, USN

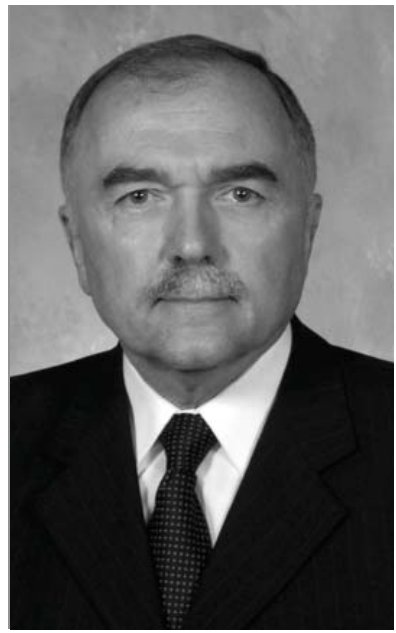
Associate Dean, Student Affairs
Richard M. MacDonald, M.D.

Associate Dean, Simulation Education
CAPT Joseph V. Lopreiato, MC, USN

Assistant Dean, Clinical Sciences
COL Lisa K. Moores, MC, USA

Message from the Dean

The Uniformed Services University of the Health Sciences (USU) and the F. Edward Hébert School of Medicine were established by Congress in 1972 to train healthcare professionals for the U.S. Department of Defense and the U.S. Public Health Service. The School of Medicine provides physicians and biomedical scientists who are dedicated to careers in public service.



Larry W. Laughlin, M.D., Ph.D.

The foremost reason students choose to attend the USU School of Medicine as medical students is their commitment to serve our country as physicians in the uniformed services. Our faculty is dedicated to preparing students for postgraduate medical practice in medicine, surgery, or public health as team members of the uniformed services healthcare system.

The medical school experience provides students with the knowledge, skills, training, and attitudes to become competent, compassionate, and caring physicians. The curriculum emphasizes military medicine, preventive medicine, tropical medicine, disaster medicine, and survival in harsh climates. Our graduates are educated to practice good medicine in bad places under difficult circumstances. Graduates of our medical programs serve proudly and make substantial contributions to military operations around the world.

The faculty of the School of Medicine is committed to excellence by continuing on the forefront of advances in medical education, military medicine, public health, science, technology, and patient care. They ensure that our educational programs remain contemporary and relevant. Present and future graduates will serve in a world undergoing rapid and profound change. Our graduates are uniquely prepared to meet the opportunities and challenges of medicine in this uncertain world.

Larry W. Laughlin, M.D., Ph.D.,
Dean, F. Edward Hébert School of Medicine

2. F. Edward Hébert School of Medicine

A medical career in the uniformed services is like no other. Matriculation at the F. Edward Hébert School of Medicine of the Uniformed Services University of the Health Sciences (USU) involves a commitment to such a career. The practice of medicine as an active duty officer provides a variety of experiences that offer the opportunity for continuing professional and personal growth.

Although the needs of the services determine specific assignments and places of duty, medical officers have wide latitude in determining the content, direction, and pace of their career development.

Patient care in hospitals and clinics provides specialty training and practice as well as opportunities for clinical investigation. The team concept of medical care in the services permits the physician to practice medicine with the full support of professional paramedical and administrative personnel.

Patient care in peacetime is practiced primarily in modern facilities with easy access to colleagues and specialists to consult on problem cases. Although medical officers must be sensitive to the costs of medical care, the care of a patient is never compromised by the patient's inability to pay.

The uniformed services offer many medical career opportunities, including preventive medicine, public health medicine, aerospace medicine, and submarine and diving medicine. Medical officers command most medical units and organizations. The challenge of applying leadership and management skills to medical care and to the supervision of healthcare professionals is demanding, yet satisfying. One rewarding aspect of these careers is the opportunity they offer to live and work with the outstanding men and women of the uniformed services.

Uniformed medical officers will find the pay adequate for themselves and their families. Fringe benefits include 30 days of paid vacation annually and a generous noncontributory retirement plan. Medical officers and their families have opportunities to travel, especially during overseas assignments where they may become intimately familiar with new places, foreign cultures, and people.

The decision to become a career uniformed services medical professional should not be made without careful deliberation. Even peacetime assignments can

involve substantial personal sacrifice. In wartime, such sacrifices become even greater. Combat requires the exercise of sound medical and military judgment under stress. The School of Medicine does not seek those who expect or would be satisfied with an easy professional life.

Above all, successful medical officers must understand the ideals of both the military and the medical profession and see no conflict between them. Only by devoted service to the two professions—medicine and the military—can one gain full satisfaction as a uniformed services physician.

2-1. History and Philosophy

In 1976, the School of Medicine received provisional accreditation as a four-year medical school from the Liaison Committee on Medical Education (LCME), the accrediting body for all U.S. medical schools, and admitted a charter class of medical students. In 1980, the School of Medicine was given full accreditation and graduated its first class, which comprised 29 students. A full seven-year term of accreditation was awarded to the School by the LCME in 2003.

Since then the medical school has become a national resource, offering challenges unparalleled in health education. The School has attracted outstanding faculty to teach students the knowledge, skills, and attitudes they will require in order to become competent and compassionate medical officers.

By functioning as an educational resource for the uniformed services, the School enables military medical departments to develop graduate level programs in health education. It further enhances the capabilities of the services in developing continuing education programs, contributing to lifelong professional competence. Additionally, through the School of Medicine, military physicians have an opportunity to contribute to academic medicine and research.

The School of Medicine's principal emphasis is on training medical officers for the U.S. Army, U.S. Navy, U.S. Air Force, and U.S. Public Health Service. Students are selected with the understanding that they will be trained for service to the Nation, including assignments abroad or at sea. Dedication to the idea of service to country must be foremost among an applicant's reasons for coming to the medical school.

2-2. Administration and Faculty

The USU medical program operates under the dean of the School of Medicine. The dean and departmental chairpersons are responsible for working with medical center commanders and the surgeons general of the uniformed services to ensure the adequacy of clinical and investigative programs.

At present, the USU operational academic elements include the School of Medicine, graduate programs in the basic sciences, and the Graduate School of Nursing; plans allow, however, for the future development of other health sciences programs.

The teaching staff of the medical school comprises approximately 2,076 full-time basic and clinical science faculty members; there are 1,433 part-time appointments. The mix of military and civilian faculty varies among departments, and students can expect both military and civilian faculty at all levels of instruction.

2-3. Clinical Facilities

Students receive part of their clinical training at four main teaching hospitals affiliated with the university: Walter Reed Army Medical Center, the National Naval Medical Center, the Air Force's Malcolm Grow Medical Center, all in the Washington, DC, metropolitan area, and the Air Force's Wilford Hall Medical Center in San Antonio, Texas. These institutions are recognized as among the military's finest.

Additional complementary education in the basic and clinical sciences is provided by, among others, the following federal government resources:

- Naval hospitals at Portsmouth (Virginia), Pensacola (Florida), and Jacksonville (Florida)
- Air Force regional hospitals at Eglin (Florida), Keesler (Mississippi), Travis (California), and Wright-Patterson (Ohio)
- Army medical centers at Brooke (Texas), Eisenhower (Georgia), DeWitt (Virginia), Martin (Georgia), Tripler (Hawaii), and Womack (North Carolina)
- The National Institutes of Health (Bethesda, Maryland) and the Centers for Disease Control (Atlanta, Georgia)

- The Naval Medical Research Institute, Walter Reed Army Institute of Research, Armed Forces Institute of Pathology, Armed Forces Radiobiology Research Institute, and the U.S. Army Medical Research Institute of Infectious Diseases (Washington, DC, metropolitan area)

Elective courses are offered in clinical and research facilities in the United States and in areas of the world where there are diseases rarely seen in the United States. Residency programs in all major specialties are offered at these medical centers. Affiliated with the university through joint faculty appointments and common teaching and research activities, these centers have sizable outpatient workloads and together have more than 3,000 teaching beds.

2-4. Medical Student Status, Pay, and Benefits

While enrolled in the School of Medicine, students serve on active duty as reserve commissioned officers in grade O-1 (i.e., second lieutenant in the U.S. Army or U.S. Air Force; ensign in the U.S. Navy or U.S. Public Health Service) with full pay and allowances for that grade.

Military personnel who are accepted for entrance and hold appointments in grades higher than O-1 must be recommissioned as O-1 upon matriculation. Regular officers of the uniformed services selected for entrance must resign their regular commissions to enter the School. Resignations should be arranged to be effective upon admission to preclude a break in service.

Enlisted acceptees are discharged from their services at their duty stations the day preceding their effective permanent change of station (PCS) date of transfer to the School. They are commissioned on the day of official departure from their units. It is important to ensure that the discharge date is the day prior to the PCS date to preclude a break in service.

Pay: Each student's monthly salary comprises three categories of pay and allowances: base pay, basic allowance for subsistence (BAS), and basic allowance for housing (BAH). Table 1 depicts monthly pay for a student with no prior service at the O-1 grade in 2007, both with and without dependents.

Base Pay: Base pay is established by an individual's service longevity (i.e., years of service). The only taxable portion of a military member's pay is the base pay. Base

Table 1. Breakdown of Monthly Salary at Grade O-1 in 2007

Type of Pay	Without Dependents ($)	With Dependents ($)
Monthly base pay	2,469.30	2,469.30
Basic allowance for subsistence	192.74	192.74
Basic allowance for housing	1,524.00	1,820.00
Monthly total (gross pay)	4,186.04	4,482.04

pay may also be taxed by a student's state of residency, depending on which state is designated as a student's official residence. The amount shown in the chart is the minimum monthly base pay for an O-1 with no prior service.

Basic Allowance for Subsistence: BAS, which is nontaxable, is one standard amount for all officers.

Basic Allowance for Housing: BAH is based on the location of the member's primary duty station and whether a student has dependents. Dependent pay is the same for all service members, regardless of the number of dependents. This allowance is provided to all military members who reside off base and is nontaxable. The O-1 amount is shown in the chart.

Longevity Credit: The four years spent in medical school do not count toward determining pay upon graduation. All students are commissioned into the regular medical corps on graduation day in grade O-3 (captain in the U.S. Army or U.S. Air Force; lieutenant in the U.S. Navy or U.S. Public Health Service). At the O-3 grade, the combined base pay, BAH (including locality pay for Washington, DC), and BAS for a student with no prior service and no dependents was approximately $65,351 in 2007; for a student with no prior service and dependents, it was approximately $68,759.

Length of prior service, however, does count in determining the amount of base pay in grade O-1. All students receive annual pay raises as granted by Congress for all commissioned service personnel.

Promotion Credit: Currently, a maximum of one-half year is creditable for each year of prior commissioned service in determining medical corps promotion eligibility at graduation by the regulations of the service concerned.

Service Obligation: Officers awarded the doctor of medicine degree following a four-year program of medical studies are required by law to serve on active duty for seven years. Time spent in graduate medical education (i.e., an internship or residency) does not count toward the payback. Upon completion of the active duty service obligation, students who served on active duty for less than 10 years after graduation are placed on the Individual Ready Reserve (IRR) roster. (Graduate medical education does not count toward the 10 years.) While on the IRR roster, service members are on inactive reserve status, with no weekend or annual active duty drill required, but are subject to call-up by the president of the United States in times of emergency. The amount of time required is as follows:

- Active duty service less than eight years: six years on the IRR roster
- Active duty service of more than eight years, but less than nine: four years on the IRR roster
- Active duty service of nine years or more, but less than 10; two years on the IRR roster

Except as law or service policy otherwise prescribe, the IRR obligation is added after all other active duty obligations have been served, including time for USU, ROTC, or the service academies.

A medical graduate of the School who is relieved of his or her active duty service obligation before completion may be given, with or without the consent of the graduate, any of the following alternative obligations, as determined by the secretary of the military department concerned.

- A service obligation in another armed force for a period of time not less than the member's remaining active duty service obligation
- A service obligation in a component of the selected reserve for a period not less than twice as long as the member's remaining active duty service obligation

Leave Policies: As officers on active duty, students are authorized 30 days of leave per year. Because of curriculum requirements, leave can be taken only during official school breaks, such as winter recess, spring break, and the months of June, July and August. Leave is approved and scheduled by the commandant. Federal holidays and end-of-examination breaks are generally authorized periods of absence.

Benefits: As active duty officers, students are eligible for a wide range of benefits. They may use commissary (i.e., military supermarket) and post exchange (i.e., military department store) facilities where costs are considerably lower than in their civilian counterparts. Certain legal services are free, such as advice on income tax matters and execution of personal wills.

Students are eligible for low-cost life insurance and are provided comprehensive medical and dental care at no charge. The university has its own campus health service, which is available to students and their families for medical care and counseling.

Dependents of students have the same entitlements as dependents of other active duty personnel, including commissary and post exchange privileges as well as the services of military legal officers. In addition, they are eligible for medical treatment and care in uniformed service facilities on a space-available basis or, under certain circumstances, from a civilian medical resource at partial government expense.

Dental care is not available for dependents at the National Naval Medical Center (NNMC); however, military members are encouraged to enroll their dependents in the TRICARE Active Duty Family Member Dental Plan from United

Concordia. The approximate plan cost is $10.51 per month for one dependent, and $26.27 per month for two or more. Specifics of the dental plan are available through the United Concordia website at http://www.ucci.com or by calling 1-800-866-8499.

Charges for other types of dependent healthcare vary depending on circumstances but are generally much lower than they would be under other medical programs.

Housing and Living Expenses: The university does not have dormitories. Students are responsible for arranging for their lodging and meals. The BAH and BAS, nontaxable monthly housing and subsistence allowances, are provided in addition to basic pay to help defray housing/food expenses.

Housing costs in the Washington, DC, area, including rentals, are higher than in many other major metropolitan areas. Upon request, the base housing office can help students locate suitable living accommodations.

If they desire, students may dine in the School's cafeteria or at the military dining facilities at NNMC. All of these on-base dining facilities provide meals at reasonable prices.

Uniforms: Students must wear prescribed military attire in class. New students need not report in uniform to their temporary orientation duty stations. Time for uniform purchase and fitting is allowed during orientation. Students are required to report in uniform when arriving at the university in August.

The purchase and maintenance of uniforms is an individual responsibility. Students receive an initial uniform allowance of $300 during orientation if they are entering commissioned service for the first time. Uniform and accessory costs vary but usually range between $500 and $1,000 and generally exceed the uniform allowance.

Travel Expenses: Matriculants to the School of Medicine are reimbursed for travel expenses for relocating themselves and their dependents to the Washington, DC, area. Travel and per diem expenses for students are partially paid while matriculants attend officers' orientation programs en route to the university. The remainder of the travel expenses are paid upon arrival at the university.

Students may move personal effects and household goods to Washington, DC, at government expense after they have consulted with the nearest military travel management office. Department of Defense joint travel regulations limit the amount of reimbursement for travel and impose a ceiling on weight for shipment of household goods, but these limitations should not financially burden most students. Several weeks before matriculation, new students are sent detailed information on moving and travel entitlements. Students should wait for moving information and orders from the School before moving.

Tuition, Books, and Equipment: The School of Medicine is a tuition-free institution. In addition, books and instruments are furnished to students either without charge or on a loan basis. Access to computer resources necessary to complete curriculum requirements is required. This may entail purchase of a computer by individual officer students.

2-5. Medical Student Organizations

Numerous activities, organizations and interest groups are available at the university to address a wide range of diverse interests. Students are encouraged to participate in the health-based volunteer opportunities in the community.

Alpha Omega Alpha: AOA is the national honor medical society, recognizing and perpetuating excellence in the medical profession. The USU Gamma Chapter members are active in tutoring and assisting other students as they adjust to the rigors of medical school. Students are eligible for election to the society in the spring of their third year and fall of their fourth year. Criteria for election include overall academic achievement, contributions to the university and the community, and exemplary character and personal conduct.

American Medical Association–Medical Student Section: The USU chapter of AMA–MSS is an affiliate of the AMA and the Medical Chirurgical Society of Maryland. Its primary functions are to inform students of national issues concerning medical education, to provide students with an outlet for their opinions and ideas, and to aid in career planning.

American Medical Student Association: AMSA is committed to improving healthcare and healthcare delivery to all people; promoting active improvement in

medical education; involving its members in the social, moral and ethical obligations of the profession of medicine; assisting in the improvement and understanding of world health problems; contributing to the welfare of medical students, interns, residents and post-MD/DO trainees; and advancing the profession of medicine.

AMSA's Military Medicine Interest Group: This interest group at http://www.amsa.org/military is a venue for those interested in military medicine to gain information and share ideas as well as to facilitate discussion pertinent to the military services' Health Professions Scholarship Programs, USU, and military medical/ethical topics. The website enables you to ask questions, share your medical experiences from military rotations, and seek general military information pertinent to military medical students like training locations, what to expect, and military pay scales.

Asian Pacific American Medical Students Association: APAMSA is the only national organization of Asian Pacific American medical students, representing more than 14,000 East and South Asian medical students in more than 70 medical schools in the United States. The goals of APAMSA are to educate student physicians of all ethnic backgrounds so that they can deal effectively with the issues that face East and South Asian patients and to promote leadership in Asian Pacific American communities.

Association of American Medical Colleges–Organization of Student Representatives: The OSR is the student voice of the AAMC, an organization uniting U.S. and Canadian medical schools accredited by the Liaison Committee on Medical Education. USU has two student representatives, but opportunities exist for other students to become involved within this national network advancing academic medicine.

Association of Military Surgeons of the United States: The mission of AMSUS is to promote all areas of federal healthcare. USU students participate in the Baltimore-Washington Student Chapter, the goals of which are to stimulate interest in and discussions of military medicine, to provide special opportunities for medical and military education, and to develop leadership.

Christian Medical and Dental Society: CMDS is a national organization of Christian physicians, dentists, and medical and dental students. Its purpose is to

motivate and equip doctors in the practice of their Christian faith, both personally and professionally. The USU chapter provides opportunities for students, faculty, and staff to grow spiritually, develop Christian relationships, and serve the university community.

Interest Groups: The university offers a great variety of interest groups, many affiliated with national sponsoring organizations, which provide opportunities for learning about careers and fostering interest in specific medical specialties by having students spend time with physicians in an office or hospital environment. Students often become involved in medically related service projects. Current interest groups include the Aerospace Medical Student Organization, Club Med–Internal Medicine Interest Group, Emergency Medicine Student Association, The Cutting Edge–Surgical Interest Group, Family Medicine Interest Group, Obstetrics/Gynecology Interest Group, Student Pediatric Society, and Undersea Medicine Interest Group.

Latino Medical Student Association: LMSA is a network of students, alumni, and health professionals whose mission is to promote the development of Latino students through educational, volunteer, professional and networking opportunities to foster diversity, higher education, and the improvement of the Latino community.

Military Medical Student Association: MMSA is a national organization of more than 1,200 members, consisting of students in military medicine at USU and in the Health Professions Scholarship Program throughout the country. As the headquarters for the organization, a primary function of MMSA at USU is to publish *The Journal of the Military Medical Student Association* three times a year.

Phi Delta Epsilon: PhiDE is an international fraternity for physicians and medical students. The USU Delta Alpha Chapter encourages professional development, fosters relationships between students and other members of the medical community, and generates an environment wherein students may serve and grow.

Student National Medical Association: SNMA is the nation's oldest and largest student organization focused on the needs and concerns of medical students of color. Established in 1964 by Howard University College of Medicine students and Meharry Medical College students, the SNMA boasts over 30 years of service to underserved communities and the medical student community. The

SNMA chapter at the USU Medical School is designed, like others around the nation, to serve the health needs of underrepresented communities. The goal is to educate people about important health matters to ensure that medical education and services are culturally sensitive to the needs of diverse populations. The USU SNMA chapter assists students with enrollment and successful matriculation in U.S. medical schools.

Students for AIDS Education: SFAE is dedicated to educating youngsters about the human immunodeficiency virus and AIDS. USU student volunteers visit middle schools and high schools in the local community to discuss the virus, how the infection is spread, methods of prevention, and attitudes toward people with AIDS. SFAE conducts a brief training program early in the academic year for prospective members.

Student Spouses Club: The Student Spouses Club exists primarily to help spouses of medical students meet others in situations similar to their own and to form friendships that sustain them through the medical school years. The club offers many activities throughout the year, including monthly meetings and social activities for each class.

The *Gouge* and the *CADUSUHS:* The *Gouge*, the student newspaper, focuses on the freshman and sophomore classes of the School of Medicine. It publishes information on current events, stimulates the exchange of ideas, and records the history of the institution from the student perspective. The *CADUSUHS* is the university's yearbook. Both publications are produced entirely by student volunteers.

The Dermatones: The Dermatones, an a cappella men's and women's singing group, perform both barbershop and traditional choral arrangements. The group sings at numerous university functions throughout the year, including mess dinners, social occasions, and memorial services, and at special functions in the Washington, DC, area.

Women In Medicine: As the USU chapter of the American Medical Women's Association, WIM provides a support group for women in medicine and a forum for discussion of medical topics that affect women specifically and healthcare providers in general. WIM includes opportunities for service in the local community with emphasis on preventive health and mentoring.

2-6. Medical Education Program

In addition to teaching the usual biomedical sciences that prepare students for careers in preventive and curative healthcare, the medical school also trains students for work in adverse physiological and psychological environments. In this way, the School of Medicine's educational program is unique.

Because of the need for broadly trained uniformed services physicians, the School of Medicine offers a comprehensive curriculum. Designed to ensure clinical and academic rigor within the School, its teaching hospitals, and various military operational environments, the program includes core instruction in human biology. Although initial emphasis is on the basic sciences, clinical sciences are progressively integrated, beginning with patient care activities in the first year. This integration allows students to see not only the physical and biological factors affecting the human body but also the complex social factors affecting individuals. Two concepts underscore the USU curriculum: that medicine exists to serve society and that physicians must be humanists.

Goals

The School of Medicine's four-year program, which culminates in the doctor of medicine degree, aims to transform students into competent and compassionate uniformed services physicians; create and foster an environment of learning and investigative curiosity; and provide a setting that supports the development of uniformed service medical professionalism. The specific goals of the School's medical program are as follows:

1. To teach physicians the basic knowledge and skills:

   - Normal and abnormal human development, structure, and function
   - The natural history of disease
   - Appropriate diagnostic, therapeutic, preventive, and health maintenance

methods and skills as well as knowledge of their limitations
- Communication and learning resources skills
- The mission of the military healthcare team and community social services

2. To develop the fundamental attitudes of a humanistic physician–scientist:

- Respect and compassion for others
- Intellectual honesty, including recognition of personal limitations
- An appreciation of scholarship and research
- An understanding of medicine's socioeconomic and ethical aspects
- The realization that a health sciences career is a continuous learning experience
- An understanding of the physician's role as a uniformed officer, including the requirement for personal physical fitness
- An inner motivation for lifelong learning

The School of Medicine offers more than just a sound, comprehensive medical education. The School's primary objective is to produce dedicated medical officers. Consequently, leadership, military training, and military medical programs are integral parts of the curriculum. Students are expected to master these aspects of their education.

Curriculum

Tables 2 and 3 present an overview of the curriculum. A more detailed description of each year follows. The section Medical School Course and Clerkship Descriptions presents brief descriptions of courses and clerkships.

First Year

Before coming to the School of Medicine in August, freshman students are assigned to a four- to six-week service-specific orientation program. Orientation programs are conducted at the following locations:

- U.S. Army: U.S. Army Academy of the Health Sciences, Fort Sam Houston, Texas
- U.S. Navy: Officer Indoctrination School, Naval Education and Training Center, Newport, Rhode Island
- U.S. Air Force: Commissioned Officer Training Course, Maxwell Air Force Base, Gunter Annex, Montgomery, Alabama

Table 2. The MS-III Year

Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
IM—inpatient and ambulatory		PEDS	FAP	SURG—general, subs, anesthesiology		OB/GYN	PSYCH
SURG—general, subs, anesthesiology		PSYCH	OB/GYN	IM—inpatient and ambulatory		PEDS	FAP
PEDS	FAP	IM—inpatient and ambulatory		OB/GYN	PSYCH	SURG—general, subs, anesthesiology	
PSYCH	OB/GYN	SURG—general, subs, anesthesiology		PEDS	FAP	IM—inpatient and ambulatory	
OB/GYN	PSYCH	IM—inpatient and ambulatory		FAP	PEDS	SURG—general, subs, anesthesiology	
FAP	PEDS	SURG—general, subs, anesthesiology		PSYCH	OB/GYN	IM—inpatient and ambulatory	
SURG—general, subs, anesthesiology		FAP	PEDS	IM—inpatient and ambulatory		PSYCH	OB/GYN
IM—inpatient and ambulatory		OB/GYN	PSYCH	SURG—general, subs, anesthesiology		FAP	PEDS

▲
Winter recess between rounds 4 and 5

Table 3. The MS-IV Year

Summer leave - follows Round 1										
Round 1		**Round 2**	**Round 3**	**Round 4**	**Round 5**	**Inter-session**		**Round 6**	**Round 7**	**Round 8**	**Round 9**	
MCM		electives subintern-ship	electives subintern-ship	electives subintern-ship neurol-ogy	MEM elec-tives sub-internship neurology			MEM elec-tives sub-internship neurology	MEM elec-tives sub-internship neurology	MEM elec-tives sub-internship neurology	MEM elec-tives sub-internship neurology	
		▲ Summer leave						▲ Winter recess			▲ Spring leave Transition to residency	
Spring leave follows round 9												
TRANSITION TO RESIDENCY WEEK follows Spring leave												
GRADUATION WEEK follows Transition to Residency Week												

March 2006

- U.S. Public Health Service: Department of Health and Human Services, Parklawn Building, Rockville, Maryland

Professional Orientation

During these orientations, administrative records are initiated for students entering active duty. Students buy uniforms and are informed of their proper wear, learn basic information about their services, gain an understanding of one's responsibilities as an officer, and begin to develop an *ésprit de corps*. Those students not accustomed to life in a uniformed service typically find that orientation is both educational and challenging while providing a smooth transition to the uniformed services.

Medical officer candidates with prior commissioned service may not be required to attend the Army Officer Basic Course (OBC), the Navy Officer Indoctrination School (OIS), or the Air Force Commissioned Officer Training (COT) course, as determined by each respective service. The Army does require that students who are graduating from the United States Military Academy and Reserve Officer Training Corps (ROTC) programs attend the OBC in San Antonio, Texas. Those individuals who did not graduate from the Army Medical Department (AMEDD) course are required to attend it prior to matriculation. The U.S. Navy and U.S. Air Force do not require service academy and ROTC graduates to attend the summer orientation program.

Following the service-specific orientation, students report directly to the School of Medicine. Brigade orientation begins the second week of August. During this period, administrative requirements for registering students with the university and local military are completed. Academic orientation begins the third week of August. Students are encouraged to have finalized living arrangements by the start of academic orientation.

Upon completing orientation at the School of Medicine, students begin a 40-week academic program devoted to the basic biomedical sciences, the psychosocial aspects of health and disease, and an introduction to military medicine and patient care techniques. Each one-course credit involves approximately 22 hours of course contact. See table 4.

Military Medical Field Studies

The university's Department of Military and Emergency Medicine directs the

Table 4. First-Year Curriculum

First-Year Courses*	Course Numbers	Credit Hours
Biochemistry	BC01001	9
Clinical Head, Neck, and Functional Neuroscience	AT01022	11
Diagnostic Parasitology and Medical Zoology	PM01002	2
Fundamentals of Epidemiology and Biometrics	PM01001	3
Human Context in Healthcare	FP01001	3
Introduction to Clinical Medicine	ID01004	3
Introduction to Structure and Function	AT01020	10
Medical Psychology	MP01001	2
Military Studies and Medical History	MM01001	7
Military Medical Field Studies-Summer	MM01002	6
Structure and Function of Systems	AT01024	11

*For details, see the section Medical School Course and Clerkship Descriptions.

Military Medical Field Studies (MMFS) course in the freshman year. The four components of MMFS are a road march, a field training exercise (FTX), a patient context experience and an operational experience. The MMFS course is required for graduation and is graded pass/fail.

For the road march, students are brought to the Antietam National Battlefield in Maryland. Fundamentals of military medicine, such as field treatment facilities, logistics, evacuation and the impact of terrain and tactical situation, are reinforced in the context of this historic battle.

Operation Kerkesner is a four-day FTX conducted at Fort Indiantown Gap, Pennsylvania. While in the field, students function as soldiers, marines, airmen and platoon/squad leaders. Students learn about nuclear, chemical and biological warfare; night operations; camouflage; emergency medical care; patient management on the battlefield; and patient movement via litter, helicopter, armored vehicle and ambulance. They are also challenged in leadership exercises.

The patient experience begins at the university with instruction on how to role-play a variety of illnesses and injuries. At Fort Indiantown Gap, first-year students serve as casualties who are managed by fourth-year students during the three-day FTX Operation Bushmaster. This experience provides an awareness of what it is like for a patient on the battlefield as well as insight into what will be expected of students as seniors.

Following the FTX, students spend two weeks with an operational unit in their parent service. The student is exposed to the real-world military environment and its medical hazards. This introduction allows each student to obtain a better understanding of the military work environment, its physical and psychological stresses, and the personnel for whom the student will provide medical care. Students with extensive operational experience can elect alternative training by completing a project or course, for example, in research, clinical administration, or emergency medicine. The alternative should be designed to improve the student's understanding of military medicine.

After returning to the university at the end of July, students are on leave until mid-August, when the second-year classes begin.

Second Year

The second year involves 35 weeks of instruction in which courses continue to emphasize the basic sciences (pathology, pharmacology, and microbiology) as well as the psychosocial aspects of disease, patient care techniques, and military medicine. During the second year, emphasis is given to preparation for third-year clerkships by integrating the basic sciences with diagnosis of clinical problems

Table 5. Second-Year Curriculum

Second-Year Courses*	Course Numbers	Credit Hours
Introduction to Clinical Reasoning	ID02001	7
Ethical, Legal, and Social Aspects of Medical Care	ID02102	2
Human Behavior	PS02001	4
Introduction to Clinical Medicine II	ID02103	3
Introduction to Clinical Medicine IIi	ID02111	6
Microbiology and Infectious Diseases	MC02001	10
Military Studies II	MM02002	2
Pathology	PA02001	12
Pharmacology	PH02101	9
Preventive Medicine	PM02001	3
Radiographic Interpretation	RD02001	1

*For details, see the section Medical School Course and Clerkship Descriptions.

and their management. Students have a three-week period for review before taking step one of the U.S. Medical Licensing Examination (USMLE). See table 5.

Third Year

In the third year, students engage in 48 weeks of required clinical clerkships in family practice, medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. Leave periods are provided in December and late June. See table 6.

Fourth Year

Following one week of instruction in Military Preventive Medicine, students have 40 weeks of required clerkships and electives, including a required four weeks in both Military Contingency Medicine and Military Emergency Medicine.

Table 6. Third-Year Curriculum

Third-Year Courses*	Course Numbers	Credit Hours	Duration (weeks)
Family Practice	FP03001	8	6
Medicine	MD03001	16	12
Obstetrics and Gynecology	OB03001	8	6
Pediatrics	PD03001	8	6
Psychiatry	PS03001	8	6
Surgery	SU03001	16	12

*For details, see the section Medical School Course and Clerkship Descriptions.

Leave periods are scheduled for late December and April. Students graduate in May. Step two of the USMLE is taken in the fourth year. See table 7.

Academic Policies

The university's academic policies ensure the highest standards for academic performance and individual responsibility.

Examinations and Promotions

All courses given by the School of Medicine, including electives, are letter graded. Examination and evaluation methods vary among the departments. Most courses are graded A, B, C, D, or F, although a few are pass/fail. Academic performance is graded in both cognitive and noncognitive areas.

For each required course, written grading criteria are prepared by the responsible academic department, reviewed periodically by the School of Medicine's Curricu-

Table 7. Fourth-Year Curriculum

Fourth-Year Clerkships	Course Numbers	Credit Hours	Duration (weeks)
Military Preventive Medicine	PM04001	1	1
Military Contingency Medicine	MM04001	6	4
Military Emergency Medicine	MM04002	6	4
Neurology	NE04001	6	4
Subinternships**		15	8
Medical Selective Block** (to be chosen from Internal Medicine, Pediatrics, Family Practice, Radiology, Dermatology, Preventive Medicine)			8
Surgical Selective Block** (to be chosen from General Surgery, Surgical Subspecialties, Anesthesiology, Obstetrics/Gynecology)			8
Behavioral Sciences Selective Block**			4
Elective Clerkships**			8

*For details, see the section Medical School Courses and Clerkship Descriptions.

**A subinternship meets the medical, surgical, or behavioral sciences selective block requirement. Students may elect to take an 8- to 12-week research experience in any approved basic or clinical science area. Selective/elective block clerkships receive five credits for each four-week experience.

lum Committee, and distributed to the students at the beginning of the course. The academic content of several of the basic science and clinical science courses includes participation in laboratories, which may involve the use of laboratory animals. These labs are mandatory. Failure to participate is sufficient grounds for course failure and results in review by the School of Medicine's Student Promotions Committee, which could lead to disenrollment. A departmental chairperson may exempt a student from fulfilling a course requirement based on proven expertise (testing out) or academic degrees (master's and/or doctoral).

A grade point average is computed for each student, but an official class standing list is not published. An annual Officer Efficiency Report (performance evaluation) includes the student's class standing by thirds as well as his or her grade point average for the academic year. Academic competence in cognitive areas is not enough to satisfy USU academic requirements. Noncognitive areas, such as officer bearing and attitude, are essential aspects of academic performance evaluated during each curriculum year.

Academic progress is monitored by the Student Promotions Committee. Medical students must maintain satisfactory academic performance to be eligible for promotion to the next year, recommended for graduation, and approved for Graduate Medical Education (GME-1). Failure to complete coursework or to maintain an acceptable grade point average may cause the Student Promotions Committee to recommend remedial work or dismissal.

The final decision to dismiss a student from the School of Medicine rests with the dean. Students have 46 months from the time of matriculation to fulfill all requirements for the M.D. degree. Inability to complete degree requirements on time is grounds for dismissal. An extension of time may be granted by the dean, but such exceptions are considered on an individual basis only.

United States Medical Licensing Examination

Besides meeting the academic and personal requirements to graduate from the School of Medicine, students must take and pass Step 1, Step 2-CK (clinical knowledge), and Step 2-CS (Clinical Skills Examination) of the United States Medical Licensing Examination (USMLE).

All three parts of the examination are administered annually by the National Board of Medical Examiners (NBME). The USMLE replaced what was known

as Parts I and II of the NBME Examination. Step 1 usually is given at the end of the sophomore year (May to June) and focuses on the basic sciences, namely anatomy, physiology, behavioral science, biochemistry, pathology, microbiology, and pharmacology. Step 2-CK usually is given at the beginning of the senior year (July to September), and covers internal medicine, surgery, obstetrics and gynecology, public health and preventive medicine, pediatrics, and psychiatry. Step 2-CS, taken after Step 2-CK, usually is given in October to December of the senior year and tests a student's clinical and communication skills in a one-on-one patient encounter in a clinical setting. Fees for all parts of the USMLE are paid by the School of Medicine.

These tests are used by the School, along with other tests, to determine cognitive mastery in a range of subject material. Performance on the USMLE appears on the student's individual official transcript as pass/fail. Because the faculty regards the ability to pass all components of the USMLE as evidence of minimal competence, students who fail Step 1, Step 2-CK, or Step 2-CS will appear before the USU Student Promotions Committee.

Academic Integrity

Academic integrity is the hallmark of every student and is part of academic performance. Students who violate academic integrity are subject to dismissal even though they are otherwise in good academic standing.

Licensure Requirements

Policies of each of the uniformed services require that a medical officer hold a valid license to practice medicine in one of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, or the U.S. Virgin Islands.

Graduation

Commencement exercises for the university are held on Armed Forces Day, the third Saturday in May, at the Daughters of the American Revolution (DAR) Constitution Hall in Washington, DC. Graduates receive the M.D. degree, are commissioned into the medical corps of their respective services, and receive a promotion from the O-1 to the O-3 officer rank (captain in the U.S. Army or the U.S. Air Force; lieutenant in the U.S. Navy or the U.S. Public Health Service). The university pays for rental of the graduating seniors' caps and gowns, their

diplomas, and printed graduation invitations.

Withdrawal from the School of Medicine

Students may withdraw from the School of Medicine by submitting a letter of resignation through the associate dean for Student Affairs to the dean of the School of Medicine, stating the reasons for withdrawal. Students who withdraw voluntarily or are dismissed from the School must perform military duty in an appropriate capacity, as determined by the secretary of the military service concerned, for a period equal to the period spent in training, but no less than one year. Unless law or service policy requires otherwise, the incurred service obligation for students separated from the School is added to any other prior service commitment. Students who leave the program may be required to repay the government for the cost of their education.

Academic and Leadership Awards

The university holds an annual *Academic Collegium*, where undergraduates from each of the first three years of medical school are honored for their scholastic achievements in courses and clerkships. In addition, the following awards are made to graduating seniors.

Board of Regents Award: This is the highest honor a graduating senior can receive. The recipient must have demonstrated a combination of superior academic performance and clinical competence, commitment, and care, reflecting the highest level of duty and honor expected of a commissioned officer.

Society of Medical Consultants to the Armed Forces Award: The award recognizes the class valedictorian—the

graduate who demonstrates the highest level of academic performance.

Association of Military Surgeons of the United States Award: This award is presented to the graduate who has best demonstrated the qualities of leadership and academic involvement. Consideration is also given to military motivation and bearing.

Surgeons General Awards: These awards are given to one graduate from each of the uniformed services whose contributions and role in the class have strongly identified him or her with the mission of that service. Each awardee has demonstrated a combination of academic achievement, medical professionalism, commitment to fellow students, and creative, sensitive leadership.

***Ésprit de Corps* Award:** The award recipient is chosen by students of the graduating class. The award recognizes the individual in that class who by thought, word, and action demonstrates the humanistic qualities of compassion, caring, and concern for the well-being of all.

2-7. Graduate Education in Medicine

Additional graduate-level medical education follows medical school and is a prerequisite for independent practice and licensure. Graduates of the School of Medicine, with rare exceptions, must spend the first year after graduation in an internship or its equivalent, designated as Graduate Medical Education-1 (GME-1). Following this, graduates become eligible either for further specialty training or for a nontraining assignment, which begins their period of obligatory service.

Graduate Medical Education-1

Graduates of the School of Medicine are required to apply for GME-1 internships in approved programs in teaching hospitals of their respective services. They can choose from a range of medical specialty areas including internal medicine, pediatrics, surgery, family medicine, neurology, psychiatry, and obstetrics and gynecology. Those undecided about their specialty or who do not require a specialty internship may choose a transitional residency, in which the intern rotates through several different medical services over the course of the year. In general,

officers in the U.S. Air Force and U.S. Army are selected for the full length of the specialty program before the GME-1 year. Internships are competitive; thus, a graduate of the School of Medicine is not assured a first-choice internship in a particular service's teaching hospital.

Residency Training

Following GME-1, the first year of graduate medical education, candidates not already selected for continuous training and seeking further specialty training are selected on a competitive basis for residency assignments depending on the needs of the medical departments. Graduates may be required to serve in operational assignments as general medical officers before becoming eligible for specialty or subspecialty training.

Service Obligations

The service obligation for the four-year undergraduate medical program is seven years of active duty plus six years of listing on the Individual Ready Reserve (IRR) roster. (See the topic Service Obligation in the section Medical Student Status, Pay, and Benefits.)

No additional service obligation is incurred for GME-1, and time spent in this training is creditable in computing eligibility for retirement. It is not, however, creditable toward satisfying the seven-year obligation incurred from undergraduate medical studies. Time spent in a residency does not count toward satisfying the service obligation incurred from participation in the undergraduate medical program of the School of Medicine but is creditable in determining retirement eligibility.

In general, students

Table 8. Summary of Training, Obligatory Service Incurred, and Service Creditable Toward Retirement Elgibility

Training	Years
Medical school	4
Internship	1
Residency (in a uniformed service medical facility)	3 (avg.)
Total	8
Obligation	
Medical school	7 (+6 IRR)
Total obligation	15 (avg.)
Total service minus 4 years of medical school	- 4
Years of service creditable toward retirement	11

who take residency training in service medical teaching facilities do not accrue an additional service obligation for that residency training if they currently have an existing service obligation equal to or greater than the length of the residency. Therefore, to complete GME-1 and a residency program and fulfill all payback requirements, including the initial obligation for medical school, the average graduate spends approximately 11 years on active duty after receiving the M.D. degree. (See table 8 for undergraduate and graduate medical education payback requirements.)

National Capital Consortium

The School of Medicine is a charter member of the National Capital Consortium, which includes Malcolm Grow Medical Center, National Naval Medical Center, and Walter Reed Army Medical Center. The consortium sponsors 65 internships, residencies, and fellowships in virtually all major disciplines.

Trainees in these programs are frequently graduates of the School of Medicine and provide new graduates with invaluable mentorship, teaching, and role models in the local teaching hospitals. USU graduates in other military teaching hospitals provide comparable support to new trainees during rotations through their facilities.

2-8. Medical School Admission Requirements and Application Procedures

The School of Medicine subscribes fully to the policy of equal educational opportunity. There are no quotas by race, sex, religion, marital status, national origin, socioeconomic background, or state of residence. There are no congressional quotas or appointments. All applicants are judged on personal merit in terms of demonstrated aptitude, potential, and motivation for the study and practice of military medicine. Only the best-qualified, most promising candidates are selected.

Both civilian and uniformed services personnel are eligible for admission. The term "uniformed services personnel" means individuals who currently are on (or on orders for) active duty for a period of 90 days or more in any of the seven components making up the uniformed services: U.S. Army, U.S. Navy, U.S. Air Force, U.S. Marine Corps, U.S. Coast Guard, Commissioned Corps of the U.S. Public Health Service, and Commissioned Corps of the National Oceanic and Atmospheric Administration.

Individuals engaged in programs of study sponsored by the armed forces must have approval from their military departments or sponsoring components before applying. This includes those in undergraduate programs of the service academies, scholarship ROTC, nonscholarship advanced ROTC, and U.S. Army Reserve. Each military department has established regulations governing procedures for initiating and processing requests for approval. The School of Medicine does not take final action on the application of any individual who is in service or who is in a sponsored training program until receipt of an official "Letter of Approval to Apply." Applicants should know the procedures involved in applying to a medical school. An excellent source for such information is *Medical School Admission Requirements*, published annually by the Association of American Medical Colleges (AAMC). The website for information on this handbook is http://www.aamc.org/publications. This book contains information on college academic course planning, application procedures for medical school, the medical school admissions process, and medical school requirements.

General Requirements

Applicants to the School of Medicine must meet the following requirements:

- Be citizens of the United States

- Be at least 18 years old at the time of matriculation but no older than 30 as of June 30 in the year of admission (civilians and enlisted personnel). Applicants older than 30 years of age may apply to the School of Medicine. If they are recommended for a position by the admissions committee and approved by the dean, an age waiver is requested from the Office of the Secretary of Defense (Health Affairs) prior to extending an offer.
- Meet the requirements for holding a commission in the uniformed services (see the section Physical Standards)
- Be of sound moral character
- Be motivated for a medical career in the uniformed services
- Meet the academic, intellectual, and personal qualifications of the School

The age limits for entrance parallel those governing appointment in the regular medical corps of the armed forces (Section 532, Title 10, United States Code). The age of any student who has served on active duty as a commissioned officer in the uniformed services, however, may exceed the age limit by a period equal to the time served on active duty, provided the student is no older than 35 as of June 30 in the year of admission.

Academic Requirements

Military medicine needs individuals with a variety of interests and talents; thus, the School welcomes applications from individuals with diverse educational backgrounds. Intellectual maturity, however, is an important consideration in admissions decisions. Applicants should be well-informed, knowledgeable individuals who have demonstrated competence in scholastic pursuits. They should be adept in organizing, analyzing, and synthesizing factual information. Mathematical ability and a background in the sciences—natural, physical, and social—are expected. Prior to matriculation, applicants must have achieved the following:

- Attained a baccalaureate degree as of June 15 of the year of planned matriculation from an accredited academic institution in the United States, Canada, or Puerto Rico. An accredited institution is any college, university, or institution that is accredited by an accrediting agency or association recognized for such purpose by the U.S. Commissioner of Education. Included within this definition are those institutions that are in the process of seeking accreditation and currently have provisional or conditional accreditation, or candidacy status for accreditation, based solely on the newness of the institution.
- Completed the following academic coursework:

- One academic year of general or inorganic chemistry including laboratory
- One academic year of organic chemistry including laboratory
- One semester of calculus (precalculus or computer science courses are not acceptable)
- One academic year of general physics including laboratory (courses in astronomy are not acceptable)
- One academic year of biology including laboratory (botany courses are not acceptable)
- One academic year of college English (introductory courses in composition or literature are acceptable)

An academic year of coursework consists of studies extending over a two-semester or three-quarter period, carrying total credits of between 8 semester or 12 quarter hours. Persons who have not taken all required courses or who are not in the process of completing the last 8 semester hours (or 12 quarter hours) of these courses at the time of application are ineligible for admission.

Applicants must take all prerequisites under a letter grade system. Grades of D or D+ are unacceptable and do not satisfy the minimum requirements. College Level Examination Program (CLEP) and Advanced Placement (AP) credits cannot be used to fulfill the prerequisites. Also, all prerequisites must be taken in a traditional classroom setting with a letter grade.

The quality of an applicant's work at the preprofessional level is of major interest to the School and is important in admissions decisions. Although grades are not the only criterion used in making decisions, college achievements are scrutinized very carefully since academic performance speaks to achievement potential, interest, motivation, and self-discipline. Applicants are encouraged to take college courses in the humanities and social sciences. Courses in history, philosophy, literature, political science, psychology, economics, sociology, and foreign languages are relevant and valuable; and the School believes they enhance a student's preparation for medical studies.

The admissions committee strongly encourages applicants to pursue some form of clinical work (e.g., emergency room, emergency medical technician, shadowing a physician) because applicants are seldom accepted without clinical experience. While extracurricular activities, community service, employment, graduate study, military service, and personal accomplishments are considered in evaluating the

applicant as a total individual, these factors cannot substitute for a poor academic undergraduate record.

Test Requirements

Applicants to the School must take the Medical College Admission Test (MCAT), a national standardized examination designed to measure general and specific aptitude for medical studies. Applicants must provide scores from tests that have been taken within three years of desired matriculation.

Applicants must make their own arrangements for taking the MCAT. Administered by the American College Testing Program (ACTP), the test is given at various locations in the United States and abroad. The website to obtain information regarding the web-based application for the test (including examination dates, testing locations, sample questions, score reports, and deadlines) is http://www.aamc.org/students/mcat/start.htm.

Applicants should not send personal MCAT score reports to the School. Arrangements should be made to have the ACTP furnish official reports. The ACTP designator code for USU is 821. The fall MCAT is the latest testing date considered by the admissions committee from those students applying to the School of Medicine for admission the following summer. Applicants cannot take the MCAT and enter the School in the same year.

Physical Standards

Requirements for a military commission include medical standards of fitness. These requirements are contained in the Department of Defense Instruction 6130.4 (January 2005) and are used by the Department of Defense Medical Examination Review Board (DODMERB)—the agency responsible for scheduling and evaluating physical examinations. This scrutiny ensures that an applicant does not have a physical or mental condition that would preclude or be aggravated by his or her participation in the academic and military duties encountered during training at the university or that would be an impediment to shipboard or field duty after graduation.

Major medical considerations are summarized below so that an applicant can consult with his or her physician and dentist to see whether basic physical requirements for admission to USU are met. This is not a comprehensive listing of

all disqualifying conditions, but rather provides a brief and general guide to help students determine medical eligibility. Each applicant's medical history is reviewed for information on illnesses, injuries, surgical procedures, congenital or familial diseases, or other factors that could affect current or future physical status. Applicants may be asked to provide additional reports and/or records from a physician or hospital. A potential applicant with a remediable medical or dental condition should have planned corrections completed prior to his or her DODMERB examination. Individuals should not, however, undergo any elective or expensive procedure for the sole purpose of correcting a potentially disqualifying defect without first contacting the USU Admissions Office to discuss whether they are otherwise competitive applicants.

Waivers

Some medical requirements can be waived for applicants who are otherwise highly qualified. If an applicant is notified by DODMERB of a disqualifying defect but would still like to be considered for admission, he or she may request a waiver of the disqualifying defect by writing to the USU Admissions Office.

If application records support the individual's competitive status, admissions office staff members will request that DODMERB prepare a waiver request package.

The applicant may be asked by the Office of Admissions to provide amplifying information on the condition in question or to submit a more comprehensive evaluation by a medical specialist. The request is then forwarded to the Assistant

Secretary of Defense (Health Affairs) for granting or rejection of the waiver. Members of the admissions staff are available to assist applicants with questions concerning the administrative processing of physical examinations and the waiver process.

Height and Weight Standards

Tables 9 and 10 show standards of weight according to height. Minimum and maximum height for men and women, measured to the nearest quarter inch without shoes, are 60 to 80 and 58 to 80 inches, respectively. Applicants exceeding the maximum allowable weight are qualified or disqualified based on their percentage of body fat, which is calculated in accordance with service-specific regulations. It is a requirement of the university to meet height and weight body fat standards for matriculation and graduation.

Disqualifying Medical Conditions

Eyes and Vision: Applicants who wear glasses or contact lenses should bring them to the examination. Soft contact lenses should not be worn for three days prior to the exam. Hard contact lenses or gas permeable lenses should not be worn for 21 days prior to the exam.

Distant Visual Acuity
Distant visual acuity must be correctable with spectacles (not contact lenses) to at least 20/20 in one eye and 20/400 in the other eye, 20/30 in one eye and 20/100 in the other eye, or 20/40 in one eye and 20/70 in the other eye.

Near Visual Acuity
Near visual acuity must be correctable to at least 20/40 (J-6) in the other eye.

Refractive Error
For refractive error, the spherical equivalent must be less than ± 8.00

Table 9. Height and Weight Standards According to Age, Gender, and Service for Admission to USU

Males: Ages 21–27				
Height in Inches	Minimum Weight Regardless of Age	Maximum Weight		
		U.S. Army	U.S. Navy	U.S. Air Force
58	98	-	-	-
59	99	-	-	-
60	100	136	-	153
61	102	140	161	155
62	103	144	164	158
63	104	149	167	160
64	105	154	170	164
65	106	159	174	169
66	107	163	178	174
67	111	169	181	179
68	115	174	185	184
69	119	179	188	189
70	123	185	192	194
71	127	189	196	199
72	131	195	200	205
73	135	200	205	211
74	139	206	210	218
75	143	212	215	224
76	147	217	-	230
77	151	223	-	236
78	153	229	-	242
79	157	235	-	248
80	161	240	-	254

diopters in each eye; astigmatism greater than 3.00 diopters requires evaluation for keratoconus. The following are disqualifying conditions:

- Radial keratotomy, photo refractive keratotomy, orthokeratology, or any other surgical procedure to correct myopia
- Keratoconous

Ears and Hearing: Hearing acuity is determined by audiometric testing on machines calibrated for ISO or ANSI. An average level of hearing loss greater than 30 db; loss greater than 35 db in any one frequency in the 500, 1000, or 2000 Hz

Table 10. Height and Weight Standards According to Age, Gender, and Service for Admission to USU

Females: Ages 21–27				
Height in Inches	Minimum Weight Regardless of Age	Maximum Weight		
		U.S. Army	U.S. Navy	U.S. Air Force
58	88	112	139	126
59	90	116	141	128
60	92	120	144	130
61	95	124	147	132
62	97	129	151	134
63	100	133	155	136
64	103	137	160	139
65	106	141	164	144
66	108	146	168	148
67	111	149	172	152
68	114	154	176	156
69	117	158	179	161
70	119	163	183	165
71	122	167	187	169
72	125	172	-	172
73	128	177	-	179
74	130	183	-	185
75	133	188	-	190
76	136	194	-	196
77	139	199	-	201
78	141	204	-	206
79	144	209	-	-
80	147	214	-	-

frequencies; loss greater than 45db in the 3000 Hz; or loss greater than 55 db in the 4000 Hz frequency are cause for disqualification, regardless of cause. The following conditions are also disqualifying.

- A history of middle ear surgery (excluding mynigotomy)
- Abnormalities of the external or internal ear, unless minor
- Any acute or chronic disease of the external, middle, or internal ear
- Current use of any hearing aids
- Perforated eardrum within 120 days of physical examination or unresolved perforation, including current tubes or myringotomy

Respiratory System and Allergies: History of asthma, recurrent asthmatic bronchitis, exercise-induced bronchospasm, or reactive airway disease by any other name are disqualifying. Additional evaluation is necessary to be considered for a waiver.

Symptomatic nasal polyps, severe hay fever, tuberculosis (active within two years), nasal septal deviation, hypertrophic rhinitis, and other conditions that cause significant reduction of air flow through either nasal passage or that interfere with drainage of any sinus are cause for rejection. Allergy immunotherapy (including treatment for hymenoptera sensitivity, unless established at monthly maintenance levels) does not qualify for waiver consideration.

Nervous System: The conditions below are disqualifying.

- Degenerative disorders such as multiple sclerosis and encephalomyelitis
- Peripheral nerve disorder
- Residuals of trauma
- Paroxysmal convulsive disorders
- Any abnormality of the central nervous system
- Any chronic pain syndrome
- Any history of recurrent severe headaches or migraines within the past three years

Musculoskeletal Systems: The following conditions are disqualifying.

- Ununited fracture
- History of surgery to a major joint within six months
- History of derangement of any major joint not corrected by surgery or evidence of instability subsequent to surgery
- Anterior cruciate/posterior cruciate ligament with or without repair (comprehensive evaluation required if repaired at least 10 months prior to DOD-MERB examination)
- Retained orthopedic fixation devices (may be evaluated on a case-by-case basis if no longer essential to the structural/functional integrity of the repair)
- Arthritis
- Significant scoliosis
- Symptomatic structural abnormalities of the spinal column
- Herniated nucleus pulposis or history of surgery for this or any other spinal column abnormality

Genitourinary System: Cause for disqualification are diabetes insipidus, persistent hematuria or albuminuria, absence of kidney, horseshoe kidney, diseases

of the kidneys, atrophy or absence of both testicles, undescended testicle unless surgically treated, or active genital herpes (symptomatic).

Gastrointestinal System: History of peptic ulcer, gall bladder disease, Crohn's disease (regional enteritis), ulcerative colitis, or any other inflammatory bowel disease even though controlled with diet and/or medication are cause for disqualification.

Neuropsychiatric Disorders: Seizure disorders (except childhood febrile convulsions), degenerative conditions, and vascular or other kinds of recurrent or severe headaches are disqualifying.

History of psychosis, affective illness, personality disorder, eating disorders (i.e., anorexia or bulimia), learning disorders (i.e., attention deficit disorder with or without hyperactivity), and current use of medication are disqualifying. Current use of any psychotropic or psychoactive drug for any reason is disqualifying.

Skin: The following conditions are disqualifying.

- Eczema of long standing, chronic impetigo (not under control), carbuncles, acne of the face or neck that is so severe as to be unsightly, any history of psoriasis
- Use of accutane until eight weeks after completion of acne therapy
- Pilondial cyst or sinus if evidenced by readily palpable tumor masses, a history of inflammation or of purulent discharge, or inadequate surgical correction or unhealed condition resulting in recurring symptoms

Other Disqualifying Conditions

- Hernias (including abdominal wall) until repaired
- Splenectomy except for trauma, anemia, abnormal bleeding states
- Diabetes mellitus
- Sickle cell disease (sickle cell trait is not disqualifying)
- Any active communicable disease
- Any severe, generalized reaction to stinging insect venom
- Family history of malignant hyperthermia
- Allergy to common foods requiring special dietary considerations
- History of drug abuse or alcohol dependence
- Positive HIV test

Subsequent to commissioning and arrival at the officer basic course (OBC), unconditional acceptees need to take and pass a test for HIV, blood alcohol, and

urine. Those individuals (i.e., active and prior service officers) not attending the officer basic course will complete the same testing upon arrival at the university. A confirmed positive result is disqualifying without the possibility of a waiver.

Significant speech impediments, persistent sleepwalking episodes, and severe motion sickness susceptibility are evaluated on an individual basis by each service waiver authority.

Dental Standards

Missing teeth causing reduced masticatory (chewing) or incisal (biting) efficiency must have been replaced by well-designed bridges, partial dentures, or implants, which must also be in good condition. Active orthodontic treatment must be completed prior to matriculation.

Additional conditions that are cause for disqualification include the following: chronic disease of the oral cavity soft tissue; marked malocclusion that requires extensive treatment (including orthognathic surgery) or will, in some other way, jeopardize dental health; severe apical or periodontal disease; incomplete or unsatisfactory harelip/cleft palate repairs; tumors or cysts of the oral tissues that can reasonably be expected to require more than simple, surgical excision in the future.

Miscellany

Neither this document nor the Department of Defense Directive (Accession Standards) contains all disqualifying conditions. Neither are all the disqualifying conditions listed in these two sources always permanently disqualifying. After evaluation by a senior military physician, waivers may be possible if the condition is not so severe as to interfere with an individual's daily participation in rigorous physical training or the wearing of military equipment; nor should it detract from a smart military bearing and appearance.

USU graduates must be able to perform their professional medical and military duties without functional limitations in both a field environment and aboard ship. USU produces military physicians, not just physicians who happen to wear a military uniform. Physical fitness and ability to function without professional, military, or geographic restrictions are essential.

National Security Requirements

All applicants who accept an invitation to interview at the School of Medicine must complete forms to undergo a security investigation, which is a criterion for entrance to the School. This requirement applies to all commissioned officers entering the uniformed services and ensures that the military denies admission to individuals who might compromise national security. Individuals who enter the medical school but fail to meet security standards are disenrolled. Although security standards are rigorous, applicants should not be unduly intimidated by them. Only in rare cases have the standards presented an obstacle for individuals who were otherwise qualified for entry to the School of Medicine.

Once applicants are scheduled for an interview at the School, they receive instructions via email for downloading and completing the electronic personnel security questionnaire. The applicant must complete the forms as instructed and submit them to the security office after arriving on campus for interview day. Service members on active duty who have current security clearances must provide verification.

When an applicant receives an unconditional offer of acceptance from the School, the security questionnaire is sent electronically to the Defense Security Service (DSS) to begin the investigation.

A potential student who fails (or refuses) to complete the security questionnaire in its entirety, intentionally fails (or refuses) to sign it, makes entries on it that provide reason to believe that his or her acceptance might not be in the best interest of national security, or otherwise fails (or refuses) to answer any pertinent questions in the course of the official investigation is denied admission to the School.

Profile of the Entering 2007 Class (Class of 2011)

Entrance to the F. Edward Hébert School of Medicine is on a competitive basis. For the class that entered in 2007, 1,908 applicants competed for 170 places. Of those applicants, 506 were interviewed. Students who were accepted to the class had a mean college grade-point average of 3.5 and a mean science GPA of 3.5. The mean score on the MCAT has been averaging an overall score of 30. The applicant-to-position ratio was 11 to 1, and the student acceptance rate was 61 percent.

All entrants had received baccalaureate degrees and 10 held master's degrees. Biology was the most-represented undergraduate major of matriculants (34 percent), followed by chemistry (13 percent), and 10 percent in biochemistry. Other majors for class members were English, zoology, neuroscience, psychology, history, and computer science.

Sixty percent of the entrants had no military experience. The 40 percent of entrants previously associated with the military included active duty officer and enlisted service members, prior officer and enlisted service members, service academy graduates, and graduates of ROTC programs.

Women comprised 35 percent of the class. Thirty-eight students in the entering class were from minority groups, including 11 from groups classified as underrepresented in U.S. medicine.

Application Procedures

The School of Medicine participates in the American Medical College Application Service (AMCAS), a nonprofit organization founded to provide centralized processing of applicants to U.S. medical schools. Accordingly, applicants to the School must apply electronically through AMCAS by completing the web application.

This application is available only online through the AMCAS website at http://www.aamc.org. Click on the "AMCAS" link for instruction materials and the application. The designation code assigned to the School of Medicine by AMCAS is 821. Applicants must not send application materials directly to the School of Medicine unless they are specifically requested to do so by the USU admissions committee. Application materials must be properly routed through AMCAS.

Following completion of the web application, students must submit official transcripts to AMCAS from all the colleges or universities attended for verification of academic records. Failure to complete this step in a timely manner can delay the processing of an individual's application.

Individuals with a current application on file with AMCAS need not complete another application to apply to the School of Medicine. For the original application materials to be forwarded, however, the applicant must submit a new school-designation form and the appropriate fee to AMCAS.

The earliest date for submitting an AMCAS application for admission to the School of Medicine's first-year class is June 1. The deadline for having all required credentials into AMCAS is November 15. This is the receipt date, not a postmark date. The cutoff date is firm; therefore, applicants should submit materials well in advance of the deadline. The School of Medicine does not grant deadline extensions due to the early date of matriculation. Because USU has a rolling admissions procedure, in which the admissions committee begins processing applications as soon as they are received, applicants are advised to apply during June and July, even if taking one of the fall MCAT exams.

Once AMCAS receives an individual's electronic application, the data are verified for completeness and accuracy. If no irregularities are encountered, AMCAS forwards the candidate's application to the School of Medicine and notifies the applicant.

Once an individual's basic application materials are received from AMCAS, the medical school's Admissions Office notifies the applicant by e-mail and postcard that he or she is eligible to submit supplemental application materials. This step involves submission of a personal statement, a premedical committee letter (or three letters of recommendation from academia) and an evaluation from the supervisor of your clinical experience. A two- by two-inch passport-type photograph should also be affixed to your statement.

The admissions committee requires a premedical committee letter from the program attended by the applicant. If unable to obtain one, a letter from the applicant should be closed with the supplemental application materials stating the reason a composite premedical committee reference letter was not available. If a premedical committee letter is not enclosed, three individual faculty recommendation letters are required. At least one letter of recommendation must be from a clinical supervisor. If an applicant is unable to provide a letter from a clinical supervisor, a letter of explanation should be sent with the applicant's supplemental materials stating why. Letters from an applicant's relative, regardless of that relative's profession or status, do not satisfy the reference requirement.

The School of Medicine provides pre-printed forms for letters of reference; however, it is not necessary to use them. They are furnished for the convenience of applicants and the faculty who write recommendations on behalf of students. Writers of recommendations should provide in-depth information on the char-

acter, personality, and attributes of the candidate and elaborate on any relevant major events and/or achievements.

The School of Medicine asks for substantive letters because recommendations are extremely important in the selection process. Recommendation letters should be sent directly to the F. Edward Hébert School of Medicine, USU Admissions Office, Room A1041, 4301 Jones Bridge Road, Bethesda, MD 20814-4799.

Applicants are responsible for requesting required letters of reference and for submitting supplemental application materials. Applicants who fail to submit these materials by the deadline are not considered. All application materials submitted to the School of Medicine become the property of the university and are not returned.

Once all supplemental application materials are received, the admissions committee begins review of an individual's file. Applicants who merit further consideration on the basis of academic, intellectual, and personal qualifications are invited for a personal interview. Those not selected for an interview are notified once that decision is made.

Personal Interviews

Candidates selected for an interview are notified via e-mail. All appointments are scheduled through the medical school's Admissions Office. Once applicants are invited to interview, physical examinations are arranged with the services (see Physical Examinations section). Interviews are conducted at the university, in Bethesda, Maryland. Those accepting the invitation spend a day at the medical school. On interview day, applicants are briefed by the Associate Dean for Recruitment and Admissions, Associate Dean for Student Affairs, Assistant Dean for Clinical Sciences, the Commandant, and Vice President for Recruitment and Diversity, and campus representatives of the uniformed services. Applicants are given a tour of the campus by USU students and, if they choose, can stay at a student's home the night before.

During this time, two representatives of the medical school interview applicants. Interviewers evaluate each applicant's motivation and potential as a future military physician by observing the candidate's maturity, stability, personality, and other pertinent qualities.

Final Screening and Acceptance Status

Once interviews are completed, the USU admissions committee reviews all files and makes decisions about each application. Final decisions are based on the collective evaluations of committee members. Possible actions are (1) conditional acceptance, (2) designation as an alternate, or (3) rejection.

The School of Medicine does not participate in the Association of American Medical College's (AAMC) Uniform Acceptance Dates Program or in the AAMC Early Decision Plan. Applicants who are conditionally accepted or designated as alternates receive written notification of their status following the admissions committee decisions. Applicants not selected are also advised.

Applicants offered a conditional acceptance have two weeks to acknowledge their intent to enroll. This acceptance must be in writing. Applicants failing to meet the deadline automatically forfeit their place in the class. No deposit is required to hold a class space.

Those applicants who are selected as alternates may be offered conditional acceptances at any time prior to the start of classes whenever a vacancy arises. In such cases enrollment procedures are explained in the "Letter of Conditional Acceptance."

Service Assignments

Conditional acceptance letters specify the branch of service (U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service) in which the conditional selectee has been nominated to serve. The particular service assignment is dependent on the preference indicated on an applicant's service preference statement, a form that is completed on interview day, and on the projected needs of each service component.

An individual can accept appointment in the branch stipulated or decline the offer to matriculate. The school does not guarantee that service nominations are compatible with applicant preferences but it makes every effort to accommodate individual choices. Applicants on active duty are tendered a position in the same service unless they requested transfer to another branch of service. Such a request should have been included in the "Letter of Approval to Apply." Service academy and ROTC students are commissioned in the service in which they have been

commissioned.

Service preference statements have no bearing on admissions decisions. Applicants compete for places in the class rather than for specific service assignments. The decision to nominate an individual for a given service component is purely administrative and is not a selection factor for the medical school. The School's determination of service nominations is based on the total preferences expressed for each service by all conditional applicants, individual backgrounds and desires, and service quotas established by the U.S. Secretary of Defense.

Physical Examinations

As soon as individuals accept interview invitations, they are referred to the Department of Defense Medical Examination Review Board (DODMERB) for physical examinations and are required to complete the necessary paperwork for background investigations. (See the National Security Requirements section.)

Physical examinations for potential entrants are performed without charge at the medical facility closest to his or her place of residence. The cost of travel to and from the examination site is each applicant's responsibility and is not reimbursable by the government or the medical school. Individuals with a conditional acceptance who pass both the physical exam and the security check receive unconditional (final) acceptance to the School of Medicine. Individuals who do not meet commissioning standards are ineligible for matriculation.

Applicants offered unconditional acceptances must maintain an acceptable level of performance in pending academic work. Those who fail to achieve an acceptable level of performance or who fail to complete baccalaureate degree requirements by June 15 are denied admission and, if already enrolled, are considered for disenrollment.

Reapplication

Any applicant who reapplies in a subsequent year is evaluated and reviewed along with the entire applicant pool for that particular cycle of application and admission. Reapplicants are advised to enhance their competitive status by demonstrating to the admissions committee continued scholarly activity and clinical motivation. Such evidence includes any or all of the following: completion of additional academic coursework, repeat of the MCAT exam, expanded clinical exposure,

improved communication or interview skills, and additional contemporary letters of recommendation. Simply resubmitting a previous application is unlikely to increase one's competitive standing in a new application cycle.

Advanced Standing and Transfer

The School of Medicine does not have an advanced standing program and admits students only to the first-year class.

2-9. Medical School Course and Clerkship Descriptions

First-Year Courses

Biochemistry (BC01001): The molecular mechanisms of human biology are described and explained. Major areas covered are (1) the structure and function of proteins, nucleic acids, carbohydrates, and lipids; (2) bioenergetics; (3) membranes and transport; (4) intermediary metabolism of biological fuels, vitamins, and minerals; and (5) signal transduction. Mendelian and population genetics are also presented as a foundation for understanding heritable metabolic disorders. Emphasis is placed on the biochemical basis of disease and nutrition throughout the course; however, clinical correlation lectures that are included are devoted to relating various aspects of biochemistry, molecular biology, and human genetics to specific human diseases. (Department of Biochemistry)

Clinical Head, Neck, and Functional Neuroscience (AT01022): Module II of the Anatomy, Physiology, and Genetics MS-I curriculum consists of integrative learning of basic and applied anatomy of the head and neck region with functional neuroscience and histology and physiology of the special senses. This course stresses a core of basic science information of practical clinical value and emphasizes the development of skills in clinical reasoning by involving the students in problem-solving clinical case studies. (Department of Anatomy, Physiology, and Genetics)

Diagnostic Parasitology and Medical Zoology (PM01002): The major protozoan, helminth, and arthropod parasites of humans as well as their respective

reservoir hosts and vectors are covered in a series of lectures, laboratories, and demonstrations. Emphasis is placed on diagnostic methods, geographic distribution, means of transmission, methods for prevention of disease, and control strategies. Venomous vertebrate and invertebrate animals likely to be encountered by the military are also discussed. (Department of Preventive and Biometrics)

Fundamentals of Epidemiology and Biometrics (PM01001): This course is designed to give the student a working knowledge of basic clinical biostatistics as well as fundamental epidemiological principles and concepts. Applications to evidence-based clinical decision-making, epidemiological study design, and disease outbreak investigation are covered in lectures, seminars and labs. The objective is to provide a solid foundation in the epidemiological approach to clinical and public health practice. (Department of Preventive Medicine and Biometrics)

Human Context in Healthcare (FP01001): This course is designed to introduce the student to the clinical approach in healthcare through readings, panel presentations, and discussion groups. It examines the role of context—individual life experience, beliefs, and values—of both physician and patient in determining the quality of care provided, demonstrating how these factors influence care independently of the nature of the patient's illness and the specialty of the physician. Presentations emphasize the crucial role of the physician's self-awareness in facilitating effective patient care. (Department of Family Medicine)

Introduction to Clinical Medicine I (ID01101): Introduction to Clinical Medicine I is designed to provide an initial experience in clinical skills needed in the care of a patient. The course is conducted in the second half of the first year and includes the teaching of basic communication skills and interviewing techniques. Coursework includes conducting a history with standardized patients, videotape review with faculty, and a variety of interviews with inpatients and ambulatory patients with direct observation and feedback from experienced faculty. (Interdepartmental course managed by the Department of Medicine)

Introduction to Structure and Function (AT01020): This module consists of three sections: Module 1a, 1b, and 1c. Module 1a teaches first-year medical students the fundamental concepts of structure and function that are most important to their understanding. This curriculum combines (1) topics on cell biology with relevant segments of basic physiology, (2) the study of human basic tissue structure and function (physiology), and (3) early embryogenesis and basic tissue for-

mation. Modules 1b and 1c (1) introduce the medical student to anatomical and medical terminology; (2) teach basic information on form, structure, and function by dissection of the body and normal radiology; and (3) correlate the development of organ systems and the etiology of congenital abnormalities. (Department of Anatomy and Cell Biology)

Medical History (MM01001): This course describes the historical development of Western medicine with emphasis on medical practice, patient care, and interactions between medicine and society. The development of military, naval, and aviation medicine is presented in the context of the social and military events of the period. Particular attention is given to the growth of medicine in America from colonial times to the present. (Department of Medical History)

Medical Psychology (MP01001): Medical psychology is the study of mind and behavior as they relate to physical and mental health. This course presents important topics in medical psychology, including tobacco use, stress, eating disorders, pain, psychological assessment, behavioral cardiology, substance abuse, sexual assessment, medical decision-making, and compliance. Presentations integrate basic psychological and behavioral principles with modern life sciences and relevant treatment strategies. (Department of Medical and Clinical Psychology)

Military Studies (MM01001): Military Studies (MS-I) is composed of five sub-courses over the freshman year of medical school. Listed in chronological order, these include Introduction to Military Medicine (IMM), Military Medical History [taught by the Department of Medical History], Combat Medical Skills (CMS), Military Applied Physiology (MAP), and Military Medical Field Studies (MMFS, see below). IMM serves as a basic introduction to military medicine: it introduces basic concepts that form the foundation for everything that follows, both during medical school and afterward, enabling students to appreciate and understand the complexities of military medicine; and it answers the question "What can I expect in my role as a physician in the U.S. military at the beginning of the 21st century?" CMS teaches combat-/field-oriented, basic and advanced, out-of-hospital, first-aid skills and an algorithmic approach to multiple patient incidents. MAP adds military specific issues to the traditional physiology course (taught concurrently) focusing on the unique military occupational environments. (Department of Military and Emergency Medicine)

Military Medical Field Studies—Summer (MM01002): Students receive training in military field and leadership skills, including weapons familiarization, land

navigation, small-unit leadership and team problem solving, field sanitation, and basic field medical skills while deployed during one week of Field Training Exercise Kerkesner at Fort Indiantown Gap in Pennsylvania. Immediately following this week in the field, students spend two to three weeks with an operational unit of their parent service to enrich their understanding of the working environment and people for which they will have future medical responsibility. (Department of Military and Emergency Medicine)

Structure and Function of Organ Systems (AT01024): This course examines the anatomy and physiology of the organs of the human body, beginning at the level of cellular and subcellular structures comprising organ systems. Students learn how these cellular components form the anatomical organs and study the function and physiology of whole organs. The course approaches the material by dividing organs into six organ systems: cardiovascular, immune, renal, gastrointestinal, respiratory, and endocrine. Material is presented both in lecture format and as laboratory/small group exercises designed to strengthen student understanding of major concepts in this field. Clinical correlations and pathology cases emphasize the practical aspects of this material. (Department of Anatomy, Physiology, and Genetics)

Second-Year Courses

Introduction to Clinical Reasoning (ID02001): This course introduces students to principles of diagnostic reasoning and clinical problem solving. A series of common, primary-care topics germane to the disciplines of medicine, pediatrics, obstetrics/gynecology, and surgery are introduced through clinically oriented lecture followed by small group case studies in which students are expected to lead discussions under the guidance of a faculty preceptor. Students learn the vocabulary of clinicians and appropriate terms that are understood by patients as well as gain a broadened ability to relate patient symptoms and signs to pathophysiologic principles. (Interdepartmental course managed by the Department of Medicine)

Ethical, Legal, and Social Aspects of Medical Care (ID02102): The course provides a framework for using diverse perspectives in analyzing current ethical problems in medicine at both institutional and individual levels. Current issues are discussed from legal, ethical, sociological, and economic perspectives and include neonatal care, military medicine, truth telling, informed consent, experimentation, active and passive euthanasia, reproductive choices, genetic screening and counseling, and macro and micro allocations. (Interdepartmental)

Human Behavior (PS02001): The format for this course involves lectures and small group discussions (attendance mandatory) on normal human development and psychopathology. The first segment of the course focuses on psychological growth and development from infancy to late adulthood. The second segment introduces major psychiatric disorders and emphasizes biological, psychosocial, and social factors in diagnosing and treating these disorders. Six small, group sessions held throughout the course emphasize learning objectives through case discussions and are intended to provide clinical correlations to lecture materials. (Department of Psychiatry)

Introduction to Clinical Medicine II (ID02103): ICM II, taught at the beginning of the second year, concentrates on learning the essentials of a complete physical examination. Mastering the mechanics and sequence of examination for a normal, healthy subject is achieved through sessions devoted to individual sections of the body and the cumulative performance of a complete physical examination. Specific, sensitive portions of examination techniques are taught by using standardized patients and teaching associates. (Interdepartmental course managed by the Department of Medicine)

Introduction to Clinical Medicine III (ID02111): Taught in the spring semester, ICM-III prepares students for MS3 clerkships by consolidating basic clinic skills learned in ICM-I (Medical Interviewing) and ICM-II (Physical Examination). After successfully completing ICM-III, students are able to perform a comprehensive history and physical exam. This interdepartmental course is managed by the Department of Medicine. Key course components include the following:

- Seven comprehensive history and physical examinations performed on standardized patients at the NCA Simulation Center (6) and hospitalized inpatients (1)
- Didactic and practical instruction in subspecialty examinations (e.g., dermatology, neurology, etc.) with three interactive cardiac auscultation sessions
- Practical sessions in the gynecological exam (taught by instructor/models) and the pediatric exam
- Introduction to oral and written medical case presentation
- Introduction to medical record-keeping and chart organization
- Introduction to professionalism in the patient care environment
- Pre-clerkship evaluation of clinical skills including an observed history and physical and an Objective Structured Clinical Examination (OSCE)

Microbiology and Infectious Diseases (MC02001): The course objective is to provide an understanding of the scientific basis for prevention, pathogenesis, diagnosis, and treatment of infectious human diseases. The course surveys the immunobiology of human hosts and the biology of pathogenic bacteria, viruses, fungi, and parasites. It presents a broad introduction to immunology, general and pathogenic microbiology, and host responses to infectious agents. Students develop an understanding of the biological characteristics of pathogenic microorganisms, the course of their infections, the functions of the immune system, and the actions of antibiotics against these pathogens. Students learn techniques for collecting and inoculating specimens from patients and the common laboratory tests used to diagnose infectious and immunological diseases. Upon completion of the course, students should be able to answer the following questions about each infectious agent.

- How is the pathogen identified? What are its specific growth characteristics or distinguishing biochemical tests? What are its morphological and/or staining characteristics? What immunological or nucleic acid-based tests are used to identify the pathogen?
- What diseases does the pathogen cause? What are the most common symptoms?
- Which epidemiological risk factors (e.g., age, sex, ethnicity, race, immune status, geographic, or occupational exposure) make an individual susceptible to infection/disease?
- How is the pathogen transmitted to a human host? How is it maintained in nature?
- What are the virulence factors of the pathogen?
- How does the host defend itself against the pathogen? Does the host response contribute to the pathogenesis of the disease?
- How is infection by the pathogen treated?
- How is infection/disease prevented? Does a vaccine exist to protect susceptible hosts? If so, what is its composition? (Department of Microbiology and Immunology)

Military Studies II (MM02002): The second-year course in military studies, conducted by the Department of Military and Emergency Medicine, focuses on two general areas, casualty care and medical planning. Introduction to Combat Casualty Care (ICCC) builds on the principles of physiological responses to abnormal environments, learned in Military Applied Physiology (MAP), and the mechanics of wounding, learned in Introduction to Military Medicine (IMM), to educate second-year medical students about the pathophysiology of injuries sustained in

the combat environment (e.g., ballistic, blast, burn, chemicals). Introduction to Joint Medical Planning (IJMP) focuses on the command and staff functions of military medicine in joint commands (e.g., medical planning, medical logistics, medical evacuation systems, and blood programs) to help students understand the complex relationship between medical planning and military missions. (Department of Military and Emergency Medicine)

Pathology (PA02001): This course initiates study of human disease. Part I, introductory and basic pathology, illuminates some of the major primary disease processes and mechanisms of cell and tissue damage by means of gross and microscopic correlations. Part II, organ system pathology, expands upon the effects of disease in major tissue systems and emphasizes specifics of causation, pathophysiology, biochemical alterations, progression, and complications. Throughout the course, integration of pathology and clinical medicine is accomplished through studies of multisystem diseases and case analysis with emphasis upon clinicopathologic correlations and differential diagnosis from the perspectives of both pathologic anatomy and clinical pathology. (Department of Pathology)

Pharmacology (PH02001): This course covers the principles of drug action and the properties of the major drug groups used in the treatment of disease. The course begins with a review of the basic principles of drug action and a survey of drug-delivery methods followed by discussion of drug absorption, distribution, and metabolism and an overview of toxicology. Students are given a systematic review of drug effects and pharmacotherapeutic approaches to disease states in major physiological systems, including the central and peripheral nervous systems (including drug abuse) and the immune, cardiovascular, renal, and endocrine systems. A review of drug applications in cancer chemotherapy and in the treatment of viral, bacterial, and parasitic infections follows. The final section of the course offers an introduction to the use of drugs in specific clinical populations, including surveys of neonatal, developmental, and geriatric pharmacology. The course objective is to provide a solid basis for understanding the therapeutic application of drugs, to be studied in the third and fourth years of medical school. (Department of Pharmacology)

Preventive Medicine (PM02001): This course reviews the principles of disease and injury prevention applicable to both military and community public health environments. Fundamental skills learned in epidemiology, biostatistics, and other basic science courses are used to examine specific disease and injury risk patterns.

Emphasis is on identifying preventive medicine interventions that contribute to the health and fitness of military personnel and their families. The course also provides students with the fundamentals of health policy in general and the military system in particular. Approaches to primary prevention and health promotion are introduced in lectures, seminar discussions, and laboratory sessions. Students develop the necessary skills to recognize common public health problems, to formulate practical solutions, and to make recommendations for implementing those solutions during laboratory exercises. (Department of Preventive Medicine and Biometrics)

Radiographic Interpretation (RD02001): This course is a basic introduction to radiology. The course is taught by using didactic lectures supplemented with CD-ROM and web-based materials and through "open book" quizzes. Module I (fall) stresses the systematic evaluation of the chest film and culminates in an oral examination. Instruction also emphasizes the utility and evaluation of the following topics: mammography, the acute abdomen, CNS trauma including cervical spine, skeletal trauma, and pediatric emergencies. This course helps students prepare for effective use of radiology services during the clerkship years and in the development of modest skills for evaluating acute and emergent imaging studies. (Department of Radiology)

Third-Year Clerkships

Family Practice (FP03001): The family medicine clerkship is designed to provide students with a solid background in the principles and practice of family medicine. Students are exposed to a model of comprehensive, compassionate and personal healthcare where the physician's continuing responsibility is limited neither by a patient's age or sex nor by a particular organ system or disease entity. The importance of the family unit and the community context are emphasized. The predominant focus of the six-week rotation is ambulatory family medicine during which students have direct contact with patients and provide primary care under the supervision of faculty family physicians and senior residents

The clerkship also exposes students to primary care sports medicine, inpatient family medicine care, family-centered maternity care and other on-call experiences. Interactive workshops, clinical case discussions, clinical and ward rounds, behavioral science seminars, required readings, and an assigned family study enrich this in-depth exposure to family medicine. (Department of Family Medicine)

Medicine (MD03001): The internal medicine clerkship focuses on the care of adult patients. It fosters clinical problem solving for and with patients as they experience a wide variety of problems, allowing students to become clinicians who embrace complexity, yet act with simplicity. Students spend six weeks at two of the following hospitals: National Naval Medical Center (Bethesda, Maryland); Walter Reed Army Medical Center (Washington, DC); Wilford Hall Medical Center (San Antonio, Texas); Wright-Patterson Medical Center (Dayton, Ohio); Naval Medical Center (Portsmouth, Virginia); Malcolm Grow Medical Center (Andrews Air Force Base, Maryland); Madigan Army Medical Center (Tacoma, Washington); and Tripler Army Medical Center (Honolulu, Hawaii). One rotation is in an outpatient setting, the other is on inpatient service.

Clinic students work directly with faculty in the care of patients. Students on wards are junior members of teams consisting of attending physicians, residents, interns, and students. Under supervision, they participate actively in patient care, including nighttime and weekend call. All students attend teaching conferences and work directly with teaching preceptors in the analysis and synthesis of clinical information. "Growing independence" of the learner, fulfilling a promise of duty and expertise, is the core goal of this clerkship. In both settings, students are expected to become reliable "reporters" who are making a transition to active "interpreters" for their patients; some students may progress to the "manager/educator" level. Formal evaluation and feedback are scheduled for mid-way and at the end of each six-week rotation at each clerkship site. (Department of Medicine)

Obstetrics and Gynecology (OB03001): The clinical clerkship in obstetrics and gynecology is designed to fulfill the dual objectives of providing all students with the core knowledge and skills required to address the health needs of women in primary care settings as well as to stimulate in some students a long-term interest in the clinical and academic excitement and challenges of this surgical and women's healthcare specialty. During much of the six weeks, students are members of the healthcare team through the traditional inpatient and outpatient services of obstetrics, gynecology, reproductive endocrinology, or gynecologic oncology. Additionally, at all five clerkship sites (National Capital Consortium; San Antonio Military Consortium; Tripler Army Medical Center; DeWitt Army Hospital; and Washington Hospital Center), students have ample opportunity to evaluate patients and develop management skills in the ambulatory care setting. Case discussions on rounds, problem-based learning discussion groups, simulation sessions, clinical skills sessions, and independent study assignments assure

exposure to the knowledge and principles of the specialty. The on-site clerkship coordinators are responsible for the cognitive and noncognitive assessments of students' performance.

A final standardized clinical examination (OSCE) is conducted on the next-to-last day of the clerkship and a final standardized National Board subject examination is administered on the last day of the clerkship. The on-site coordinators, clerkship director, and the department chairperson are readily available to provide career counseling to further stimulate the interest of students in the numerous professional challenges in obstetrics and gynecology. (Department of Obstetrics and Gynecology)

Pediatrics (PD03001): The pediatric clerkship addresses issues unique to childhood and adolescence by focusing on human growth and development, principles of health supervision, and recognition and treatment of common health problems. Additionally, it emphasizes the impact of family, community, and society on child health, well being, and illness. The experience emphasizes aspects of general pediatrics important for all medical students and provides a foundation for those students who elect further study in the healthcare of infants, children, and adolescents.

Students have an opportunity to participate in clinical activities of both general and subspecialty pediatric services, but the emphasis in all services is placed on fundamental and common issues. The six-week rotation occurs at teaching hospitals representing three of the uniformed services (U.S. Army, U.S. Air Force, and U.S. Navy). It is divided into three weeks of primarily outpatient general pediatrics with some exposure to subspecialty care, two weeks of inpatient ward, and one-week of newborn medicine.

The Department of Pediatrics utilizes a nationally accepted curriculum that guides students through knowledge acquisition concerning the diverse areas of pediatric medicine. Throughout the clerkship, the essentials of pediatric history taking and physical examination are stressed. In addition, the department places a strong emphasis on clinical problem solving and provides students with a structured learning environment, incorporating quality clinical teaching by motivated preceptors and utilizing computer-simulated case studies. The educational goal of the department is to provide each student with a comprehensive learning experience and the self-directed learning skills necessary to provide a lifetime of cur-

rent, compassionate, and committed healthcare. (Department of Pediatrics)

Psychiatry (PS03001): Students participate in practical clinical work, individual supervision, and seminars and case conferences. In their daily work on inpatient, partial hospital, consultation-liaison, and/or outpatient services, students are supervised by psychiatry residents and staff. The department strongly emphasizes the biopsychosocial model, integrating biological, psychological, and socio-cultural knowledge in understanding behavior and disease. The development of clinical interviewing, diagnostic, and treatment planning skills are central to the clerkship.

Particular attention is given to disorders often seen in the international focus of military medicine. Each student meets weekly with a senior clinician preceptor for review and discussion of case histories. Mandatory seminars and case conferences consider both practical and theoretical aspects of emotional disorders. (Department of Psychiatry)

Surgery (SU03001): The clerkship begins with a two-day orientation to the fine art and science of surgery. This includes didactic and hands-on experience in the lab using surgical instruments, suturing, knot tying, manipulating tissue, and exposure to emerging surgical technologies such as videoendoscopic surgery and ultrasound. Students then become members of surgical teams of interns, residents, supervising surgical staff, and other healthcare providers at one of the participating military medical centers. They work in clinics, make ward rounds, assist in the operating room, take night call, and attend departmental conferences related to all aspects of care of the surgical patient.

Students do independent histories and physical examinations, which are reviewed and discussed. Lectures on disease and injuries managed surgically are given using a departmental handbook as a reading guide. Distinguished professor lectures (bimonthly) and quarterly one-day surgical seminars are provided at USU. Each student prepares a topic or case-based formal presentation. Clinical performance is evaluated by the teaching staff and final written and oral examinations are given. (Department of Surgery)

Fourth-Year Courses and Clerkships

With the assistance of a faculty advisor, the student selects 28 weeks of elective/selective experiences from a wide vairety of clinical and research areas. (All departments)

Military Contingency Medicine (MM04001): The capstone course for the four-year integrated military medicine curriculum, Military Contingency Medicine (MCM), is four weeks long and features both classroom didactic teaching and the field training exercise Operation Bushmaster. The course utilizes lectures, labs, small-group discussions, and clinical encounters to build upon topics introduced in first- and second-year courses. In MCM, the approach is at the clinical level, focusing on clinical management, decision making, and problem solving. As in both medicine and war, students are often faced with situations for which there are no perfect textbook answers. Lecturers from the Department of Military and Emergency Medicine teach core lectures.

Within the course, the Advance Trauma Life Support (ATLS) course is given under the guidance of the Department of Surgery. Many distinguished guest speakers outside the department also contribute, and information from recent or ongoing conflicts is integrated whenever possible. The final grade is based upon the written examination, the ATLS written test score, and the performance evaluation received during the field training exercise. Students must pass each component of MCM to pass the course, and they must pass the course to graduate. USU graduates are exempt from the Combat Casualty Care Course (C4) on the basis of having completed MCM. (Department of Military and Emergency Medicine)

Military Emergency Medicine (MM04002): This required course provides senior medical students with an opportunity to learn unique aspects of the specialty of emergency medicine. The four-week clinical rotation is completed at one of a number of participating military and civilian emergency departments in the national capital region and across the country. Students learn the initial approach to patients of all ages for whom a diagnosis is not already established or narrowed down to a short list of possibilities.

Under the on-site supervision of practicing emergency physicians, students evaluate acute presentations of common injuries and illnesses, devise management plans, and formulate disposition decisions within a variety of healthcare systems. Basic and advanced life support skills are reinforced and technical abilities performing common procedures are augmented. Students are provided with core reading materials prior to the course. Small group discussions covering important clinical presenations and led by residency-trained emergency physicians further

prepare students for their clinical rotation. Grades are based on clinical performance in the emergency department, completion of a logbook of patient encounters, presentation of an interesting case to a small group, active participation in all didactic sessions, score on a written examination, and submission of a course evaluation.

Military Preventive Medicine (PM04001): The course is a problem-solving exercise based on a scenario cast in a combat zone in a tropical third-world nation. Based on relevant lectures and laboratory sessions, students must evaluate medical intelligence, identify disease threats, determine paractical countermeasures, and brief senior officers on problem solutions. The course prepares students for the field preventive medicine exercises in Operation Bushmaster. (Department of Preventive Medicine and Biometrics)

Neurology (NE04001): Students select assignments by lottery number. Rotation sites are available in adult neurology on an inpatient service (Walter Reed Army Medical Center), a consultation service (Walter Reed Army Medical Center or National Naval Medical Center), or an outpatient service (Kaiser/Permanente).

Rotations are also available in child neurology, neurosurgery, or neurorehabilitation. A few students are allowed to select sites outside of the national capital area. Students evaluate and participate in the management of patients as part of a team consisting of other medical students, residents, and attending staff.

Depending on the rotation site, students participate in teaching rounds, conferences, and lectures/seminars; the latter are specifically designed to cover critical areas of neurological knowledge. To ensure adequate exposure to a breadth of neurological topics, a student objective list and other educational material are provided to guide independent study. At the end of the four-week clerkship, a formal written examination is given based on these materials. The exam counts for half of the grade. Students must achieve a minimum of 70 points to pass. (Department of Neurology)

2-10. Medical School Calendars

Tables 11 through 14 present the calendars for the Medical School.

Table 11. Medical School Calendar—Class of 2008

New Student Orientation	
Brigade	
Student Affairs	16 Aug 04 (Mon)–20 Aug 04 (Fri)
MS-I Year 2004–2005	
First Instructional Period	23 Aug 04 (Mon)–16 Dec 04 (Thur)
Winter Recess	17 Dec 04 (Fri)–2 Jan 05 (Sun)
Second Instructional Period	3 Jan 05 (Mon)–18 Mar 05 (Fri)
Spring Recess	19 Mar 05 (Sat)–27 Mar 05 (Sun)
Third Instructional Period	28 Mar 05 (Mon)–17 Jun 05 (Fri)
Leave Period	18 June 05 (Sat)–3 July 05 (Sun)
Train-Up/Operation Kerkesner	5 July 05 (Tues)–22 July 05 (Fri)
Military Medical Field Studies	25 July 05 (Mon)–17 Aug 05 (Wed)
MS-II Year 2005–2006	
Student Orientation	18 Aug 05 (Thur)
First Instructional Period	22 Aug 05 (Mon)–15 Dec 05 (Thur)
Winter Recess	16 Dec 05 (Fri)–2 Jan 06 (Mon)
Second Instructional Period	3 Jan 06 (Tue)–17 Mar 06 (Fri)
Spring Recess	18 Mar 06 (Sat)–26 Mar 06 (Sun)
Third Instructional Period	27 Mar 06 (Mon)–12 May 06 (Fri)
USMLE Step 1 and Leave Period	13 May 06 (Sat)–25 Jun 06 (Sun)
MS-III Year 2006–2007	
Rotation 1	26 Jun 06 (Mon)–4 Aug 06 (Fri)
Rotation 21	7 Aug 06 (Mon)–15 Sep 06 (Fri)
Rotation 3	18 Sep 06 (Mon)–27 Oct 06 (Fri)
Rotation 4	30 Oct 06 (Mon)–8 Dec 06 (Fri)
Intersession	11 Dec 06 (Mon)–15 Dec 06 (Fri)
Winter Recess	16 Dec 06 (Sat)–1 Jan 07 (Mon)
Rotation 5	2 Jan 07 (Tue)–9 Feb 07 (Fri)
Rotation 6	12 Feb 07 (Mon)–23 Mar 07 (Fri)
Rotation 7	26 Mar 07 (Mon)–4 May 07 (Fri)
Rotation 8	7 May 07 (Mon)–15 Jun 07 (Fri)
MS-IV Year 2007–2008	
Intersession	18 Jun 07 (Mon)–22 Jun 07 (Fri)
Rotation 1 MCM	25 Jun 07 (Mon)–20 Jul 07 (Fri)
Summer Leave	21 Jul 07 (Sat)–5 Aug 07 (Sun)
Rotation 21	6 Aug 07 (Mon)–31 Aug 07 (Fri)
Rotation 3	4 Sep 07 (Tue)–28 Sep 07 (Fri)
Rotation 4	1 Oct 07 (Mon)–26 Oct 07 (Fri)
Rotation 5	29 Oct 07 (Mon)–23 Nov 07 (Fri)
Intersession	26 Nov 07 (Mon)–14 Dec 07 (Fri)
Winter Recess	15 Dec 07 (Sat)–6 Jan 08 (Sun)
Rotation 6	7 Jan 08 (Mon)–1 Feb 08 (Fri)
Rotation 7	4 Feb 08 (Mon)–29 Feb 08 (Fri)
Rotation 8	3 Mar 08 (Mon)–28 Mar 08 (Fri)

Table 11 continued

MS-IV Year 2007–2008	
Rotation 9	31 Mar 08 (Mon)–25 Apr 08 (Fri)
Spring Leave	26 Apr 08 (Sat)–4 May 08 (Sun)
Transition to Residency	5 May 08 (Mon)–9 May 08 (Fri)
Commandment's Time	12 May 08 (Mon)–16 May 08 (Fri)
Graduation	17 May 08 (Sat)

Table 12. Medical School Calendar—Class of 2009

New Student Orientation	
Brigade	8 Aug 05 (Mon)–12 Aug 05 (Fri)
Student Affairs	15 Aug 05 (Mon)–19 Aug 05 (Fri)
MS-I Year 2005-2006	
First Instructional Period	22 Aug 05 (Mon)–15 Dec 05 (Thur)
Winter Recess	16 Dec 05 (Fri)–2 Jan 06 (Mon)
Second Instructional Period	3 Jan 06 (Tue)–17 Mar 06 (Fri)
Spring Recess	18 Mar 06 (Sat)–26 Mar 06 (Sun)
Third Instructional Period	27 Mar 06 (Mon)–16 Jun 06 (Fri)
Train-Up	19 June 06 (Mon)–23 June 06 (Fri)
Leave Period	24 June 06 (Sat)–9 July 06 (Sun)
Operation Kerkesner	10 July 06 (Mon)–21 July 06 (Fri)
Military Medical Field Studies	24 July 06 (Mon)–16 Aug 06 (Wed)
MS-II Year 2006-2007	
Student Orientation	17 Aug 06 (Thur)
First Instructional Period	21 Aug 06 (Mon)–14 Dec 06 (Thur)
Winter Recess	15 Dec 06 (Fri)–1 Jan 07 (Mon)
Second Instructional Period	2 Jan 07 (Tue)–16 Mar 07 (Fri)
Spring Recess	17 Mar 07 (Sat)–25 Mar 07 (Sun)
Third Instructional Period	26 Mar 07 (Mon)–11 May 07 (Fri)
USMLE Step 1 and Leave Period	12 May 07 (Sat)–24 Jun 07 (Sun)
MS-III Year 2007-2008	
Rotation 1	25 Jun 07 (Mon)–3 Aug 07 (Fri)
Rotation 21	6 Aug 07 (Mon)–14 Sep 07 (Fri)
Rotation 3	17 Sep 07 (Mon)–26 Oct 07 (Fri)
Rotation 4	29 Oct 07 (Mon)–7 Dec 07 (Fri)
Intersession	10 Dec 07 (Mon)–14 Dec 07 (Fri)
Winter Recess	15 Dec 07 (Sat)–6 Jan 08 (Sun)
Rotation 5	7 Jan 08 (Mon)–15 Feb 08 (Fri)
Rotation 6	18 Feb 08 (Mon)–28 Mar 08 (Fri)
Rotation 7	31 Mar 08 (Mon)–9 May 08 (Fri)
Rotation 8	12 May 08 (Mon)–20 Jun 08 (Fri)

Table 12 continued

MS-IV Year 2008–2009	
Intersession	23 Jun 08 (Mon)–27 Jun 08 (Fri)
Rotation 1 MCM	30 Jun 08 (Mon)–25 Jul 08 (Fri)
Summer Leave	28 Jul 08 (Sat)–10 Aug 08 (Sun)
Rotation 21	11 Aug 08 (Mon)–5 Sep 08 (Fri)
Rotation 3	8 Sep 08 (Mon)–3 Oct 08 (Fri)
Rotation 4	6 Oct 08 (Mon)–31 Oct 08 (Fri)
Rotation 5	3 Nov 08 (Mon)–28 Nov 08 (Fri)
Intersession	1 Dec 08 (Mon)–19 Dec 08 (Fri)
Winter Recess	20 Dec 08 (Sat)–4 Jan 09 (Sun)
Rotation 6	5 Jan 09 (Mon)–30 Jan 09 (Fri)
Rotation 7	2 Feb 09 (Mon)–27 Feb 09 (Fri)
Rotation 8	2 Mar 09 (Mon)–27 Mar 09 (Fri)
Rotation 9	30 Mar 09 (Mon)–24 Apr 09 (Fri)
Spring Leave	25 Apr 09 (Sat)–3 May 09 (Sun)
Transition to Residency	4 May 09 (Mon)–8 May 09 (Fri)
Commandment's Time	11 May 09 (Mon)–15 May 09 (Fri)
Graduation	16 May 09 (Sat)

Table 13. Medical School Calendar—Class of 2010

New Student Orientation	
Brigade	7 Aug 06 (Mon)–11 Aug 06 (Fri)
Student Affairs	14 Aug 06 (Mon)–18 Aug 06 (Fri)
MS-I Year 2006-2007	
First Instructional Period	21 Aug 06 (Mon)–14 Dec 06 (Thur)
Winter Recess	15 Dec 06 (Fri)–1 Jan 07 (Mon)
Second Instructional Period	2 Jan 07 (Tue)–16 Mar 07 (Fri)
Spring Recess	18 Mar 07 (Sat)–25 Mar 07 (Sun)
Third Instructional Period	26 Mar 07 (Mon)–15 Jun 07 (Fri)
Train-Up	18 June 07 (Mon)–22 June 07 (Fri)
Leave Period	23 June 07 (Sat)–8 July 07 (Sun)
Operation Kerkesner	9 July 07 (Mon)–20 July 07 (Fri)
Military Medical Field Studies	23 July 07 (Mon)–15 Aug 07 (Wed)
MS-II Year 2007-2008	
Student Orientation	23 Aug 07 (Thur)
First Instructional Period	27 Aug 07 (Mon)–20 Dec 07 (Thur)
Winter Recess	21 Dec 07 (Fri)–6 Jan 08 (Sun)
Second Instructional Period	7 Jan 08 (Mon)–21 Mar 08 (Fri)

Table 13 continued

MS-II Year 2007–2008	
Spring Recess	22 Mar 08 (Sat)–30 Mar 08 (Sun)
Third Instructional Period	31 Mar 08 (Mon)–16 May 08 (Fri)
USMLE Step 1 and Leave Period	17 May 08 (Sat)–29 Jun 08 (Sun)
MS-III Year 2008–2009	
Rotation 1	30 Jun 08 (Mon)–8 Aug 08 (Fri)
Rotation 21	11 Aug 08 (Mon)–19 Sep 08 (Fri)
Rotation 3	22 Sep 08 (Mon)–31 Oct 08 (Fri)
Rotation 4	3 Nov 08 (Mon)–12 Dec 08 (Fri)
Intersession	15 Dec 08 (Mon)–19 Dec 08 (Fri)
Winter Recess	20 Dec 08 (Sat)–4 Jan 09 (Sun)
Rotation 5	5 Jan 09 (Mon)–13 Feb 09 (Fri)
Rotation 6	16 Feb 09 (Mon)–27 Mar 09 (Fri)
Rotation 7	30 Mar 09 (Mon)–8 May 09 (Fri)
Rotation 8	11 May 09 (Mon)–19 Jun 09 (Fri)
MS- IV Year 2009-2010	
Intersession	22 Jun 09 (Mon)–26 Jun 09 (Fri)
Rotation 1 MCM	29 Jun 09 (Mon)–24 Jul 09 (Fri)
Summer Leave	27 Jul 09 (Sat)–9 Aug 09 (Sun)
Rotation 21	10 Aug 09 (Mon)–4 Sep 09 (Fri)
Rotation 3	7 Sep 09 (Mon)–2 Oct 09 (Fri)
Rotation 4	5 Oct 09 (Mon)–30 Oct 09 (Fri)
Rotation 5	2 Nov 09 (Mon)–27 Nov 09 (Fri)
Intersession	30 Nov 09 (Mon)–18 Dec 09 (Fri)
Winter Recess	19 Dec 09 (Sat)–3 Jan 10 (Sun)
Rotation 6	4 Jan 10 (Mon)–29 Jan 10 (Fri)
Rotation 7	1 Feb 10 (Mon)–26 Feb 10 (Fri)
Rotation 8	1 Mar 10 (Mon)–26 Mar 10 (Fri)
Rotation 9	29 Mar 10 (Mon)–23 Apr 10 (Fri)
Spring Leave	24 Apr 10 (Sat)–2 May 10 (Sun)
Transition to Residency	3 May 10 (Mon)–7 May 10 (Fri)
Commandment's Time	10 May 10 (Mon)–14 May 10 (Fri)
Graduation	15 May 10 (Sat)

Table 14. Medical School Calendar—Class of 2011

New Student Orientation	
Brigade	13 Aug 07 (Mon)–17 Aug 07 (Fri)
Student Affairs	20 Aug 07 (Mon)–24 Aug 07 (Fri)
MS-I Year 2007-2008	
First Instructional Period	27 Aug 07 (Mon)–20 Dec 07 (Thur)
Winter Recess	21 Dec 07 (Fri)–6 Jan 08 (Sun)
Second Instructional Period	7 Jan 08 (Mon)–21 Mar 08 (Fri)
Spring Recess	22 Mar 08 (Sat)–30 Mar 08 (Sun)
Third Instructional Period	31 Mar 08 (Mon)–20 Jun 08 (Fri)
Train-Up	23 June 08 (Mon)–27 June 08 (Fri)
Leave Period	28 June 08 (Sat)–13 July 08 (Sun)
Operation Kerkesner	14 July 08 (Mon)–25 July 08 (Fri)
Military Medical Field Studies	28 July 08 (Mon)–20 Aug 08 (Wed)
MS-II Year 2008-2009	
Student Orientation	21 Aug 08 (Thur)
First Instructional Period	25 Aug 08 (Mon)–18 Dec 08 (Thur)
Winter Recess	19 Dec 08 (Fri)–4 Jan 09 (Sun)
Second Instructional Period	5 Jan 09 (Mon)–20 Mar 09 (Fri)
Spring Recess	21 Mar 09 (Sat)–29 Mar 09 (Sun)
Third Instructional Period	30 Mar 09 (Mon)–15 May 09 (Fri)
USMLE Step 1 and Leave Period	17 May 09 (Sat)–21 Jun 09 (Sun)
MS-III Year 2009-2010	
Rotation 1	22 Jun 09 (Mon)–31 Jul 09 (Fri)
Rotation 21	3 Aug 09 (Mon)–11 Sep 09 (Fri)
Rotation 3	14 Sep 09 (Mon)–23 Oct 09 (Fri)
Rotation 4	26 Oct 09 (Mon)–4 Dec 09 (Fri)
Intersession	7 Dec 09 (Mon)–11 Dec 09 (Fri)
Winter Recess	12 Dec 09 (Sat)–3 Jan 10 (Sun)
Rotation 5	4 Jan 10 (Mon)–12 Feb 10 (Fri)
Rotation 6	15 Feb 10 (Mon)–26 Mar 10 (Fri)
Rotation 7	29 Mar 10 (Mon)–7 May 10 (Fri)
Rotation 8	10 May 10 (Mon)–18 Jun 10 (Fri)
MS-IV Year 2010-2011	
Intersession	21 Jun 10 (Mon)–25 Jun 10 (Fri)
Rotation 1 MCM	28 Jun 10 (Mon)–23 Jul 10 (Fri)
Summer Leave	24 Jul 10 (Sat)–8 Aug 10 (Sun)
Rotation 21	9 Aug 10 (Mon)–3 Sep 10 (Fri)
Rotation 3	7 Sep 10 (Tue)–1 Oct 10 (Fri)
Rotation 4	4 Oct 10 (Mon)–29 Oct 10 (Fri)
Rotation 5	1 Nov 10 (Mon)–26 Nov 10 (Fri)
Intersession	29 Nov 10 (Mon)–17 Dec 10 (Fri)

Table 14 continued

MS-IV Year 2010–2011	
Winter Recess	18 Dec 10 (Sat)–9 Jan 11 (Sun)
Rotation 6	10Jan 11 (Mon)–4 Feb 11 (Fri)
Rotation 7	7 Feb 11 (Mon)–4 Mar 11 (Fri)
Rotation 8	7 Mar 11 (Mon)–1 Apr 11 (Fri)
Rotation 9	4 Apr 11 (Mon)–29 Apr 11 (Fri)
Spring Leave	30 Apr 11 (Sat)–8 May 11 (Sun)
Transition to Residency	9 May 11 (Mon)–13 May 11 (Fri)
Commandment's Time	16 May 11 (Mon)–20 May 11 (Fri)
Graduation	21 May 11 (Sat)

2-11. Graduate Education in the Biomedical Sciences and Public Health

The goal of graduate study in the basic biomedical sciences at USU is to develop independent scholarship, originality, and competence in research, teaching, and professional service. The graduate programs are designed for outstanding students committed to careers in the biomedical sciences and public health.

Application Process

Applicants must complete a bachelor's degree from an accredited academic institution prior to enrollment. Applicants must arrange for official transcripts of all prior college-level courses taken and their GRE scores (taken within the last two years) to be sent to the Office of Graduate Education. Applicants must also arrange for letters of recommendation from three people who are familiar with their academic work to be sent to the university. The on-line application can be found at http://ieb.usuhs.mil/gapp/. Completed application should be received before January 15 for matriculation in late August. There is no application fee.

Doctoral and Master's Degree Programs

The doctoral and master's degree programs available at USU are listed below.

- Interdisciplinary Ph.D. Programs
  - Emerging Infectious Diseases
  - Molecular and Cellular Biology

    - Neuroscience
- Department-Based Ph.D. Programs
    - Medical and Clinical Psychology
    - Environmental Health Sciences
    - Medical Zoology
- Doctor of Public Health (Dr.P.H.)
- Physician Scientist (M.D./Ph.D.) Program
- Master of Science
    - Public Health
    - Molecular and Cellular Biology
- Master of Public Health (M.P.H.)
- Master of Tropical Medicine and Hygiene
- Master of Military Medical History

USU graduate programs are offered to both civilian and military students and are an essential part of the academic environment at the university. Large numbers of both basic science and clinical science faculty members are involved in didactic and research training of USU graduate students. An excellent faculty-to-student ratio is provided by the more than 150 biomedical science faculty members who teach graduate courses and mentor students during their research and thesis preparation. Graduate training programs are conducted in state-of-the-art research facilities on the USU campus. Students can enhance their educational experiences at USU through collaboration with NIH, Walter Reed Army Institute of Research, Armed Forces Radiobiology Research Institute, and numerous biotechnology companies in the area.

The 170 graduate students currently enrolled in the doctoral and master's degree programs at USU come from all parts of the country, from all types of undergraduate academic institutions, and from many different careers. Most students are enrolled full time,

but a few exceptional students are accepted into degree-granting programs as part-time students. Two-thirds of the graduate students are pursuing doctoral degrees (Ph.D. or Dr.P.H.) and one-third are master's degree candidates.

The university offers stipends that range from $25,000 to $31,000 on a competitive basis to civilian doctoral students who are U.S. citizens or permanent residents. Outstanding applicants may be nominated for the Dean's Special Fellowship, which supports a stipend of an additional $5,000. Civilian students do not incur a service obligation to the United States government after completion of their graduate training program. Active-duty military personnel accepted for full-time study must have the consent and sponsorship of their parent service. Tuition is waived for USU graduate students.

Graduate Education in the Biomedical Sciences and Public Health Contact Information

By mail:	Associate Dean for Graduate Education Uniformed Services University 4301 Jones Bridge Road, Room A1045 Bethesda MD 20814-4799
By phone:	Toll free: 1-800-772-1747 Commercial: (301) 295-3913 DSN: 295-3913
By e-mail:	graduateprogram@usuhs.mil
At website:	http://www.usuhs.mil (click on Graduate Education)

Graduate Programs and Research Areas

The graduate programs offer unique training and research opportunities.

Emerging Infectious Diseases

This interdisciplinary program has three academic tracks within the field of emerging infectious diseases: microbiology and immunology, pathology, and preventive medicine. The program offers training for students with primary interests in the pathogenesis, host response, pathology, and epidemiology of infectious diseases. This program's research training emphasizes modern methods in molecular biology, cell biology, and interdisciplinary approaches.

Students in the Emerging Infectious Diseases program are to (1) provide the scientific community with broadly trained, outstanding research scientists who can contribute significantly to the increasingly complex field of infectious disease

mechanisms and pathogenesis and (2) provide a rigorous academic research environment wherein trainees learn to ask well-informed questions, develop the skills to answer those questions at the bench, expand their capacity to think creatively and broadly, and acquire the skills necessary to communicate their ideas orally and in writing to colleagues.

Opportunities may include (1) academicians who seek to bridge the gap between the clinical and basic science worlds as well as those who wish to advance the integration of the basic science fields; (2) research scientists in private, federal, or state public health laboratories who are involved in the discovery of and characterization of new infectious agents, or in the investigation of the epidemiology of these new agents in the United States or overseas, or in the analysis of the molecular or cellular biology of newly described or other pathogens, or in the dissection of the host immune response to such agents at the molecular, cellular, or whole animal/human levels; 3) product development managers who may conduct some basic or clinical studies, but whose primary goal is to develop and evaluate products such as disease detection kits or vaccines; and (4) vector biologists in public health lab settings.

Program of Study

The curriculum is multifaceted and includes a rigorous didactic component that is integrated into a research-centered curriculum. Each student takes a core curriculum and then chooses advanced courses in one of three academic areas of concentration (tracks). In our pre-doctoral training program, the students participate in course work, laboratory rotations, seminars, journals clubs, lab meetings, a comprehensive examination, thesis research, advisory committee meetings, scientific meetings, and preparation and defense of a dissertation.

The first-year core courses provide students with a strong foundation in

molecular biology, cell biology, and genetics. Studies, many unique to this program, are as follows.

- Topics Course: Introduction to the primary literature.
- Models of Emerging Infectious Diseases: Introduction to the interdisciplinary nature of the program, a theme repeated throughout the formal course work. Students are exposed to an in-depth analysis of the epidemiology of and the host immune response/pathology to select emerging (and re-emerging) infectious disease agents. Emphasis is on the molecular mechanisms by which the specific pathogens evoke disease.
- During two to three rotations, the student undertakes a short research project in the laboratories of different faculty members. Rotations last approximately three months and give students a hands-on introduction to research projects and the opportunity to determine which area of concentration, advisor, and laboratory environment best fits his/her needs for dissertation research.

The second-year core courses provide a foundation in histology/pathology, biostatistics, and epidemiology. The courses for the academic track selected (microbiology and immunology, pathology, or preventive medicine/epidemiology), build on the core curriculum courses and provide advanced training in the student's area of research interest.

Together with formal course work, informal teaching and research opportunities contribute to the student's rich academic environment. The activities foster the intellectual development of both pre- and post-doctoral trainees, promote critical thinking, and enable the student to establish and maintain a breadth of knowledge on a wide range of topics. Activities include the following.

- Teaching as part of graduate training
- Participating in seminar programs and journal clubs
- Interacting informally with visiting speakers through the Meet the Professor program
- Presenting a formal seminar once a year after Advancement to Candidacy.
- Presenting, in weekly journal clubs, scientific reports from the primary literature on timely topics
- Presenting, in data clubs, progress reports of their research projects.

Faculty and Research Opportunities

The Emerging Infectious Diseases program with its strong, integrated curriculum and research opportunities, permits broad, optimal research training of young

scientists in infectious diseases. The program recruits the most talented and qualified faculty members in each of the core disciplines, regardless of the department in which they hold a primary appointment. This structure has attracted faculty members who are interested not only in investigating broad biological ideas associated with the multifaceted area of infectious diseases but also in focusing on particular aspects of a given infectious disease.

Faculty members are chosen based on their overall research interests in emerging and re-emerging infectious diseases, pathogenesis, immunology, epidemiology of infectious diseases, and/or biodefense. Synergistic educational opportunities are offered by clinical and basic science faculty who hold primary appointments in the Departments of Microbiology and Immunology, Pathology, Preventive Medicine/Epidemiology, Biochemistry, Pediatrics, or Medicine.

Students have the opportunity to engage in cutting edge research either at the bench or in the field. Research programs in cellular and molecular laboratory training in microbial pathogenesis and immunology coexist with research programs that focus on field-oriented medical parasitology or vector biology. The blending provides a rich research environment, which ensures that students have strong interdisciplinary training.

Students' thesis advisors, in addition to the university-based advisors, may include USU faculty members from some of the preeminent infectious diseases research institutes in the country: the Walter Reed Army Institute of Research (WRAIR), the Naval Medical Research Center (NMRC), the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), and the Armed Forces Institute of Pathology (AFIP). The ability of these institutes to focus their research programs on select agents and tropical diseases provides stimulating research opportunities for trainees who seek to devote their graduate studies to the areas of emerging and re-emerging infectious diseases. In addition, students have an exceptional opportunity to choose from a variety of training environments that include both field studies and bench studies. A number of

Emerging Infectious Diseases Contact Information

Website:	http://www.usuhs.mil/eid
Administrative contact:	Patricia Sinclair (301) 295-5749 psinclair@usuhs.mil
Program director:	Dr. Christopher Broder (301) 295-3401 cbroder@usuhs.mil

our faculty members have ongoing studies in Belize, Peru, Thailand, and Brazil. The juxtaposition of tropical medicine and pathogenesis research in the same graduate program provides an unparalleled opportunity for students to participate in multiple educational experiences. Further information on the research interests of the Emerging Infectious Diseases faculty can be found at: http://www.usuhs.mil/eid; http://www.usuhs.mil/mic/; http://cim.usuhs.mil/geo/pathology.htm; and http://www.usuhs.mil/pmb/PMBintropage.html.

Molecular and Cell Biology

Modern biology has been revolutionized by developments in molecular and cell biology. These developments cross traditional disciplines in ways that involve virtually every aspect of biomedical investigation. Understanding the complex mechanisms involved in cell-cell communication, intracellular signal transduction, regulation of gene expression, and immune response to foreign antigens and pathogens all require the application of multidisciplinary methods and thinking. Similarly, the investigation of the basis for the structural organization of cells and their organelles, the control of cell division, and the processes that lead to oncogenic transformation is most productive when techniques and ideas from diverse disciplines are brought to bear, as is the rational design of appropriate strategies and therapeutic agents to combat human disease. The ability to apply a multitude of approaches to a single problem and to exploit the advantages of diverse model systems is the hallmark of interdisciplinary research.

The Molecular and Cell Biology interdisciplinary Ph.D. 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 biology. Individuals who desire to explore the molecular basis of biological processes and human disease will receive comprehensive didactic and laboratory training in all areas of contemporary biomedical research.

For officers in the uniformed services, the Molecular and Cell Biology program offers a two-year program leading to a Masters of Science Degree in Molecular and Cell Biology. The program is a combination of class work and mentored laboratory research. Prospective students should have a background in biological or chemical sciences.

The faculty is drawn from 11 basic science and clinical departments. Their research programs reflect a wide range of interests, including the molecular virology

of HIV pathogenesis, the function of the immune system, cellular and molecular mechanisms of radiation injury, and the mechanisms by which prokaryotic and eukaryotic cells sense, process, and respond to a variety of normal and abnormal stimuli. These programs attract extensive funding from the National Institutes of Health, the National Science Foundation, and a host of other public and private agencies; and they provide students, who come from all over the world, with the opportunity to receive training that prepares them for careers in academic, government, or industry research settings.

Program of Study

The Ph.D. program of study is divided into coursework in fundamental and advanced areas of molecular and cellular biology, and supervised laboratory research. The first year is largely devoted to required courses that include advanced biochemistry, bacterial and eukaryotic genetics, cell biology, immunology, and extensive instruction in the molecular, cellular and physical techniques used in the laboratories of the faculty. Students also are introduced to the research of individual faculty and, during the first summer, conduct laboratory rotations with two faculty members of their choosing. In the second year, students can choose from a variety of advanced electives offered by this and other programs and begin their laboratory research.

In addition, students and faculty participate in a journal club designed to foster interaction across disciplines and to develop the critical skills needed for data presentation and analysis. A biweekly seminar series brings renowned scientists to the university, and students are encouraged to take advantage of these and other seminars offered at USU and the National Institutes of Health to enhance their knowledge in their own area of research as well as to broaden their horizons.

The Ph.D. is awarded to students upon completion of an original body of research, whose conduct is supervised by a faculty advisory committee. Students who have graduated from this program have gone on to positions in a variety of research settings as well as positions of

Molecular and Cell Biology Contact Information

Website:	http://www.usuhs.mil/mcb
Administrative contact:	Tina Finley (301) 295-3642 nfinley@usuhs.mil
Program director:	Dr. Jeffrey M. Harmon (301) 295-3248 jharmon@usuhs.mil

responsibility in private industry.

Research Interests of Faculty

Students have the opportunity to work with faculty conducting research in virtually every area of contemporary molecular and cell biology including cancer biology, cellular immunology, infectious disease, molecular mechanisms of signal transduction, and molecular therapeutics. Detailed descriptions of faculty research programs can be accessed through the program's homepage: http://www.usuhs.mil/mcb.

Neuroscience

Neuroscience is the study of the structure and function of the nervous system in the normal adult as well as in development and pathology. The nervous system is the most complex system in the body as it plays a regulatory role controlling or influencing the functions of all physiologic systems. Understanding the ways in which the central (brain, spinal cord, retina) and peripheral nervous systems function requires a multidisciplinary approach. Techniques from those of the molecular biologist to those of the experimental psychologist are all required to elucidate the interrelated structure and function of neurons and glial cells throughout the nervous system and to apply this knowledge to the treatment of psychiatric and neurodegenerative diseases.

The multidisciplinary approach acquired during training in a neuroscience doctoral program is ideal preparation for future independent research in any of the contributing disciplines. The overlap of molecular, cellular, and physiological techniques with other fields leads to broader potential research directions. In addition to careers in research, the doctoral training in neuroscience can lead to opportunities in industry, administration, private foundations, and government regulatory agencies. This variety of career opportunities is particularly apparent in the Bethesda, Maryland, and Washington, DC, areas.

The Neuroscience program is an interdisciplinary Ph.D. program with courses and research training provided by more than 45 Neuroscience faculty holding primary appointments in the Departments of Anatomy, Physiology and Genetics, Anesthesiology, Biochemistry, Medical and Clinical Psychology, Microbiology and Immunology, Neurology, Obstetrics and Gynecology, Pathology, Pediatrics, Pharmacology, and Psychiatry in the USU School of Medicine. The interdisci-

plinary nature of the program permits considerable flexibility in the choice of courses and research areas; training programs are tailored to meet the individual needs of each student.

The program is designed for students who have a strong undergraduate background in biology, physical sciences, or experimental/physiological psychology and who wish to pursue a professional career in neuroscience research. It offers research training in the fields of development, regeneration, and plasticity in the nervous system; molecular neurobiology; and adaptive responses of the nervous system to stress, injury, and a changing environment. It includes integrated instruction in the development, structure, function and pathology of the nervous system and its interaction with the environment.

Program of Study

The program of study is divided into course work in fundamental and advanced areas of neuroscience, and laboratory dissertation research leading to the Ph.D. During the first year, students take courses and participate in research rotations in three laboratories of Neuroscience program faculty members. By the end of the first year, a mentor will be chosen and research continued in the mentor's lab during subsequent years. Additional advanced courses are taken in the second year after which the successful completion of the qualifying exam will advance the student to candidacy for the Ph.D. degree.

In addition to coursework in neuroscience, formal and informal training is provided to develop more general skills required for diverse career directions. Opportunities for students to obtain teaching experience in neuroscience courses are available and encouraged.

A dissertation advisory committee comprised of the thesis advisor and at least four other USU faculty will guide the direction and progress of the student's dissertation research. Presentation of a written doctoral dissertation proposal, completion of original neuroscience research, preparation of the doctoral dissertation, and the successful oral defense of the dissertation will lead to award of the Ph.D. degree.

Research Interests of Faculty

Research opportunities described here are provided in more detail and updated regularly on our website at http://www.usuhs.mil/nes/home.html.

- Nervous system development including the regulation of proliferation and differentiation and the repair potential of neural stem cells and progenitor cells; generation and migration of neurons and glia
- Acquired and inherited brain and spinal cord neurologic dysfunction including traumatic brain and spinal cord injury, epilepsy, and neurodegenerative diseases such as Alzheimers and multiple sclerosis
- Psychiatric and behavioral disorders including post-traumatic stress disorder, addictive behaviors, and schizophrenia

Neuroscience
Contact Information

Website:	http://www.usuhs.mil/nes/home.htm
Administrative contact:	Tina Finley (301) 295-3642 nfinley@usuhs.mil
Program director:	Dr. Regina Armstrong (301) 295-3205 rarmstrong@usuhs.mil

Medical and Clinical Psychology

Doctoral programs and research in medical psychology emphasize the application of psychology to behavioral medicine and to clinical psychology. Study is offered in applied areas of the interface of health, psychology, and behavior as well as in basic areas of psychology. An American Psychological Association-accredited clinical psychology Ph.D. program is offered to selected members of the uniformed services.

The Medical and Clinical Psychology program provides graduate training in Medical Psychology, Medical Psychology—Clinical Track (APA-Accredited), and Clinical Psychology (APA-Accredited).

Medical Psychology Programs

The graduate programs in Medical Psychology emphasize research training in health psychology, combining psychology with the biomedical sciences. Basic and applied approaches to health psychology and behavioral medicine are emphasized. The programs are designed to train psychologists to become scientists, university professors, health policy-makers, and scientific administrators who focus on the study of behavior and mind as they relate to physical and mental health. These training programs, which include graduate and medical school courses and

teaching experience, focus on research activities.

These programs are open to civilians and uniformed applicants. Civilian students do not incur military or national service obligations for their education, and there are no tuition costs. Two training tracks are offered within the Medical Psychology program: Medical Psychology and Medical Psychology—Clinical Track.

Medical Psychology Track
This program provides research training in biobehavioral and psychosocial factors involved in the etiology, pathogenesis, treatment, and prevention of physical disease and mental disorders, and in the prevention of problems in high-risk populations. Although a considerable amount of didactic coursework is available within this program, the emphasis of training is upon direct involvement in research on a year-round basis. Hands-on training in experimental design and methods and psychobiology and in behavioral aspects of health and disease are emphasized.

Medical Psychology—Clinical Track
This dual training track builds on the strengths of the Medical Psychology and Clinical Psychology Ph.D. programs and trains psychologists to conduct clinical research in the area of health psychology. This track is aimed at training psychologists who are both academically and clinically prepared to work as researchers in academic or medical settings. This track emphasizes combined year-round training in health psychology research and the development of skills in the clinical application of health psychology. The program requires ongoing practicum experience and completion of a one-year internship to be eligible for clinical licensure.

Clinical Psychology Program

The Clinical Psychology program, accredited by the American Psychological Association (APA) since 1997, is designed for uniformed students who wish to pursue clinical practice in military settings. The program endorses the scientist-practitioner or "Boulder Model" of training. The program emphasizes the development of knowledge, skills, and critical thinking to apply to real-world situations, particularly in military and public health environments.

The program trains clinical psychologists to be (1) effective providers of mental health services, (2) creative problem solvers, (3) critical thinkers sensitive to organizational needs and constraints, (4) effective managers and communicators, and (5) professionals who can evaluate process and/or outcomes related to a varied

individual and systems level interventions to improve quality of healthcare.

Clinical Training

Practicum and clerkship training focuses on the development of assessment, intervention, and consultation skills in a wide range of areas (e.g., adult, child, adolescent, family, outpatient, inpatient, and organizational). The internship is a one-year intensive training experience provided during the fifth and final year of the program.

Clinical training experiences are available at the university's main affiliated teaching hospitals (National Naval Medical Center, Walter Reed Army Medical Center, Air Force Malcolm Grow Medical Center) and at other APA-accredited military facilities in the United States. Students also train at the National Capital Area Medical Simulation Center, a state-of-the-art training facility where they practice interviewing and psychotherapy skills on "simulated patients."

Military Service Obligation for Clinical Psychology

Applicants to the Clinical Psychology program must be either active duty military or civilians who will join a particular service upon acceptance into the program. Active duty military incur a service obligation of seven years. Civilian applicants who join a specific service will be obligated to seven years of active duty service plus six years of listing on the individual ready reserve (IRR) roster. For service instructions, contact the liaison for the appropriate military service: U.S. Army (LTC Stephen Bowles, 301-295-9672, e-mail sbowles@usuhs.mil), U.S. Navy (Dr. Eric Getka, 301-295-2476, e-mail ejgetka@bethesda.med.navy.mil), and U.S. Air Force (Capt Jeffrey Goodie, 301-295-9461, e-mail jgoodie@usuhs.mil).

Medical and Clinical Psychology Contact Information

Website:	http://www.usuhs.mil/mps
Administrative contact:	Corinne Simmons (301) 295-9669 csimmons@usuhs.mil
Medical Psychology Program director:	Dr. Tracy Sbrocco (301) 295-9674 tsbrocco@usuhs.mil
Clinical Psychology Program director:	Dr. Michael Feuerstein (301) 295-9677 mfeuerstein@usuhs.mil

Medical History

A Master of Military Medical History (MMH) program is offered to U.S. Army officers. The program, designed to meet

the needs of Army officers in the Medical Service Corps (MOS 70H), prepares an officer to be an instructor in professional military medical education programs and to serve as a field historian for specific military medical issues. Graduates qualify for the skill designator 5X, which is awarded by the United States Army Center of Military History and is used by the Army to identify all commissioned military historians.

Admission Requirements

Applicants must be selected for long-term civilian education by the Surgeon General of the Army and must be acceptable for follow-on assignment to the U.S. Army Academy of the Health Sciences as an instructor. The USU Graduate Education faculty retain admission authority. The Graduate Record Examination is required. All academic transcripts, a copy of the Officer's Record Brief, copies of all efficiency reports and three letters of recommendation are required. The applicant must be a graduate of the AMEDD Officer's Advanced Course and graduation from the Combined Arms and Services Staff School is preferable. The program is restricted to one student per year.

Program Outline

The program will teach research methods and analysis, provide a specific knowledge base, and document that the graduate is capable of using the methods to extend the knowledge base. The 12-month program includes:

- Completion of the Army's two week military history teacher program at The Combat Studies Institute, USA Command and General Staff College, Fort Leavenworth, Kansas.
- Completion of a USU program of study to include a minimum of 48 quarter hours of graduate credit. This will include an overview of United States history, military history and medical history, with particular emphasis on the history of military medicine as well as on methods of historical research and teaching. The core courses require intensive reading and tutorial work, attendance at local seminars and national meetings, and the independent preparation of lectures and seminars. At least two graduate history seminars will be taken at the Department of History, the American University, Washington, DC.
- Presentation of original research in an area of U.S. military medical history in such a way as to establish the student's capacity to function as a military medical history instructor and field military medical historian.

Faculty

Core faculty for the program are Robert J. T. Joy, M.D., Professor Emeritus of Medical History; Dale C. Smith, Ph.D., Professor of Medical History; and Kimberly Pelis, Ph.D., Assistant Professor of Medical History. An associated faculty member will assist as appropriate (John Parascondola, Ph.D., Chief Historian U.S. Public Health Service). Adjunct faculty will be used for special topics.

Military Medical History Contact Information

Website:	http://www.usuhs.mil/meh/meh.htm
Administrative contact:	Kelly Mullally (301) 295-3168 kmullally@usuhs.mil
Program director:	Dr. Dale Smith (301) 295-3168 dcsmith@usuhs.mil

Preventive Medicine and Biometrics

Graduate programs in public health are offered at the master's and doctoral levels. The Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), and the Master of Science in Public Health (MSPH) programs are designed for students with at least three years of experience in a health-related field. The Doctorate in Public Health program prepares individuals for leadership roles in research, teaching, or policy development in the field of public health. Two Ph.D. programs are offered: Medical Zoology, for students with a master's 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 militarily relevant exposure assessment.

The mission of these progams is to enhance and protect the health of members of the uniformed services by producing knowledgeable and highly skilled public health professionals and by promoting evidence-based policy making, research, and service initiatives that support the global mission of the uniformed services.

The Preventive Medicine and Biometrics faculty is committed to providing the highest level of education in public health and preventive health services. The department is the largest within the School of Medicine and includes 85 faculty organized into seven administrative divisions (Aerospace Medicine, Environmental and Occupational Health, Epidemiology and Biostatistics, Health Services

Administration, Preventive Medicine and Public Health, Social and Behavioral Sciences, and Tropical Public Health).

Masters Programs

The MPH degree program provides a broad didactic experience in public health and preventive medicine. This rigorous curriculum has a quantitative focus and is designed to be completed within 12 months. MPH graduate students represent a diverse group of health professionals including physicians in General Preventive Medicine (GPM) and Occupational and Environmental Medicine (OEM), GPM or OEM residency programs or medical fellowships programs, veterinarians, dentists, sanitary engineers, microbiologists, entomologists, environmental scientists, nurses, and pharmacists, among other uniformed military officers. Uniformed services members with education or experience in a health-related discipline are given priority as candidates for admission.

The MPH degree requires core courses, including epidemiology, biostatistics, environmental health, health services administration, and social and behavioral sciences. The satisfactory completion of an independent project and a practicum experience is required. In addition to completing the core courses, each MPH student selects an area of concentration from among the following: aerospace physiology, biostatistics and epidemiology, environmental and occupational health, general preventive medicine and public health, health services administration, international health specialist, tropical public health, and occupational ergonomics. The MTM&H student completes additional required courses in tropical medicine and tropical public health. A practicum experience is spent at an affiliated overseas facility and involves clinical diagnosis and treatment as well as field study of diseases endemic to tropical regions.

Graduates acquire quantitative and analytical skills in biostatistics and epidemiology to identify and measure community health needs and to investigate the impact of biological, environmental, and/or social behavioral factors to solve public health problems. Graduates also understand the components, operations, and financing of health delivery services, particularly those in the public sector, and have the administrative skills to plan, analyze, manage, and improve public health programs.

The Preventive Medicine and Biometrics program also offers the MTM&H degree for physicians preparing for assignment to tropical medicine clinical,

research and teaching positions. The MTM&H program provides a physician with the necessary academic background to practice as a competent public health officer and tropical disease expert in one of the uniformed services.

The MSPH is a two-year thesis-based program providing students with basic knowledge and skills in the core public health disciplines and focused academic preparation in either environmental health sciences, industrial hygiene, health physics, or medical entomology. The MSPH requires (1) a foundation in core public health concepts and principles, (2) a total of 67 credit hours of concentration-specific courses and directed research, (3) at least 23 credit hours of electives for a minimum total of 120 quarter credit hours of academic preparation, (4) participation in journal clubs, (5) specific field or practical experience, and (6) completion of a written and defended thesis. Graduates will gain competency in the recognition, evaluation, and control of a variety of public health problems in their specialty areas and will have the ability to develop policy initiatives in response to these issues. Prior academic preparation and experience in the biological or physical sciences or in a health-related field is required for admission.

Doctoral Programs

The Department offers three doctoral programs: a Dr.P.H., and Ph.D.'s in Environmental Health Sciences and Medical Zoology. The doctoral programs require a minimum of three years of full-time study consisting of the following components: (1) basic academic foundation consisting of the MPH curriculum, (2) additional required advanced electives, (3) critical thinking seminar series and journal clubs, (4) written and oral qualifying examinations to advance to candidacy, (5) minimum of one teaching assistant assignment per year, and (6) a dissertation. Students must meaningfully participate in all aspects of original research: proposal submission, data collection, data analysis and interpretation, and dissertation preparation and defense.

Preferential admission to the Dr.P.H. or Ph.D. programs will be offered to active duty officers in the uniformed services serving in a field related to their desired degree program. At a minimum, applicants must have a Master's degree with an outstanding academic record and documented successful completion of rigorous coursework related to their desired area of graduate study. In addition, applicants to the Preventive Medicine and Biometrics doctoral programs must identify a faculty sponsor prior to submitting their application. Civilian applicants will be considered on a space-available basis, with preference given to health profession-

als sponsored by other U.S. government agencies.

Facilities

These graduate programs are housed in facilities on the USU campus. Well-equipped modern laboratories support the tropical medicine and environmental health programs. The affiliated overseas laboratories include the United States Army and Navy biomedical research laboratories in Bangkok, Thailand; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and Lima, Peru. The university is affiliated with the Ministry of Health Laboratory in Belize City, Belize. A formal affiliation with the U.S. Army Center for Health Promotion and Preventive Medicine provides additional opportunities for students.

Preventive Medicine and Biometrics Contact Information

Website: http://www.usuhs.mil/pmb

Administrative contacts:	Tina Thompson (301) 295-1977 tthompson@usuhs.mil
Program Director:	Dr. David Cruess (301) 295-3465 dcruess@usuhs.mil

The Physician–Scientist (M.D./Ph.D.) Training Program

The M.D./Ph.D. program at USU was established to train outstanding, dedicated military officers as independent physician–scientists to carry out both clinical investigations and biomedical research in the basic sciences. The program combines a rigorous basic science graduate curriculum with outstanding clinical training and special, integrated M.D./Ph.D. activities that qualify students for careers in academic medicine, biomedical and clinical research, as well as clinical practice.

Matriculants to the M.D./Ph.D. program must maintain all requirements necessary to be commissioned into the United States military throughout the Ph.D. portion of his or her training.

Financial Support and Military Service

Students admitted to M.D./Ph.D. Program receive a graduate stipend from the graduate program for the first three years. In most cases, the M.D./Ph.D. student is commissioned in the United States military as an O-1 after completing the Ph.D. portion of the program. Commissioning marks the beginning of the student's military service.

Application and Admission Procedures

The M.D./Ph.D. Program at USU is a select program that seeks highly motivated students with outstanding research and academic potential. Applicants interested in the program will first apply directly to the F. Edward Hébert School of Medicine using the Association of American Medical Colleges Application Services (AMCAS) and indicating interest in the M.D./Ph.D. Program. Applicants must take the Medical College Admission Test (MCAT) and provide scores from tests taken within three years of desired matriculation. When a secondary application is sent to prospective students, instructions for applying to one of the graduate programs also will be sent in the packet.

The admissions committee for the Medical Program at USU initially will review the application and, if the applicant is deemed acceptable for admission, the applicant's file will be forwarded to the Graduate Education Office for evaluation. The admissions committee of the appropriate graduate program will review the application and determine whether the applicant should be interviewed. A memorandum of the graduate program's decision will be placed in the applicant's admission file in both the Graduate Education Office and the Medical Program Admissions Office. Applicants who meet the initial criteria for acceptance will be invited for interviews. The interview process for the M.D./Ph.D. applicants will span two days. On the first day, the applicant will be interviewed with other applicants to the M.D. Program. On the second day, the applicant will spend half the day interviewing with faculty and graduate students and, in addition, will tour the research facilities and labs. The applicant will be notified of the final decision.

Curriculum

The curriculum combines and integrates requirements for both the M.D. and Ph.D degrees. The M.D./Ph.D. Program consists of three phases to be completed in seven to eight years. The first or graduate program phase generally lasts three years. The M.D./Ph.D. student completes this initial phase as a civilian under the guidance of the Graduate Program director, thesis advisor, and M.D./Ph.D. advisory committee. The student completes all required courses for the Ph.D. during the first and second years and many of the courses required for the first two years of the medical school curriculum.

The qualifying examination for advancement to candidacy is taken at the end of the second year; a doctoral thesis proposal is subsequently submitted to the thesis advisory committee. The third year is devoted to research.

The second or transition phase begins after the third year and lasts two years. The student completes all requirements needed to be commissioned in the United States military and attends officer basic training. As a uniformed officer, the student completes the remaining requirements of the first and second years of the medical school curriculum. The student also continues to spend significant time on thesis research, finalizes the thesis project, and prepares and defends his or her doctoral dissertation.

The Physician-Scientist (M.D./Ph.D.) Training Program Contact Information

Website: http://cim.usuhs.mil/geo/mdphd.htm

Administrative contacts:	Office of Graduate Education 1-800-772-1747 graduateprograms@usuhs.mil Office of Medical School Admissions 1-800-772-1743 admissions@usuhs.mil
Program director:	Dr. Eleanor S. Metcalf (301) 295-110 emetcalf@usuhs.mil

The third and final phase of the M.D./Ph.D. Program is the clinical phase over years six and seven. The student begins full participation in the medical school curriculum and completes all required clinical rotations and clerkships. Subsequent —to completion of all requirements, the student is awarded both the M.D. and Ph.D. degrees and commissioned as an active duty officer (O-3) at commencement.

Graduate Education in the Biomedical Sciences and Public Health Yearly Calendar

Summer Quarter, 2007

Monday, 21 May 2007—Summer Quarter Begins
Monday, 28 May 2007—Memorial Day (Holiday)
Friday, 1 Jun 2007—Last Day to Drop/Add Courses
Spring Quarter Grades Due
Wednesday, Jul 4, 2007—Independence Day (Holiday)
Monday–Friday, 22–27 Jul 2007—Fall Quarter Registration
Friday, Aug 10, 2007— Summer Quarter Ends
Academic Year Ends

Fall Quarter

Monday–Friday, 23-27 July, 2007—Fall Quarter Registration, Current Students
Wednesday–Thursday, 15-16 Aug 2007—Orientation, Incoming Graduate Students
Thursday–Friday, 16-17 Aug 2007—Registration, Incoming Graduate Students
Monday, 20 Aug 2007—Fall Quarter Classes Begin
Friday, 24 Aug 2007—Summer Quarter Grades Due
Friday, 31 Aug 2007—Last Day to Drop/Add Courses
Monday, 3 Sep 2007—Labor Day (Holiday)
Monday, 8 Oct 2007—Columbus Day (Holiday)
Monday–Friday, 15-19 Oct 2007—Winter Quarter Registration
Friday, 9 Nov 2007—Fall Quarter Ends
Monday, 12 Nov 2007—Veterans' Day (Holiday)

Winter Quarter

Tuesday, 13 Nov 2007—Winter Quarter Classes Begin
Thursday–Sunday, 22-25 Nov 2007—Thanksgiving Recess
Monday, 26 Nov 2007—Last Day to Drop/Add Courses
Fall Quarter Grades Due
Saturday, 22 Dec 2007—Sunday, 6 Jan 2008—Winter Recess
Monday, 21 Jan 2008—Martin Luther King, Jr.'s Birthday (Holiday)
Tuesday–Friday, 22 Jan—25 Jan, 2008—Spring Quarter Registration
Friday, 15 Feb 2008—Winter Quarter Ends
Monday, 18 Feb 2008—President's Day (Holiday)

Spring Quarter

Tuesday, 19 Feb 2008—Spring Quarter Classes Begin
Monday, 3 Mar 2008—Last Day to Drop/Add Classes
Winter Quarter Grades Due
Saturday–Sunday, 22-30 Mar 2008—Spring Recess
Monday–Friday, 21-25 Apr 2008—Summer Quarter Registration
Tuesday, 13 May 2008—Graduate Student Colloquium
Friday, 16 May 2008—Spring Quarter Ends
Saturday, 17 May 2008—USU Graduation

Summer Quarter, 2008

Monday, 19 May 2008—Summer Quarter Begins

Monday, 26 May 2008—Memorial Day (Holiday)
Friday, 30 May 2008—Last Day to Drop/Add Courses
Spring Quarter Grades Due
Friday, 4 Jul 2008—Independence Day (Holiday)
Monday–Friday, 14-18 Jul 2008—Fall Quarter Registration
Friday, 8 Aug 2008—Summer Quarter Ends
Academic Year Ends

2-12. School of Medicine Faculty Departmental Listings*

***Information is current as of August 2007**

Anatomy, Physiology and Genetics

Chair and Professor
Harvey B. Pollard

Professor
Juanita J. Anders, Regina C. Armstrong, Rosemary C. Borke, Rolf Bunger, Sharon L. Juliano, Joseph T. Mccabe, Gregory P. Mueller, Motilal B. Pamnani

Distinguished Professor
Alan E. Seyfer

Emeritus Professor
Peter H. Abbrecht, Ruth E. Bulger, Michael N. Sheridan

Adjunct Professor
Henry M. Fales, Eliahu Heldman, David M. Jacobowitz, Kenneth A. Jacobson, David C. Klein, Irwin J. Kopin, James L. Olds

Research Professor
Nelson J. Arispe, Meera Srivastava

Visiting Professor
Donald P. Jenkins

Associate Professor
Mark R. Adelman, Denes V. Agoston, Howard J. Bryant, David E. Dobbins, Melissa H. Fries, Zygmunt Galdzicki, Martha C. Johnson, David J. Mears

Adjunct Associate Professor
Michelle Michelle Chenault, Robert J. Lowy, James M. Terris, Ronald W. Waynant

Research Associate Professor
Ofer Eidelman, M. A. Aryan Namboodiri, Stephen W. Rothwell

Assistant Professor
Diane E. Borst, Maria F.M. Braga, Martin L. Doughty, Jennifer C. Schiltz, Yumin Zhang

Adjunct Assistant Professor
Andrea L. Harabin, Catherine E. Jozwik, Victor Krauthamer, Lisa S. Longacre, Elizabeth A. Montcalm-Smith, Cloud P. Paweletz

Research Assistant Professor
William J. Driscoll, Guisen Jiang, Maria X. Leighton, Mirta S. Szpak-Glasman, Xianglan Yao, Yong-Xing Zhou

Instructor
Richard R. Kyle

Associate
George S. Holborow

Anesthesiology

(Acting) Chair and Associate Professor
Cynthia H. Shields (Acting)

Professor
Paul D. Mongan, Sheila M. Muldoon

Adjunct Professor
Ali H. Nagia

Associate Professor
Steven P. Cohen, Don J. Daniels, Thomas E. Grissom, Stephen J. Holman, Darin K. Via

Adjunct Associate Professor
Marilyn G. Larach, Victor W. Macdonald, Paul A. Pudimat, Paul C. Reynolds, Rom A. Stevens

Assistant Professor
Jennifer K. Adams, Charles F. Adams, Nolan C. Babcock, John B. Baccus, Philip D. Bailey, Kimberly Mae Balogh, John L. Bastien, David J. Beardsley, Willian A. Beckman, Joseph A. Bettencourt, Ian H. Black, Scott David Blackwell, Jeremy R. Blanchard, Lisa L. Bleckner, Joseph G. Brooks, Carlton Q. Brown, Chester C. Buckenmaier, Tracey L Cacciatore, Mark D. Calkins, John F. Capacchione, Meir D. Chernofsky, John H. Chiles, Harold O. Cline, Christopher P. Clinkscales, Christopher T. Collie, Scott M. Croll, Rhodel F. Dacanay, Rupa Dainer, Louis A. Damiano, Patrick R. Danaher, Kenneth R. Davis, Anthony L. Dragovich, John M. Dunford, Thomas A. Edell, Byron K. Edmond, Michael W. Fahlgren, John L. Fontana, Christopher J. Frandrup, Melody A. Garrett, Ted

F. Gingrich, Kurt W.A. Grathwohl, Richard Green, Scott R. Griffith, Gregory M. Gullahorn, Steven Richard Hanling, Brennan R. Harding, Wesley S. Hunt, Elizabeth Ann Javernick, Robert C. Jones, Michael S. Kelley, Mark Andrew Kobelja, Ana C. Krakusin, Brian N. Kravitz, Sudarshan Kumar, Hung-Chi Kwok, Thomas M. Larkin, Bruce R. Laverty, Ivan K. Lesnik, Alexander J. Lim, Richard Chengan Liu, David B. Longenecker, John C. Lundell, Kevin M. Maguire, Darryl E. Malak, Randall J. Malchow, Michael Aldo Mazzilli, Michael D. Mcbeth, Craig Campbell Mcfarland, Jeffrey D. Mcguire, Kevin A. Mckenney, Geselle Mcknight, Robert J. Medell, Robert J. Mendez, Daniel M. Merrill, Eric James Miano, Doug R. Miller, Scott A. Miller, Joseph P. Miller, Thomas Joseph Moran, Gregory F. Paine, Scott D. Pennington, Christian T. Petersen, Pablo D. Pizarro, Christian C. Popa, Mark D. Rasmussen, Orlando Ricci, Daniel Roke, Julie S. Rose, Jeffrey S. Sagel, Nyamkhishig Sambuughin, Kevin L. Scheu, Dominique H. Schiffer, Jeffrey N. Schmidt, Richard Paul Serianni, Raymond R. Sessions, Sean M. Shockey, Deborah Simmons-Brown, Robert L. Smits, Terry A. Stambaugh, Anna M. Staudt, Dale F. Szpisjak, Arash Taleghani, Christopher Eric Tebrock, Robert P. Theil, Klaus D. Torp, Steven G. Venticinque, Michael H. Verdolin, Ann M. Vrtis, Benjamin John Wallisch, Kathryn A. Weesner, Ronald Lemond White, James V. Winkley, David C. Zenger

Adjunct Assistant Professor
Eugenio Lujan, Elizabeth Jane Mccarthy, Leslie C. Mckinney, Joseph G. O'Brien, Yoshitatsu Sei

Research Assistant Professor
Saiid Bina, Pushpa Sharma

Instructor
Alice Smith

Biochemistry

Chair and Professor
Teresa M. Dunn-Giroux

Professor
David A. Grahame

Adjunct Professor
Paul D. Rick

Associate Professor
Saibal Dey, David S. Horowitz, Mark A. Roseman, Xin Xiang

Assistant Professor
Ernest L. Maynard, Galina V. Petukhova, Tharun Sundaresan

Adjunct Assistant Professor
Susan R. Haynes

Research Assistant Professor
Guimin Guan

Biomedical Informatics

Associate Professor
Brian J. Kelly, Robert W. Williams

Adjunct Associate Professor
Paul A. Fontelo

Assistant Professor
Stephen Richard Brown, Nancy B. Morell, Janice J. Powell-Muller, Linda M. Spitzer, William T. Wittman

Adjunct Assistant Professor
Michael J. Ackerman, Marion J. Ball, Brian N. Bowes, Nhan V. Do

Dermatology

Chair and Professor
Leonard C. Sperling

Professor
Dennis A. Vidmar

Emeritus Professor
James H. Graham, William M. Narva

Adjunct Professor
Andrew Blauvelt, Kim B. Yancey

Associate Professor
Thomas N. Darling, George P. Lupton, Scott A. Norton, Purnima Sau, George W. Turiansky

Adjunct Associate Professor
Douglas S. Walsh, Harry W. Wyre

Assistant Professor
Eric Eugene Belin, Jonathan Lee Bingham, Paul F. Bostrom, John D. Boyer, Edward W Cowen, Naomi B. Creel, Brian M. Davis, Kenneth J. Friedman, Glenn P. Genest, Neil F. Gibbs, Robert T. Gilson, Robert A. Guardiano, Sean T. Gunning, William B. Henghold, Briana M. Hill, Thomas K. Hirota, Chad M. Hivnor, Darryl S. Hodson, Richard A. Keller, Jessica H. Kim, Heidi H. Kong, Stephen J. Krivda, Matthew C. Lambiase, Kurt L. Maggio, Kimberly L. Maino, Jon H. Meyerle, Jennifer T. O'Neill, Hon S. Pak, Eric C. Parlette, Kevin L. Pehr, Joseph C. Pierson, John S. Pujals, Matthew R. Ricks, Steven E. Ritter, Daniel John Schissel, Raymond A. Schwab, Mary E. Shepherd, Charles Bradie Toner, Mark C. Udey, Thomas K. Vaughan, Paula S. Vogel, Susan J. Walker, Mark L. Welch,

Robert J. Willard

Adjunct Assistant Professor
Jeffrey J. Meffert

Research Assistant Professor
Shaowei Li

Instructor
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U.S. Senator Daniel K. Inouye

Senator Daniel K. Inouye

In 1989, in response to a nationwide nursing shortage, then-USU President Jay P. Sanford, M.D., conducted a study to determine the feasibility of establishing degree programs in nursing at the university. Based on the findings, the USU Board of Regents recommended establishing a Master of Science in Nursing program and the Federal Nursing Chiefs concurred. In 1993, Congress started a demonstration project at USU to prepare advanced practice nurses in the family nurse practitioner and nurse anesthesia disciplines. Three students matriculated into the first Graduate School of Nursing (GSN) class.

The GSN was officially established in 1996 under Public Law 104-106 through the efforts of Senator Daniel K. Inouye of Hawaii.

The Federal Nursing Chiefs later identified a need for Perioperative Clinical Nurse Specialists within the uniformed services and recommended that such a program be established at USU. The first class matriculated in 2003 and graduated in 2005.

In 2003, the GSN added a Doctor of Philosophy in Nursing Science degree program to address the need for qualified nurse leaders in education, research and clinical practice within the federal healthcare system. The first Ph.D. student graduated in 2006.

Graduate School of Nursing
Administration

(Acting) Dean
BG William T. Bester, AN, USA (Ret)

Associate Dean
Vacant

Assistant Dean, Administration, Finance, and Technology
Ernest L. Hepler, Jr., Ph.D.

Assistant Dean, Student Affairs, Commandant
LTC Wanda Jenkins, AN, USA

Chair, Department of Health, Injury and Disease Management
Diane Padden, Ph.D., CRNP

Chair, Department of Health Systems, Risk and Contingency Management
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Director, Nurse Anesthesia Program
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Director, Perioperative Clinical Nurse Specialist Program
COL Linda Wanzer, AN, USA

Director Psychiatric Mental Health Nurse Practitioner Program
MAJ Robert R. Arnold, AN, USA

Message from the Dean

BG William T. Bester, AN, USA (Ret)

Welcome to the Uniformed Services University of the Health Sciences (USU) Graduate School of Nursing (GSN) where learning is focused on preparing healthcare professionals for practice and research in federal healthcare and military systems. The USU is in Bethesda, Maryland, on the spacious grounds of the National Naval Medical Center and ideally located across the street from the National Institutes of Health. Direct access to the Washington beltway allows for convenient travel to major federal health facilities that, through affiliations, provide resources to enhance the education of our students. Walter Reed Army Medical Center, Andrews Air Force Base, and Fort Belvoir are within easy access.

Established by Congressional action in 1993, the GSN mission is to prepare nurses at the graduate level. Our faculty and staff have an exceptional blend of experience in the military and/or the federal healthcare systems and are prepared to provide a distinctly different educational experience. Our "signature curriculum" is uniquely designed to prepare nurses for practice and research roles in support of active duty members of the uniformed services, their families and all other eligible beneficiaries.

If you are a commissioned nurse corps officer or a nurse in the federal system, with a commitment to our Nation's health and well-being, then the USU Graduate School of Nursing is the right place for you. Our graduates are prepared to contribute to peacetime healthcare and to support combat operations, civil disasters and humanitarian missions worldwide.

Our curriculum is unique and will prepare you for nursing practice and research to support the military and federal healthcare systems. The GSN curriculum has three research foci: (1) operational readiness in a changing environment,

(2) population health and outcomes, and (3) clinical decision making in the federal healthcare delivery system, with cross-cutting emphasis on patient safety; evidence-based practice and reseach; leadership; technology; and global, cultural and political issues.

The GSN is fully accredited and has master's degree and doctoral degree programs. The master's program options include Nurse Anesthesia, Family Nurse Practitioner, Perioperative Clinical Nurse Specialist and Psychiatric Mental Health Nurse Practitioner tracks. The Ph.D. program in nursing science, established in 2003, has a research-intensive focus within the curriculum areas mentioned previously. The GSN is committed to promoting clinical excellence and furthering research and scholarship in healthcare. The school enjoys interdisciplinary relationships with medicine, public health and other health-related professions.

GSN students include uniformed officers from the U.S. Army, U.S. Navy, U.S. Air Force and U.S. Public Health Service as well as nurses working in a variety of federal agencies. Graduates are prepared for collaborative and autonomous advanced practice roles with an emphasis on health promotion and disease prevention, management and delivery of primary healthcare, case management for the chronically and acutely ill, anesthesia services, administration, and unique expertise in emergency preparedness. In addition, GSN doctorally prepared nurses are uniquely qualified leaders in research, education, and clinical practice in federal healthcare and military operational settings. This program also is intended to increase the supply of faculty prepared to teach and conduct relevant research in federal and military healthcare.

BG William T. Bester, AN, USA (Ret)
(Acting) Dean, Graduate School of Nursing

3. Graduate School of Nursing

The mission of the Graduate School of Nursing (GSN) is to educate students as advanced practice nurses, scientists and scholars for service as future leaders in military operational environments, federal health systems and university settings. In a dynamic educational environment, GSN prepares graduate nursing students to provide care and to teach and conduct research for the uniformed services and federal healthcare system during peace, disasters, war and other contingencies.

3-1. History

In the fall of 1992, the Department of Defense received the authority, along with an appropriation, to plan and implement a nurse practitioner training program at the Uniformed Services University of the Health Sciences. The intent of the legislation was to meet the need for advanced practice nurses in the uniformed services to include the U.S. Army, U.S. Navy, U.S. Air Force and U.S. Public Health Service.

Because academic resources were already in place at the USU, the GSN was created to provide program options leading to a Master of Science in Nursing degree. The first two program options were Family Nurse Practitioner, which admitted its first students in August 1993, and Nurse Anesthesia, which admitted students in June 1994. The next program option established was Perioperative Clinical Nurse Specialist, which admitted its first students in May 2003. A fourth program option, Psychiatric Mental Health Nurse Practitioner, will be added in May 2008.

These students are being prepared as future federal advanced nurse practitioners and investigators of the discipline of nursing. The graduates represent the future federal nursing leaders in their respective services and organizations. Excellence in clinical practice with the ability to respond to military mobilization, humanitarian needs and disaster relief during times of war and peace are hallmarks of the graduates of this program.

As of May 2007, 147 students have graduated from the Family Nurse Practitioner program option and are serving as nurse practitioners. One hundred fifty-seven students have graduated from the Nurse Anesthesia program option and

are serving as certified registered nurse anesthetists. In addition, there have been 23 nurses graduate from the Perioperative Clinical Specialist program option and three from the Ph.D. program in nursing science. There currently are 149 GSN students representing the U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service, and other federal organizations/institutions in GSN programs of study. Seventy students have graduated from the Distance Learning Post Masters Adult Certificate Program as of May 2003. Nineteen students have graduated from the Resident Family Nurse Practitioner Certificate Program.

3-2. Philosophy

The shared vision of the GSN is to develop a diverse interdisciplinary community of scholars who will collaborate with agencies throughout the military and federal government to provide flexible, innovative, responsive education; conduct focused research consistent with the military and federal health system missions; and contribute appropriately to health services through faculty practice.

3-3. Accreditation

The Graduate School of Nursing was granted a five-year initial accreditation from the National League for Nursing Accrediting Commission (NLNAC) in December 1996 and an eight-year accreditation in 2002. The GSN received "Preliminary Approval" from the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (CCNE) in 1998 and subsequently was accredited for 10 years in 2002 after a 2001 site survey.

The Nurse Anesthesia program option was accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) in 1994 and in 1997. In 2003, the COA granted a 10-year accreditation.

The Family Nurse Practitioner program option meets or exceeds all standards established by the National Organization of Nurse Practitioner Faculties.

The Perioperative Clinical Nurse Specialist program option meets or exceeds all standards established by the American Association of Colleges of Nursing (AACN) "Essentials of Master's Education for Advanced Practice Nurses and the

National Association for Clinical Nurse Specialists (NACNS)" recommendation for curricular content.

Upon completion of the graduate degree, all students are prepared to take the appropriate national certification examination in their nursing specialty, where they have historically scored above national averages.

3-4. Administration

The nursing program operates under the leadership of the dean of the Graduate School of Nursing. The GSN dean, departmental chairs, and program directors work with the federal nursing chiefs and the surgeons general of the uniformed services to ensure the adequacy and relevancy of didactic and clinical programs. Likewise, the dean and chairs develop an interdisciplinary relationship with their peers in the USU School of Medicine.

3-5. Faculty

The GSN teaching staff consists of full-time, part-time and adjunct appointments. They may include civilians and active duty, reserve and retired military. They are recognized for their teaching expertise, leadership and research. The 21 faculty and 81 adjunct faculty members have an exceptional blend of experience in the military and/or the federal health system.

3-6. Sigma Theta Tau International

Sigma Theta Tau International (STTI) recognizes superior achievement and leadership, fosters high professional

standards, and encourages creative and scholarly work. STTI formally recognized the USU chapter, Tau Theta, in 2004. Tau Theta's primary mission is to support and connect nurses practicing in the federal healthcare system, wherever they may be physically located. The chapter conducts most of its business "virtually" on the USU website.

3-7. Graduate Programs

The GSN master's program prepares advanced practice nurses in both acute and primary care settings. The curriculum is designed to foster professional development, enhance clinical expertise, support patient teaching, and stimulate clinically relevant research. The doctoral program prepares nurse scientists and leaders at the doctoral level with an emphasis on our Nation's military and federal health systems. Consequently, the GSN graduate is uniquely prepared to contribute to the uniformed services healthcare system, military readiness, and the support of disaster relief and humanitarian interventions.

Signature Curriculum

The GSN signature curriculum integrates three foci (operational readiness in a changing environment, clinical decision making in the federal healthcare delivery system, population health and outcomes) with the following study threads: safety; global, environmental, cultural and political issues; evidence-based practice and research; leadership and support; and impact of technology.

Master's Program

Students in the master's program are afforded the advantages provided by the university's uniquely qualified faculty, who provide valuable experience across services and disciplines, who coordinate established clinical practicum rotations,

and who conduct research in an interdisciplinary environment. Master's program students pay no tuition and books and instruments are furnished without charge or on a loan basis. In addition, the university's technological advances, described in the General Information section, benefit master's program students in the following ways.

- A state-of-the-art simulation center enhances learning through advanced technologies.
- Students develop competence in interview and assessment of standardized patients.
- The human patient simulator provides realistic training experiences to enhance clinical decision making and problem solving for complex situations.
- Virtual reality lectures and cadaver laboratory experiences are designed for advanced clinical decision making.
- Personal digital assistants are provided for quick reference and maintaining patient logs.
- Skeletons and microscopes are made available for independent study.

Family Nurse Practitioner

Full-time status over 24 months. Degree requirements: 59 credit hours, diverse clinical experiences, and a scholarly project.

The course of study includes laboratory and clinical experiences coordinated to complement role development and integration of didactics. Clinical rotations are coordinated to enhance the skills of the students in specialty areas, primarily at military hospitals.

Core Courses (21 credits)

- Research
- Research in Federal Healthcare System
- Theoretical Foundations
- Statistical Measures/Analytic Methods
- Research and Scholarship I, II and III
- Leadership
- Leadership/Management in a Global Environment
- Health Policy/Ethics
- Military Contingency Medicine/Bushmaster
- Operational Readiness Seminar

Advanced Practice Clinical Core Courses (14 credits)

- Leadership Role in Interdisciplinary Practice
- Applied Anatomy/Cell Biology
- Advanced Health Assessment
- Pathophysiology
- Pharmacology

Specialty Core Courses (30 credits)

- Advanced Principles in Adult Primary Care
- Advanced Principles in Pediatric Primary Care
- Integration and Application of Family Theory in Primary Care
- Advanced Principles in Primary Care of Women
- Specialty Practicum Seminar and Lab
- Clinical Practicum for Nurse Practitioner Practice
- Clinical Practicum for Nurse Practitioner Practice I and II
- Elective

Total credit hours: 65

Nurse Anesthesia

Full-time status over 30 months in two phases. Degree requirements: 53 credit hours, 18-month clinical rotation, and a scholarly project.

Phase I is composed of 12 months of didactic and lab experiences.

Phase II is 18 months with a focus on the application of science and research applied to clinical anesthesia. Clinical rotations are conducted primarily at military hospitals.

Core Courses (13 credits)

- Research
- Research in Federal Healthcare System
- Theoretical Foundations
- Statistical Measures/Analytic Methods
- Research and Scholarship I, II and III
- Leadership
- Health Policy/Ethics
- Operational Readiness Seminar

Advanced Practice Clinical Core Courses (24 credits)

- Leadership Role in Interdisciplinary Practice
- Applied Anatomy/Cell Biology
- Advanced Health Assessment
- Physiology
- Pathophysiology
- Medical Pharmacology for Nurse Anesthetists
- Applied Neuroscience I and II
- Applied Biochemistry for Nurse Anesthetists
- Chemotherapeutics for Nurse Anesthetists

Specialty Core Courses (15 credits)

- Basic Anesthetic and Pharmacologic Principles of Anesthesia
- Advanced Principles of Anesthesia
- Clinical Practicum and Seminar for Nurse Anesthetists I, II, III, IV and V

Total credit hours: 52

Perioperative Clinical Nurse Specialist

Full-time status over 24 months. Degree requirements: 58 credit hours, clinical rotations, and a scholarly project.

Laboratory and clinical experiences are coordinated to complement role development and integration of didactics. Clinical rotations are conducted primarily at military hospitals with focused preceptorships to enhance specialty preparation. Area of concentration is perioperative nursing.

Primary clinical training sites include military medical treatment facilities within the national capital region as well as Shock Trauma, Baltimore, and Health Facilities Planning Agency. Practicum experiences emphasize role utilization across the perioperative continuum of care within the five specialty domains of the Clinical Nurse Specialist with special emphasis on readiness requirements.

Core Courses (21 credits)

- Research
- Research in Federal Healthcare System
- Theoretical Foundations
- Statistical Measures/Analytic Methods

- Research and Scholarship I, II and III
- Leadership
- Leadership/Management in a Global Environment
- Health Policy/Ethics
- Military Contingency Medicine/Bushmaster
- Operational Readiness Seminar

Advanced Practice Clinical Core Courses (14 credits)

- Leadership Role in Interdisciplinary Practice
- Applied Anatomy/Cell Biology
- Advanced Health Assessment
- Pathophysiology
- Pharmacology

Specialty Core Courses (24 credits)

- Standards, Quality and Safety I and II
- Advanced Principles for Perioperative Practice I, II and III
- Healthcare Resource Management for Perioperative Practice
- Clinical Practicum for Perioperative Practice I and II
- Elective

Total credit hours: 59

School of Nursing Graduate Program Curriculum by Class

Tables 15 through 17 describe the GSN Graduate Program curriculum for Family Nurse Practitioner class of 2007/2008, Nurse Anesthesia class of 2007/2008, and Perioperative Clinical Nurse Specialist class of 2008.

Admission Requirements for Master's Program

Our program options are designed for baccalaureate-prepared registered nurses (RNs) who have obtained a degree in nursing from a school accredited by the National League for Nursing Accrediting Commission (NLNAC), the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (CCNE), or other accrediting institutions recognized by the U.S. Department of Education. Our applicants are licensed as registered nurses in the United States, its protectorates or territories, and are serving on active duty in the uniformed services or are employed by the Department of Veterans Affairs (VA).

Table 15. Family Nurse Practitioner Program Curriculum
Class of 2007/2008

Course #	Master of Science in Nursing Core Courses Required for *Family Nurse Practitioner*	Credits/ Contact Hours (CH)
GSN51322	Ethics and Policy in Federal Health Systems	2
GSN51332	Leadership and Management in a Global Environment	2
GSN51111	Research in Military and Federal Health Systems	1
GSN51122	Theoretical Foundations in Military and Federal Health Research	2
GSN51132	Statistical Measures and Analytic Methods to Build Evidence for Military and Federal Healthcare Systems	2
GSN76121	Research and Scholarship I	1
GSN76131	Research and Scholarship II	1
GSN76222	Research and Scholarship III	2
GSN76232	Research and Scholarship IV	2
MM04001	Military Contingency Medicine/Bushmaster	6
	Operational Readiness and Officer Professional Development Seminar	8 CH
	Core Total	21
Course #	**Advanced Practice Core Courses Required for *Family Nurse Practitioner***	**Credits**
GSN51311	Leadership Role in Interdisciplinary Healthcare	1
GSN53013	Applied Anatomy and Cell Biology for Advanced Clinical Decision Making	3
GSN53023	Advanced Health Assessment	3
GSN51044	Applied Pharmacology for Advanced Nursing Practice	4
GSN51053	Applied Pathophysiology for Advanced Nursing Practice	3
	APN Core Total	**14**
Course #	**Required Courses for Specialty Option *Family Nurse Practitioner***	**Credits**
FNP62015	Advanced Principles in Adult Primary Care	5
FNP62025	Advanced Principles in Pediatric Primary Care	5
FNP61033	Integration and Application of Family Theory in Primary Care	3
FNP62045	Advanced Principles in Primary Care of Women	5
FNP72113	Clinical Practicum and Seminar for Nurse Practitioner Practice I	3
FNP72124	Clinical Practicum and Seminar for Nurse Practitioner Practice II	4
FNP74131	Clinical Specialty for Nurse Practitioner Practice	1
FNP73141	Specialty Practicum Seminar and Lab for Nurse Practitioner Practice	1
	Elective	3
	Family Nurse Practitioner Specialty Area Total	**30**
Family Nurse Practitioner Program	**Total Credits**	**65**

Table 16. Nurse Anesthesia Program Curriculum
Class of 2007/2008

Course #	Master of Science in Nursing Core Courses Required for *Nurse Anesthesia*	Credits/ Contact Hours (CH)
GSN51322	Ethics and Policy in Federal Health Systems	2
GSN51111	Research in Military and Federal Health Systems	1
GSN51122	Theoretical Foundations in Military and Federal Health Research	2
GSN51132	Statistical Measures and Analytic Methods to Build Evidence for Military and Federal Healthcare Systems	2
GSN76121	Research and Scholarship I	1
GSN76131	Research and Scholarship II	1
GSN76222	Research and Scholarship III	2
GSN76232	Research and Scholarship IV	2
	Operational Readiness and Officer Professional Development Seminar	8 CH
	Core Total	**13**
Course #	**Advanced Practice Core Courses Required for *Nurse Anesthesia***	**Credits**
GSN51311	Leadership Role in Interdisciplinary Healthcare	1
GSN53013	Applied Anatomy and Cell Biology for Advanced Clinical Decision Making	3
GSN53022	Advanced Health Assessment	2
GSN51033	Applied Physiology for Advanced Nursing Practice	3
GSN51053	Applied Pathophysiology for Advanced Nursing Practice	3
	APN Core Total	**12**
Course #	**Required Courses for Specialty Option *Nurse Anesthesia***	**Credits**
RNA63011	Applied Neuroscience I	1
RNA63022	Applied Neuroscience II	2
RNA61033	Applied Biochemistry for Nurse Anesthetists	3
RNA63045	Basic Anesthetic and Pharmacologic Principles of Anesthesia	5
RNA63055	Advance Principles of Anesthesia	5
RNA61065	Medical Pharmacology for Nurse Anesthetists	5
RNA61071	Clinical Pharmacology for Nurse Anesthetists	1
RNA72115	Clinical Practicum and Seminar for Nurse Anesthetists Practice I	5
RNA72128	Clinical Practicum and Seminar for Nurse Anesthetists Practice II	8
RNA72138	Clinical Practicum and Seminar for Nurse Anesthetists Practice III	8
RNA72145	Clinical Practicum and Seminar for Nurse Anesthetists Practice IV	5
RNA72158	Clinical Practicum and Seminar for Nurse Anesthetists Practice V	8
	Nurse Anesthesia Specialty Area Total	**56**
Nurse Anesthesia Program	**Total Credits**	**81**

Table 17. Perioperative Clinical Nurse Specialist Program Curriculum
Class of 2008

Course #	Nursing Core Courses Required for *Perioperative CNS*	Credits/ Contact Hours (CH)
GSN51322	Ethics and Policy in Federal Health Systems	2
GSN51332	Leadership and Management in a Global Environment	2
GSN51111	Research in Military and Federal Health Systems	1
GSN51122	Theoretical Foundations in Military and Federal Health Research	2
GSN51133	Statistical Measures and Analytic Methods to Build Evidence for Military and Federal Healthcare Systems	3
GSN76121	Research and Scholarship I	1
GSN76131	Research and Scholarship II	1
GSN76222	Research and Scholarship III	2
GSN76232	Research and Scholarship IV	2
MM04001	Military Contingency Medicine/Bushmaster	6
	Operational Readiness and Officer Professional Development Seminar	6 CH
	Nursing Core Total	**22**
Course #	**Advanced Practice Core Courses Required for *Perioperative CNS***	**Credits**
GSN51311	Leadership Role in Interdisciplinary Healthcare	1
GSN53013	Applied Anatomy and Cell Biology for Advanced Clinical Decision Making	3
GSN53023	Advanced Health Assessment	3
GSN51033	Applied Physiology for Advanced Nursing Practice	3
GSN51044	Applied Pharmacology for Advanced Nursing Practice	4
GSN51053	Applied Pathophysiology for Advanced Nursing Practice	3
	APN Core Total	**17**
Course #	**Specialty Specific Courses Required for *Perioperative CNS***	**Credits**
PCS62013	Standards, Quality and Safety for Perioperative CNS Practice I	3
PCS62023	Standards, Quality and Safety for Perioperative CNS Practice II	3
PCS61033	Healthcare Resource Management	3
PCS61053	Advanced Principles for Perioperative Management I	3
	Advanced Principles for Perioperative Management II	4
PCS61074	Track 1: Perioperative Management or	
PCS63084	Track 2: RNFA Didactic	
PCS72113	Clinical Practicum and Seminar for Perioperative CNS Practice I	3
	Clinical Practicum and Seminar for Perioperative CNS Practice II	7
PCS72137	Track 1: Perioperative Management Internship or	
PCS72147	Track 2: RNFA Clinical Internship	
	Perioperative CNS Specialty Specific Total	**26**
Perioperative Clinical Nurse Specialist Program	**Total Credits**	**65**

The Uniformed Services University Graduate School of Nursing (GSN) employs a "whole person" philosophy when evaluating applicants. The assessment of an applicant's potential for success is evaluated in a variety of ways, encompassing every element of the application packet. This allows for a global assessment of the applicant. Important attributes that help to identify students likely to be successful in a master's-level curriculum are outlined below and should be addressed in the required letters of reference.

- Evidence of critical thinking skills
- Evidence of the ability to communicate
- Evidence of the ability to be academically successful
- Evidence of character, honesty and integrity in their profession
- Evidence of initiative, self-direction and motivation

Evaluating several components of the application packet assesses these attributes. Below are some of the key elements assessed.

- Transcripts (including GPA and type of course work)
- GRE scores
- Personal statement
- Letters of recommendation
- Curriculum vitae
- Work history
- Professional certifications (i.e., CCRN, CNOR)

Application Deadlines

You can access applications at http://www.usuhs.milgsn/admissions/gsnapplications.html or contact the GSN registrar. Submission deadlines are as follows.

Master's Program
- U.S. Army: July 1
- U.S. Navy: July 1
- U.S. Air Force: July 1
- U.S. Public Health Service: July 1

Ph.D. Program
All services/applicants: February 15

General Prerequisites for the Master's Program

The following are general prerequisites for admission into the master's program. Specific requirements for each program option are also outlined.

- Current RN license
- A target GPA of 3.0 on a 4.0 scale. The GPA will be calculated on more recent coursework, with emphasis on those courses relevant to the nursing specialization.
- GRE scores within the last five years. There is no minimum requirement but to be competitive the target verbal and quantitative scores should be 1000 or higher. MAT scores are not accepted.
- Current basic life support (BLS) certification
- Current curriculum vitae (CV)
- Three letters of reference addressing the attributes of success as outlined previously. The letters may be copies that have been submitted to the service-specific selection boards. Please refer to specific program requirements for types of references required.
- A written personal statement reflective of your professional and personal strengths as well as your motivation for graduate study as an advanced practice nurse
- VA/Department of Defense applicants should be practicing a minimum of eight hours per week in direct patient care (e.g., primary care, medical-surgical, critical care, emergency room).

Additional Prerequisites for Master's Program Options

Family Nurse Practitioner

- Two years of nursing practice experience. Outpatient or ambulatory care nursing experience is desired.
- Three letters of reference from individuals as outlined here:
  - Person in chain of command
  - Immediate supervisor
  - Optional source (preferably from an individual who can adequately assess your potential for success)

Nurse Anesthesia

- Organic chemistry or biochemistry with organic chemistry preferred. It is preferable that the courses are completed within five years of application.
- One year of experience as an RN in an acute care area. Acute care is defined as work experience during which the applicant has developed as an independent decision maker capable of using and interpreting advanced monitor-

ing techniques based on knowledge of physiological and pharmacological principles.
- Current Advanced Cardiac Life Support (ACLS) certification prior to matriculation.
- Three letters of reference from individuals as outlined here:
  - Person in chain of command
  - Immediate supervisor
  - CRNA on active duty or recently retired
- Applicants must also meet their service-specific criteria.

Preoperative Clinical Nurse Specialist
- Two years of perioperative nursing experience is desired. This experience should be as recent as possible.
- Three letters of reference from individuals as outlined here:
  - Person in chain of command
  - Immediate supervisor
  - Optional source (preferably from an individual who can adequately assess your potential for success)

Transfer of Credits

Rarely will transfer of credits be granted for core courses due to the military/federal uniqueness of the university; however, on a case-by-case basis, courses will be reviewed for consideration of transfer of credit. A grade of B or better must be achieved in the course(s) to be considered for transfer of credit.

If approval is granted, a maximum of six credits for the master's program options will be allowed to be transferred into the program of study. Generally, no more than 9 to 12 credits will be allowed for the Ph.D. program.

Doctoral Program in Nursing Science

The Ph.D. program in nursing science includes a common core of required courses and electives. The program consists of five areas of concentration: nursing knowledge; research methods, statistics and designs; cognates; federal and military healthcare policy and issues; and the dissertation.

Nursing knowledge: This course content consists of a sequence of courses focusing on the development and application of theory in nursing and related disciplines as well as the ethical conduct of nursing practice and research.

Research methods, statistics and designs: These courses include research and statistical approaches that can be used in qualitative and/or quantitative research. The Advanced Research Methods course provides the student with advanced research and statistical approaches as well as content on tests and measurements. Course content is tailored to meet the unique goals of the students in the following ways.

- By promoting the individual student's research agenda
- By addressing federal health and militarily relevant issues from existing large data sets
- By beginning to develop a sustainable program of research

Cognates: These courses support and strengthen the selected research focus.

Federal and military healthcare policy and issues: This content focuses on federal and military-specific healthcare issues, preparing graduates to conduct research and take leadership roles in this area of study.

The dissertation: These four components culminate in the fifth component, the dissertation, which follows the successful completion of the qualifying examinations.

Program Design and Curriculum

Tables 18 through 21 describe the Ph.D. program minimum course requirements, the program of study, the proposed course sequencing for full-time students and part-time students.

Research Experiences

All Ph.D. students will participate in structured research field experiences or research assistantships to broaden and improve their research experience. The research practicum provides the student with an opportunity to experience the research process on a day-to-day basis and assists the student to integrate practical and theoretical knowledge. During the three Nursing Science Seminar and Practicum courses, students will be expected to work with a GSN faculty or adjunct faculty members a designated number of hours per week throughout the semester. Decisions regarding research practicum will require consultation with the faculty advisor. The student will identify research experiences, locally or

globally, with attention to background, interests and availability of quality faculty, research and leadership resources.

The experience will be tailored to the individual student's needs relative to developing doctoral-level research skills. Students will be encouraged to pursue practicum experiences that will enhance and strengthen their developing research topic. The practicum experience will be designed to help students integrate the theoretical understanding of research concepts and methods through practical experience.

Proposed practicum experiences include research-focused experiences in the national capital area at federal or military agencies, with military nurse researchers and educators (as appropriate) or at civilian healthcare institutions or universities mentored by adjunct faculty. During the practicum, students will explore research opportunities with appropriate existing large data sets and research questions that need to be answered by different federal agencies.

This experience may serve as a stimulus for developing a future program of research. Students, with the concurrence of the faculty advisor, will contract with the individual at the site to establish specific requirements to be accomplished during the practicum. Additionally, students will have the opportunity to engage in teaching assistantships for those interested in education.

Seminar Requirements

Ph.D. students are expected to develop critical thinking and effective oral and written communication skills. Seminars are designed to actively involve students in the preparation, development, coordination, and discussion of cogent topics in research, methods and nursing. Students will present and lead topics of discussion in all of the GSN-developed course work.

Table 18. Ph.D. Program Minimum Course Requirements

Course	Number of courses	Credits
Nursing knowledge	4	12
Research methods	3	10
Cognate/elective courses	3+/variable	9-15
Statistics	2	6
Dissertation	7 or more	15 or more
Federal/military healthcare delivery, policy, issues	4	11
Totals	**23+**	**63-69**

Degree Requirements

To be considered for candidacy for the doctoral degree, the student must complete course requirements with a minimum GPA of 3.0 and receive a recommendation from the academic advisor. Additionally, requirements include completion of the preliminary exam, both written and oral comprehensive exams, and a formal application for candidacy. For conferral of the doctoral degree, satisfactory completion of a dissertation and oral defense of the dissertation research are required. Both must be completed within three years of admission to candidacy.

Table 19. Ph.D. Program of Study

Required Field of Study	Year	Courses	Credits	Total Hours
Nursing knowledge and theory	1	Philosophy of Science & Theory Development	3	12
		Theoretical Frameworks Applicable to Federal Health Care and Military Research	3	
		Healthcare Ethics for Local and Global Decisions	3	
		Professional Issues in Scholarship	3	
Research methods	1	Research methods	3	10
	2	Qualitative/Quantitative Research Methods	4	
		Advanced Research Design	3	
Cognates/ electives	1/2/3	Specific to student research concentration or individual enhancement—Statistics, etc.	3/3/3	9-15
		Electives in support of administration, education, or clinical practice	1-3/ 1-3/ 1-3	
Statistics	1	Statistics and Design	3	6
	2	Advanced Statistical Methods	3	
Dissertation	2	Proposal Development & Grant Writing	3	15
	3	Dissertation Research Seminar I/II/III/IV/V	3/3/3/3	
Federal/military healthcare delivery, policy, issues	1	Nursing Science Specific to Federal Health and Military Nursing Seminar and Practicum	3	11
	2	Nursing Science Specific to Federal Health and Military Nursing Seminar and Practicum II/III	3/3	
		Health Policy	2	
Total Semester Hours				63-69

Preliminary Examination

A written preliminary exam will be required upon completion of the first year of coursework. This exam provides an opportunity for the student to demonstrate the ability to integrate concepts and synthesize knowledge from other academic disciplines. The preliminary examination is based on the educational objectives of the doctoral program.

Table 20. Proposed Course Sequencing for Full-Time Students by Year and Semester

Year 1		
Fall	**Spring**	**Summer**
PHD 81103 Philosophy of Science & Theory Development 3 credits PHD 81913 Statistics and Design 3 credits PHD 81604 Nursing Science Specific to Federal Health and Military Nursing Seminar with Limited Field Visits I 3 credits	PHD 81203 Theoretical Frameworks Applicable to Federal Health Care and Military Research 3 credits PHD 81403 Research Methods 3 credits Cognate/Elective I 1-3 credits	PHD 81112 Professional Issues in Scholarship 3 credits PHD 81303 Healthcare Ethics for Local and Global Decisions 3 credits
Approximate hours = 9	Approximate hours = 7-10	Approximate hours = 6

Year 2		
Fall	**Spring**	**Summer**
PHD 81703 Nursing Science Specific to Federal Health and Military Nursing Seminar with Field Experience II 3 credits PHD 81504 Qualitative/ Quantitative Research Methods 4 credits PHD 90103Proposal Development and Grant Writing 3 credits	PHD 81603 Advanced Research Designs 3 credits PHD 81803 Nursing Science Specific to Federal Health and Military Nursing Seminar with Practicum III 3 credits Elective in Support of Administration, Education, or Clinical Practice 3 credits Qualifying Exam no later than March	PHD 81923 Advanced Statistical Methods 3 credits PHD 90203 Dissertation Seminar 3 credits PHD 81122 Public Policy in the Context of Nursing in Federal Health Care 2 credits Dissertation Proposal Defense April through mid-July
Approximate hours = 10	Approximate hours = 9	Approximate hours = 8

Table 21. Proposed Course Sequencing for Part-Time Students by Year and Semester

Year 3		
Fall	**Spring**	**Summer**
PHD 90303 Dissertation Research Seminar 3 credits Cognate/Elective II 3 credits PHD 81933 Statistics Elective 3 credits	PHD 90403 Dissertation Research Seminar 3 credits Cognate/Elective III 3 credits	PHD 90503 Dissertation Research Seminar 3 credits Dissertation Defense
Approximate hours = 6	Approximate hours = 6	Approximate hours = 3

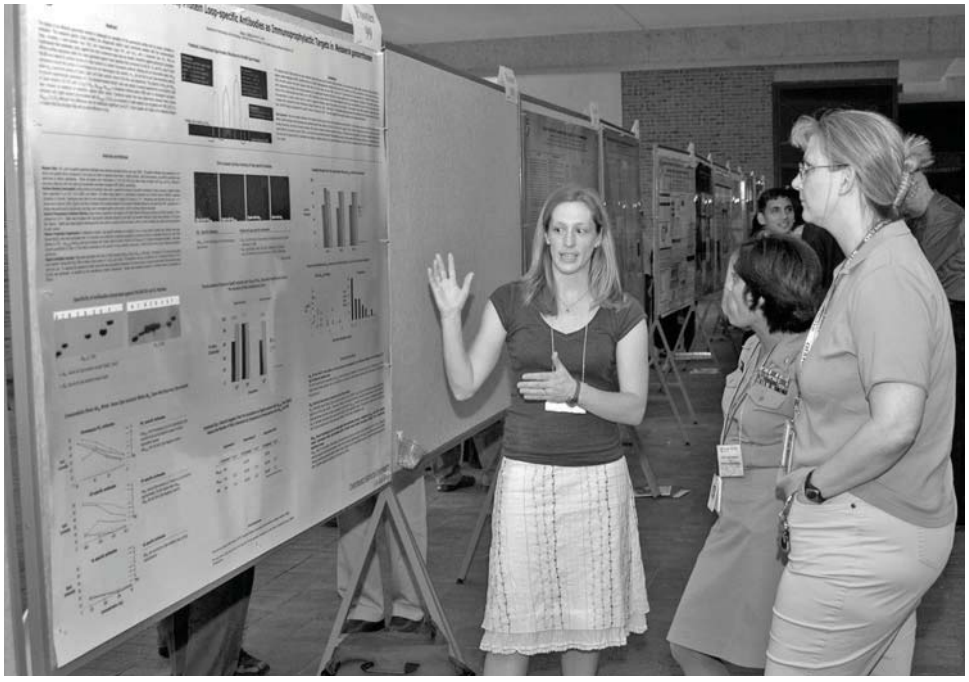
Semester 1 Philosophy of Science & Theory Development Nursing Science I	**Semester 2** Theoretical Frameworks Research Methods	**Semester 3** Professional Issues Ethics
Semester 4 Qualitative/ Quantitative Methods Nursing Science II	**Semester 5** Statistics and Design Advanced Research Design	**Semester 6** Proposal Development and Grant Writing Public Policy in Federal Healthcare
Semester 7 Elective in Support of Administration, Education, or Clinical Practice Nursing Science III	**Semester 8** Advanced Statistical Methods Cognate/Elective I Qualifying Exam by no later than March	**Semester 9** Dissertation Seminar Cognate/Elective II Dissertation Proposal Defense April through mid-July
Semester 10 Dissertation Seminar Cognate/Elective III	**Semester 11** Dissertation Seminar Cognate/Elective IV	**Semester 12** Dissertation Seminar Cognate/Elective V
Semester 13 Dissertation Seminar Cognate/Elective VI	**Semester 14** Dissertation Seminar Cognate/Elective VII	**Semester 15** Dissertation Seminar

The purpose of the examination is to assess how well the student assimilates his or her first year of study. It serves as an early indicator to faculty of potential difficulties in program completion. This is an opportunity to provide feedback on overall program progress and areas for improvement. Students may not take preliminary examinations until all first-year courses are completed.

The examination is a time-limited, "open book" exam held at the end of the first year. A committee of three faculty members will be responsible for reading the exam and providing an overall evaluation of the student's performance. The examination is expected to be independent work and should not be discussed with anyone else during the examination period. To assist students to gain experience with the type of examination they will encounter, they are encouraged to participate in student-organized examination preparation sessions.

Comprehensive Examination

This exam is a written paper in the student's research area that demonstrates synthesis and application of philosophy of science, nursing theory, elective courses and scientific methods. The focus of the paper is a practice problem. The student will submit the exam to a committee of three readers who may also be disserta-



tion committee members. One of the readers must be from outside the GSN. The members must previously approve the topic, and the format must be appropriate for a specific professional journal named by the student. Depth and breadth of knowledge will be further evaluated with an oral exam on the same focused area of study.

Overall, this exam demonstrates the student's ability to apply a clear, comprehensive treatment to the state-of-the-art problem identified. The examination process provides an opportunity to integrate theoretical knowledge from several disciplines in the formulation of a practice problem.

The criteria for the paper are (1) focus on a practice problem that is researchable and clearly identified as an area of interest to the investigator; (2) reflect familiarity with published research in the area of study from an interdisciplinary perspective and identify how nursing utilized, expanded or challenged the knowledge from other disciplines; (3) contain a critical review and synthesis of knowledge relevant to the problem; (4) identify and incorporate a theoretical framework; and (5) analyze the methods used in nursing and other disciplines to answer the practice questions and propose directions for future study.

Upon successful completion of the comprehensive exam, the committee chairperson notifies the director of the Ph.D. program and the dean by sending an approval form with the committee members' signatures. In addition, the student and the student's advisor should review the student's record and assure that all degree requirements have been met. The student is admitted to doctoral candidacy if the student's transcript is in order, i.e., all required coursework is complete and there are no incomplete grades.

Dissertation

The dissertation is an essential part of doctoral education; it must present the results of a research project carried out by the candidate. An appropriate research project requires a substantive piece of original work. The student will meet with the committee to assess and ensure progress towards completion of the research project. The manuscript will be presented to the committee members 30 days before the scheduled defense. Dissertation defense will consist of a public seminar and will be followed by an oral examination that is closed to the public. If either the dissertation or the oral defense is deemed unsatisfactory, the committee shall formulate recommendations for appropriate remedial action.

Admission Criteria

Eligibility and Application Procedures

- Evidence of successful completion of a master's degree in nursing or related field at an accredited school with a minimum GPA of 3.0 on a 4.0 scale
- Evidence of current licensure or eligibility for licensure in any of the 50 states; Washington, DC; Puerto Rico; etc.
- A current curriculum vitae
- Official evidence of scores on the GRE (Graduate Record Exam)
- A clear and succinct statement of the applicant's purpose for pursuing doctoral study and its application toward clearly defined career goals
- A sample of written work that indicates the writing skills and logic of the applicant, such as an essay, term paper, thesis, published article or professional report
- Computer literacy with proficiency in word processing and e-mail
- Three letters of reference from professors or other professionals who can adequately evaluate the applicant, the applicant's previous work and/or potential for success
- An interview with GSN graduate faculty member to assess research interests and motivation for successful completion of doctoral study

Admissions Process

Applicants are required to submit completed applications with supporting documents no later than February 15 for summer or fall admission. Following screening by the admissions committee, an interview will be conducted in person or by phone. Notice of acceptance by the GSN will be made no later than May 15. For information on preparing applications or for questions on the Ph.D. program, contact the specific program director. To check on your application status, contact the GSN registrar.

3-8. Graduate School of Nursing Academic Year

Table 22 provides general guidelines in terms of the timing and length of the semester. Start and stop dates are continually evaluated within the context of operational readiness field exercises. Dates may change as needed.

Table 22. GSN Academic Year
2007-2008

	Summer 2007
New student report date	14 May
MSN new student in-processing/orientation	29 May–1 Jun
Summer term begins for second-year students	29 May
Summer term begins for first-year students	4 Jun
Holiday, July Fourth	Wednesday, 4 Jul
Summer finals/term ends	10 Aug
	Fall 2007
Ph.D. new student orientation	23-24 Aug
Fall term starts	27 Aug
Holiday, Labor Day	3 Sept
Holiday, Columbus Day	8 Oct
Holiday, Veterans Day Observed	12 Nov
Holiday, Thanksgiving Day	22 Nov
Nurse Anesthesia graduation	7 Dec
Fall finals	10–14 Dec
Holiday, Christmas observed	25 Dec
	Spring 2008
Holiday, New Year's Day observed	1 Jan
Spring term starts	2 Jan
Holiday, Martin Luther King, Jr.	14 Jan
Holiday, Presidents Day	18 Feb
Spring break	15-23 Mar
Spring finals	28 Apr–30 Apr
Second-year scholarly project defenses	TBA
Antietem Road March	1 May
Spring book turn-in	2 May
First-year proposal defenses	TBA
Research Week	12–16 May
Graduation	17 May
Holiday, Memorial Day	26 May
Nurse Anesthesia Phase II begins	2 Jun

3-9. Graduate School of Nursing Faculty Departmental Listings*

***Information is current as of August 2007**

Health, Injury, and Disease Management

Chair and Assistant Professor
Diane L. Paddon

Professor
Patricia A. Hinton-Walker, Christine E. Kasper

Associate Professor
Dorraine Day Watts

Assistant Professor
Kevin Joseph Bohan, Lillian A. Foerster, Sandra N. Mcnaughton, Mary C. Schroeder, Linda J. Wanzer

Adjunct Assistant Professor
Robert Vincent Bienvenu

Health Systems, Risk, and Contingency Management

Chair and Associate Professor
Sandra C. Bibb

Associate Professor
Gloria C Ramsey, Laura A. Talbot

Assistant Professor
Roopa Biswas, Jorge Gomez-Diaz, Adrienne G. Hartgerink, Ernest L. Hepler, Wanda Jenkins, Michelle Denise Lavey

Adjunct Assistant Professor
Reynold L. Mosier

Nurse Anesthesia Program

Program Director
Adrienne G. Hartgerink

Associate Professor
Bruce A. Schoneboom

Adjunct Associate Professor
Paul N. Austin, Donald D. Rigamonti

Assistant Professor
Thomas Guy Fevurly

Adjunct Assistant Professor
Nathaniel M. Apatov, Jason Bolt, Joseph F. Burkard, Osvaldo Bustos, Cynthia S. Cappello, Thomas E. Ceremuga, Brian L. Clayton, Debra L. Clise, Matthew R. D'Angelo, Carole A. Daniel, Ramona M. Domen-Herbert, Christopher Dyer, Normalynn Garrett, William Dean Gilmer, Brooks Bryant Goettle, Ritchie Grissett, Scott J. Hadaway, Annette N. Hasselbeck, Louis J. Heindel, William O. Howie, Thomas S. Kaufman, Wendy L. Monrad, Kelley C. Moore, Beth A. Movinsky, Ronald L. Olson, Ami Yechiam Ostechega, Julie A. Pearson, Susan B. Perry, Brian M. Pitcher, Shari D. Pleasant, Jeffrey Michael Rengel, Alesia D. Ricks, Nicole Salas, Timothy J. Samolitis, Kelly A. Samolitis, Abdul Qudoos Shahid, Kelly S. Simpson, Michael M. Steele, Wanda J. Stone, Heather W. Suescon, Robert P. Szewczyk, Lesa R. Tilley, Ronald L. Van Nest, Robyn C. Ward, Gary Wells, Greig M. Williams, Lee Tan Wolfe

Adjunct Instructor
Betsy S. Majma
George Ralph Moseley
Ronald E. Wyatt

Nurse Practitioner Program

Program Director and Associate Professor
Diane C. Siebert

Adjunct Associate Professor
Patricia C. Mcmullen

Adjunct Assistant Professor
Erica J. Auerbach, Richard L. Blumling, Shirley M. Bowens, Joseph M. Candelario, Nancy A. Dimascio-Johnson, Linda B. Foss, Rodney W. Hicks, Robert J. Lipsitz, Susan Marullo, Mark Edward Michaud, Marilyn D. Perry, Richard Ricciardi, Margaret G. Smith, Tommy C. Stewart, Laurence Trail

Perioperative Clinical Nurse Specialist

Program Director
Linda J. Wanzer

Adjunct Assistant Professor
Demetrio J. Aguila, Ava Bivens, Nancy S. Mckelvey, George F. Nussbaum, Cynthia N. Phillips, Ritza Reese, John R. Rumbaugh, Barbara A. Sion, Kristine Timmerman

Doctoral Program

Program Director and Associate Professor
Karen L. Elberson

Adjunct Professor
Bonnie M. Jennings, Virginia K. Saba, Barbara M. Sylvia

Adjunct Associate Professor
Regina C. Aune, Kenneth P. Miller

Assistant Professor
John P. Maye

Adjunct Assistant Professor
Janice B.G. Agazio, Elizabeth J. Bridges, Laura R. Brosch, Sandra A. Cupples, Rebecca A. Dobbs, Alex D. Ehrlich, Jeannine Greenfield, Susan R. Hall, Janet R. Harris, David W. Kelly, Patricia A.W. Kelly, Deborah Kenny, Cathaleen Ley, Angela M. Martinelli, Kathleen Ann Mccormick, Moni Mcintyre, Laura P. Omer, Patricia A. Patrician, Joseph E. Pellegrini, Jill S. Phillips, Carol Ann Romano, Nancy A. Ryan-Wenger, Joseph O. Schmelz, Irene Trowell-Harris, Elizabeth E. Weiner, Holly Ann Williams, Christine A. Wynd, Stacey Young-Mccaughan

4. Transportation Information

The Uniformed Services University of the Health Sciences (USU) is located in Bethesda, Maryland, on the grounds of the National Naval Medical Center (NNMC), north of Washington, DC.

Transportation from Airports

Bethesda is served by three major airports: Dulles International Airport (Virginia), Ronald Reagan Washington National Airport (Virginia), and Baltimore-Washington International Thurgood Marshall Airport (Maryland). Ronald Reagan Washington National Airport is the closest to the university and is the only one of the three airports linked to the area's Metrorail subway system.

Ronald Reagan Washington National Airport

Passengers can take the Washington Flyer Express Bus Service, Washington Flyer Limousine Service, a cab, or Metrorail to the university. Bus and limousine service and cabs are dispatched from the airport's ground transportation booth. For information on the Washington Flyer bus and limousine service, call (703) 685-1400.

Metrorail is the least expensive way to get to the university from Ronald Reagan Washington National Airport. The airport facility connects to the Metrorail subway station. Take a Yellow Line train to the Gallery Place station, transfer to a Red Line train headed in the direction of Shady Grove or Grosvenor, and get off at the Medical Center station. From there, cross Wisconsin Avenue, enter the National Naval Medical Center (NNMC) on Wood Road, make a right onto South Palmer Road, and follow it to the university (see map).

Travel time from the Ronald Reagan Washington National Airport Metrorail station to the Medical Center stop is approximately one hour. It is a 15- to 20-minute walk to the university from the Medical Center station. Currently, NNMC has a shuttle that runs from the Medical Center station to USU.

Dulles International Airport

This airport is served by the Washington Flyer bus and limousine service (703-685-1400) and Regency Cab (301-990-6000), with representatives located at the ground transportation desk. Reservations must be made 24 hours in advance.

Driving time is approximately one hour.

Baltimore-Washington International Thurgood Marshall Airport

The Airport Shuttle (1-800-776-0323 or in Maryland 410-381-2772) and Smart Ride (1-800-762-5673) provide door-to-door shuttle service. Reservations must be made 24 hours in advance. Cabs are also available. Driving time is approximately one-and-a-half hours.

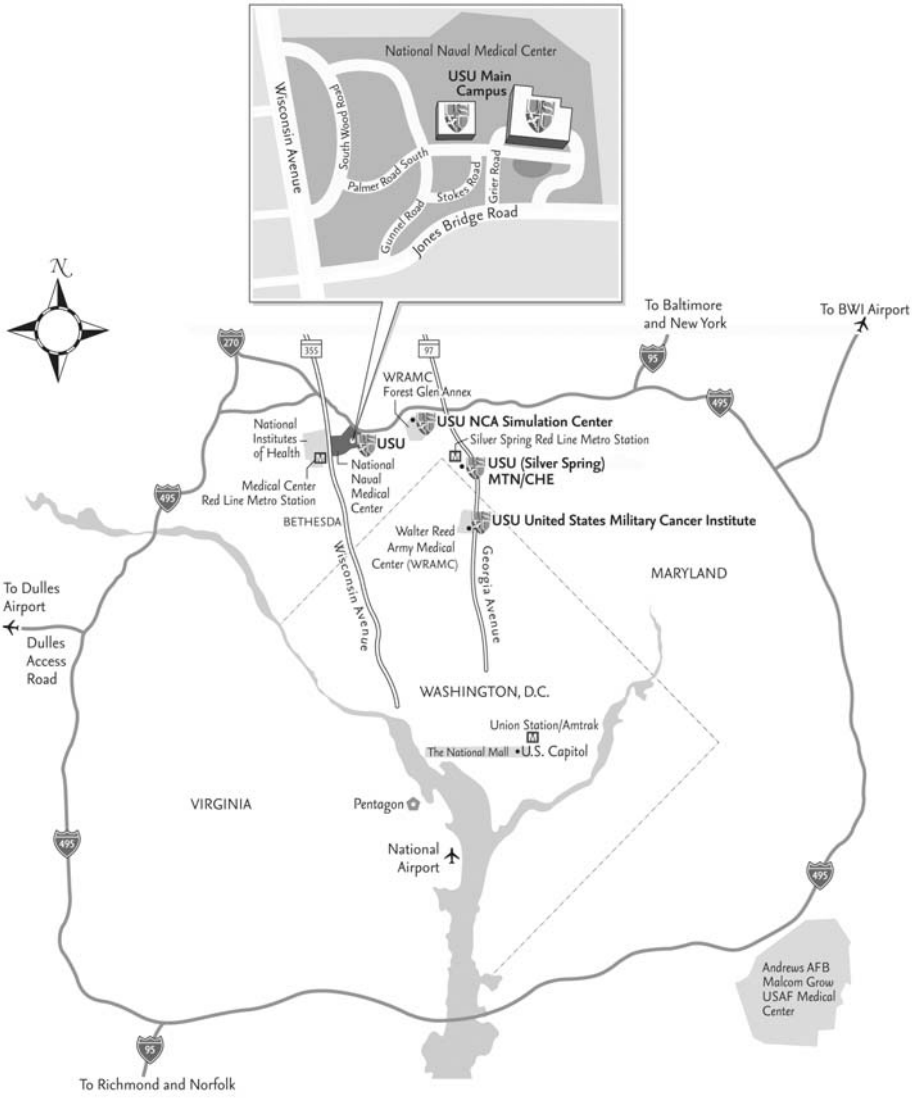
Rail Transportation

Visitors can take the Amtrak train to Union Station in Washington, DC, where cabs and the Metrorail are available for transport to the university. The cab stand is at the entrance to the station as is the Metrorail subway station. For Metrorail, take a Red Line train toward Shady Grove or Grosvenor and exit at the Medical Center station; follow the directions given above, from Ronald Reagan Washington National Airport via Metrorail, to walk to the university (see map).

By Car

From the northeast, take the Capital Beltway (I-495) to Exit 33, Maryland Highway 185 (Connecticut Avenue, south); then turn right onto Jones Bridge Road.

From the northwest, take the Capital Beltway (I-495), to Exit 34, Maryland Highway 355 (Wisconsin Avenue, south); then turn left onto Jones Bridge Road.



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