

**INFORMATION HANDBOOK  
FOR  
GRADUATE MEDICAL  
AND PUBLIC HEALTH PROGRAMS**

**THE DEPARTMENT OF  
PREVENTIVE MEDICINE AND BIOMETRICS**



**UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES  
F. Edward Hébert School of Medicine  
2009-2010**

Revised February 2009

**IMPORTANT NOTICE:** This Handbook is subject to change. The curricula for all of graduate degree programs described in this edition of the Handbook (and on the web site) are continually updated and may be revised. Since academic requirements may vary from that which are currently listed, all quarterly course registrations must be reviewed and approved by the student's Academic Advisor. Please consult the web site for periodic updates during the academic year:  
<http://www.usuhs.mil/pmb/pmb.html>

## PMB Graduate Program 2009/2010 Calendar

### Pre-Fall Session

Monday, 6 Jul 2009 – Orientation, Incoming PMB Graduate Students  
Tuesday, 7 Jul 2009 – Pre-Fall Session Classes Begin  
Friday, 17 Jul 2009 – PMB Orientation for Fall Quarter  
Monday-Friday, 20-24 Jul 2009 – Registration for Fall Quarter Classes  
Wednesday, 12 Aug 2009 – Pre-Fall Session Classes End  
Thursday-Friday, 13-14 Aug 2009 – End of Session Recess

### Fall Quarter

Monday, 17 Aug 2009 – Fall Quarter Classes Begin  
Friday, 21 Aug 2009 – Pre-Fall Grades Due  
Friday, 28 Aug 2009 – Last Day to Drop/Add Fall Courses  
Monday, 7 Sep 2009 – Labor Day (Holiday)  
Monday, 12 Oct 2009 – Columbus Day (Holiday)  
Tuesday-Friday, 13-16 Oct 2009 – Registration for Winter Quarter Classes  
Friday, 6 Nov 2009 – Fall Quarter Classes End  
Monday-Tuesday, 9-10 Nov 2009 – End of Quarter Recess  
Wednesday, 11 Nov 2009 – Veterans Day (Holiday)

### Winter Quarter

Thursday, 12 Nov 2009 – Winter Quarter Classes Begin  
Thursday-Sunday, 26-29 Nov 2009 – Thanksgiving Recess  
Monday, 23 Nov 2009 – Last Day to Drop/Add Winter Courses / Fall Quarter Grades Due  
Saturday, 19 Dec 2009 - Sunday, 3 Jan 2010 – Winter Recess  
Monday, 18 Jan 2010 – Martin Luther King, Jr.'s Birthday (Holiday)  
Tuesday-Friday, 19-22 Jan 2010 – Registration for Spring Quarter Classes  
Monday, 15 Feb 2010 – President's Day (Holiday)  
Thursday, Feb 11 2010 – Winter Quarter Ends  
Friday-Monday, 12-15 Feb 2010 – End of Quarter Recess

### Spring Quarter

Tuesday, 16 Feb 2010 – Spring Quarter Classes Begin / Winter Quarter Grades Due  
Monday, 1 Mar 2010 – Last Day to Drop/Add Spring Courses  
Saturday-Sunday, 20-28 Mar 2010 – Spring Recess  
Monday-Friday, 19-23 Apr 2010 – Registration for Summer Quarter Classes  
Tuesday, 11 May 2010 – Graduate Student Colloquium  
Wednesday, 12 May 2010 – Spring Quarter Ends  
Thursday-Friday, 13-14 May 2010 – End of Quarter Break  
Saturday, 15 May 2010 – USU Graduation

### Summer Session

Monday, 17 May 2010 – Summer Session Begins  
Monday, 31 May 2010 – Memorial Day (Holiday)  
Friday, 28 May 2010 – Last Day to Drop/Add Summer Courses / Spring Quarter Grades Due  
Friday, 18 Jun 2010 – PMB Graduation Ceremony  
Friday, 18 Jun 2010 – Summer Session Ends

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# UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

The Uniformed Services University of the Health Sciences (USU) (<http://www.usuhs.mil>) was established by Congress in 1972 and was authorized to develop advanced degree programs in the various health sciences with a priority on preparing qualified individuals for careers as Medical Officers in the Uniformed Services. As the Nation's only federal institution for higher learning in the health sciences, it is committed to excellence in military medicine and public health during peacetime and during war, fulfilling a unique mission among U.S. Schools of Medicine.

The University's F. Edward Hébert School of Medicine and the Graduate School of Nursing are resources for the Surgeons General of the Army, Navy, Air Force, and the U.S. Public Health Service. The University faculty serves as educators, researchers, and consultants for military medical readiness, disaster relief and emergency preparedness, and force health protection issues. Located on the grounds of the National Naval Medical Center (NNMC) in Bethesda, Maryland, it has close proximity to resources at the National Institutes of Health, the Walter Reed Army Medical Center (WRAMC), the Armed Forces Institute of Pathology (AFIP), the Armed Forces Radiobiology Research Institute (AFRRI), the National Library of Medicine, as well as the National Naval Medical Center. By 2011, USU will become administratively part of the new Walter Reed National Military Medical Center (WRNMMC), which will combine the assets of WRAMC and NNMC on the present NNMC campus.

## GRADUATE MEDICAL AND PUBLIC HEALTH PROGRAMS IN THE DEPARTMENT OF PREVENTIVE MEDICINE AND BIOMETRICS

The graduate education programs within the F. Edward Hébert School of Medicine (SOM) fall under the auspices of the Graduate Education Office (<http://www.usuhs.mil/graded>), and are administered by the Associate Dean for Graduate Education. The Department of Preventive Medicine and Biometrics (PMB) (<http://www.usuhs.mil/pmb/index.html>) plays a key role in the education and training of physicians dedicated to careers in public service with expertise in military medicine, preventive medicine, tropical medicine, and disaster medicine. While this Handbook describes the particular PMB graduate programs, the USU SOM Graduate Program Handbook (<http://www.usuhs.mil/graded/graduatehandbook.doc>) gives a description of the policies and practices of the USU graduate programs overall. The Graduate Programs in PMB are located on the campus of the Uniformed Services University and the adjacent AFRRI building. Well-equipped laboratories support the tropical medicine and environmental health programs. Up-to-date computer equipment is available at the University's Learning Resource Center and within the Department. The affiliated teaching hospitals in the Washington area are the Walter Reed Army Medical Center, the National Naval Medical Center, and the Malcolm Grow Air Force Medical Center. The affiliated overseas laboratories include the U.S. Army and Navy biomedical research laboratories in Bangkok, Thailand; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and Lima, Peru. These and other standing agreements, for example, with the US Army Center for Health Promotion and Preventive Medicine (USCHPPM) and the Federal Bureau of Investigation (FBI), provide abundant opportunities for our students.

The Graduate Programs at USU are fully accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools. In addition, the Graduate Programs in the Department of Preventive Medicine and Biometrics are accredited by the Council on Education for Public Health, the national accrediting organization for programs and Schools of Public Health. In 2006, our MPH program received full accreditation for the maximum seven-year term through 2013, and in 2003, was ranked among the top 6 programs in the country by US News and World Reports. In addition, the Master of Science in Public Health (MSPH) program in the area of Environmental Health Science is certified under the Accreditation Board for Engineering and Technology (ABET).

**PMB GRADUATE PROGRAM MISSION:** *The mission of the PMB Graduate Programs in Public Health 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 Department of Preventive Medicine and Biometrics offers programs of study leading to the degrees of Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), Master of Science in Public Health (MSPH), Doctor of Public Health (DrPH), and Doctor of Philosophy (PhD) in either Environmental Health Science or Medical Zoology. Students may enroll in only

one PMB degree program at a time. The total maximum number of students that will be accepted into the MPH, MTM&H, and MSPH programs during any given academic year is approximately 50.

**MASTER OF PUBLIC HEALTH (MPH),  
MASTER OF TROPICAL MEDICINE AND HYGIENE (MTM&H), AND  
MASTER OF SCIENCE IN PUBLIC HEALTH (MSPH)**

The MPH degree program provides a broad didactic experience in public health and preventive medicine. It is a rigorous curriculum with a quantitative focus, is sequenced to be completed within 12 months, and is primarily designed for individuals planning careers in Preventive Medicine and Public Health within the Uniformed Services. An MPH degree or its academic equivalent is a specific requirement for physicians seeking residency training and board certification in Aerospace Medicine, General Preventive Medicine and Public Health, Occupational and Environmental Medicine, and several other public health specialties. Matriculants may include physicians and other academically qualified health professionals, such as veterinarians, dentists, sanitary engineers, microbiologists, entomologists, environmental scientists, nurses, and pharmacists, who wish to apply the core disciplines of public health to their career field. Uniformed personnel with education or experience in a health-related discipline are given priority as candidates for admission.

The goal of the MPH program is to provide each student with the necessary academic background to practice as a competent public health or preventive medicine officer in one of the Uniformed Services. Graduates are expected to use their acquired 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 behavioral factors to solve public health problems. Each graduate will 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 for the Uniformed Services. In addition, many graduates will complete an “area of concentration” of required and elective course work in a specific area of public health and demonstrate the ability to apply appropriate specialized knowledge and skills to their chosen field.

The goal of the MTM&H program is to provide each student with the necessary academic background to practice as a competent public health officer and tropical disease expert in one of the Uniformed Services. The program is designed for medical officers desiring specific preparation for assignment to tropical medicine clinical, research and teaching positions. Graduates of the MTM&H program will acquire the same quantitative and analytical skills in biostatistics and epidemiology as MPH graduates. They will also be able to assess the health needs of communities and to investigate the impact of biological, environmental, and behavioral factors on community health. Graduates will acquire an in-depth knowledge of the agents of tropical diseases, medical parasitology, and vector biology. During the required overseas rotation they will have the opportunity for hands-on experience with the epidemiology, pathology, diagnosis, management, treatment, prevention, surveillance, and control of selected tropical diseases. The MTM&H degree also represents suitable academic preparation for residency training and board certification in General Preventive Medicine/Public Health.

The MPH and MTM&H degree programs each consist of a minimum of 60 quarter credit hours. The MPH degree requires 35 credit hours in core courses in the Department of Preventive Medicine and Biometrics, including epidemiology, biostatistics, environmental health, health services administration, and social and behavioral sciences. The minimum credit load per quarter required for a full-time student is 12, the maximum allowed is 22, and the average load is 16-18. The satisfactory completion of an independent project and a practicum is required, and the courses related to these requirements are part of the core curriculum. The independent project is the capstone of the MPH/MTM&H programs and should represent the synthesis, integration, and application of core public health concepts and principles to advance our understanding of a public health problem. The requirements for the MPH and MTM&H independent project and practicum experience are described in detail in the “Practicum and Independent Project Handbook.”

In addition to completing the MPH core course work, the MTM&H student must complete the following required courses: PMO 565-Vector Biology, PMO 512-Epidemiology II, PMO 560-Principles and Practice of Tropical Medicine, PMO 561-Medical Parasitology, PMO 569-Malaria Epidemiology and Control, PMO 614-Tropical Medicine Rounds, PMO 990-Travel Medicine, PMO 992-Travel Clinic Practicum, and PMO 563-Clinical Tropical Medicine. One supervised clinical rotation of four to six weeks is spent at an affiliated overseas facility and involves diagnosis and treatment of patients, as well as field study of diseases endemic to tropical regions and the principles and methods of disease surveillance in the region. This overseas rotation satisfies the requirement for a practicum experience. The student must still satisfy the separate requirements for the project as outlined in the “Practicum and Independent Project Handbook.” This is typically accomplished during the academic year, but can also be satisfied during the overseas rotation if requirements for both project and practicum are satisfied and written approval is obtained from the academic

advisor, residency director, and the Director of Graduate Research and Practicum Programs. If the project will be done during the rotation, the requirement for an oral presentation of the project must still be satisfied. This may be done through presentation of the detailed plan for the project before the overseas rotation takes place. Associated travel and per diem expenses are the responsibility of the applicant or applicant's sponsoring institution or Service. Some funds may be available from the University for members of the Uniformed Services through a grant from the DoD Global Emerging Infections Systems. This curriculum offers less opportunity for elective courses than the MPH degree program and typically adds six weeks to the timeline for degree completion.

The American Society of Tropical Medicine and Hygiene (ASTMH) has certified a 12-week course, "Training in Clinical Tropical Medicine and Travelers' Health," directed by the Division of Tropical Public Health. This training is offered in the Spring Quarter and fulfills the eligibility requirements for physicians and other licensed healthcare professionals to take the ASTMH Certificate of Knowledge Examination. This comprehensive lecture, seminar, laboratory, and case-based curriculum incorporate courses that are a part of the MPH/MTM&H program. See the ASTMH website for additional information: <http://www.astmh.org>.

The goal of the two-year thesis-based MSPH program is to provide students with the necessary academic background to function as public health specialists within the Uniformed Services. It is primarily designed for the public health practitioner planning a career in the environmental health sciences, such as industrial hygiene, or in medical zoology. Graduates of this program will acquire basic knowledge and skills in the five core disciplines of public health, plus in-depth knowledge in their selected area of concentration. The graduate will gain competence in the recognition, evaluation, and control of a variety of environmental and occupational health problems and will have the ability to develop policy initiatives in response to these issues. The MSPH degree provides suitable academic preparation for board certification in selected disciplines of public health. Prior education or experience in the biological or physical sciences or in a health-related field is required to be considered for admission to this program.

## **THE CORE DISCIPLINES OF PUBLIC HEALTH**

### **Summary of Program Learning Objectives**

***Biostatistics:*** Upon completion of the core courses in this discipline, students will be able to collect, analyze, and interpret data of public health importance using appropriate descriptive and inferential statistical techniques, including both bivariate and multivariate methods. In addition, students will become familiar with the use of a statistical software program for the PC, such as SPSS.

***Environmental and Occupational Health:*** Upon completion of the core courses in this discipline, students will be able to identify, measure, and analyze environmental and occupational factors affecting health. Students will have the ability to (1) describe the factors that may impact health in the community, home, and workplace, (2) effectively communicate risk, and (3) explain the standards and controls necessary to mitigate these factors.

***Epidemiology:*** Upon completion of the core course in this discipline, the student will be able to (1) discuss the basic concepts pertaining to the natural history of disease in populations, (2) identify and list the strengths and weaknesses of various sources of data, (3) define measures of disease in populations, and (4) critically assess the validity and relevance of descriptive and analytical studies. Students will develop an understanding of the basic concepts of epidemiology and be able to apply them to the analysis and interpretation of epidemiologic data.

***Health Services Administration:*** Upon completion of the core course in HSA, the student will acquire the necessary skills to critically analyze the organization, structure, function, and effectiveness of health care systems and be able to (1) describe and compare the variety of health services in developed countries, (2) discuss, in depth, the current policy issues that impact the health care systems of the United States, and (3) explain the behavioral and economic foundations for health promotion and disease prevention strategies in the United States. Students completing the HSA track will be equipped to become leaders and managers able to create, develop, and continuously improve high quality health systems.

***Social and Behavioral Sciences:*** Upon completion of the core course in this discipline, the student will be able to (1) list and explain behaviors and social factors associated with morbidity and mortality, and (2) describe behavior-related theories and prevention strategies for modification and reduction of injuries and illnesses. Students will develop the ability to identify and utilize the relationship of human behavior and social factors in public health practice.

## THE MPH DEGREE PROGRAM

Graduates of this program will become proficient in a broad set of public health skills necessary to function effectively as a Preventive Medicine or Public Health Officer in the Uniformed Services. In addition to completing the core courses in the five public health disciplines described above, MPH students may select an area of concentration from among the following: aerospace physiology, biostatistics and epidemiology, environmental and occupational health, health services administration, international health, or tropical public health. These areas of concentration are intended to help guide students who wish to focus their training and coursework in a particular area of public health. The following elective courses are recommended by the faculty in each discipline.

**AEROSPACE PHYSIOLOGY:** This concentration will provide students with the fundamental concepts and principles of the physiological aspects associated with aviation including a foundation in human factors, exercise physiology, flight/mission enhancement technologies, and mishap investigation. Upon completion of the core courses in this discipline, students will be able to identify, measure, and analyze aeromedical factors affecting pilot/aircrew performance and health. This concentration will also help prepare the student for eligibility to take the Aerospace Physiology Certification exam administered by the Aerospace Physiology Society of the Aerospace Medical Association.

Recommended courses include PMO841-Aerospace Operational Physiology I, PMO842-Aerospace Operational Physiology II, PMO845-Human Factors in Aviation, PMO846-Aerospace Exercise Physiology, and PMO848-Special Topics in Aerospace Medicine, and one of the following: PMO548-Joint Medical Operations and Humanitarian Assistance, PMO549-Principles of Toxicology, PMO599-Introduction to Health Risk Communication, PMO847-Aerospace Performance and Health, or PMO849-Aerospace Medicine in the Modern Age. Other courses outside the PMB Department may also be considered, for example, Neurophysiology, Pulmonary Physiology, Advanced Cardiovascular Physiology, among others.

**BIOSTATISTICS AND EPIDEMIOLOGY:** Students completing this concentration will be able to function as epidemiologists in the Uniformed Services. They will acquire an understanding of advanced concepts in acute and chronic disease epidemiology, and have the ability to select and apply appropriate epidemiological and biostatistical methods in planning and carrying out epidemiological investigations.

Recommended courses include PMO512-Epidemiologic Methods and PMO513-Advanced Epidemiologic Methods, as well as at least four of the following: PMO514-Epidemiology and Control of Infectious Diseases, PMO515-Chronic Disease Epidemiology, PMO522-Meta-analysis, PMO519-Occupational and Environmental Epidemiology, PMO611-Classic Studies in Epidemiology, and PMO508-Biostatistics III.

**ENVIRONMENTAL AND OCCUPATIONAL HEALTH:** This concentration provides students with the fundamental concepts and principles of environmental and occupational health, toxicology, industrial hygiene, health physics, and a survey of occupational/environmental diseases.

Occupational medicine residents must take the required core MPH courses since this training provides residents with the fundamental concepts and principles of preventive medicine, environmental and occupational health. Residents must also take PMO 512 and PMO 513-Epidemiology II and III, PMO 504-Biostatistics II, PMO 549-Principles of Toxicology, PMO 652-Occupational Ergonomics, PMO 542-Clinical Occupational and Environmental Medicine, PMO550-Industrial Hygiene I & Laboratory, PMO 553- Industrial Hygiene Field Studies, PMO642-Selected Topics in Occupational Health, PMO558-Fundamentals of Clinical Occupational, Environmental, and Preventive Medicine, PMO655-Current Injury Prevention Issues and Initiatives, PMO548-Joint Operations & Humanitarian Assistance, PMO654-Safety Engineering, PMO599-Health Risk Communication, PMO613-Public Health Issues in Disasters, and PMO973- GPM/OEM Journal Club.

In addition to the MPH core requirements, non-physician MPH students in this concentration should take PMO549-Principles of Toxicology, PMO550-Industrial Hygiene I and Laboratory, as well as additional courses recommended by their Academic Advisor chosen from among the courses offered by the PMB Division of Occupational and Environmental Health Sciences or courses from another division closely related to this field.

**HEALTH SERVICES ADMINISTRATION:** Students completing this concentration will be able to apply the necessary skills to design and develop, implement and evaluate, and continuously improve programs and systems related to promotion and health education and health care delivery in the Uniformed Services. Students will also understand and be able to apply concepts of financial management, decision making, and quality assessment to health systems and be able to develop broad policy statements concerning health care programs in the public sector as a Health Services Officer in the Uniformed Services.

Recommended courses beyond the core MPH curriculum include PMO523-Fundamentals of US Healthcare Policy, PMO527-Principles of Health Care Management, PMO529-Health Care Financial Management, PMO 559-Decision Support in Health Care Performance Improvement, and PMO535-The Law of Health Care. The PMB Division of Health Services Administration offers other courses as electives.

**INTERNATIONAL HEALTH:** The USU International Health (IH) program's mission is to prepare globally focused military professionals for positions in support of complex humanitarian emergencies and medical crises around the world, in wartime and peacetime. This area of concentration provides a strategic perspective of global and international health issues. These fields are defined and their scope explored. Military coordination and communication with civil society organizations are emphasized. The roles of health organizations, both public and private are addressed. Political, economic and sociocultural factors of population health are considered especially within the context of developing countries. Healthcare delivery systems are examined looking at resources, access, policies, current challenges, potential solutions and opportunities for reform. In addition to the MPH program goals, the IH student upon completion of concentration-specific curriculum recommendations will have a basic knowledge of major international health issues, ethical and cultural considerations and their influence in the global context; understand the role that the US military and other organizations and agencies play in addressing global health issues; and be able to apply public health principles in the assessment of international health needs and in planning, conducting, and evaluating international health-related activities and projects.

Recommended courses for this area of concentration include: PMO528-International Health I; PMO539-International Health II; PMO534-Medical Anthropology; PMO548-Joint Medical Operations and Humanitarian Assistance; PMO613-Public Health Issues of Disasters in Developing Countries; PMO512-Epidemiologic Methods; PMO991-Ethics in Public Health; and PMO531-Program Planning and Development. Additional relevant courses include: PMO599-Introduction to Health Risk Communication; PMO559-Decision Support in Health Care Performance Improvement; PMO560-Principles and Practice of Tropical Medicine; PMO569-Malaria Epidemiology and Control; and PMO990-Travel Medicine.

**TROPICAL PUBLIC HEALTH:** This concentration will enable students to function effectively worldwide as Preventive Medicine, Public Health, and Medical Officers in the Uniformed Services. Graduates will be able to apply the basic concepts and principles of tropical medicine, malaria control, and vector biology to the epidemiology, diagnosis, treatment, prevention, and control of tropical diseases.

Students interested in this area of concentration should take PMO565-Vector Biology, PMO512-Epidemiology II, PMO560-Principles and Practices of Tropical Medicine, PMO569-Malaria Epidemiology and Control, and PMO613-Public Health Issues of Disasters in Developing Countries. Other recommended courses include PMO548-Joint Medical Operations and Humanitarian Assistance, PMO561-Medical Parasitology, and PMO564-Epidemiology and Control of Arboviruses, as well as other courses offered by the PMB Division of Tropical Public Health.

## **DEPARTMENT OF PMB MPH/MTM&H CURRICULUM\***

### **PRE-FALL REQUIRED CORE COURSES**

PMO505 Microcomputer Applications in Public Health (1)  
PMO530 Behavioral & Soc Sciences Applied to PH (4)  
PMO540 Intro to Environmental Health (4)  
PMO680 Intro to Public Health (1)

### **PRE-FALL ELECTIVE COURSES \***

PMO642 Selected Topics in Occupational Health (4)  
PMO558 Fund Clinical Occ, Environ/Preventive Medicine (1)

### **FALL REQUIRED CORE COURSES**

PMO503 Biostatistics I (4)  
PMO511 Introduction to Epidemiology I (4)  
PMO526 Health Systems (4)  
PMO671 Intro to the MPH Project and Practicum (1)

### **ADDITIONAL REQUIRED COURSES FOR OEM**

PMO549 Principles of Toxicology (4)  
PMO652 Occupational Ergonomics (3)  
PMO548 Joint Operations & Humanitarian Assistance (3)  
PMO973 GPM and OEM Residency Journal Club (1)

### **ADDITIONAL REQUIRED COURSES FOR MTM&H**

PMO565 Vector Biology (2)

### **FALL ELECTIVE COURSES \***

PMO528 International Health I (3)  
PMO541 Advanced Environmental Health (2)  
PMO548 Joint Med Ops & Humanitarian Assistance (3)  
PMO549 Principles of Toxicology (4)  
PMO565 Vector Biology (2)  
PMO567 Chg Patterns of Arthropod-borne Dis (4)  
PMO577 Introduction to GIS Methods in PH (2)  
PMO584 Introduction to Health Physics (3)  
PMO600 Fundamentals of Human Physiology (2)  
PMO603 Deployment Environmental Exposures (5)  
PMO652 Occupational Ergonomics (3)  
PMO683 Critical Reading Seminar (2)  
PMO684 Clinical Research Seminar (1)  
PMO688 Info Gathering in Clin Med (2-12)  
PMO701 Advanced Biometrics Tutorial (1-12)  
PMO841 Aerospace Operational Physiology I (3)  
PMO849 Aerospace Medicine in the Modern Age (3)  
PMO971 Doctoral Student Journal Club (1)  
PMO973 GPM and OEM Residency Journal Club (1)

### **WINTER REQUIRED CORE COURSES**

PMO504 Biostatistics II (4)  
PMO672 MPH Project/Practicum Design & Dev (1)

### **ADDITIONAL REQUIRED COURSES FOR OEM**

PMO512 Epidemiology II (4)  
PMO550 Industrial Hygiene I & Lab (4)  
PMO651 Human Factors Engineering (3)  
PMO973 GPM and OEM Residency Journal Club (1)  
PMO655 Current Injury Prevention Issues and Initiatives (1)

### **ADDITIONAL REQUIRED COURSES FOR MTM&H**

PMO512 Epidemiology II (4)  
PMO990 Travel Medicine (2) (also offered in Spring)  
PMO 992 Travel Clinic Practicum (1) (also offered in Spring and Summer)

### **WINTER ELECTIVE COURSES \***

PMO502 Intro to SAS (1)  
PMO512 Epidemiology II (4)  
PMO514 Epi and Control of Infectious Diseases (2)  
PMO523 Fundamentals of U.S. Healthcare Policy (2)  
PMO527 Principles of Healthcare Management (2)  
PMO531 Program Planning & Development (3)  
PMO534 Medical Anthropology (2)  
PMO535 The Law of Health Care (2)  
PMO539 International Health II (3)  
PMO550 Industrial Hygiene I & Lab (4)  
PMO566 Phys Params of Vector Competence (4)  
PMO571 Biosystematics in Med Zool (2)  
PMO578 Remote Sensing Methods in PH (3)  
PMO594 Introduction to Medical Informatics (3)  
PMO598 Health Care Economics  
PMO602 Solid & Hazardous Wastes (3)  
PMO605 Analytical Instr Meth in Envtl Health (3)  
PMO611 Classic Studies in Epi (2)  
PMO615 Sand Flies and Disease (3)  
PMO631 EOH Journal Club (1)  
PMO651 Human Factors Engineering (3)  
PMO655 Current Injury Prevention Issues and Initiatives (1)  
PMO661 Medical Zoology Seminar (1)  
PMO683 Critical Reading Seminar (2)  
PMO684 Clinical Research Seminar (1)  
PMO701 Advanced Biometrics Tutorial (1-12)  
PMO842 Aerospace Operational Physiology II (3)  
PMO848 Special Topics in Aerospace Medicine (3)

PMO971 PMB Doctoral Student Journal Club (1)  
PMO972 Seminar in Critical Thinking (4)  
PMO973 GPM and OEM Residency Journal Club (1)  
PMO990 Travel Medicine (2) (also offered in Spring)  
PMO 992 Travel Clinic Practicum (1) (also offered in Spring and Summer)

### **SPRING REQUIRED CORE COURSES**

PMO673 MPH Proj/Practicum Implementation & Eval (1)

### **ADDITIONAL REQUIRED COURSES FOR OEM**

PMO513 Advanced Epidemiologic Methods (4)  
PMO519 Occupational & Environmental Epidemiology (2)  
PMO542 Clin Occ & Environ Medicine (4)  
PMO599 Intro to Health Risk Communication (2)  
PMO973 GPM and OEM Residency Journal Club (1)

### **ADDITIONAL REQUIRED COURSES FOR MTM&H**

PMO560 Principles and Practices of Tropical Medicine (6)  
PMO561 Medical Parasitology (3)  
PMO569 Malaria Epidemiology and Control (3)  
PMO614 Tropical Medicine Rounds (2)  
PMO990 Travel Medicine (2) (also offered in Winter)  
PMO 992 Travel Clinic Practicum (1) (also offered in Winter and Summer)

### **SPRING ELECTIVE COURSES \***

PMO508 Biostatistics III (5)  
PMO513 Advanced Epidemiologic Methods (4)  
PMO515 Chronic Disease Epidemiology (2)  
PMO519 Occupational & Environmental Epidemiology (2)  
PMO520 Molecular Epidemiology (2)  
PMO521 Concepts in Molecular Biology & Immunology (2)  
PMO522 Meta Analysis (1)  
PMO524 Health Care Performance Improvement (2)  
PMO529 Health Care Financial Management (2)  
PMO537 Clinical Decision Making (1)  
PMO542 Clin Occ & Environ Medicine (4)  
PMO549 Principles of Toxicology (4)  
PMO552 Industrial Hygiene II (CBRNE Detection) (4)  
PMO555 Industrial Ventilation (3)  
PMO559 Decision Support in Health Care Performance Improvement (4)  
PMO560 Principles & Practice of Tropical Medicine (6)  
PMO561 Medical Parasitology (3)  
PMO564 Epidemiology and Control of Arboviruses (Lec-2)  
PMO569 Malaria Epidemiology and Control (3)  
PMO582 Radiation Biology (3)  
PMO591 Marketing and Strategic Issues (2)

PMO595 Introduction to Complex Sample Survey Analysis (2)  
PMO599 Intro to Health Risk Communication (2)  
PMO604 Hydrology, Water & Wastewater Treatment Plant Design (5)  
PMO607 Environmental Chemistry (4)  
PMO613 Public Health Issues in Disasters (4)  
PMO614 Tropical Medicine Rounds (2)  
PMO653 Work Analysis Methods (3)  
PMO654 Safety Engineering (3)  
PMO682 History of Preventive Medicine (2-4)  
PMO683 Critical Reading Seminar (2)  
PMO684 Clinical Research Seminar (1)  
PMO845 Human Factors in Aviation (3)  
PMO846 Aerospace Exercise Physiology (3)  
PMO847 Aerospace Health and Performance (3)  
PMO990 Travel Medicine (3)  
PMO971 PMB Doctoral Student Journal Club (1)  
PMO973 GPM and OEM Residency Journal Club (1)  
PMO990 Travel Medicine (2) (also offered in Winter)  
PMO991 Ethics in Public Health (3)  
PMO 992 Travel Clinic Practicum (1) (also offered in Winter and Summer)  
PMO996 Clinical Trial Design and Analysis

### **SUMMER REQUIRED CORE COURSES**

PMO670 Public Health Practicum (3)  
PMO674 MPH Independent Project (3)

### **ADDITIONAL REQUIRED COURSES FOR OEM**

PMO553 Industrial Hygiene Field Studies (1)

### **ADDITIONAL REQUIRED COURSES FOR MTM&H**

PMO563 Clinical Tropical Medicine (1-12); overseas rotation (in lieu of PMO670)  
PMO 992 Travel Clinic Practicum (1) (also offered in Winter and Spring)

### **SUMMER ELECTIVE COURSES \***

PMO553 Ind Hygiene Field Studies (1)  
PMO564 Epi & Control of Arboviruses (Lab-4)  
PMO568 Medical Acarology (4)  
PMO570 Mod Tech & Vector-borne Dis (4)  
PMO572 Intro to Medical Malacology (3) )  
PMO573 Epi & Prevention of Vaccine-Preventable Diseases (1)  
PMO592 Healthcare Technology Assessment (2)  
PMO601 Environmental Health Risk Assessment (2)  
PMO 992 Travel Clinic Practicum (1) (also offered in Winter and Spring)

\*Additional electives may be found under the “Course Descriptions” section of this Handbook. Courses offered by other basic science departments in the School of Medicine are listed in the University Graduate Education Bulletin and are also available as electives (with permission of the Course Director or Department Chair)

## **MASTER OF SCIENCE IN PUBLIC HEALTH (MSPH)**

The MSPH degree program is designed for uniformed services members, and is a two-year program requiring a minimum of 120 credit-hours, depending on the area of concentration being pursued. At least 60 credit hours of coursework (non-research hours) are required and will include a practicum experience and 2 credit hours of journal club. The coursework hours may also include electives and independent studies. The courses in the MSPH curriculum (listed below) are required for each respective specialty track. Waivers may be granted on a case-by-case basis with approval by the Course Director and the Research Advisor (Academic Advisor may be substituted if a Research Advisor has not yet been selected). A written, orally-defended thesis is also required for the MSPH degree. Credit hours may be graded or pass-fail, as determined by the respective Course Director, provided the percentage of pass-fail course credits does not exceed 25% of the total number of credits for coursework taken.

Practicum Experience. The MSPH degree program requires a specific field or practicum experience. This requirement is identical to that required for the MPH degree, which is briefly described in this PMB Handbook and the Department's "Practicum and Independent Project Handbook." Students pursuing the MSPH in Medical Zoology take PMO670-Public Health Practicum for MPH students, while MSPH in Environmental Health Science students enroll in PMO942-Environmental/Occupational Health Directed Rotations. The student may enroll during any quarter with the approval of their Research Advisor (Academic Advisor may be substituted if a Research Advisor has not yet been selected).

Thesis. Students must complete and defend a written thesis based on their original research within the two-year program. The thesis is submitted to the student's Research Advisor for approval and subsequently presented and defended before a Thesis Examination Committee followed by a public defense. The student's Research Advisor must have an academic appointment in the PMB Department. Credit for research is received by enrolling in either PMO941-Environmental Occupational Health Directed Research or PMO964-Research in Medical Zoology, with the approval of the student's Academic Advisor. Students will be assigned a grade by the Research Advisor for each quarter corresponding to the credit hours taken in that quarter.

Thesis Defense. The Thesis Examination Committee will be composed of at least three members: the Research Advisor, who serves as the Committee Chair, and two other members. At least two of the three members must be full-time faculty with primary appointments in the PMB Department, and one member must be within the sponsoring PMB Division in which the student is enrolled. In order for MSPH students to participate in the USU graduation exercise held annually in May, the Thesis Examination Committee must approve the thesis defense in writing by April 10 of the year of graduation.

## **MSPH SPECIALTY TRACKS**

There are two specialty tracks within the MSPH degree program: Environmental Health Sciences (EHS) and Medical Zoology (MZ). Upon completion of the MSPH program, students will be able to demonstrate in-depth knowledge and understanding of the science and practice of public health pertaining to their specialty track.

**ENVIRONMENTAL HEALTH SCIENCES:** The EHS specialty track curriculum includes environmental health, industrial hygiene, environmental chemistry, health physics, environmental health risk assessment, analytical instrumentation, environmental surveillance, and toxicology. This specialty track is administered by the faculty of the PMB Division of Occupational and Environmental Health Sciences, and is guided by a Joint Steering Committee whose membership includes related specialty leaders from Air Force, Army and Navy Service branches. Upon completion of this curriculum, the student will be prepared to take the National Environmental Health Association (NEHA) Registered Sanitarian/Registered Environmental Health Specialist (RS/REHS) and the Certified Industrial Hygienist (CIH) examinations.

**MEDICAL ZOOLOGY:** Students in the MZ specialty track will gain knowledge and understanding of vector biology and how arthropods affect human health; how to conduct vector-borne disease risk assessments; and how to plan, coordinate, and implement vector control operations. This specialty track is administered by the faculty of the PMB Division of Tropical Public Health.

# MSPH CURRICULUM \*

## YEAR ONE

### PRE-FALL REQUIRED CORE COURSES

PMO505 Microcomputer Applications in Public Health (1)  
PMO530 Behavioral & Soc Sciences Applied to PH (4)  
PMO540 Environmental Health (4)  
PMO680 Intro to Public Health (1)

### FALL REQUIRED CORE COURSES

PMO503 Biostatistics I (4)  
PMO511 Introduction to Epidemiology I (4)  
PMO671 Intro to MPH Project and Practicum (1)

#### **Add for EHS Specialty Track**

PMO584 Introduction to Health Physics (3)  
PMO600 Fundamentals of Human Physiology (2)

#### **Add for MZ Specialty Track**

PMO567 Changing Patterns of Arthropod-Borne Diseases (4)  
PMO577 Introduction to GIS Methods in PH (2)

### WINTER REQUIRED CORE COURSES

PMO504 Biostatistics II (4)

#### **Add for EHS Specialty Track**

PMO527 Principles of Healthcare Management (2)  
PMO550 Industrial Hygiene I & Lab (4)  
PMO631 EOH Journal Club (1)

#### **Add for MZ Specialty Track**

PMO672 MPH Project/Practicum Design & Dev (1)  
PMO512 Epidemiological Methods  
PMO571 Biosystematics in Medical Zoology (2)  
PMO566 Physiological Parameters of Vector Competence (4)  
PMO578 Remote Sensing Methods in Public Health (3)

### SPRING REQUIRED CORE COURSES

None

#### **Add for EHS Specialty Track**

PMO549 Principles of Toxicology (4)  
PMO971 Doctoral Student Journal Club (1)

#### **Add for MZ Specialty Track**

PMO673 MPH Project/Practicum Implementation & Eval (1)  
PMO564 Epidemiology and Control of Arboviruses Lec (2)  
PMO569 Malaria Epidemiology and Control (3)  
PMO661 Medical Zoology Seminar (1)

### SUMMER REQUIRED CORE COURSES

None

#### **Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)  
PMO942 EOH Directed Rotation (3)

#### **Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (1-15)  
PMO670-Public Health Practicum (3)

\* See elective courses listed under MPH/MTM&H curriculum

**YEAR TWO** \*

**PRE-FALL REQUIRED CORE COURSES**

None

**Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)

**Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (1-15)

**SPRING REQUIRED CORE COURSES**

None

**Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)

**Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (4)

**FALL REQUIRED CORE COURSES**

None

**Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)

**Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (1-15)

**SUMMER REQUIRED CORE COURSES**

None

**Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)

**Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (1-15)

**WINTER REQUIRED CORE COURSES**

None

**Add for EHS Specialty Track**

PMO941 EOH Directed Research (1-15)

**Add for MZ Specialty Track**

PMO964 Research in Medical Zoology (1-15)

\* See elective courses listed under MPH/MTM&H curriculum

## INDEPENDENT PROJECT GUIDELINES

The satisfactory completion of an independent project is an academic requirement for the MPH or MTM&H degree. The independent project represents a "culminating experience" and should demonstrate a student's ability to synthesize, integrate, and apply the knowledge and skills acquired through course work in the core disciplines of public health. For example, a student will identify a public health problem or issue; formulate a focused research question; conduct a systematic review of the scientific literature; develop a research protocol using the appropriate study design; obtain the necessary institutional assurances and approvals; collect data; select and apply appropriate analytic techniques; and interpret and communicate study findings, including public health significance or policy implications. Students are encouraged to expand their horizons and stretch their capabilities at every opportunity. The submission of a manuscript for publication is encouraged as the goal of the project.

At the beginning of the academic year, each student is assigned an **Academic Advisor** who is responsible for overall guidance on matters pertaining to curriculum planning and meeting all of the master's degree program requirements. Students should meet with their Academic Advisor as soon as possible upon arrival at USU and at least once per academic quarter to discuss their proposed curriculum. In the process of selecting an independent project, students should start by discussing their areas of interest and ideas with their Academic Advisor. Ideally, students should decide on a project and select a **Project Mentor** by the end of the Fall Quarter. Past MPH students are unanimous in their recommendation for an early start to the independent project. The primary Project Mentor should be a public health professional (USU) faculty member or individual with outside affiliation) with the necessary subject-matter expertise to supervise the student's work on his/her independent project. An Academic Advisor may serve as a Project Mentor for any student. If the primary Project Mentor is not a USU faculty member, the student is encouraged to recruit a Co-Project Mentor from among the USU faculty.

Once an independent project topic has been selected, a brief description of the proposed project (the pre-proposal) should be submitted to the Director of Graduate Research and Practicum Programs. This usually occurs around the middle of the Winter Quarter. All pre-proposals will be reviewed for appropriateness and the necessary forms to submit for institutional assurances and/or approvals (e.g., research involving human participants or animal care and use), and students will be given timely feedback. Students and their Project Mentors should meet regularly to develop the protocol, discuss human participants in research issues, and/or seek advice or assistance from other faculty, as appropriate. Students are encouraged to combine their practicum activity with their independent project, if at all possible. This will prove to be a time-efficient way of meeting the two separate requirements.

Federal and USU regulations for research involving human participants are applicable to all PMB student projects, including masters and doctoral level research protocols. It is the student's responsibility to submit the appropriate University forms along with the study proposal to the USU Office of Research (REA) for a determination of whether or not the research activity falls under an exempt category or is covered by federal regulations prior to beginning work on the study. Some studies may receive an expedited review. The University is held accountable for reviewing all human-use protocols prior to the conduct of the study, as well as on at least a yearly basis thereafter, if the study continues for more than one year.

Once all necessary assurances and/or approvals have been obtained, the Academic Advisor and/or the Project Mentor may suggest additional course work and provide guidance on timelines for project deliverables: final proposal, oral presentation, and draft and final written report, among others. Students are also encouraged to draw upon the expertise of additional PMB faculty members as issues related to the project arise (e.g., statistical consultation). When the practicum experience is combined with the independent project, the student will work with both the Project Mentor and a **Practicum Site Preceptor** to develop learning objectives for the practicum component.

Students receive guidance on the design, development, and implementation of their MPH independent project throughout the year in three consecutive seminar courses, PMO671-Introduction to the MPH Project and Practicum,

PMO672-MPH Project/Practicum Design and Development, and PMO673-MPH Project/Practicum Implementation and Evaluation, collectively known as the “PIP” series. Each course is one credit (pass/fail) for a total of three credits, and all three courses are required for all MPH/MTM&H students.

Students are also required to register for PMO674-MPH Independent Project in the Summer Session just prior to graduation. This course provides a standard means for students to receive a letter grade and three credit hours for the final products of the required independent project. The primary Project Mentor reviews draft reports, provides feedback to the student, and assigns a grade for both the project proposal and the final written report. A secondary reviewer from among the PMB faculty will also assign a grade to the project. A panel of PMB faculty members will grade the oral presentations. The following will constitute the final grade for PMO674: the proposal (15%), the oral presentation (35%), and the final written report (50%).

Students whose efforts on their independent projects exceed the standard three credit hours for PMO674, plus the cumulative three credits for the PIP series, may enroll in either a tutorial, independent study, or directed reading/research course(s) for a variable number of credits during any academic quarter. The Project Mentor determines the number of credits using the general guideline that an average of three hours a week for 12 weeks equals one credit hour. The courses listed below may be used for this purpose with the permission of the designated Course Director (usually the Project Mentor):

PMO701	Advance Biometrics Tutorial
PMO760	Tropical Medicine Research Tutorial
PMO811	Independent Study in Epidemiology
PMO830	Independent Study in Social and Behavioral Science
PMO881	Military Preventive Medicine Study Topics
PMO911	Research in Epidemiology
PMO926	Health Services Administration Directed Research
PMO940	Environmental/Occupational Health Directed Studies
PMO941	Environmental/Occupational Health Directed Research
PMO960	Directed Laboratory Research
PMO962	Directed Clinical Research
PMO963	Directed Field Research
PMO964	Research in Medical Zoology
PMO970	Directed Studies in Preventive Medicine

Timeline for project deliverables:

1. The pre-proposal for the independent project consists of a brief description of the study or project, its public health significance, a draft research question, and an estimated timeline for project completion. Students should also have completed a preliminary literature search. This document is submitted to the Director of Graduate Research and Practicum Programs during the Fall or Winter Quarter.
2. Each student should identify a team of faculty consultants (e.g., epidemiologist, biostatistician, among others) depending on your area of research interest. Students should seek advice or consultation from these faculty members, as needed, beginning with the earliest phases of the project. Students need to stay on a timeline to complete all preparatory activities (e.g., literature search, institutional assurances and/or approvals) so that work on the project itself can begin ideally no later than the beginning of the Spring Quarter. This will be very important for those students doing primary data collection for a study involving human participants.
3. A proposal for the independent project is submitted to the Project Mentor for signature and subsequently to the Director of Graduate Research and Practicum Programs. The proposal is a four to five-page description of the project including study design, sampling methods and sample size calculations (if relevant), data sources and/or survey instruments, and should include references. Notice of project approval from the Office of Research must be received by the student before definitive work begins on the project.

4. Oral presentations of the independent projects (10 minutes with five minute for questions) will be scheduled during the summer session towards the end of the academic year. All students are expected to attend all of the presentations, and PMB Department faculty, preceptors from outside organizations, as well as other guests, will be invited to attend.
5. A final written report must be submitted to the Project Mentor and the Director of Graduate Research and Practicum Programs for distribution to a secondary faculty reviewer approximately three weeks prior to graduation.

## **PRACTICUM EXPERIENCE GUIDELINES**

The practicum experience is a requirement for the MPH degree, separate from the independent project. The Council on Education for Public Health (CEPH), one of the national accrediting bodies for our Graduate Programs, provides the following guidelines:

*"The [graduate] program must provide opportunities for professional degree students to apply the knowledge and skills being acquired through their courses of study. Practical knowledge and skills are essential. A planned, supervised, and evaluated practice experience is considered a very important component of a public health professional degree program. These opportunities should be arranged in cooperation with as wide a range of community agencies as possible, including especially local and state public health agencies in the program's geographic area. Individual waivers should be based on well-defined criteria; the possession of a prior professional degree in another field or prior work experience that is not closely related to the academic objectives of the student's degree program would not be sufficient reason for waiving the practice requirement."*

A public health practicum is considered to be an essential component of the USU MPH program. It represents an opportunity for students to enhance their classroom learning by participating in a variety of public health activities at local, regional, and national organizations, military and civilian, within the National Capitol area and, possibly, more distant sites. The opportunities are many and varied, and the potential for personal and professional reward is great. Because this is an educational activity, the practicum is expected to meet explicit learning objectives.

To fulfill the MPH practicum requirement, a student must complete a minimum of 108 hours of a planned public health activity under the direct supervision of an experienced public health professional (the Practicum Site Preceptor). The practicum experience may involve research, clinical practice, program/service delivery, or policy-making settings. Examples of appropriate types of experiences include, but are not limited to, the following: observation of day-to-day operations within a public health agency to determine how important public health issues are identified and prioritized; participation in the development of public health educational materials, reports, or survey instruments at a government or private agency; primary data collection, database development for a health surveillance system, or an outbreak investigation; management system or program evaluation; or public health policy development. A proposal for the practicum experience, jointly prepared by the student and the Practicum Site Preceptor, includes a minimum of three learning objectives and should generally be submitted by the end of winter Quarter. At the conclusion of the practicum experience, the student and the Site Preceptor will complete and submit separate evaluation forms.

To receive academic credit for the practicum, students register for PMO670-Public Health Practicum, generally in the Summer Session, although the hours devoted to the practicum may be spread over several academic quarters (students must maintain a log of activities). Students receive a total of three credits (pass/fail) for their practicum activity after the final report plus two evaluation forms have been submitted to the Director of Graduate Research and Practicum Programs.

Students are referred to the Handbook on Independent Projects and Practicum Experience (under separate cover) for more complete information, guidelines, and sample forms, or contact the Director of Graduate Research and Practicum Programs (Office: A1040G, Phone: 301-295-1975; Fax: 301-295-6282; E-mail: [thooper@usuhs.mil](mailto:thooper@usuhs.mil)).

## **DOCTOR OF PUBLIC HEALTH**

The Doctor of Public Health (DrPH) advanced degree program is designed to provide rigorous, advanced training for graduate students who plan to assume leadership roles in research, teaching, or the policy arena. DrPH students build on a firm foundation of core public health concepts and principles with additional coursework in research methodology, critical thinking skills, and teaching methods. Our students then apply this knowledge to the design, development, and execution of an original research project culminating in a doctoral dissertation. USU students have unique opportunities to work with a variety of public health agencies due to its centralized location near Washington DC. Students receive broad exposure to the major public health issues confronting the U.S., as well as more global issues, and they learn to systematically and critically evaluate the scientific literature, identifying the inherent strengths and weaknesses of various sources of data. The PMB Doctoral Programs Subcommittee (DPS) is responsible for all matters concerning the DrPH program, including admission of students, program curriculum, and progression of students through advancement to candidacy and ultimately the thesis defense.

The objective of the DrPH program is to produce scholarly health professionals who are knowledgeable in the diverse competencies relevant to public health and who have expertise in at least one of these fields, for example, epidemiologic research, health policy development, environmental risk assessment and management, disaster and emergency preparedness, or tropical public health.

Active duty military medical, dental, and veterinary officers in the Uniformed Services or other Uniformed Services officers with doctoral degrees in a health-related field receive preference for admission to this program. Non-uniformed applicants will be considered for admission on a space-available basis, with preference given to health professionals sponsored by U.S. government agencies. A graduate degree that is relevant to public health degree should be considered a prerequisite for admission to the DrPH program. In addition, the minimum requirements include an outstanding academic record, some health-related work or volunteer experience, and a demonstrated interest in pursuing a public health career. Exceptions to the post-baccalaureate degree requirement will be considered on a case by case basis. Typically, students without a prior MPH degree will first be required to enroll in the USU MPH program, and, upon completion of the MPH degree, apply for admission into the DrPH program.

Course of Study: The DrPH program normally requires a minimum of three years of full-time study. Students must earn a grade of “B” or better in every required course. Students are expected to complete at least 144 credit hours, 48 of which must be formal, from graded courses.

The DrPH program of study is structured of the following components:

- Basic academic foundation consisting of the MPH curriculum
- Additional required advanced core courses and electives
- Attending seminars and journal clubs
- Minimum of two teaching-assistant assignments
- Oral and written qualifying examination
- Dissertation

Students must meaningfully participate in all aspects of original research: proposal submission, data collection, data analysis and interpretation, and dissertation preparation and submission.

Students transferring into the DrPH program from other institutions may apply up to 24 academic credits of comparable graduate level courses to meet the MPH and DrPH requirements. The individuals responsible for this approval include the PMB Doctoral Programs Subcommittee (DPS) members, the Director of Graduate Programs, and the Associate Dean for Graduate Education. The grades from transferred courses will not contribute to the overall grade point average for coursework completed at this University. Students who have previously completed the MPH program at this University may apply up to 24 credits from elective courses toward the required 48 credits of formal coursework.

Academic Advisor: The Director, Graduate Programs, will appoint an Academic Advisor for each incoming DrPH student. The student working closely with his/her academic adviser will determine which courses will be taken during each academic quarter.

**All DrPH students/candidates are required to complete the following courses:**

**DrPH Curriculum (144 minimum quarter hour credits)**

PMO503	Biostatistics I
PMO504	Biostatistics II
PMO508	Biostatistics III
PMO505	Microcomputer Applications in Public Health
PMO511	Intro to Epidemiology
PMO512	Epidemiologic Methods
PMO513	Advanced Epidemiologic Methods
PMO526	Health Systems
PMO527	Principles of Healthcare Management
PMO530	Behavioral & Social Sciences Applied to Public Health
PMO531	Program Planning and Development
PMO540	Environmental Health
PMO680	Introduction to Public Health
PMO971	Doctoral Journal Club

All DrPH students should register for and attend PMO971: Doctoral Journal Club each academic quarter while they are in residence; exceptions are permitted only if approved by their Thesis Advisor and the Director of Graduate Programs.

Directed Research in the student's area of interest via one of more of the following courses:

PMO701	Advanced Biometrics Tutorial
PMO760	Tropical Medicine Research Tutorial
PMO811	Independent Study in Epidemiology
PMO830	Independent Study in Social and Behavioral Science
PMO881	Military Preventive Medicine Study Topics
PMO911	Research in Epidemiology
PMO926	Health Services Administration Directed Research
PMO940	Environmental/Occupational Health Directed Studies
PMO941	Environmental/Occupational Health Directed Research
PMO960	Directed Laboratory Research
PMO962	Directed Clinical Research
PMO963	Directed Field Research
PMO964	Research in Medical Zoology
PMO970	Directed Studies in Preventive Medicine

Additional courses as required by the student's Thesis Advisory Committee

Required University courses currently include:

IDO704 Ethics and the Responsible Conduct of Research  
IDO511 Educational Methods

Teaching Assistant Assignments: DrPH students are required to serve as teaching assistants (TA) annually (minimum 2 times) after completing their first year of the program. One of their TA assignments should be in a 4 credit MPH core course (i.e. PMO503, PMO511, PMO526, or PMO530). The role of the TA will vary by course content but regardless the TAs are expected to make significant and measurable contributions to the courses in which they participate, sharing responsibility with the Course Director.

**The following are examples of the ways in which Teaching Assistances may contribute to teaching and learning:**

- Maintain class blackboard site for student and lecture postings.
- Preview lectures, lecture notes, tests, and laboratory sessions
- Prepare and present lectures; lead labs or small group discussions
- Prepare and grade quizzes, examinations, and papers
- Assist students who need extra instruction
- Provide feedback to the Course Director to improve the course

Each TA assignment should provide an excellent learning experience, allowing TAs to polish their knowledge and skills. After demonstrating competence in the subject as students, the assistant experience allows doctoral students/candidates to develop and demonstrate mastery of the subject material, including theoretical background and application, and to acquire and practice various teaching skills and techniques. Course Directors are responsible for developing specific learning objectives for the TA and for articulating the responsibilities of the TA.

The DrPH Qualifying Examination is composed of a written and an oral examination. The DrPH Qualifying Examination Subcommittee of the DPS is responsible for the creation, conduct and grading of the DrPH written qualifying examination. This comprehensive Written Qualifying Examination encompasses the five core areas (biostatistics, epidemiology, social and behavioral sciences, health service administration, and environmental health) of public health. Students may take the exam only after completing all core DrPH course requirements. Students must pass all areas of the written examination before proceeding to the oral examination. Students may be allowed one retake of the written qualifying examination if they fail any part of the examination. This retake may consist of just the areas in which they received a failing grade, or the entire examination, at the Subcommittee's discretion.

After successfully passing the written qualifying examination, a Thesis Advisor appointed by the Director of Graduate Programs will be appointed with the advice and consent of the DPS. The student with the assistance of the Thesis Advisor, should prepare a proposal describing the intended DrPH thesis and a suggested Thesis Advisory Committee and forward both to the Director of Graduate Programs and Department Chair. They will then review the proposal, considering its appropriateness as a DrPH thesis topic and whether or not the student is prepared to undertake the project. Additionally, they will review the proposed make-up of the Thesis Advisory Committee.

The Oral Qualifying Examination takes place within one year of the written qualifying examination. Traditionally, the Thesis Advisory Committee is appointed to serve as the oral examination committee; however, additional faculty may be appointed at the discretion of the Director of Graduate Programs. The oral qualifying examination consists of an oral defense of the thesis proposal and, if deemed necessary by the Thesis Advisory Committee, may also consist of an oral examination of public health's core disciplines.

Thesis Advisory Committee

The Thesis Advisory Committee will consist of no fewer than four members. Three of these committee members must have a doctoral degree, an academic rank of Assistant Professor or above, and a faculty appointment in the PMB Department. The thesis advisor is also a member of the committee and can serve as one of the required PMB members, if appropriate. The most senior PMB faculty member (excluding the thesis advisor) will serve as Chair of the thesis advisory committee.

Additional members may hold a faculty appointment at USU or have an equivalent appointment outside of USU. Members from outside of USU need the consent of the thesis advisor to serve on the thesis committee. At least one member of the committee must be a USU faculty member, but not have a primary or secondary appointment of any kind in the PMB Department. Students are strongly encouraged to have five faculty members on their thesis committee.

The majority of the members of the student's committee must have a full-time appointment at USU and must be members of the PMB Department. An exception to this requirement may be granted at the discretion of the Associate Dean for Graduate Education upon submission of a written justification.

Advancing to candidacy: Students will advance to candidate status within the DrPH program once they successfully pass both the written and oral components of the DrPH Qualifying Examination.

#### Ongoing Progress

At least twice per academic year, the DPS Chair will contact faculty advisors for updates on each student's progress. This will allow for timely discussion of any students who appear to be at risk. If a majority of the members of the DPS feels that the student still is not making sufficient progress, the student is formally placed on probation.

All major changes to the thesis proposal must be submitted to the Thesis Advisory Committee for approval. The candidate will begin research activities only after obtaining the appropriate institutional approvals and assurances. Prior approval for research by another institution does not automatically constitute approval for this research to be done as a thesis project at USU.

It should be expected that DrPH students complete the entire program in five years. The additional two years allowed by USU should only be permitted in unusual circumstances beyond the control of the student, such as prolonged illness of the student or thesis advisor or interruptions caused by military duty obligations. Any proposed extension should be first reviewed by the DPS, which then forwards its recommendations to the PMB Chair through the Director of Graduate Programs.

#### Thesis Requirement:

The final completed thesis must be presented and defended before the candidate's Examination Committee, which is appointed by the Associate Dean for Graduate Education. Traditionally, the student's thesis advisory committee is appointed to serve as the Examination Committee; however, additional faculty may be appointed at the discretion of the Associate Dean for Graduate Education. After the private defense of the completed thesis is held before the Examination Committee, a public defense is held before the USU community. The DrPH thesis must be based on original research, be worthy of publication, and be acceptable to University Graduate Education Office and the University Board of Regents.

An alternative to the traditional thesis pathway is a manuscript-based thesis, which in many ways differs little from the more traditional framework. The standard of quality, the content, and much of the format remains the same. In particular, both require an extensive, unifying introduction, background, and discussion sections, in which the student places his or her work in context. The dissimilarity applies to the materials and methods section and the results section, which in the manuscript-based framework consists of completed manuscripts suitable for peer-reviewed publication. These manuscripts would take the place of the traditional chapters approved for the thesis. The elements of the thesis must still result in a unified product representing the original, independent work of the student. Since the manuscript-based thesis is considered to be an acceptable alternative to the more traditional thesis format, the student and his/her Thesis Advisory Committee can select either format.

## **DOCTOR OF PHILOSOPHY IN ENVIRONMENTAL HEALTH SCIENCES**

The PhD degree program in Environmental Health Sciences (EHS) offers extensive classroom and research experience in the field of environmental health sciences and in selected subspecialties concerned with the health effects of biological, chemical, physical, and radiological hazards encountered in air, soil, and water. Completion of this doctoral degree program requires both independent scholarship and original research. An individualized program of study will be designed to meet the specific needs of each graduate student. Graduates will have the training and experience necessary to enter research and/or operational careers in the environmental health sciences and have the expertise to support military operations worldwide.

Our curriculum provides students with the necessary knowledge and skills to manage a wide range of environmental health issues. The overall program is rigorous, and the focus is to teach the ability to critically assess and solve complex problems in the field of environmental health sciences, especially as they relate to exposure assessment. The program culminates in the successful completion of a doctoral dissertation that reflects the practice and mastery of both fundamental and advanced concepts in environmental health sciences. The academic foundation includes required core and selected elective coursework, which prepares doctoral candidates for focused efforts in the use of the scientific method to ask appropriate questions and solve problems related to the field.

Preferential admission will be offered to active duty officers in the Uniformed Services serving in a field related to their desired degree program. Applicants will only be accepted as full-time students with a maximum of three years of study in residence. The requirements for satisfactory academic standing are the same as those for the DrPH program. Each PhD candidate must demonstrate sustained excellence in completing independent research to satisfy the thesis requirement. Graduates are expected to be well-versed in both theory and practice, as well as confident and tested in their abilities to apply knowledge, implement policies, and communicate research findings.

Advisory Committee: An Advisory Committee is selected by the PMB Director of Graduate Programs for each PhD student within his/her first year of study. The Advisory Committee consists of at least four faculty members (including a chairperson, an advisor, and two others). The purpose of the Committee is to oversee and direct the student's program. The members of this committee, in concert with the student, prepare a program of study, which is subsequently submitted for approval, through the Director of Graduate Programs, to the Chair of the PMB Department and the Associate Dean for Graduate Education. Any proposed changes are made in full consultation with the student and his/her Advisory Committee and incorporated into the Advisory Committee Report, which is regarded as the official statement of the student's program.

Course of Study: All students/candidates must complete a minimum of 144 credit hours, of which 48 credit hours must be devoted to formal coursework. The 48 hours of formal coursework is regarded as the minimum number of required classroom hours to acquire the knowledge base necessary to support the research phase. This reflects our philosophy that each doctoral student must work closely with his/her Advisory Committee to plan both the overall course of study and the thesis research. Candidates who are active duty military members have the ability to tailor their research to meet the specific needs of their sponsoring Uniformed Service.

Teaching Assistant Assignments: Teaching experience is considered to be an integral part of graduate education. Thus, all graduate students in the EHS PhD program must serve as a laboratory instructor or teaching assistant in appropriate courses as assigned. As a minimum, each PhD candidate will serve as a teaching assistant in one course per year, starting in the second year of his/her program.

Core Courses: The required courses are presented below:

Biostatistics I and II	8
EOH Journal Club (first year)	1
Environmental Chemistry	3
Environmental Health	4
Epidemiology I and II	8
PMB Doctoral Journal Club (second and third years)	2 (one per year)
Principles of Toxicology	4
Introduction to Health Physics	3
Occupational and Environmental Epidemiology	2
Introduction to Risk Communication	2
Scientific Ethics and the Responsible Conduct of Research	1
Grant Writing	2
<hr/> Total credits	<hr/> 40

Elective Courses: In addition to the courses offered by our Department, several other courses offered by other USU Departments, including the interdisciplinary Emerging Infectious Diseases program, may be suitable as electives for students in the EHS program. With permission, students may also take courses offered by the Foundation for Advanced Education in the Sciences (FAES) at the National Institutes of Health. FAES courses are offered in the

disciplines of biochemistry, biophysics, biology, genetics, chemistry, physics, general studies, languages, mathematics, computer science, medical subspecialties, medicine, physiology, microbiology, immunology, pharmacology, toxicology, psychiatry, psychology, and statistics.

Qualifying Examination for Advancement to Candidacy: The Qualifying Examination in EHS consists of two parts: a written examination followed by an oral examination. The written and oral portions are comprehensive and test the student's knowledge in the core areas of environmental health, as well as problem-solving and analytic abilities. We anticipate that the Qualifying Examination will be administered within one year, and no later than 24 months post-admission, to those students entering the program with a Master's degree. The Qualifying Examination Committee for PhD degree students will be composed of at least four faculty members holding doctoral degrees and the rank of Assistant Professor or above. Three members will be from the PMB Department; the fourth member may be a PMB faculty member, faculty from another USU Department, or faculty from outside the University. The Qualifying Examination Committee is appointed by the PMB Director of Graduate Programs.

Thesis Requirements: The program is focused on conducting original, innovative, and hypothesis-driven research leading to a doctoral dissertation. Following successful completion of the written and oral portions of the Qualifying Examination, the candidate develops a research hypothesis and a formal research proposal, approved by the student's Advisory Committee. The process is a rigorous one, with the candidate presenting the proposal in a seminar format. Committee members provide constructive feedback to ensure that the proposed research is of acceptable quality and relevance. All major changes to the proposal must be submitted to the Advisory Committee for approval. After obtaining the appropriate institutional approvals and assurances, the candidate will begin research activities at the earliest opportunity to maximize the likelihood of developing capabilities for independent research culminating in the dissertation.

Both the Advisory Committee and the Dissertation Committee support the student's independent research through mentoring, guidance, and feedback, especially during the early phases. The Dissertation Committee is composed of at least four faculty members with doctoral degrees, three of whom must have a primary appointment in the PMB Department at the rank of Assistant Professor or above. The fourth member of this Committee must be from another USU Department, without a secondary appointment in the PMB Department. The PMB Director of Graduate Programs recommends outside committee member(s) with the approval of the PMB Department Chair. Completion of the dissertation is the sole responsibility of the student. The thesis must be defended before the Dissertation Committee in a closed meeting. The members of the Committee critically examine the student's efforts to design and develop, implement, and complete his/her original research. The Committee makes one of three recommendations following the thesis defense: 1) dissertation acceptable, requiring no more than minor changes; 2) dissertation potentially acceptable, but major revisions required; and 3) dissertation unacceptable. After satisfactory completion and submission of required revisions, the Dissertation Committee recommends acceptance of the dissertation. Successful private defense is followed by presentation of the dissertation in a public forum.

## **DOCTOR OF PHILOSOPHY IN MEDICAL ZOOLOGY**

This PhD degree program provides a broad didactic and research experience in Medical Zoology and its principal subspecialties and is primarily designed for individuals interested in Medical Parasitology or Medical Entomology. Specific goals for this PhD degree program are to develop independent scholarship, originality, and competence in research, teaching, and professional service. This program is designed for outstanding students with a strong commitment to careers in Medical Zoology. Within the PhD program, an individualized course of study is designed for each graduate student to meet his or her specific needs. The PhD program provides the training and experience necessary for research careers in Medical Parasitology or Medical Entomology. Matriculants should have a Master's degree in an appropriate field of biology. Only under the most exceptional circumstances will individuals with only a Baccalaureate degree be considered for admission to the program.

Advisory Committee: For each PhD student, the Director of Graduate Programs will appoint an Advisory Committee within his/her first year of study. The Committee will consist of at least four members of the faculty (a chairperson, an academic advisor, and two others) to oversee and direct the student's program. When formed, the Advisory Committee, in concert with the student, will prepare an individually tailored program of study (including

all degree requirements) and submit it for approval to the PMB Department Chair, through the Director of Graduate Programs, and forward it to the Associate Dean for Graduate Education. Any changes made by the Associate Dean or PMB Chair will be in consultation with the student and his/her Advisory Committee. This Advisory Committee Report, as amended, will be regarded as the statement of program requirements.

Course of Study: Two tracks will be offered to students, one in Medical Entomology and the other in Medical Parasitology. All students will be expected to complete a minimum of 144 credit hours, of which 48 credit hours must be devoted to formal coursework. Applicants will be accepted as full-time students, and a minimum of three years of study in residence is required.

A series of core courses will be required of all students in the Medical Zoology PhD program. In addition, students in the medical parasitology track will take courses in experimental parasitology, helminthology and protozoology, while students in the medical entomology track are required to take courses in arbovirology and biosystematics. Students are also encouraged to take a series of courses in molecular biology. Extensive course offerings in molecular biology are available from other USU Departments and from the National Institutes of Health. A list of core and elective courses is presented below:

Core Courses:

Biostatistics I, II, and III	13
Changing Patterns of Arthropod-Borne Diseases	4
Environmental Health	4
Epidemiology I	4
Malaria Epidemiology and Control	3
Medical Parasitology	3
Principles and Practice of Tropical Medicine	6
Ethics and the Responsible Conduct of Research	1
<u>Scientific Writing</u>	<u>1</u>
Total credits	39

A partial list of elective courses within PMB and other departments that may be used to fulfill program requirements follows:

- Department of Preventive Medicine and Biometrics
  - Biosystematics in Medical Zoology
  - Epidemiology and Control of Arboviruses
  - Epidemiology and Control of Infectious Diseases
  - Principles of Toxicology
  - History of Preventive Medicine
  - Immunoparasitology Tutorial
  - International Health I and II
  - Joint Medical Operations and Humanitarian Assistance
  - Malaria Epidemiology and Control
  - Medical Acarology
  - Men, Molluscs and Medicine: An Introduction to Medical Malacology
  - Microcomputer Applications
  - Modern Technology and Vector-Borne Diseases
  - Physiological Parameters of Vector Competence
  - Introduction to GIS in Public Health
  - Remote Sensing Methods in Public Health
  - Research in Medical Zoology
  - Topics in Medical Zoology
  - Tropical Medicine Research Tutorial
  - Tutorial in Medical Zoology
  - Tutorial in Aquatic Biology
  - Vector Biology
- Department of Anatomy
  - Practical Histologic Techniques

- Department of Microbiology
  - Animal Virology
  - Cellular and Molecular Immunology
  - Elementary Immunology
  - Laboratory Microcomputer Programming
  - Microbial Physiology and Genetics
- Department of Pathology
  - Practical Methods in Cell Mediated Immunology
  - Recombinant DNA Technology and Applications
- Interdepartmental Courses
  - Electron Microscope Techniques
  - Principles and Techniques for the use of Animals in Teaching and Research
  - Tutorial in Transmission Electron Microscopy
  - Tutorial in Scanning Electron Microscopy
  - Tutorial in Freeze-Etching Techniques

Students may also be eligible to take, as electives, courses at The Foundation for Advanced Education in the Sciences (FAES) Graduate School at the National Institutes of Health. FAES courses are offered in the disciplines of biochemistry, biophysics, biology, genetics, chemistry, physics, general studies, languages, mathematics, computer science, medical subspecialties, medicine, physiology, microbiology, immunology, pharmacology, toxicology, psychiatry, psychology and statistics.

Teaching experience is considered to be an integral part of graduate education, and all graduate students in the program will participate in the Diagnostic Parasitology course offered to second-year medical students and/or in other PMB Department courses.

Qualifying Examination: The Qualifying Examination in Medical Zoology will consist of two parts: a written examination followed by an oral examination. The written examination is comprehensive and designed to test the student's knowledge of selected topics in medical zoology, as well as the student's problem-solving abilities. For those who matriculate with a master's degree, the Qualifying Examination will normally be scheduled one year post-admission and no later than 24 months post-admission. The Qualifying Examination Committee for PhD degree candidates will be composed of at least four faculty members at the rank of Assistant Professor or above, three from the PMB Department, and appointments are made by the PMB Director of Graduate Programs. The fourth member may hold either a faculty position in this Department, in another USU Department, or have an appointment outside of USU. Additional members, if desired, may be USU faculty or affiliated with an outside institution. The majority of the Committee will be full-time faculty members of the PMB Department.

Thesis Requirement: A written dissertation based on the student's original research must be prepared by the student, submitted for approval to the Advisory Committee, and presented and defended before a Dissertation Committee.

Defense of Thesis: The Dissertation Examination Committee will be composed of at least four persons with doctoral degrees. At least three of these must be USU faculty members at the rank of Assistant Professor or above with a primary appointment in the Department of Preventive Medicine and Biometrics. A fourth member of this Committee will be from another Department at USU. Additional members may either hold a faculty position at USU or have an appointment outside of USU. Outside appointments will be recommended by the Director of Graduate Programs and approved by the PMB Department Chairperson. The majority of the Committee must be full-time faculty of the PMB Department.

## APPLICATION PROCEDURES

### **COMPLETE APPLICATION PACKAGES ARE DUE AT THE OFFICE OF GRADUATE EDUCATION BY JANUARY 15<sup>th</sup> EACH YEAR FOR ALL GRADUATE PROGRAMS IN THE DEPARTMENT OF PREVENTIVE MEDICINE AND BIOMETRICS (PMB)**

Application forms for all graduate degree programs offered by the University may be obtained by contacting the Office of Graduate Education:

Associate Dean for Graduate Education  
Uniformed Services University of the Health Sciences  
4301 Jones Bridge Road, Bethesda, MD 20814-4799  
Telephone (301) 295-3913; DSN 295-3913

Forms may also be downloaded from the USU web site: <http://www.usuhs.mil/graded/application.html>

In addition to the USU Application for Admission to Graduate Study, the University requires the following documents: Official academic transcripts for all post-secondary education; results of the Graduate Record Examination (GRE); three letters of recommendation from individuals familiar with the applicant's academic, professional, and/or military service background; and a personal statement describing how the applicant became interested in public health and how they envision incorporating the training they would receive in their future careers. The number used to identify USU for the results of the Test of English as a Foreign Language (TOEFL) and the Graduate Record Examination (GRE) is 5824. The GRE requirement may be waived for recent (within last five years) graduates of accredited schools of medicine, dentistry and veterinary medicine, or for applicants who have recently completed a doctoral degree in a health science discipline at an accredited college or university. Applicants wishing to have the GRE requirement waived must submit a formal, written request for a waiver to the Associate Dean for Graduate Education.

Active-duty Uniformed Services personnel must obtain the sponsorship of their parent organization and may incur an obligation for additional service in accordance with the applicable regulations governing sponsored graduate education. Uniformed Service members should make mention in their packet of where they stand in the process of obtaining sponsorship.

The completed application form and supporting documents must be submitted to the Associate Dean for Graduate Education by January 15<sup>th</sup> each year. Careful consideration is given to all eligible applicants, and students are selected for admission to the PMB Graduate Programs on a competitive basis without regard to race, color, sex, creed, or national origin. However, preferential admission is granted to active duty Uniformed Services personnel with Service sponsorship. Civilian applicants are admitted on a space-available basis.

The appropriate subcommittee within the PMB Department reviews all completed application packages. The names of applicants recommended for admission are forwarded to the Director of Graduate Programs, who in turn submits a recommendation to the Associate Dean for Graduate Education through the PMB Department Chair. The Office of the Associate Dean for Graduate Education provides official notification of acceptance.

Complete application packages will be reviewed after January 15<sup>th</sup>. If active duty service members require a letter of competitiveness or early consideration for admission before that date, they should notify the University's Graduate Education office. Late applications are considered on a case-by-case basis, especially as they concern the needs of the Uniformed Services.

For additional information, please go to the USU website. If you have specific questions, please contact the Program Administrator for PMB Graduate Programs at (301) 295-1977 or address written correspondence as follows:

Director of Graduate Programs  
Department of Preventive Medicine and Biometrics  
Uniformed Services University of the Health Sciences  
4301 Jones Bridge Road, Bethesda, MD 20814-4799

### **MPH Program**

Preference for admission goes to medical, dental and veterinary officers on active duty in the Uniformed Services, as well as to other Uniformed Services officers possessing doctoral degrees in health-related fields. Applicants without a doctoral degree in a health-related field may also be considered for admission. However, these applicants must have, as a minimum, a Baccalaureate degree with an outstanding academic record (college transcript(s) and GRE scores), some health-related experience, and demonstrated interest in pursuing a public health career. Civilian applicants will be considered for admission on a space-available basis, with preference given to physicians and other health professionals sponsored by other U.S. government agencies. Although civilians accepted as MPH students are not charged tuition, they are not eligible for a stipend since there are no USU sources of financial aid for Master's degree students.

### **MTM&H Program**

The MTM&H program is restricted to physicians with a medical degree from an accredited institution and at least one year of post-doctoral clinical training. The sponsoring Service or agency will be responsible for funding the travel and per diem for the required overseas experience and for verifying the applicant's professional credentials and unrestricted privilege to practice medicine. Some funds may be available from the University for members of the uniformed services through a grant from the DoD Global Emerging Infectious System. Civilians accepted as MTM&H students are not eligible for stipends and are personally responsible for travel and living expenses for the overseas experience.

### **MSPH Program**

Admission into the MSPH program will be preferentially offered to military personnel on active duty in one of the preventive medicine/public health disciplines. Applicants should possess, as a minimum, a Baccalaureate degree in one of the biological or health science disciplines or in engineering, an outstanding academic record, some health-related experience, and demonstrated interest in pursuing a career in public health. With the permission of the PMB Director of Graduate Programs, outstanding civilian applicants may be considered on a space-available basis, with preference given to health professionals sponsored by other U.S. government agencies. Civilians accepted as MSPH students are not eligible for a stipend, and there are no USU sources of financial aid for Master's degree students.

### **DrPH Program**

Admission to this program will be preferentially offered to medical, dental and veterinary officers on active duty in the Uniformed Services and to other Uniformed Services officers with doctoral degrees in health-related fields. Civilians and uniformed officers with less than a doctoral degree in a health-related field may also be considered for admission. To be competitive, these applicants would be expected to have at least a Master's degree with an outstanding academic record, some public health experience, and demonstrated interest in pursuing a career in public health. Civilian DrPH students may be eligible for USU graduate student stipends if they meet the University eligibility criteria.

### **PhD Program**

Qualified active duty uniformed officers serving in fields related to environmental health and medical zoology will be preferentially reviewed for admission to the PhD programs in Environmental Health Science and Medical Zoology. Civilian applicants are considered on a space available basis with preference given to health professionals sponsored by other U.S. government agencies. At a minimum, applicants for both programs must have a Master's degree with an outstanding academic record (undergraduate transcript and GRE scores) and documented successful completion of rigorous coursework related to their desired area of graduate study. A limited number of pre-doctoral teaching/research assistantship stipends are available for civilian graduate students in PhD programs through the Graduate Education Office.

Academic Advisor: Each graduate student in the PMB Department will be assigned an academic advisor, who is a member of the Departmental faculty. The advisor is responsible for guiding the student in the selection of an appropriate curriculum based on his or her career objectives, for monitoring student performance, and for counseling, as appropriate.

Transfer Credits and Waivers: Students wishing to waive a program requirement for a core course on the basis of previous coursework and/or relevant work experience may request exemption for up to eight credit hours of required formal coursework. The procedure involves direct negotiation with the appropriate Course Director in the PMB

Department and will include, but is not limited to, documentation of previous academic credit with course description and objectives; evidence of relevant experience demonstrating mastery of subject matter; and/or “testing out” of the course requirement. The course requirement may be satisfied by modifying the process, for example, by taking the final examination or by serving as a teaching assistant in the course. Alternatively, an individual may be given permission to substitute an individually tailored “special topics” course. Doctoral students may still receive teaching credit for serving as a Teaching Assistant in an exempted course.

### **FOREIGN APPLICANTS**

Foreign applicants for whom English is not the primary language must submit recent scores from both the Graduate Record Examination and the Test of English as a Foreign Language (TOEFL) in addition to all other required documents. Foreign civilian applicants sponsored by any organization with a specific bilateral agreement with USU for research and training may apply directly to the University for entry into a graduate education program. Foreign military applicants or civilians employed by their country’s Ministry of Defense should also have their military organization contact the American Embassy for information pertaining to funding through the Foreign Military Sales Act of 1949 or the International Military Education and Training grant program. Other foreign civilian applicants need to contact the American Embassy in their home country for information on entering the U.S. for educational purposes.

### **OFFICER STUDENT STATUS**

USU graduate students who are members of the Armed Forces are detailed/attached to the University for purposes of graduate study only. Army graduate students are assigned to the Student Detachment located at Fort Sam Houston, Texas; Navy graduate students are assigned to the Naval School of Health Sciences; and Air Force graduate students are assigned to the Air Force Institute of Technology located at Wright-Patterson Air Force Base in Ohio. Overall records management is the responsibility of each student and their respective military organization. In this regard, Armed Forces graduate students are in a different status than medical students assigned to USU.

While a graduate student at USU, members of the Uniformed Services will conform to all University uniform and dress code standards applicable to medical students, staff, and faculty, as promulgated and enforced by the Commandant, School of Medicine. Moreover, uniformed graduate students are expected to set a good example for the rest of the student body by displaying proper military courtesy and discipline at all times, and, when appropriate, assisting the Commandant in enforcing standards of conduct among military members.

A limited number of Uniformed Service members may be admitted into the Master of Public Health (MPH) degree program with their billet remaining at their parent agency. These students will have two years to complete all course requirements. In order to be enrolled as a two-year student, the officer must furnish a letter from their immediate supervisor, or other appropriate individuals in his/her chain of authority, approving the officer's participation in the graduate degree program and agreeing to support his/her commitment to graduate study at USU. The non-billeted program is open only to uniformed officers and U.S. government civilian employees, at the discretion of the Director of Graduate Programs.

### **AUDITING / SHADOWING CLASSES**

With the permission of the Graduate Programs Director and the concurrence of the course director, an individual who is not officially enrolled in a PMB graduate program may be permitted to audit (attend classes but usually do not take examinations) or shadow (fully participate in all class activities, including examinations) a particular PMB graduate course.

### **STUDENT EVALUATION**

Grading: Student performance in all formal courses taken for credit, whether at USU or at an affiliated institution, will be evaluated and ordinarily reported as a letter grade. Some courses are graded for credit as pass/ fail. Graduate students must have a cumulative grade point average (GPA) of "B" (3.0) or better at the end of the academic year to be eligible for the degree. On a quarterly basis, the Departmental Graduate Affairs Committee

reviews the performance of each graduate student and makes recommendations for counseling, remediation, and/or academic probation for those in academic difficulty. Students who fail to achieve a GPA of 3.0 after two quarters of study, or who receive any grade below a "C," will be referred to the University Graduate Education Committee for academic performance review. (See University policy on "Graduate Student Grading, Promotion, and Dismissal Procedures")

**Academic Ethics:** Satisfactory academic standing is determined both by performance in formal courses and by personal attributes related to professionalism and ethical standards. The USU faculty considers other aspects of academic performance, such as attitudes and perceptions, honesty and integrity, reliability, fairness, judgment, insight, interpersonal skills, and institutional loyalty, as important attributes for success as a biomedical scientist. These comprise the elements of academic ethics. Students whose behavior or performance is judged to be unethical are subject to dismissal even though they are otherwise in good academic standing.

**Awarding of Degrees:** Upon successful completion of all requirements for the MPH, MTM&H, MSPH, DrPH or PhD degree, the Director of Graduate Programs, through the PMB Department Chair, will certify student eligibility for the graduate degree to the Associate Dean for Graduate Education. Following review and approval, the Associate Dean for Graduate Education will recommend to the Board of Regents that the appropriate degrees be awarded.

## **ACADEMIC HONESTY**

The USU policy on academic "cheating" is articulated in USU Instruction 1306, "Academic Standing of Graduate Students", revised, effective January 1, 1996.

It states, in part:

- E. 2. Students/fellows whose performance is academically unethical are subject to dismissal even though they are otherwise in good academic standing.
  - a. Students/fellows shall not:
    - (1) Use, attempt to use, or copy an unauthorized material during any examination or graded exercise;
    - (2) Knowingly present the work of someone else as their own work without attribution;
    - (3) Forge or alter for advantage any academic document;
    - (4) Knowingly disregard instruction for the proper performance of any examination or graded exercise;
    - (5) Intentionally impede or interfere with the ability of fellow students/fellows to use academic materials or to complete academic work; or
    - (6) Knowingly assist a fellow student/fellow in any of the above activities.
  - b. In addition to those actions listed [above], GEC [Graduate Education Committee] may determine that other actions demonstrate unethical academic behavior.

This subject is extremely important and is treated as such by the USU community. If you have any questions or wish to discuss or review this policy, please see the Director, Graduate Programs, Department of Preventive Medicine and Biometrics, or the Associate Dean for Graduate Education.

## **UNIVERSITY POLICY ON GRADUATE STUDENT GRADING, PROMOTION, AND DISMISSAL PROCEDURES**

Standards of performance and procedures regarding academic status for graduate students are contained in USU Instruction No. 1306 "Academic Standing of Graduate Students" of 10 August 1982. A summary of these standards is as follows:

- Satisfactory academic standing is defined as a cumulative grade point average of B (3.0), with no grade below "C" in any course. Doctoral level students in the Department of Preventive Medicine and Biometrics must earn at least a "B" in each required course.
- Satisfactory academic standing is determined both by performance in formal courses and by the aspects of academic performance, including skills, attitudes and attributes judged by the graduate faculty to be important for success as a basic medical scientist. These include factors such as honesty, integrity, reliability, perception, balanced judgment, personal insight, and the ability to relate to others.

Graduate students will be referred to the Graduate Education Committee for review for any of the following reasons:

1. When a final grade of "D" or "F" is received in any course.
2. When the cumulative grade point average is below 3.0 at the end of the third academic quarter or any time thereafter.
3. For failure to maintain appropriate academic standing or violation of academic integrity.

### **Following review the Graduate Education Committee may recommend:**

1. Dismissal.
2. Appropriate remedial action within a specified period of time. NOTE: A grade of F will not be allowed to stand unremediated on a graduate student's transcript regardless of the student's overall academic performance. If a grade of D is received in a course, the Committee may require remedial work depending upon the student's overall academic performance. Grades for the original course and the remedial work will both remain on the student's transcript. In calculating the cumulative GPA, the original D or F and the grade for the remedial work will be averaged, and the averaged grade will be applied to the number of quarter credit hours for the original course to calculate the final grade point average.
3. Other action appropriate to the specific cause under review.

Any student reviewed by the Graduate Education Committee and found to be academically deficient will either be recommended for dismissal or placed in a probationary status until a satisfactory academic standing is achieved. Specific details of these policies can be obtained from the Office of the Associate Dean for Graduate Education.

### **DEPARTMENT OF PREVENTIVE MEDICINE AND BIOMETRICS ACADEMIC PROMOTION, PROBATION, AND TERMINATION PROCESS FOR THE MPH/MTM&H/MSPH PROGRAMS**

The current policy for satisfactory academic standing is defined in USU Instruction 1306 as:

"...a cumulative grade point average of B (3.0), with no grade below "C" in any course.

Satisfactory academic standing is determined both by performance in formal courses and by the aspects of academic performance, including skills, attitudes and attributes judged by the graduate faculty to be important for success as a [public health professional]. These include factors such as honesty, integrity, reliability, perception, balanced judgment, personal insight, and the ability to relate to others."

The Masters level graduate programs (MPH, MTM&H, and the first year of the MSPH) within the Department of Preventive Medicine and Biometrics (PMB) consist of a compressed schedule of core and elective courses over a one year period. Therefore, the academic progress of students in these programs requires more frequent monitoring than that of students in multi-year programs. Accordingly, in addition to the stated policy in USU Instruction 1306, the PMB Department's policy on academic probation is as follows:

If a student receives a grade of "C" or less in any core course or a "D" or "F" in any other course or if his/her overall GPA falls below 3.0 at the end of any academic quarter, he/she will be placed on academic probation. The student, his/her Academic Advisor, and the Course Director(s), if appropriate, will develop a corrective plan of action. A memorandum from the Academic Advisor describing the student's status and the agreed upon plan of action will be presented to the student and a copy placed in the student's official file. A copy of the memorandum will also be submitted to the Director of Graduate Programs for review.

The student will remain on academic probation until the corrective plan is completed. All grades of "D" and "F" must have been remediated to a grade of at least a "C."

If the student receives another grade of "C" or less in any core course or a "D" or "F" in any other course or if his/her overall GPA falls below 3.0 or does not maintain satisfactory academic standing for two consecutive quarters, the Graduate Programs Director will then refer him/her to the USU Graduate Education Committee for the process of review and possible dismissal from the program.

### **INCLEMENT WEATHER POLICY**

The University is usually open for business in inclement weather unless the Federal Government is closed for the day due to extreme weather conditions (such as heavy snow or ice on the roads). If the Federal Government is closed for the day, then the University is closed and all classes for that day are canceled. Occasionally, the Federal Government will announce a delayed opening or liberal leave policy for "non-essential" personnel when the weather conditions are not severe enough to warrant the closure of the government for the day. However, students, faculty and staff required for teaching support are defined as essential personnel and are expected to report for work on time, within the bounds of safety and common sense.

The opening status of the Federal Government on inclement weather days is broadcast on local television and radio stations, and is available online at the USU website: [www.usuhs.mil](http://www.usuhs.mil) and on a taped telephone USU message system at 301-295-3039. The color codes used to describe the opening status of the Federal Government and USU are in the table below:

**THE INCLEMENT WEATHER MESSAGES AND COLOR CODES ARE AS FOLLOWS:**

<b>COLOR CODE</b>	<b>MESSAGE NO.</b>	<b>MESSAGE</b>
<b>GREEN</b>	<b>MESSAGE 1</b>	"This is the Uniformed Services University of the Health Sciences. The University is open. All employees are expected to report to work on time. Students will report to classes as scheduled. Code "GREEN" is in effect for the University."
<b>YELLOW</b>	<b>MESSAGE 2</b>	"This is the Uniformed Services University of the Health Sciences. OPM has announced an unscheduled leave policy. The University is open. Due to the existing weather conditions, employees may take leave without prior approval. However, employees should inform their supervisors of their intentions. Students, faculty and staff required for teaching support are defined as essential personnel and are expected to report for work on time, within the bounds of safety and common sense. Emergency personnel or those entrusted with patient or animal care, or emergency facilities or research requirements as designated by their Activity Heads or Chairs are expected to report to work on time unless other arrangements have been made. Code "YELLOW" is in effect for the University."
<b>BLUE</b>	<b>MESSAGE 3</b>	"This is the Uniformed Services University of the Health Sciences. OPM has announced an adjusted home departure policy of ____ hour(s). The University is open. Due to the existing weather conditions, employees should adjust their normal home departure time consistent with the OPM announcement. Students, faculty and staff required for teaching support are defined as essential personnel and are expected to report for work on time, within the bounds of safety and common sense. Emergency personnel or those entrusted with patient or animal care, or emergency facilities or research requirements as designated by their Activity Head or Chairs are expected to report to work on time unless other arrangements have been made. Code "BLUE" is in effect for the University."
<b>ORANGE</b>	<b>MESSAGE 4</b>	"This is the Uniformed Services University of the Health Sciences. OPM has announced an adjusted home departure/unscheduled leave policy of ____ hour(s). The University is open. Due to the existing weather conditions, employees should adjust their normal home departure time consistent with the announcement. Employees may take leave without prior approval, but they should inform their supervisors if they plan to take leave. Students, faculty and staff required for teaching support are defined as essential personnel and are expected to report for work on time, within the bounds of safety and common sense. Emergency personnel or those entrusted with patient or animal care, or emergency facilities or research requirements as designated by their Activity Heads or Chairs are expected to report to work on time unless other arrangements have been made. Code "ORANGE" is in effect for the University."
<b>RED</b>	<b>MESSAGE 5</b>	"This is the Uniformed Services University of the Health Sciences. OPM has announced that the Federal Government is closed. Due to the extreme weather conditions, the University is closed. Students, faculty and staff required for teaching support or essential personnel are NOT to report to class. However, all emergency personnel who are entrusted with patient or animal care, or emergency facilities or requirements as designated by their Activity Heads or Chairs are to report to work. Code "RED" is in effect for the University."
<b>WHITE</b>	<b>MESSAGE 6</b>	"This is the Uniformed Services University of the Health Sciences. The status on opening, closing or a possible unscheduled leave or adjusted home departure policy for the University and all Federal Agencies in the Washington METRO area is pending an official announcement from the Office of Personnel Management (OPM). This message will be updated in accordance with the OPM announcement. Code "WHITE" is in effect for the University."

**NOTE: YOU WILL HEAR ONE OF THE ABOVE MESSAGES WHEN YOU CALL 301-295-3039 DURING PERIODS OF INCLEMENT WEATHER.**

## **GRADUATE MEDICAL EDUCATION PROGRAMS (RESIDENCIES)**

### **National Capital Consortium (NCC) / Uniformed Services University (USU) Occupational and Environmental Medicine (OEM) Residency**

#### **Mission:**

The mission of the OEM residency is to produce highly competent occupational and environmental medicine specialists who pass the certification examination of the American Board of Preventive Medicine (ABPM) and become leaders in the field of occupational and environmental medicine. OEM residency graduates are capable of serving in a wide variety of military assignments that include direct support of globally stationed and deployed operational forces, fixed based clinical settings, world class biomedical research facilities, and in policy positions at the highest policy-making levels of each service and the DoD. Graduates possess preventive and occupational medicine skills and they are able to practice in a broad range of civilian and international settings.

#### **Background and Overall Residency Structure**

The NCC/USU OEM Residency is a 2-year program for Medical Corps officers sponsored by the Air Force and Navy. Commissioned Corps Officers of the US Public Health Service have completed in the residency in the past and are eligible to apply with Public Health Service sponsorship.

The NCC/USU OEM Residency is co-located and shares resources with the NCC/USU General Preventive Medicine Residency (GPM) Residency that trains residents primarily from the Air Force, and Navy. Thus, between the two companion residencies, all three Services, the Uniformed Public Health Service, and on a space available basis, Canadian forces residents are represented.

U.S. Army residents accepted into the PGY-2 year of training that begins in academic year 2008-2009 will attend USU to earn their masters in public health (MPH). (A small number of Army residents may be selected to attend the Johns Hopkins University Bloomberg School of Public Health). The residents then complete a practicum PGY-3 year in General Preventive Medicine at the Walter Reed Army Institute of Research, Silver Spring, MD, followed by a PGY-4 practicum year in occupational and environmental medicine (OEM). Army, Navy and Canadian Forces residents will be eligible to sit for board certification by the American Board of Preventive Medicine in the two specialty areas of Occupational and Environmental Medicine.

The NCC/USU PM/OEM Sequential Residency is a DoD-sponsored training program leading to ABPM certification accredited by the Accreditation Council for Graduate Medical Education (ACGME) as a three year program. The co-location of the PGY2 Academic, PGY3 and PGY4 Practicum years allows for optimal continuity and coordination throughout both training years.

#### **PGY2 Academic Year**

The USU Academic Year is twelve months in duration, beginning the first week in July and ending the last week in June. The primary objective of the academic year is to provide the residents with a solid academic foundation. To successfully complete the academic year, residents must meet the requirements for an MPH degree and earn a minimum of 60 course credits. For the purposes of board certification in Occupational and Environmental Medicine, the ABPM requires a PGY2 Academic Year consisting of courses in epidemiology, biostatistics, health services administration, environmental health, and behavioral health.

In addition to the core requirements, OEM residents must actively participate in the Weekly Resident Meeting. They must enroll in PMO973-GPM and OEM Journal Club. Residents must take Epidemiology II and III and Biostatistics II. Further, residents must complete the following courses: PMO559-Principles of Toxicology, PMO550-Industrial Hygiene I and Laboratory, PMO642-Selected Topics in Occupational Health, PMO558-Fundamentals of Clinical Occupational, Environmental and Preventive Medicine, PMO652-Occupational Ergonomics, PMO519-Occupational and Environmental Epidemiology, PMO542-Clinical Occupational and Environmental Medicine, PMO553-Industrial Hygiene Field Studies, PMO 655-Current Injury Prevention Issues and Initiatives, PMO548-Joint Medical Operations and Humanitarian Assistance, PMO 599-Health Risk

Communication, and PMO613-Public Health Issues in Disasters,. This academic training culminates with the awarding of a Master of Public Health (MPH) or Master of Tropical Medicine and Hygiene (MTM&H) degree.

In order to obtain an MPH/MTM&H, an individual research project is required in addition to the above course work. Each resident must choose a project mentor from the USU or residency faculty. It is expected that residents will complete their independent projects during the academic year in order to satisfy MPH/MTM&H requirements.

Preventive medicine and occupational medicine residents who pursue the MTM&H degree can write up their overseas experience to meet the practicum requirements for the degree. Some residents entered training having completed an MPH degree. In these cases, transcripts are carefully reviewed by the program director for content, currency of knowledge is assessed, and individual needs are determined. Residents may be asked to repeat their MPH if coursework is older than 4 years since completion, or they may choose to earn an MSPH or MTM&H.

### **PGY3 Practicum Year**

The practicum year begins immediately after completion of the academic year. Residents must spend 52 weeks (equivalent of 12 months) in practicum year rotations. Residents may not take more than two weeks of leave in either the MPH/MTM&H or practicum years, if they elect to use it. This will permit an on-time graduation if convalescent leave or permissive TDY is needed for house-hunting.

The object of the practicum year is to complete the training of the resident by giving him/her a variety of opportunities to apply the ‘book knowledge’ of the academic year to real world occupational medicine practice situations. The challenge of occupational medicine is to make rational, evidenced-based decisions based on sound data and science in the face of uncertainty, inadequate information, politics, economics, and other confounders.

The practicum year is structured as a series of rotations, typically lasting 8 weeks each. Each rotation is built around ACGME competencies, and each rotation has a designated preceptor who supervises and guides the resident. The resident is expected to fully participate in a “hands-on” mode during practicum rotations, assuming significant responsibilities. Usually, in addition to dealing with the day-to-day work at the rotation site, the preceptor will assign a specific project or series of projects for the resident to complete.

Because of the unique circumstances of the USU OEM residency (robust support for the residency, fully funded and salaried residents, and a prime location in Washington, DC), a large number of practicum rotations are possible. The greatest dilemma for most residents in the practicum year is choosing among the different rotation possibilities. Doing a variety of rotations is desirable because it allows the resident to experience a wide range of occupational medicine practice situations.

The practicum year will be tailored to the needs of the individual and his/her sponsoring service. The practicum year may be viewed as the hands-on application of the academic knowledge. Specific residency educational goals and objectives for each practicum rotation are expressed in clear behavioral and measurable terms in the letter of agreement between the residency and the practicum site and in the resident rotation evaluation. These educational goals and objectives for each practicum rotation are reviewed with the resident prior to each rotation and are included as an appendix to the residency handbook.

In addition to their rotations, practicum year residents continue to participate in residency meetings and journal club. They are expected to take a more active leadership role in these activities. They are expected to serve as mentors for the MPH/MTM&H year residents, advising them on their courses and teaching them about the practicum year. The resident must present the results of their research projects at a national professional meeting and submit an abstract for publication.

### **Core Rotations**

Required “core” rotations, are 4-8 weeks in duration. They are designed to cover a wide spectrum preventive and occupational medicine practice, from front-line military and civilian public health agencies, including the policy level. The philosophy of the residency is that every resident needs to get experience with front line civilian and military occupational and environmental medicine. They should also get experience with higher-level policy

organizations in the military and civilian sectors. If a resident already has significant experience in one of these areas then a core rotation may be waived at the discretion of the Program Director.

Of note, per the residency program requirements, each resident must complete a minimum of six months of clinical rotations in their practicum year. The core required Occupational & Environmental Medicine Rotations include:

### **Required Administrative Rotations**

1. Two months at the Federal Occupational Health and Safety Administration, Office of Occupational Medicine, Washington DC
2. One to two month service specific administrative rotations:  
Army: Two month at the US Army Center for Health Promotion and Preventive Medicine, Edgewood Arsenal, MD (includes US Army Inspector General Surety Inspection)  
Navy: One Month at the Bureau of Medicine and Surgery, Washington, DC, one month at the Navy and Marine Corps Public Health Center, Portsmouth, VA.  
Air Force: Two months at Air Force Medical Support Agency, Bolling AFB, Washington, DC.  
Canadian Forces: One month at the service-specific rotations listed above or by arrangement in advance, the Canadian equivalent rotation.

### **Six Months Required Clinical Rotations**

Army Medical Center, Occupational Health Service (Two Months WRAMC OHC) or  
National Naval Medical Center, Occupational Health Service, Bethesda, MD (Two months)  
National Institute of Health, Occupational Health Clinic (Two Months)  
Walter Reed Army Medical Center, Physical medicine & Rehabilitation Service, Washington, DC (One Month)  
Annapolis Naval Health Clinic, Sports Medicine or  
Dewitt Army Community Hospital Sports Medicine Service, Alexandria, VA (One month)

### **One Month Required Research Rotation**

Walter Reed Army Institute of Research, Washington DC  
Naval Health Research Center, San Diego, CA  
USU Department of Preventive Medicine and Biometrics

### **Clinical Electives**

Pulmonary medicine, NNMC or Walter Reed  
Dermatology, NNMC or Walter Reed  
Ophthalmology, NNMC or Walter Reed  
Travel Medicine, NNMC or Walter Reed

### **Two Month Required Industrial Rotation:**

Aberdeen Proving Grounds, Kirk OH Clinic  
US Coast Guard Shipyard, Occupational Health Clinic, Curtis Bay, MD.  
National Security Agency, Occupational Health Service, Fort Meade, MD  
Shipyard Rotations (Philadelphia, PA and Portsmouth, New Hampshire)

### **Policy/Union Electives**

VA Central Office  
Office of the Assistant Secretary of Defense for Health Affairs, Falls Church, VA  
International Association of Fire Fighters, Washington, DC

### **Application Process**

The NCC/USU OEM Residency does not participate in the civilian residency match program, but instead uses the DoD Joint Graduate Medical Education Selection Board (JGMESB) to select our residents. The JGMESB typically meets early in December each year, and notification of those selected occurs shortly thereafter, usually by posting to the Service respective graduate medical education websites.

Army, Air Force and Navy information on the JGMESB process is available from:

**Army:**

GENERAL INFORMATION FOR MEDICAL EDUCATION DIRECTORATE  
HQDA, OTSG  
ATTN: DASG-PSZ-M  
5109 LEESBURG PIKE  
Skyline 6, Room 691  
FALLS CHURCH, VA 22041-3258  
Phone Numbers: (877) 633-2769, (703) 681-7781, DSN 761-7781  
Fax Numbers: 703-681-8044, DSN 761-8044  
Email: DASG.ZHM@OTSG.AMEDD.ARMY.MIL  
Internet: <http://www.mods.army.mil/medicaleducation/>

**Navy:**

Naval Medical Education and Training Command  
Graduate Programs - Code OG12  
Bldg 1, Tower 15  
8901 Wisconsin Avenue  
Bethesda, MD 20889-5611

FTOS/OFI PROGRAMS ASSISTANT (CODE-OG151)  
COMM: (301) 319-4511 DSN: 285-4511  
FAX: (301) 295-6113  
Internet: <http://nshs.med.navy.mil/gme/mcpp.htm>

**Air Force:**

HQ AFPC/DPAME  
550 C Street W Suite 25  
Randolph AFB, TX 78150-4727

COMM: 210-565-2638 DSN 665-2638  
Toll Free: 1-800-531-5800  
FAX: 210-565-2830  
E-Mail: [afpc.dpame@randolph.af.mil](mailto:afpc.dpame@randolph.af.mil)  
Internet: <http://www.afpc.randolph.af.mil/medical/PhysicianEducation/default.htm>

The NCC/USU OEM residency program has the capacity for fifteen total residents between the PGY2 and PGY3/4 years. The number of sponsored (fully funded) residency training authorizations varies from year-to-year, based upon Service training needs. Canadian military officers are accommodated on a space available basis after the DoD match is completed.

Application to the USU MPH is done separately after acceptance to the NCC/USU Preventive Medicine residency program through the JGMESB. Information on application to the USU Graduate School is available at <http://www.usuhs.mil/graded>. The deadline for application to the MPH or MTM&H program is 15 January.

Applicants must have, at a minimum, completed an internship of which at least 6 months are clinical. Fulfilling this requirement allows the internship to count as the PGY1 year for ABPM certification eligibility. Applicants may apply immediately after internship.

The most competitive physician applicants have completed an initial tour as a general medical officer (GMO), or flight surgeon (FS) prior to residency. Many past and current residents enter the OEM residency already board certified in another specialty, such as Family Practice.

## **National Capital Consortium (NCC) / Uniformed Services University (USU) General Preventive Medicine (GPM) Residency**

### **Mission**

*The NCC (USU) General Preventive Medicine Residency trains to be fully competent, board-certified physicians who expertly apply population-based methods to promote, protect, preserve and rehabilitate the health of all entrusted to their care anytime, anywhere.*

### **Overall Learning Objectives**

At the completion of this training program, residents will be able to:

- Apply principles and methods of biostatistics and epidemiology effectively
- Plan, administer, and evaluate health systems and medical programs
- Recognize, assess, and control environmental and occupational health hazards
- Address social, cultural and behavioral factors influencing individual and public health
- Implement primary, secondary, and tertiary prevention for assessed needs
- Identify and counter disease and injury threats related to military service

### **Background and Overall Residency Structure**

The NCC (USU) GPM Residency is a two year graduate medical education training program for Medical Corps officers sponsored by the uniformed Services of the United States and is fully accredited by the Accreditation Council for Graduate Medical Education (ACGME) through March 2013. This program trains primarily Air Force and Navy physicians since the Army operates two GPM residency programs of its own: one at Walter Reed Army Institute of Research and the other at Madigan Army Medical Center. The NCC (USU) GPM residency program is approved by the ACGME for twelve (12) total residents split between the Post-Graduate Year two (PGY2) (six residents) and PGY3 (six residents) training phases. The number of sponsored (fully funded) residency training authorizations varies from year-to-year, based upon Service training needs. The NCC (USU) GPM Residency is co-located and shares resources with the NCC (USU) Occupational and Environmental Medicine (OEM) Residency. Both programs are also able to train sponsored foreign military and Public Health Service physicians on a space-available basis.

The NCC (USU) GPM and OEM Residencies are the only DoD-sponsored training programs leading to American Board of Preventive Medicine (ABPM) certification accredited by the Accreditation Council for Graduate Medical Education (ACGME) in which the second post-graduate year (PGY2) academic training and following PGY3 practicum year are at the same institution. Currently, in all other DoD sponsored ABPM residencies the training is separate. The collocation of the PGY2 academic and PGY3 practicum years allows for optimal continuity and coordination throughout both training years.

### **PGY2 Academic Year**

The USU Academic Year is twelve months in duration, beginning the first week in July and ending the last week in June. For the purpose of board certification in General Preventive Medicine and Public Health, the ABPM requires a PGY2 Academic Year consisting of foundational courses in epidemiology, biostatistics, health services administration, environmental health, and behavioral health. This academic training culminates in either the Master of Public Health (MPH) or Master of Tropical Medicine and Hygiene (MTM&H) degree, both of which are available at USU. Within the USU MPH degree program, there are several “concentration areas” from which PGY2 GPM residents generally select in order to focus their studies. Full details on available options may be found elsewhere in the graduate handbook for the Department of Preventive Medicine and Biometrics.

Residents must complete all MPH or MTM&H degree requirements. In addition, all GPM residents are required to take PMO512-Epidemiology II, PMO558-Fundamentals of Clinical Occupational, Environmental, and Preventive

Medicine, PMO573-Epidemiology and Prevention of Vaccine-Preventable Diseases, PMO973-General Preventive and Occupational and Environmental Medicine Journal Club, and PMO990-Travel Medicine. In addition all residents pursuing the MPH degree must also take PMO513-Advanced Epidemiologic Methods. Residents intending to meet the requirements for the MTM&H curriculum are encouraged to take PMO513, but it is not mandated in recognition of the heavier course load often encountered for this degree during the spring semester.

A number of other electives are also highly encouraged if the student's schedule permits, such as PMO549-Principles of Toxicology, PMO514 (and 515) Epidemiology and Control of Infectious (and Chronic) Diseases, PMO531-Program Planning and Development, and PMO548-Joint Medical Operations and Humanitarian Assistance. Resident educational plans will be discussed and approved each academic quarter by the program director and deputy director who serve as academic advisors during the PGY2 year.

Some residents may enter training already in possession of an MPH degree. In these cases, the program director carefully reviews previous transcripts for content that meets at a minimum the ABPM foundational course requirements. Currency of the knowledge base is also assessed, and individual needs relative to the adequacy of Board preparation are determined. Upon the advice of residency program director and in consultation with the individual's Service sponsor, these residents may elect to complete a second MPH in a different area of concentration or obtain an MTM&H degree. Decisions on placement directly into the practicum year are unusual, and would be made at the Joint Service Graduate Medical Education Selection Board (JSGMESB) by the Service Board President in consultation with the program directors.

### **PGY3 Practicum Year**

**GPM Core Practicum rotations** - Following the academic year, at least 12 months of practicum "on the job" training is required by the ABPM. The current required "core" practicum rotations are as below:

- A county public health department rotation, usually Montgomery County Department of Health and Human Services. Rotations at either the Anne Arundel County or Fairfax County health departments may be substituted to meet this requirement.
- A policy rotation at either:
  - Navy Bureau of Medicine or Headquarters Marine Corps or
  - The Air Force Medical Support Agency
- A clinical preventive services rotation at the Agency for Healthcare Research and Quality
- Navy residents are also required to rotate at one of the Navy Environmental Preventive Medicine Units.

Most of these rotations are readily available in the National Capital Area. Core required rotations are generally two months long.

**PGY3 Elective Rotations** - There are a wide range of additional rotations available. The remainder of the practicum year can be tailored to an individual resident's interests, needs, and experience level. Potential electives include:

#### **Policy Rotations**

ACPM Pfizer Fellowship in Preventive Medicine Policy

#### **Primary Public Health Rotations**

Armed Forces Health Surveillance Center, Washington, DC

Navy and Marine Corps Public Health Center, Norfolk, VA

Air Force Medical Operations Agency-South (FOA-S) , San Antonio, TX

### **Managerial Medicine Rotations**

National Committee for Quality Assurance, Washington, DC

### **Research and Military-Oriented Rotations**

Military Overseas Research Activities (Lima, Bangkok, Nairobi, Cairo)

Naval Health Research Center, San Diego, CA

USU Department of Preventive Medicine and Biometrics

USU Center for Disaster & Humanitarian Assistance Medicine

Vaccine Health Center, Walter Reed Army Medical Center, DC

National Center for Medical Intelligence

Military Vaccine Agency, Falls Church, VA

Many other rotations within the DC metro area are available or can be created based on the resident's interests and initiative in developing (nb: it typically takes several months advance notice to create a completely new rotation).

Due to the importance of information covered in Journal Club and other didactic fora listed below, the need for ongoing observation and evaluation by core program faculty, and budgetary limitations, away rotations are generally limited to no more than four months and usually less. In rare cases, with special approval of the program director, away rotations may last up to six months. However, with the numerous opportunities for high quality practicum experiences within the National Capital Area no resident should plan for more than two to four months away.

### **Practicum Year Didactic Components**

During the practicum year, a variety of didactic training activities occur in addition to the rotations. Conferences, selected courses and other non-rotation requirements for the PGY3 year are described below:

**Weekly Residency Business Meeting:** The resident, while on rotations in the National Capital Area (that is, not on TAD/TDY orders or on leave), is required to return to USU on Wednesday afternoons and attend the weekly residency business meeting. A variety of topics are covered, including updates and discussions of resident projects, ABPM examination preparation and review sessions, career planning, and discussion of residency policy issues.

**Weekly Journal Club:** Journal Club continues during the practicum year and each resident is expected to be highly involved with its planning and execution. This session follows the weekly Residency Business Meeting. The GPM Journal Club gives the resident an opportunity to hone critical appraisal skills, review relevant clinical preventive medicine literature, discuss current preventive medicine issues and give presentations. Although emphasis is on critical appraisal, some sessions will focus on specific public health-related "hot topics," "Journal Watch" sessions, or address gaps in the curriculum. Any practicum year resident out of the National Capital Area for more than four months of the year must document ongoing review of the current literature, including articles and other educational material distributed via e-mail for Journal Club sessions. They must also present a critical appraisal at Journal Club while in the local area on at least one occasion.

**Professional Conferences:** During the practicum year, each resident is encouraged to attend at least one major professional conference, typically the American College of Preventive Medicine (ACPM) Annual Conference ([www.acpm.org](http://www.acpm.org)). If funding is available, PGY3 residents may also attend a DoD-connected prevention conference such as the Force Health Protection Conference or the Navy Public Health Conference.

Additional Meetings which could be considered if funding is available and/or could be attended on PTDY status:

- The Association for Prevention Teaching and Research (previously the American Society of Teachers of Preventive Medicine) (<http://www.atpm.org>)
- CDC Epidemiology Intelligence Service Conference (<http://www.cdc.gov/epo/dapht/eis>)
- Navy Occupational and Preventive Medicine Workshop (<http://www-nehc.med.navy.mil>)
- American Public Health Association Annual Meeting (<http://www.apha.org>)
- American Society of Tropical Medicine and Hygiene Annual Meeting (<http://www.astmh.org>)

- International Conference on Emerging Infectious Diseases (<http://www.cdc.gov>)
- International Society of Travel Medicine Conference (<http://www.istm.org>)

Other Courses: There are a wide variety of short courses and external seminars which are required or potentially available to residents. Required courses are labeled with "\*\*\*" below. This requirement may be waived by the program director in lieu of prior experience or equivalent training. Some of the courses available include:

\*\*Centers for Disease Control and Prevention (CDC) course, "Epidemiology and Prevention of Vaccine Preventable Diseases". This is an online course: <http://www2a.cdc.gov/phtn/epv06/> or <http://www.cdc.gov/vaccines/ed/self-study.htm#2>.

\*\*USACHPPM Risk Communication Course (<http://apbdev/hr/default.asp>)

\*\*Medical Management of Chemical and Biological Casualties Course (MMCBC)  
<http://www.usamriid.army.mil/education/index.htm>

Medical Effects of Ionizing Radiation (MEIR) Course (Strongly recommended)  
<http://www.afri.usuhs.mil/outreach/meir/meir.htm>

The Denver TB Course, (<http://www.nationaljewish.org>)--the premier biannual four-day course held in at the National Jewish Medical and Research Center each October and April.

Health Emergencies in Large Populations (HELP), Johns Hopkins University, Baltimore, MD--A three-week course sponsored by the International Committee of the Red Cross and hosted annually every July by the Department of International Health at the Johns Hopkins Bloomberg School of Public Health.  
[http://www.jhsph.edu/refugee/education\\_training/help/](http://www.jhsph.edu/refugee/education_training/help/)

Global Medicine: an intensive two-week course sponsored by the USAF designed to train operational physicians to identify and plan for the infectious diseases and environmental conditions of medical and military significance worldwide. (Generally residents choose between Global Medicine or Military Tropical Medicine)  
[https://usachppm.apgea.army.mil/TrainCon/Describe.aspx?Name=global\\_med](https://usachppm.apgea.army.mil/TrainCon/Describe.aspx?Name=global_med) Military Tropical Medicine Course (generally post-residency for Navy residents)  
<https://usachppm.apgea.army.mil/TrainCon/Describe.aspx?Name=MTM>

ACPM Board Review Course (post-residency) <http://www.acpm.org/review.htm> The residency has historically funded either the attendance fee or purchased the review books--graduating residents choose one option.

## Application Process

The NCC (USU) GPM Residency does not participate in the civilian residency match program, but instead uses the DoD Joint Service Graduate Medical Education Selection Board (JSGMESB) to select our residents. The JSGMESB typically meets early in December each year, and notification of those selected occurs shortly thereafter, usually by posting to the Service respective graduate medical education websites. Air Force and Navy information on the JSGMESB process is available from:

HQ AFPC/DPAME  
550 C Street W Suite 25  
Randolph AFB, TX 78150-4727  
COMM: 210-565-2638 DSN 665-2638  
Toll Free: 1-800-531-5800  
FAX: 210-565-2830  
E-Mail: [afpc.dpame@randolph.af.mil](mailto:afpc.dpame@randolph.af.mil)

Internet:

<http://airforcemedicine.afms.mil/afphysicianeducation> - Main Physician Education Public site

<http://airforcemedicine.afms.mil/afphysiciangme> - Main Physician GME Public site

Naval Medical Education and Training Command

Graduate Programs - Code OG12

Bldg 1, Tower 15

8901 Wisconsin Avenue

Bethesda, MD 20889-5611

Navy Medicine Manpower, Training, and Education Command

GME website: <http://navmedmpte.med.navy.mil/gme/index.cfm>

FTOS/OFI PROGRAMS ASSISTANT (CODE-OG151)

COMM: (301) 319-4511 DSN: 285-4511

FAX: (301) 295-6113

Internet: <http://nshs.med.navy.mil/gme/mcpp.htm>

Residents designating the NCC (USU) GPM residency training program as their first choice are required by the JSGMESB to interview with the residency Program Directors either in person or by phone if travel is not possible based on individual circumstances. It is also advisable to arrange for an interview even if USU is your second choice, as sometimes the selection process results in residents being placed in other than their first choice for training. Please contact the residency director or administrator to arrange for an interview (see contact information below).

Application to the USU MPH or MTM&H program is done separately after acceptance to the NCC (USU) General Preventive Medicine residency program through the JSGMESB. Information on application to the USU graduate school is available at <http://www.usuhs.mil/graded/application.html>. The deadline for application to the MPH or MTM&H program is 15 January.

Applicants must have, at a minimum, completed an internship of which at least 6 months are clinical. Fulfilling this requirement allows the internship to count as the PGY1 year for ABPM certification eligibility. It is experientially helpful and preferred by the sponsoring Services for prospective residents to complete at least an initial tour as a general medical officer (GMO), flight surgeon (FS), or undersea medical officer (UMO). Many past and current residents enter the GPM residency already board certified in another specialty, such as Family Practice. However, qualified and motivated applicants have been accepted for training immediately after internship.

### **Contact information**

The administrator for both the GPM and OEM residency programs may be reached by phone at 301-295-3717 for further inquiry. Also, contact information for both NCC (USU) residency program directors is updated annually and available at the ACPM website, which also has data on all similar programs. The pertinent link is

<http://www.acpm.org/Education/residency/ataglance.htm>.

GPM Residency Program Director

PMB Department

(301)295-3717(Program Administrator)

[Gpm\\_residency@usuhs.mil](mailto:Gpm_residency@usuhs.mil)

## LIST OF COURSES

Course No.	Title	Division	Page
PMO502	Introduction to SAS (1)	EPI/BIOST	48
PMO503	Biostatistics I (4)	EPI/BIOST	48
PMO504	Biostatistics II (4)	EPI/BIOST	48
PMO505	Microcomputer Applications in Public Health (1)	EPI/BIOST	49
PMO508	Biostatistics III (5)	EPI/BIOST	49
PMO511	Introduction to Epidemiology I (4)	EPI/BIOST	49
PMO512	Epidemiologic Methods (4)	EPI/BIOST	49
PMO513	Advanced Epidemiologic Methods (4)	EPI/BIOST	49
PMO514	Epidemiology and Control of Infectious Diseases (2)	EPI/BIOST	49
PMO515	Chronic Disease Epidemiology (2)	EPI/BIOST	50
PMO516	Design and Analysis of Follow-up Studies (3)	EPI/BIOST	50
PMO519	Occupational & Environmental Epidemiology (2)	EPI/BIOST	50
PMO520	Molecular Epidemiology (2)	EPI/BIOST	50
PMO521	Concepts in Molecular Biology & Immunology (2)	EPI/BIOST	50
PMO522	Meta Analysis (1)	EPI/BIOST	50
PMO523	Fundamentals of U.S. Healthcare Policy (2)	HSA	52
PMO524	Health Care Performance Improvement (2)	HSA	52
PMO526	Health Systems (4)	HSA	52
PMO527	Principles of Healthcare Management (2)	HSA	52
PMO528	International Health I (3)	HSA	52
PMO529	Health Care Financial Management (2)	HSA	52
PMO530	Behavioral and Soc Sciences Applied to Public Health (4)	SOC/BEHAV	55
PMO531	Program Planning and Development (3)	SOC/BEHAV	55
PMO534	Medical Anthropology (2)	HSA	53
PMO535	The Law of Health Care (2)	HSA	53
PMO537	Clinical Decision Making (1)	HSA	53
PMO539	International Health II (3)	HSA	53
PMO540	Intro to Environmental Health (4)	OEHS	42
PMO541	Advanced Environmental Health (2)	OEHS	42
PMO542	Clinical Occupational and Environmental Medicine (4)	DEPT	60
PMO548	Joint Medical Operations & Humanitarian Assistance (3)	DEPT	61
PMO549	Principles of Toxicology (4)	OEHS	42
PMO550	Industrial Hygiene I and Laboratory (4)	OEHS	42
PMO552	Industrial Hygiene II and Laboratory (4)	OEHS	43
PMO553	Industrial Hygiene Field Studies (1)	OEHS	43
PMO555	Industrial Ventilation (3)	OEHS	43
PMO557	Introduction to Military Occupational Health (3)	DEPT	61
PMO558	Fundamentals of Clinical Occupational Health Environmental & Preventive Medicine (1)	DEPT	61
PMO559	Decision Support in Health Care Performance Improvement	HSA	53
PMO598	Health Care Economics	HSA	54
PMO560	Principles & Practice of Tropical Medicine (6)	TPH	55
PMO561	Medical Parasitology (3)	TPH	55
PMO563	Clinical Tropical Medicine (1-12)	TPH	56
PMO564	Epidemiology and Control of Arboviruses (Lec-2 and Lab-4)	TPH	56
PMO565	Vector Biology (2)	TPH	56
PMO566	Physiological Parameters of Vector Competence (4)	TPH	56
PMO567	Changing Patterns of Arthropod-borne Diseases (4)	TPH	57

PMO568	Medical Acarology (4)	TPH	57
PMO569	Malaria Epidemiology and Control (3)	TPH	57
PMO570	Modern Technology and Vector-borne Disease (4)	TPH	57
PMO571	Biosystematics in Medical Zoology (2)	TPH	57
PMO573	Epidemiology and Prevention of Vaccine-preventable Diseases (1)	TPH	58
PMO577	Introduction to GIS in Public Health (2)	TPH	58
PMO578	Remote Sensing Methods in Public Health (3)	TPH	58
PMO582	Radiation Biology (3)	OEHS	43
PMO584	Introduction to Health Physics (3)	OEHS	43
PMO591	Marketing and Strategic Issues for Health Care Organizations (2)	HSA	54
PMO592	Health Technology Assessment (2)	HSA	54
PMO594	Introduction to Medical Informatics (3)	HSA	54
PMO595	Introduction to Complex Sample Survey Analysis	EPI/BIOST	51
PMO599	Introduction to Health Risk Communication (2)	OEHS	44
PMO600	Fundamentals of Human Physiology (2)	OEHS	44
PMO601	Environmental Health Risk Assessment (2)	OEHS	44
PMO602	Solid & Hazardous Wastes (3)	OEHS	44
PMO603	Deployment Environmental Exposures (5)	OEHS	44
PMO604	Hydrology, Water & Wastewater Treatment Plant Design (5)	OEHS	44
PMO605	Analytical Instrumentation Methodologies in Environmental Health (3)	OEHS	45
PMO607	Environmental Chemistry (3)	OEHS	45
PMO611	Classic Studies in Epidemiology (2)	EPI/BIOST	51
PMO613	Public Health Issues of Disasters in Developing Countries (4)	TPH	58
PMO614	Tropical Medicine Rounds (2)	TPH	58
PMO615	Sand Flies and Disease (3)	TPH	59
PMO631	EOH Journal Club: Env and Occ Health Case Studies (1)	OEHS	45
PMO642	Selected Topics in Occupational Health (4)	DEPT	61
PMO651	Human Factors Engineering (3)	OEHS	45
PMO652	Occupational Ergonomics (3)	OEHS	45
PMO653	Work Analysis Methods (3)	OEHS	46
PMO654	Safety Engineering (3)	OEHS	46
PMO655	Current Injury Prevention Issues and Initiatives (1)	OEHS	46
PMO661	Medical Zoology Seminar	TPH	59
PMO670	Public Health Practicum (1-3)	DEPT	62
PMO671	Introduction to the MPH Project and Practicum (1)	DEPT	62
PMO672	MPH Project/Practicum Design and Development (1)	DEPT	62
PMO673	MPH Project/Practicum Implementation and Evaluation (1)	DEPT	62
PMO674	MPH Independent Project (3)	DEPT	62
PMO680	Introduction to Public Health (1)	DEPT	63
PMO682	History of Preventive Medicine (2-4)	DEPT	63
PMO683	Critical Reading Seminar (2)	DEPT	63
PMO684	Clinical Research Seminar (1)	DEPT	63
PMO685	Health Policy Seminar (1)	DEPT	63
PMO688	Information Gathering in Clinical Medicine (2-12)	DEPT	64
PMO691	Teaching Practicum (3)	DEPT	64
PMO701	Advanced Biometrics Tutorial (1-12)	EPI/BIOST	51
PMO760	Tropical Medicine Research Tutorial (1-12)	TPH	59
PMO761	Immunoparasitology Tutorial (3)	TPH	59
PMO763	Tutorial in Medical Zoology (1-12)	TPH	60

PMO764	Tutorial in Aquatic Biology (4)	TPH	60
PMO811	Independent Study in Epidemiology (1-12)	EPI/BIOST	51
PMO830	Independent Study in Social and Behavioral Science (1-12)	SOC/BEHAV	55
PMO841	Aerospace Operational Physiology I (3)	OEHS	46
PMO842	Aerospace Operational Physiology II (3)	OEHS	46
PMO845	Human Factors in Aviation (3)	OEHS	46
PMO846	Aerospace Exercise Physiology (3)	OEHS	47
PMO847	Aerospace Performance and Health (3)	OEHS	47
PMO848	Special Topics in Aerospace Medicine (2-3)	OEHS	47
PMO849	Aerospace Medicine in the Modern Age (3)	OEHS	47
PMO900	Introduction to Clinical Trials (2)	DEPT	64
PMO911	Research in Epidemiology (1-12)	EPI/BIOST	51
PMO926	Health Services Administration Directed Research (1-12)	HSA	54
PMO940	Environmental/Occupational Health Directed Studies (1-15)	OEHS	48
PMO941	Environmental/Occupational Health Directed Research (1-15)	OEHS	48
PMO942	Environmental/Occupational Health Directed Rotations (1-15)	OEHS	48
PMO964	Research in Medical Zoology (1-12)	TPH	60
PMO970	Directed Studies in Preventive Medicine (1-12)	DEPT	64
PMO971	PMB Doctoral Student Journal Club (1)	DEPT	64
PMO972	Seminar in Critical Thinking (4)	DEPT	65
PMO973	GPM and OEM Residency Journal Club (1)	DEPT	65
PMO975	Introduction to Aerospace Medicine Seminar (2)	DEPT	65
PMO990	Travel Medicine (2)	TPH	60
PMO991	Ethics in Public Health (3)	DEPT	65
PMO992	Travel Clinic Practicum (1)	TPH	60
PMO996	Clinical Trials Design and Analysis	DEPT	65

## COURSE DESCRIPTIONS

### OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES (OEHS)

PMO540	<p><u>INTRODUCTION TO ENVIRONMENTAL HEALTH</u></p> <p>This course provides a broad exposure to basic environmental health subjects, including toxicology, epidemiology, indoor and outdoor air quality, food service sanitation, insects and rodents, environmental noise, energy, drinking water treatment, wastewater treatment, solid waste disposal, injury control, the workplace, risk assessment, risk communication, and environmental regulations. Discussions will cover the specific, general and global issues associated with these environmental health topics. Several site visits are scheduled during the course which will reinforce understanding of selected topics.</p>
	Prerequisites: None
Pre-Fall	White
	4 Quarter Hours/Graded
PMO541	<p><u>ADVANCED ENVIRONMENTAL HEALTH</u></p> <p>This course will provide the student with detailed instruction on environmental health subject areas typically encountered by a Registered Environmental Health Specialist. Upon completion of this course, a student should be able to discuss issues relating to general environmental health, food protection, wastewater, solid and hazardous waste, potable water, institutions and licensed establishments, vectors, pests and poisonous animals, swimming pools and recreational facilities, statutes, regulations and standards, hazardous materials, radiation protection, housing, occupational safety and health, air quality and noise, and disaster sanitation and emergency planning. This course will consist of regular homework assignments, a mid-term, and a comprehensive final exam.</p>
	Prerequisites: PMO 540 and Concurrence of Course Director
Fall	Hout
	2 Quarter Hours/Graded
PMO549	<p><u>PRINCIPLES OF TOXICOLOGY</u></p> <p>This course covers the general principles and basic concepts of toxicology including dose-response, toxicokinetics, toxicodynamics, target organs, and effect modification by toxicants. Major mechanisms of toxicity including mutagenesis, teratogenesis, carcinogenesis, and immunotoxicity are discussed. Students study the responses of various organ systems to toxicants. In addition, toxic effects of selected substances including but not limited to solvents, metals, pesticides, fibers, toxins, and radiation are surveyed. Students learn to evaluate the validity of toxicological literature generated by the lay press, scientific community, and regulatory agencies. Previous exposure to biology and organic or biochemistry is very useful.</p>
	Prerequisites: Concurrence of Course Director
	Recommended: PMO600 (if limited background in biomedical sciences)
Fall	Rouse
Spring	Criswell / Barnes
	4 Quarter Hours/Graded
	4 Quarter Hours/Graded
PMO550	<p><u>INDUSTRIAL HYGIENE I AND LABORATORY</u></p> <p>This course will cover the essentials of the practice of industrial hygiene through the concepts of hazard anticipation, recognition, evaluation and control. It is designed as an overview for those students with limited prior experience in industrial hygiene. Topics covered include threshold limit values and OSHA exposure limits, calculations of exposure data, classification of agents, monitoring techniques for particulates and gases/vapors, introduction to ventilation principles, noise, respiratory protection practices and physical hazards. The laboratory will familiarize students with commonly used industrial hygiene sampling equipment. Laboratories will emphasize calibration of sampling pumps, direct reading gas/vapor sampling equipment, sampling particulates, industrial ventilation, and industrial noise.</p>
	Prerequisites: Concurrence of Course Director
Winter	DeLong
	4 Quarter Hours/Graded

PMO552	<p><u>INDUSTRIAL HYGIENE II (CBRNE DETECTION) (4)</u></p> <p>This course will focus on industrial hygiene in a military occupation. The military occupation may be performed in any environment; indoors or outdoors; in the United States or abroad. The IH focus in this course will primarily cover recognition, evaluation and control of nuclear, biological and chemical (NBC) agents that military members may confront while under NBC attack or upon inadvertent exposure in performance of their military duties. Topics to be covered include military field detection techniques for NBC agents and protection techniques. Particular attention will focus on field detection characteristics such as limit of detection, false readings, usability etc. Familiarization with instruments will also be emphasized in this class.</p>
Spring	<p style="text-align: right;">Prerequisites: PMO550 and Concurrence of Course Director DeLong <span style="float: right;">4 Quarter Hours/Graded</span></p>
PMO553	<p><u>INDUSTRIAL HYGIENE FIELD STUDIES</u></p> <p>This course is designed to familiarize the student with functional industrial hygiene operations. This will be accomplished by a series of lectures that support field trips to military and civilian work sites. Industrial facilities will be toured and industrial hygiene operations reviewed on site. The practice of industrial hygiene in the workplace will be demonstrated.</p>
Summer	<p style="text-align: right;">Prerequisites: PMO550 and Concurrence of Course Director Smith / DeLong <span style="float: right;">1 Quarter Hour/Graded</span></p>
PMO555	<p><u>INDUSTRIAL VENTILATION</u></p> <p>This course is intended to give in-depth instruction in design and testing of local exhaust hoods and industrial ventilation systems. The course will cover contaminant generation, principles of air flow, general and contaminant-specific hoods, duct sizing and layout, ventilation system balancing, fan selection, air cleaning devices, and ventilation system testing. Upon completion of the course, the student should be able to correctly design and evaluate existing designs of industrial ventilation systems for correctness.</p>
Spring	<p style="text-align: right;">Prerequisites: PMO550 and Concurrence of Course Director Smith <span style="float: right;">3 Quarter Hours/Graded</span></p>
PMO582	<p><u>RADIATION BIOLOGY</u></p> <p>The use of ionizing radiation in medical and industrial applications continues to expand. For example, approximately 320 million diagnostic medical and dental x-ray procedures are performed each year in the US. This fact highlights the need to study and quantify the stochastic (chronic) and non-stochastic (acute) effects of ionizing radiation. At the end of the course the student will demonstrate an understanding of the fundamentals of ionizing radiation interactions with matter, human radiation exposure scenarios, fundamentals of radiation chemistry and cellular radiobiology, biological effects of low doses of ionizing radiation (chronic effects), radiation risks in perspective, biological effects of high doses of ionizing radiation (acute effects), and radiation accidents and biodosimetry.</p>
Spring	<p style="text-align: right;">Prerequisites: Concurrence of Course Director Blakely <span style="float: right;">3 Quarter Hours/Graded or Credit</span></p>
PMO584	<p><u>INTRODUCTION TO HEALTH PHYSICS</u></p> <p>Upon the completion of the course, students will be able to: Describe the various modes of decay, determine the types of equilibrium achievable for chains of nuclides, describe the basic interaction mechanisms for all types of ionizing radiation, recognize naturally occurring and man made radionuclides, calculate equilibrium activities and specific activities, perform basic activation calculations, understand the difference between roentgen and rad, and determine external and internal dose based on simplified scenarios.</p>
Fall	<p style="text-align: right;">Prerequisites: Concurrence of Course Director Cuellar <span style="float: right;">3 Quarter Hours/Graded or Credit</span></p>

PMO599	<p><u>INTRODUCTION TO HEALTH RISK COMMUNICATION</u></p> <p>This course is an introduction to the basic principles of risk communication theory and practice. The student is oriented to the fundamentals, principles, and processes that have proven effective in communicating health risk in a high concern / low trust environment. Students are guided through the process of responding to difficult questions from a hostile or suspicious audience, of identifying key stakeholders, and of working with the media. Students will, while working in a small group, develop and present a risk communication strategy for a provided scenario.</p>
	Prerequisites: Concurrence of Course Director
Spring	White <span style="float: right;">2 Quarter Hours/Credit</span>
PMO600	<p><u>FUNDAMENTALS OF HUMAN PHYSIOLOGY FOR PUBLIC HEALTH</u></p> <p>The objective of this class is to familiarize the student with the concepts and principles involved in human physiology. It is assumed that the student has limited or no background in human physiology or biological sciences. The class will also benefit students who need a refresher course in physiology. It will provide a basic foundation in physiology and prepare non-clinicians for further study in toxicology. The major topic areas covered are cell physiology, genetics, cancer, general toxicology concepts, liver, kidney, nervous system, immune system, endocrine system, and reproductive system.</p>
	Prerequisites: None
Fall	Criswell / Artino <span style="float: right;">2 Quarter Hour/Graded</span>
PMO601	<p><u>ENVIRONMENTAL HEALTH RISK ASSESSMENT</u></p> <p>Risk assessment impacts many disciplines and various tools are used to evaluate and quantify risk. Environmental Health risk assessment will be covered in depth using the EPA Risk Assessment Guidelines for Superfund sites. Topics to be covered are toxicology concepts, genetics, cancer, animal toxicology studies, exposure assessments, environmental data collection considerations, tools used in risk analysis and ecological risk assessment. A comprehensive project will reinforce understanding of a risk assessment.</p>
	Prerequisites: PMO540 and Concurrence of Course Director
Summer	Hout <span style="float: right;">2 Quarter Hours/Graded</span>
PMO602	<p><u>SOLID &amp; HAZARDOUS WASTES</u></p> <p>Students will learn about the collection, transfer, disposal by sanitary landfill, waste to energy, and resource conservation and recovery of solid wastes. In addition, classification of hazardous wastes, risks, Resource Conservation and Recovery Act, Hazardous and Solid Waste Act, Comprehensive Environmental Response, Compensation and Liability Act, Superfund Amendments and Reauthorization Act, hazardous waste management, treatment technologies, land disposal, groundwater contamination and remediation will also be presented. Lab time will be devoted to problem solving exercise and site visits to waste material treatment, storage, handling and recycling operations. The course has a mid-term and a non-comprehensive final exam. Class participation and graded problem sets also contribute to the final grade.</p>
	Prerequisites: PMO540 and Concurrence of Course Director
Winter	White / Hout <span style="float: right;">3 Quarter Hours/Graded</span>
PMO603	<p><u>DEPLOYMENT ENVIRONMENTAL EXPOSURES</u></p> <p>Students will learn how environmental exposures are quantified, recorded, analyzed, and interpreted into usable information not only for the ground commanders' immediate use but subsequently for later use by DOD, the Veteran's Administration, and others. Students may be offered the opportunity to go TDY/TAD with environmental experts during mission work relating to environmental exposure surveillance. Students will produce a final graded project.</p>
	Prerequisites: PMO540 and Concurrence of Course Director
Fall	White <span style="float: right;">5 Quarter Hours/Graded</span>
PMO604	<p><u>FUNDAMENTALS OF HYDROLOGY AND WATER AND WASTEWATER TREATMENT PLANT DESIGN</u></p>

Students will learn basic hydrology and how water and wastewater treatment plants are designed and the physical and chemical processes involved. Given a moderately complex treatment plant design problem, students should be able to determine if the process meets industry guidelines or public health standards. Students should also be able to recommend corrective design solutions. Site visits will reinforce the student's understanding of selected topics.

Prerequisites: PMO540 and Concurrence of Course Director  
 Spring Hout 5 Quarter Hours/Graded

PMO605 ANALYTICAL INSTRUMENTATION METHODOLOGIES IN ENVIRONMENTAL HEALTH

Students will examine the major instrumental methodologies used in the quantitative and qualitative analysis of samples taken during environmental health risk assessment or environmental health surveillance procedures. Methods examined will include gas chromatography mass spectroscopy, inductively coupled plasma spectrometry, ion and liquid chromatography, ELISA, PCR, radiochemistry and techniques. For each methodology the student will learn the scientific basis, equipment set-up and procedures, limitations, interferences, calibration, and sample preparation. The course is conducted through lectures, demonstrations and laboratory exercises. The course grade is based on two examinations and course participation.

Prerequisites: Concurrence of Course Director  
 Winter Smith 3 Quarter Hours/Graded

PMO607 ENVIRONMENTAL CHEMISTRY

This course will provide students with the knowledge and experience needed to predict, study, and describe the origin and distribution of xenobiotic chemical species, and their properties that effect uptake into biological systems.

Prerequisites: PMO540, 549, 1 year of organic & inorganic chemistry, and Concurrence of Course Director  
 Spring Smith 4 Quarter Hours/Graded

PMO631 ENVIRONMENTAL AND OCCUPATIONAL HEALTH (EOH) JOURNAL CLUB

This course will provide students with the knowledge and skills needed to critically read and evaluate a scientific journal article and serve as a forum for discussion of topics in environmental and occupational health including current research, classic case studies, emerging technology, and new or ongoing issues in the field. These discussions are geared to supplement and enhance classroom knowledge and field experience. There are no examinations or graded homework for this course. The course grade is based upon two in-class reviews/critiques of assigned articles and participation in group discussions.

Prerequisites: none  
 Winter White / Hout 1 Quarter Hour/Credit

PMO651 HUMAN FACTORS ENGINEERING

This course is a practical introduction to the application of human physical, perceptive and cognitive abilities and behaviors, human performance engineering design criteria, and human factors principles and practices to the design of systems, subsystems, equipment and facilities. Topics include basic human factors research and design methods, perception, cognition, information reception and processing, decision theory, memory, judgment, performance capabilities and limitations in human-machine systems.

Prerequisite: Concurrence of Course Director  
 Winter Criswell / Artino 3 Quarter Hours/Graded

PMO652 OCCUPATIONAL ERGONOMICS

This introductory course focuses on fundamental ergonomic principles involved in understanding the interactions among the worker, workplace, and job tasks and how these interactions can impact work and health outcomes. Particular emphasis is placed on the recognition and prevention/control of work-related musculoskeletal disorders. Topics covered include basic concepts of Anthropometrics, Biomechanics, and Work Physiology, major sources of occupational ergonomic exposures, and considerations in the development of ergonomic programs.

		Prerequisite: Concurrence of Course Director Callison	3 Quarter Hours/Graded
PMO653	<u>WORK ANALYSIS METHODS</u>	This course will familiarize students with ergonomic analysis techniques using traditional industrial engineering approaches such as timemotion study and work sampling in the analysis of task demands and human performance. Topics include performance measures, function allocation, general and specific task analysis techniques (OWAS, RULA, Strain Index, PATH, NIOSH Lift Equation, etc.), human reliability and economic analyses.	
		Prerequisites: PMO562 & Concurrence of Course Director Callison	3 Quarter Hours/Graded
PMO654	<u>SAFETY ENGINEERING</u>	This course covers key concepts and techniques involved in Occupational Safety Engineering and Management to provide students with considerations and tools for implementing and/or evaluating programs targeted at reducing/eliminating workplace injuries. Lectures, discussions, and assignments address topics in: legislation, regulations, and standards in workplace safety; quantitative and qualitative analyses of systems, operations, and activities associated with risk for injury; and, development and implementation of corrective actions/programs for reducing/eliminating potential hazards that may contribute to worker injury and associated costs.	
		Prerequisite: Concurrence of Course Director TBD	3 Quarter Hours/Graded
PMO655	<u>CURRENT INJURY PREVENTION ISSUES AND INITIATIVES (Seminar)</u>	Examination of injury prevention policies, initiatives, plans and current knowledge with special emphasis on the examination of analytic and intervention research studies and risk communication methods. Topics include current Department of Defense policies and initiatives, the Defense Medical Surveillance System (DMSS), epidemiologic studies, case studies and demonstration projects, behavioral issues and risk communication methods.	
		Prerequisite: Concurrence of Course Director Bringer	1 Quarter Hour/Graded
PMO841	<u>AEROSPACE OPERATIONAL PHYSIOLOGY I</u>	This course introduces students to aerospace physiology. It involves lectures, readings, and discussions that review the history and physiological issues related to exposure to high altitudes. Emphasis is placed on the physical nature of the atmosphere as well as respiratory/circulatory anatomy and physiological effects of exposure to decreased atmospheric pressure. Aircraft and flight equipment designs to counter the physiological threats are included.	
		Prerequisites: Concurrence of Course Director Artino	3 Quarter Hours/Graded
PMO842	<u>AEROSPACE OPERATIONAL PHYSIOLOGY II</u>	This course continues to introduce students to aerospace physiology. It involves lectures, readings, and discussions that review the physiological problems associated with flight. Emphasis is placed on the areas of sensory physiology, acceleration physiology & biodynamics, and crash preparation. The role of associated survival equipment will be emphasized in each area. By the end of the course the student will know how to calculate the forces involved in an aircraft mishap.	
		Prerequisites: Concurrence of Course Director & Trigonometry Recommended: PMO841 Artino	3 Quarter Hours/Graded
PMO845	<u>HUMAN FACTORS IN AVIATION</u>	This course will introduce the student to the multifaceted concept of human factors in aviation. It will discuss the impact of human limitations and human interaction in the flight environment. Emphasis will be placed on identifying the role of human factors in aircraft mishaps. The course will also include preventive techniques used to reduce human error. Crew/Cockpit Resource	

Management Training teaches crews to use all resources available to them to increase mission effectiveness and flight safety. Secondly, Operational Risk Management attempts to identify hazards and alleviate or compensate for them. Lastly, technical advances enable more realistic simulator training to better prepare crews for high threat contingencies. At the completion of the course the student will be able to effectively evaluate aviation related CRM/ORM issues.

Prerequisites: Concurrence of Course Director

Recommended: PMO841 & 842

Spring

Artino

3 Quarter Hours/Graded

PMO846

AEROSPACE EXERCISE PHYSIOLOGY

This course will introduce the student to exercise physiology as it relates to the aviation environment. The course will be comprised of lecture, seminar, and laboratory/field trip experiences. Emphasis will be placed on the role of proper physical conditioning in maintaining the healthy lifestyle necessary for optimum performance in the demanding environment of flight and flight operations. At the end of the course the student will be able to design physical conditioning programs for aviators based upon the demands of the weapon system in which they fly. The student will also be able to apply exercise physiology principles to the aviation environment.

Prerequisites: Concurrence of Course Director

Recommended: PMO841 & 842

Spring

Criswell

3 Quarter Hours/Graded

PMO847

AEROSPACE PERFORMANCE AND HEALTH

This course will introduce the student to health related topics as they apply to performance in the air and space environments. The course will be comprised of lecture and seminar using aviation mishaps to illustrate the health/performance issues. The student will be required to research a given mishap, given the appropriate background information, and then provide a human factor analysis of the event. Topics will include such things as nutritional supplements, fatigue, fitness, body defenses, general health, dehydration, and medications. At the end of the course the student will have a broad understanding of the relationship of health to performance in the aerospace environment.

Prerequisites: Concurrence of Course Director

Recommended: PMO841 & 842

Spring

Artino

3 Quarter Hours/Graded

PMO848

SPECIAL TOPICS IN AEROSPACE MEDICINE

Focus is current medical issues within Aerospace Medicine and physiology. Topic theme can vary annually depending on student/faculty interest. Themes can include medicine in extreme environments, diving medicine, wilderness medicine, hyperbaric medicine to mention a few. Each theme will be dealt from both a physiologic and clinical viewpoint while keeping in mind that overarching principles of preventive medicine and public health.

Prerequisites: Concurrence of Course Director

Winter

Barnes

2-3 Quarter Hours/Graded

PMO849

AEROSPACE MEDICINE IN THE MODERN AGE

Focus is current medical issues affecting those individuals engaged in flying, whether aircrew or passengers. Physiologic, clinical, and operational aspects of each issue will be emphasized. Major areas will be addressed including Aeromedical Evacuation, Radiation Exposure, Space Medicine, Aircraft Accident Investigation, Mishap Forensics, Clinical Aviation Medicine, Physical Standards, and Hot Topics in Aerospace Medicine. Each will involve some degree of didactic presentation, interactive discussion led by students, literature review, and case studies.

Prerequisites: Concurrence of Course Director

Fall

Barnes

3 Quarter Hours/Graded

PMO940	<p><u>ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED STUDIES</u></p> <p>The student will conduct an independent study project concerning some specific aspect of environmental health, industrial hygiene or occupational health under the close supervision of his/her academic advisor. This course is designed for students working independently to explore a defined topical area or problem or on their MPH year final academic project. Selected students may utilize this independent study option to expand their knowledge in selected subject areas relative to the MPH, or occupational medicine and general preventive medicine residencies.</p>
	Prerequisites: Concurrence of Course Director
All	Staff 1-15 Quarter Hours/Graded or Credit
PMO941	<p><u>ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED RESEARCH</u></p> <p>The student will conduct an independent research project in environmental and/or occupational health or industrial hygiene under supervision of his/her academic advisor. The research project will be designed to involve field studies, laboratory studies, and/or a policy study. A written report and an oral presentation will be required.</p>
	Prerequisites: Concurrence of Course Director
All	Staff 1-15 Quarter Hours/Graded or Credit
PMO942	<p><u>ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED ROTATIONS</u></p> <p>The student will gain relevant experience and specified knowledge, skills, and abilities while working closely with a mentor. The directed rotation will cover staff and technical functions of environmental/occupational health and/or industrial hygiene to include laboratory, field, and policy situations.</p>
	Prerequisites: Concurrence of Course Director
All	Staff 1-15 Quarter Hours/Graded or Credit

**EPIDEMIOLOGY AND BIostatISTICS (EPI/BIOST)**

PMO502	<p><u>INTRODUCTION TO SAS</u></p> <p>This hands-on course is designed for students who want to perform statistical analyses using SAS, a popular statistical software package. The course will cover basic skills in writing SAS programs, managing data, and performing various statistical procedures covered in PMO504. Concepts and techniques covered will also be useful when using other statistical software packages.</p>
	Prerequisites: PMO503, PMO504 concurrently
Winter	Kao 1 Quarter Hour/Graded
PMO503	<p><u>BIostatISTICS I</u></p> <p>This course instructs students in the application of elementary statistical procedures commonly used in biomedical and public health research. Topics include techniques of exploratory data analysis, probability, discrete and continuous statistical distributions, sampling procedures, confidence intervals, hypothesis testing, and sample size determination for experiments and observational studies.</p>
	Prerequisites: None
Fall	Cruess 4 Quarter Hours/Graded
PMO504	<p><u>BIostatISTICS II</u></p> <p>This continuation of PMO503 covers many of the advanced statistical procedures commonly used in biomedical and public health research. Statistical methods include techniques for the analysis of contingency tables or frequency data, non-parametric methods, simple linear regression and correlation, analysis of variance, multiple regression, logistic regression, and analysis of survival data.</p>
	Prerequisites: PMO503
Winter	Chen 4 Quarter Hours/Graded

PMO505	<p><u>MICROCOMPUTER APPLICATIONS in PUBLIC HEALTH</u></p> <p>This course introduces the basic microcomputer software applications that are commonly used in the Uniformed Services University Department of Preventive Medicine and Biometrics graduate programs. Successful completion of this course should enable students to access and document the scientific literature, identify internet sources of public health information, manipulate, merge, analyze, graphically display, interpret and present electronic data sets using spread sheets, databases, statistical, presentation and other software in common use in epidemiology and public health. Emphasis is on acquisition of basic familiarity with progression toward intermediate level skills.</p>
	Prerequisites: None
Pre-Fall	Kao
	1 Quarter Hour/Graded or Pass/Fail
PMO508	<p><u>BIostatISTICS III</u></p> <p>This course instructs students in understanding the concepts of more advanced statistical methods, and learning how to obtain and interpret results from the computer output of performing suitable statistical procedures by using statistical software, SAS on: basic concepts of matrix algebra used in biostatistics, introduction to generalized linear models, , maximum likelihood estimation, advanced analysis of multiple linear regression, analysis of covariance, Poisson regression, advanced binary logistic regression, multinomial logistic regression, logistic regression for matched study, and generalized estimating equations (GEE).</p>
	Prerequisites: PMO502, 503, 504 and Concurrence of Course Director
Spring	Kao
	5 Quarter Hours/Graded
PMO511	<p><u>EPIDEMIOLOGY I: INTRODUCTION TO EPIDEMIOLOGY</u></p> <p>This course introduces the student to basic epidemiologic principles. The course focuses first on the measurement of disease and then transitions to instruction on basic principles of study design. Instruction is provided through lectures and small-group exercises.</p>
	Prerequisites: None
Fall	Rouse
	4 Quarter Hours/Graded
PMO512	<p><u>EPIDEMIOLOGY II: EPIDEMIOLOGIC METHODS</u></p> <p>This course expands upon the basic concepts of epidemiology presented in PMO511. Methodological issues discussed include sampling, measurement error, bias, confounding and study design with special emphasis on how to analyze categorical data.</p>
	Prerequisites: PMO503, 504II concurrently, 511
Winter	White / Zhu
	4 Quarter Hours/Graded
PMO513	<p><u>EPIDEMIOLOGY III: ADVANCED EPIDEMIOLOGIC METHODS</u></p> <p>This course expands on the content of PMO511 and 512. Particular emphasis is placed on data analysis. Small-group exercises and simulations provide the student with hands-on experience in solving selected epidemiologic problems. The course covers advanced material on data analysis, rates and measures, bias, confounding, and specific methodologic problems in epidemiology.</p>
	Prerequisites: PMO503, 504A, 504B, 511, 512 and Concurrence of Course Director
Spring	Scher
	4 Quarter Hours/Graded
PMO514	<p><u>EPIDEMIOLOGY AND CONTROL OF INFECTIOUS DISEASES</u></p> <p>The natural history, distribution patterns, and risk factors of selected infectious diseases are discussed. Strategies for prevention or control are derived from such epidemiologic concepts as natural reservoir, modes of transmission, inapparent versus apparent infections, herd immunity, and the effects of immunization. Student participation in seminars and student presentations will constitute a major part of the course.</p>
	Prerequisites: PMO511, Concurrence of Course Director
Winter	Lewis
	2 Quarter Hours/Graded



abstraction, analysis and publication; and (3) understand the theory and statistical methods of meta-analysis including fixed and random effects models, tests of heterogeneity, publication bias, file drawer tests, and sensitivity analysis.

Prerequisites: PMO503, 511 and Concurrence of Course Director

Spring/Summer Jackson 1 Quarter Hour/Credit

PMO595 INTRODUCTION TO COMPLEX SAMPLE SURVEY ANALYSIS

This course is developed to enable the students to do basic statistical analysis based on the complex surveys with sample weights. Such population complex surveys have been conducted in U.S. for civilians and military personnel. Well-known surveys are: the third National Health and Nutrition Examination Surveys (NHANES III) funded by National Center for Health Statistics (NCHS), Center for Disease Control and Prevention (CDC), and surveys of Health Related Behaviors among Military Personnel (HRB) funded by the Department of Defense (DOD). A real data extracted from one of the HRB will be used to illustrate the concepts in complex surveys and related statistical analyses. Statistical software, SAS-callable SUDAAN (by performing the statistical analysis of complex survey under the SAS environment) using SAS will be taught. Prior knowledge in using SAS, one of the popular statistical software is not required, although it is preferred. Lectures, labs for statistical analysis using SUDAAN, and written assignment for homework problems will be used throughout the course.

Prerequisites: Concurrence of Course Director

Spring Kao 2 Quarter Hour/Graded

PMO611 CLASSIC STUDIES IN EPIDEMIOLOGY

Students will analyze the original articles in the medical literature that formed the basis for current practices in epidemiology. Focus will be on the conceptual and methodologic advances in the field. Articles will be selected for discussion based on their quality, originality and, above all, on their influence on the field of epidemiology. Definitions of “classic” studies vary, but we will concentrate on those which changed the way epidemiologic studies are conducted and the way that epidemiologists think.

Prerequisites: PMO511 and Concurrence of Course Director

Winter Lipnick/Haverkos 2 Quarter Hours/Graded

PMO701 ADVANCED BIOMETRICS TUTORIAL

Selected advanced topics in biometrics, not covered in other graduate courses, that are of interest to the student(s).

Prerequisites: Concurrence of Course Director

All Staff 1-12 Quarter Hours/Graded

PMO811 INDEPENDENT STUDY IN EPIDEMIOLOGY

This course provides experience in epidemiologic investigations as well as programs of reading and research in specific areas of epidemiologic interest. Students work under the supervision of a faculty member. A proposal must be submitted to the faculty mentor for approval and credits are assigned commensurate with the complexity of the project.

Prerequisites: Concurrence of Division Director

All Staff 1-12 Quarter Hours/Graded or Credit

PMO911 RESEARCH IN EPIDEMIOLOGY

This course teaches students methods in conducting epidemiologic studies. Under mentorship of a faculty member, the student may continue research already started or participate in research in progress at USU.

Prerequisites: PMO511, 512, Concurrence of Course Director

All Staff 1-12 Quarter Hours/Credit

## HEALTH SERVICES ADMINISTRATION (HSA)

- PMO523      FUNDAMENTALS OF U.S. HEALTHCARE POLICY  
This course examines the application of concepts and techniques of advocating or influencing policy on behalf of organizations, the community, and the health services industry. Legislative, executive and judiciary branches and their role in national and state policy will be discussed. Comparisons of the roles and effects of public and private policy will be conducted. The role of interest groups in the policy process, and the concept of political competence at the individual and organizational levels will be examined.  
Prerequisites: Concurrence of Course Director  
Winter      Thompson      2 Quarter Hours/Graded
- PMO524      HEALTH CARE PERFORMANCE IMPROVEMENT  
This course will provide students an in-depth view of the Malcolm Baldrige National Quality Award criteria. Students will learn the scoring methods used by Baldrige examiners and will apply their skills to a standard case. Lecture and discussion periods will focus on the Core Values, applicability of the business criteria to the health profession, actual impact of the criteria set on quality and profitability in those businesses which have won the Award. This course will provide the student with an understanding of the systems approach to quality improvement and will enable students to use the Baldrige criteria for assessment of health care systems.  
Prerequisites: None  
Spring      Barbour      3 Quarter Hours/Graded
- PMO526      HEALTH SYSTEMS  
This course provides an overview of the organization and function of health services in the U.S., including the pluralistic nature of the systems, the behavioral and economic foundations for understanding its function, major historical and legislative events that have shaped the current system, current research relating to the health system financing and staffing, and current policy issues in regard to the organization of health services. At the completion of this course, students will be able to explain the historical development of American health care and to analyze the factors that effect change in the system.  
Prerequisites: None  
Fall      Corriere      4 Quarter Hours/Graded
- PMO527      PRINCIPLES OF HEALTHCARE MANAGEMENT  
This course provides a survey of health care management principles, including strategic and health systems planning, leadership, resource and information management, performance measurement and improvement, and organizational theory and design.  
Prerequisites: None  
Winter      Corriere      2 Quarter Hours/Graded
- PMO528      INTERNATIONAL HEALTH I  
This course provides a broad-based introduction to the field of international health. The course provides an introduction to major global health issues beginning with trends in disease burden, cultural perspectives, and roles of international public and private agencies. Underlying health issues will also be discussed including reproductive health, nutrition, infectious diseases, HIV/AIDS, mental health, and chronic diseases and injury. By the end of the course, students will have an understanding of major political, economic, and socio-cultural factors influencing the assessment, intervention, and evaluation processes for addressing specific global health issues.  
Prerequisites: Concurrence of Course Director  
Fall      Ainscough      3 Quarter Hours/Graded
- PMO529      HEALTH CARE FINANCIAL MANAGEMENT  
This course introduces students to resource the management concepts that influence an organization's financial performance. Topics includes: the government resource environment, the

defense resource environment, budgeting and cost analysis, accounting and finance, TRICARE contract financial incentives, and the public healthcare resource environment.

Prerequisites: PMO526 and PMO527 or Concurrence  
of Course Director

Spring Tinling 2 Quarter Hours/Graded

PMO534 MEDICAL ANTHROPOLOGY

This course introduces students to the link between culture and health behaviors (understanding medicine from the patient's point of view) in order to increase understanding between the "healers" and the populations they serve. This understanding will contribute to better compliance and improved health outcomes. At the end of the course, students will be able to characterize barriers to health services produced by cultural differences, evaluate health-seeking behaviors from a cross-cultural perspective, and characterize their own health care system perspectives as they relate to their own culture.

Prerequisites: Concurrence of Course Director

Winter Primack/Ainscough 2 Quarter Hour/Graded

PMO535 THE LAW OF HEALTH CARE

This course provides an introduction to the law and the legal process in relation to health care administration, and is designed to provide the student an ability to deal with legal concepts in health care settings. Topics include constraints that law and regulations impose on the health care industry; liability of health care providers; rights of patients; consent issues; and administrative law for health care organizations.

Prerequisites: Concurrence of Course Director

Winter Baker 2 Quarter Hours/Graded

PMO537 CLINICAL DECISION MAKING

This is an introductory course in the principles of medical decision making. The first part of the course deals with heuristics used by health care providers, probability assessment, and the performance characteristics of diagnostic tests. The second part of the course provides an overview of instruments used in health policy and the decision sciences including: decision trees, patient preference assessment, and cost-effectiveness analysis. For each session there are specially prepared handouts, problems, and in-class exercises based upon the Stanford medical decision making series. The seminar is interactive to encourage understanding, application, and teaching of the concepts.

Prerequisites: Concurrence of Course Director

Spring Jackson 1 Quarter Hour/Credit

PMO539 INTERNATIONAL HEALTH II

This course builds on the information presented in International Health I but is designed to stand alone. It will address: effects of current humanitarian emergencies on families, communities and nations, use of the media and methods of social communication in disease prevention and health promotion; economic issues in developing countries affecting health; and the structure and function of health systems in selected geographic regions. By the end of the course, students will have an understanding of major health systems and programs in place throughout the world and their influence on global health.

Prerequisites: PMO528 and Concurrence of Course Director

Winter Ainscough 3 Quarter Hours/Graded

PMO559 DECISION SUPPORT IN HEALTH CARE PERFORMANCE IMPROVEMENT

This course focuses on developing student's skills and knowledge on how to improve performance in health care systems of any size. The subject matter begins with first level knowledge needed to understand how to make good decision when faced with problems and issues of inefficiency. At the second level, students will learn to uncover information showing the current health care delivery performance status of the system. They will also learn the key attributes of data use and the discipline of which data to use at specific times in performance improvement.

		Prerequisites: None Barbour/Crawford	4 Quarter Hours/Graded
PMO598	<u>HEALTH CARE ECONOMICS</u>		
	This course applies economics concepts to: analyze health, the healthcare market and policies for healthcare. Two primary themes for this course are: public health care economics, and military health care economics. As they relate to the primary topics of the course, the primary objectives of this course are: 1) to understand the distinctive economics characteristics of health, the healthcare industry and the professional responsible for delivering health services 2) from the standpoint of economics, to analyze and evaluate, the American systems of healthcare financing and delivery 3: to discuss multiple current policy issues such as health care costs, uncompensated care, managed care and health insurance reform.		
		Prerequisites: None Anderson	2 Quarter hours/Graded
PMO591	<u>MARKETING AND STRATEGIC ISSUES FOR HEALTH CARE ORGANIZATIONS</u>		
	This course provides an overview of health systems marketing and strategic planning while integrating key concepts and skills derived from other courses within the health services track. Select topics include measuring and understanding consumer behavior, market segmentation and strategic targeting, crafting business case analyses, forecasting demand for care, analysis of the competitive environment, governance, and leveraging your public relations assets. At the completion of this course, students will present – in small teams - a solution to the Regents Health Care System case study used throughout the health services track to a mock “board of directors” for approval.		
		Prerequisites: PMO 526 and 527 Faculty	2 Quarter hours / graded
PMO592	<u>HEALTHCARE TECHNOLOGY ASSESSMENT</u>		
	This course provides an introduction to technology assessment as a tool for public policy, evidence-based health administration, and clinical decision-making. There are two modules in this course. The first module introduces medical technology assessment and its role in health systems and evaluates the priorities and strategies of the major initiatives in healthcare technology assessment. This includes an appraisal of the role of government agencies like the Centers for Medicare and Medicaid Services, the Food and Drug Administration, and the Agency for Healthcare Research and Quality; industry entities such as the Blue Cross Blue Shield Technology Evaluation Center; and academic efforts such as the Cochrane Collaboration. The second module introduces the tools of economic evaluation of health services and interventions, to include cost-effectiveness, cost-utility, and cost-benefit analyses; and provides guidance on the presentation and use of economic evaluation results.		
		Prerequisite: None Faculty	2 Quarter Hours/Graded
PMO594	<u>INTRODUCTION TO MEDICAL INFORMATICS</u>		
	A foundation course in medical informatics designed primarily for clinicians who practice in the primary care environment and others with an interest. The course provides a broad view of medical informatics and information technology within health systems down to application at the patients’ bedside. Topics of special interest within the curriculum include electronic medical records, implications for translation of research into practice, digital libraries and acquiring rapid answers to clinical questions, telemedicine, change management and population health applications. Students are required to complete a medical informatics project during the term.		
		Prerequisites: None Gimbel	3 Quarter Hours/ Graded
PMO926	<u>HEALTH SERVICES ADMINISTRATION DIRECTED RESEARCH</u>		
	Students undertake selected research projects emphasizing organizational and management studies and program evaluation. At times the project will include teaching a technique or methodology.		

More often the study will be an actual operational problem of a health agency. At the end of the research students will be able to describe and defend the methods used and the findings discovered in a traditional scientific forum (e.g., formal presentation or journal article publication).

All Prerequisites: Concurrence of Course Director  
Staff 1-12 Quarter Hours/Graded or Credit

### **SOCIAL AND BEHAVIORAL SCIENCES (SOC/BEHAV)**

PMO530 **BEHAVIORAL AND SOCIAL SCIENCES APPLIED TO PUBLIC HEALTH**  
This survey course exposes students to aspects of the behavioral and social sciences which are relevant to public health. It is intended to make students more sophisticated analysts of health problems by increasing their understanding of how complex the human aspects of prevention are. Major scientific theories and models of health behavior are presented early in the quarter. The remainder of the course focuses on important social factors and specific behaviors, with an emphasis on primary and secondary prevention.

Pre-Fall Prerequisites: None  
Creel 4 Quarter Hours/Graded

PMO531 **PROGRAM PLANNING AND DEVELOPMENT**  
This course is designed for students who are already familiar with health behavior theory and want to learn how to develop health behavior change programs. While a planning framework will be covered in lecture format, the acquisition of needs assessment skills is emphasized throughout the quarter. Program implementation and evaluation will also be covered, as will ethical issues relevant to health promotion.

Winter Prerequisites: PMO530 or Course Director Concurrence  
Girasek 3 Quarter Hours/Graded

PMO830 **INDEPENDENT STUDY IN SOCIAL AND BEHAVIORAL SCIENCES**  
Under the mentorship of a faculty member, students will conduct an independent study project in the social and behavioral sciences as they relate to public health. The objective is to acquire specific methodological skills or deepen their understanding of the field's science base.

All Prerequisites: Concurrence of Course Director  
Creel / Girasek 1-12 Quarter Hours/Graded or Credit

### **TROPICAL PUBLIC HEALTH (TPH)**

PMO560 **PRINCIPLES AND PRACTICE OF TROPICAL MEDICINE**  
This course presents a comprehensive approach to the principles and practice of tropical medicine. Tropical illness will be presented from both a pathogen and organ system perspective (i.e., cardiac, neurological, dermatological). The epidemiology, pathogenesis, clinical manifestations, complications, differential diagnoses, diagnostic features, and treatment of each disease will be presented. Methods for the prevention and control of these diseases are emphasized. Rational approaches to patients with various symptom complexes are discussed. Students are strongly encouraged to enroll concurrently in PMO 614 Tropical Medicine Rounds. Graded; or Pass/Fail in limited circumstances with instructor permission.

Prerequisites: PMO600 Fundamentals of Human Physiology (for non-clinicians only)  
or Concurrence of Course Director  
Spring Coldren/Hickey 6 Quarter Hours/Graded or credit

PMO561 **MEDICAL PARASITOLOGY**  
This course consists of lectures, practical exercises, and demonstrations covering the important helminthic and protozoan diseases of man. The life cycle, epidemiology, geographic distribution,

pathology and immunology together with laboratory and field methods of diagnosis, treatment, and prevention are covered.

Spring Prerequisites: Concurrence of Course Director  
Cross 3 Quarter Hours/Graded

PMO563

CLINICAL TROPICAL MEDICINE

This course consists of advanced and applied training in the diagnosis and management of diseases of the tropics that present special problems and in the principles and methods of disease surveillance. The course is clinically oriented and exposes the student to patients at selected health care facilities in Asia, Africa, Central or South America. It satisfies the practicum requirement for the MTM&H degree.

All (Overseas) Prerequisites: Concurrence of Course Director  
Coldren/Hickey 1-12 Quarter Hours/Credit

PMO564

EPIDEMIOLOGY AND CONTROL OF ARBOVIRUSES

This course covers the epidemiology, prevention and control of viruses that are biologically transmitted by arthropods such as mosquitoes and ticks. In addition, some of the important African and South American hemorrhagic fever viruses and the hantaviruses are covered. At the end of the course, students should have an extensive understanding of how these viruses may cause outbreaks of human disease in urban and/or rural environments, how to assess risk of exposure to these viruses, and how to prevent and/or treat these viral diseases. Lectures and discussions will cover topics such as arthropod infection and transmission of viruses, the epidemiology of various viruses carried by arthropods and rodents, clinical course and pathology of certain viral diseases, risk assessment of arthropod-borne virus transmission, prevention/control of arthropod-borne virus transmission, and development of new antiviral drugs. Students taking the laboratory will receive extensive training in the latest techniques for isolating, diagnosing, and cultivating certain viruses. All students will have a wide variety of current scientific articles to read and discuss. Graded; or Pass/Fail in limited circumstances with instructor permission.

Spring(Lec)/Summer(Lab) Prerequisites: Concurrence of Course Director  
Johnson 2(Lec), 4(Lab) Quarter Hours/Graded or Credit

PMO565

VECTOR BIOLOGY

This course presents an overview of vector biology as it relates to the epidemiological patterns of arthropod-borne diseases in human populations. Vector species of major arthropod-borne diseases will be selected to illustrate different types of disease transmission and to examine vector potential as influenced by climate and habitat, susceptibility to infection, vector longevity, length of extrinsic incubation, host preferences and the relationships between vector behavior, socio-cultural characteristics of human populations and disease incidence. The influence of vector biology on the methods and success of control efforts will be emphasized. The course will be presented in a series of lectures, discussions and class projects.

Fall Prerequisites: Concurrence of Course Director  
Johnson 2 Quarter Hours/Graded

PMO566

PHYSIOLOGICAL PARAMETERS OF VECTOR COMPETENCE

This course presents essential aspects of arthropod physiology and basic physiological principles that regulate competence for transmission of disease agents. Lectures and discussions will cover subjects such as growth and metamorphosis of vectors, movement of the various life stages of vectors, sensory functions of vectors which aid in host location and feeding, digestion of blood in mosquitoes, and adaptation of different vectors to climatic stresses. Laboratories will demonstrate various physiological phenomena such as effects of hormones on growth and development of mosquitoes, ovarian development in mosquitoes, feeding stimuli for flies, effects of repellents on mosquito feeding, and effects of insecticides on mosquito locomotion.

Winter Prerequisites: Concurrence of Course Director  
Greico/Achee 4 Quarter Hours/Graded



systems of biological classification and how behavioral, physiological, biochemical, and molecular techniques are applied in classifying medically important taxa.

Prerequisites: Concurrence of Course Director

Winter

Johnson

2 Quarter Hours/Graded

PMO573

EPIDEMIOLOGY AND PREVENTION OF VACCINE-PREVENTABLE DISEASES

The primary focus of this course will be to provide updates on vaccine-preventable diseases, vaccine management and safety, and standard immunization practices. The course is a self-paced distance-learning course using an annual teleconference from the National Immunizations program at the Centers for Disease Control and Prevention in Atlanta, GA. The teleconference is held live in the spring, so this course uses the archived video online. Session one will cover principles of vaccination, general recommendations on immunization, vaccine safety, storage and handling, and vaccine administration. Session Two will cover pertussis, pneumococcal disease (childhood), polio and Hib, Session Three will cover measles, rubella, varicella, smallpox and meningococcal disease. Session Four will cover hepatitis B, Hepatitis A, influenza, and pneumococcal disease (adult). For more information about this course see the course director.

Prerequisites: Concurrence of Course Director

Summer

Coldren

1 Quarter Hours/Credit

PMO577

INTRODUCTION TO GIS IN PUBLIC HEALTH

Geographic Information Systems (GIS) have a variety of uses including: mapping and analyzing the spatial distribution of diseases, determining the proximity of diseases to environmental factors, and planning the distribution of public health services. The goal of the course is to give students an understanding of GIS and spatial analysis techniques, example applications, and hands-on experience in the lab using hardware and software that will enable students to use the techniques discussed in class in a knowledgeable way in their research and future work in public health. The lectures will cover GIS data structures, entering data into a GIS, GPS, geographic analysis, cartographic presentation, and applications of GIS to public health.

Prerequisites: Concurrence of Course Director

Fall

Achee/Masuoka

2 Quarter Hours/Graded

PMO578

REMOTE SENSING METHODS IN PUBLIC HEALTH

Images acquired from aircraft and satellites have an increasing role in public health research as a way to map environmental factors that can affect health (such as mosquito larval habitats, water pollution, dust storms, etc.). The lectures will cover types of remote sensing imagery, image processing, photointerpretation of various imagery types, and examples of applications of remote sensing to public health from the literature. The laboratory will give students experience in photointerpretation, image processing, and use of remote sensing data with GIS data.

Prerequisites: Concurrence of Course Director

Winter

Masuoka

3 Quarter Hours/Graded

PMO613

PUBLIC HEALTH ISSUES OF DISASTERS IN DEVELOPING COUNTRIES

This course focuses on the public health consequences of disasters in developing countries (natural, man-made and technological) and on the principal public health interventions needed to mitigate and respond to the disaster's effects. Students will learn epidemiological tools to assess and monitor the health of populations affected by disasters. The role of the medical community when planning for and/or supporting the response to complex humanitarian crises will be emphasized. The course will use guest speakers to support the course material.

Prerequisites: Concurrence of Course Director

Spring

TBA

4 Quarter Hours/Graded

PMO614

TROPICAL MEDICINE ROUNDS

This is a clinical case management course, geared toward the diagnosis and treatment of actual clinical cases. X-rays, basic laboratory specimens and photographs will be available for consideration. Discussion will include differential diagnosis, specific treatment, complications, epidemiological implications and preventive measures that could have avoided disease. Upon

completion of this course the students should be able to (1) develop a tropical medicine disease case management strategy that is logical, realistic and comprehensive; (2) discuss the differential diagnosis of a patient symptom complex and recommend diagnostic and therapeutic actions; (3) know the chemotherapeutic treatment and case management strategy for common tropical diseases; and (4) devise a public health program to prevent further disease transmission in the community. This course is strongly recommended for anyone enrolled in PMO560 Principles and Practice of Tropical Medicine.

Spring Prerequisites: Concurrence of Course Director  
Hickey/Coldren 2 Quarter Hours/Credit

PMO615

SAND FLIES AND DISEASE

This course presents a thorough coverage of the phlebotomine sand flies and their importance as vectors of diseases such as the leishmaniases, bartonellosis and sand fly fever. Particular emphasis is given to the leishmaniases and the ecology of Leishmania transmission, including parasitevector and vectorhost interactions, sand fly and Leishmania surveillance and leishmaniasis prevention and control. The course also covers in less detail the biting midges (also called sand flies) and the diseases they transmit, such as blue tongue and Oropouche viruses, and certain microfilariae. Students will gain an extensive understanding of sand fly and biting midge biology and ecology, and will be able to recognize sand flies and biting midges by sight and identify important vector species using dichotomous keys. They will learn to organize and conduct sand fly and Leishmania surveys to assess the risk of human exposure, and will be able to recommend appropriate countermeasures for vector and disease suppression. Students will be required to rear sand flies in the laboratory and to collect age-specific life-table data through an entire colony generation.

Winter Prerequisites: Concurrence of Course Director  
Johnson/Lawyer 3 Quarter Hours/Graded

PMO661

TROPICAL PUBLIC HEALTH SEMINAR

This seminar series presents reviews of current concepts and research in tropical public health. Guest speakers and faculty members present weekly seminars on selected topics.

Spring Prerequisites: Concurrence of Course Director  
TBA 1 Quarter Hours/Graded

PMO760

TROPICAL MEDICINE RESEARCH TUTORIAL

Students, with faculty advice, will develop a study question for a directed research project during the overseas quarter. Background research of the medical/scientific literature will be required to formulate a hypothesis to be investigated. Laboratory procedures necessary for the study, but with which the student is unfamiliar, will be identified. This tutorial will include learning these techniques. There will be requirements for outside reading to understand the theory, as well as laboratory hands-on instruction to master the mechanics of the procedure(s) required to do the research project.

All Prerequisites: PMO560, Concurrence of Course Director  
Hickey/Coldren 1-12 Quarter Hours/Graded

PMO761

IMMUNOPARASITOLOGY TUTORIAL

This course covers the immune responses in hosts caused by parasites and the mechanisms of escape selected by the parasites. The student will gain knowledge in the immune responses, including non-specific mechanisms such as activated macrophages, neutrophils and eosinophils, and the humoral and cellular arms of the specific immune response to various human parasites. In addition, antigenic variation demonstrated in a number of protozoan parasites will be analyzed with reference to malaria and trypanosomiasis. The mechanisms which permit intracellular survival of Leishmania and Toxoplasma will also be assessed. The potential for immunization against human parasites, utilizing the state-of-the-art molecular biology techniques is explored specifically with reference to malaria, trypanosomiasis, and schistosomiasis.

Spring Prerequisites: Concurrence of Course Director  
Richards 3 Quarter Hours/Credit



environment in which the occupational health specialist must function. Lecture presentations, assignments, and practical exercises will address methods to detect and prevent occupational illness and injury within the context of an occupational medicine service. A required group project allows students to design and present elements of a program for occupational safety and health.

Prerequisites: Concurrence of Course Director  
Spring Jankosky 4 Quarter Hours/Graded

PMO548

JOINT MEDICAL OPERATIONS AND HUMANITARIAN ASSISTANCE

Lectures will present the student with a historical perspective on the importance of preventive medicine in controlling disease and nonbattle illnesses during deployments. Using the current National Security and National Military Strategies as a starting point, an examination of those strategies in relationship to joint military deployments and the role of military medicine in international humanitarian relief will be made. The medical threat estimate and assessment processes will be studied, and a working knowledge of preventive medicine activities necessary before, during and after a deployment will be reviewed and applied to selected case studies. Current service staffing, organizations, doctrine and capabilities for medically supporting a deployed joint force will be examined in depth. Students will conduct a mock deployment planning and assessment exercise in class.

Prerequisites: Concurrence of Course Director  
Fall Schor 3 Quarter Hours/Graded

PMO557

INTRODUCTION TO MILITARY OCCUPATIONAL HEALTH

Course designed for occupational medicine residents of all military services. This course will complement PM0558 Fundamentals of Occupational Health, which will be taught in the same quarter. The course will follow the syllabus for Army Medical Department Center and School (AMEDD C&S), Fort Sam Houston, Texas Course 6H-F20. The course will involve pre-class review of 6H-F20 web-based topics with class time centered on discussion of the web materials. Area of discussion will include: 1) application of occupational health topics to military health care systems using current Army programs as a model; and 2) the advantages/disadvantages of this format of learning for residential and distance learning for students. Army graduates of this course will be eligible to apply for 6H-F20 Phase II resident course (4.5 days duration) training provided by the AMEDD C&S in Dec of each year in San Antonio, Texas.

Prerequisites: Concurrence of Course Director  
Pre-Fall Mallon 1 Quarter hour graded

PMO558

FUNDAMENTALS OF CLINICAL OCCUPATIONAL ENVIRONMENTAL, AND PREVENTIVE MEDICINE

This course is an introduction to the National Capital Consortium Residencies in Occupational and Environment Medicine (OEM) and General Preventive Medicine (GPM) for academic-year OEM and GPM residents. It provides an introduction, through lectures and group class activities, to concepts and administrative procedures germane to the residency program. Resident competencies will be discussed, and each resident will prepare and present an individual educational plan. The class is also relevant and open to residents who are in the academic year of other service-related GPM or Aerospace Medicine Residency or fellowship programs.

Prerequisites: Status as a resident in an ABPM specialty  
Pre-Fall D. Bradshaw/Mallon 1 Quarter Hour/Graded

PMO642

SELECTED TOPICS IN ENVIRONMENTAL/OCCUPATIONAL HEALTH

This course is designed primarily for residents in occupational and environmental medicine and for residents in general preventive medicine and provides an introduction to the scope of occupational and environmental health in the United States, the practice of occupational health, administrative and legal aspects of occupational health, and general concepts of toxicology and medical surveillance.

Prerequisites: Concurrence of Course Director

	Pre-fall	Mallon/Jankosky	4 Quarter Hours/Graded
PMO670	<u>PUBLIC HEALTH PRACTICUM</u>		
	Students will have the opportunity for a variety of public health experiential training opportunities within military and civilian organizations in the local geographic area and possibly other more distant sites. Students will enhance their didactic learning experience by practical application, and they will acquire a broad public health perspective to specific health-related problem solving. The practicum experience is worth a total of 3 credits, which may be taken over more than one quarter.		
	Prerequisites: PMO503,511,526,530,540., Concurrence of Course Director		
	All	Hooper	1-3 Quarter Hours/Credit
PMO671	<u>INTRODUCTION TO THE MPH PROJECT AND PRACTICUM</u>		
	This seminar course is designed to introduce students to the yearlong process of the designing, developing, executing, and presenting the results of their independent projects and practicum activities. Guest speakers from various military and civilian organizations offer potential project and practicum opportunities. Goal setting, time lines, and curriculum planning for successful completion of the MPH program will be integrated into the course. By the end of the course, students will be able to describe the criteria for an appropriate independent project and practicum activity and formulate a short list of possible projects or practicum activities aligned with their personal and professional goals.		
	Prerequisites: Concurrence of Course Director		
	Fall	Hooper	1 Quarter Hour/Credit
PMO672	<u>MPH PROJECT/PRACTICUM DESIGN AND DEVELOPMENT</u>		
	Building on the introductory course in this series, students will receive guidance on formulating a research question, developing a preproposal and final proposal for their independent project. Workshops and small group exercises will afford students the opportunity for peer review and instructor feedback. Discussions will include the criteria and format for different types of projects (i.e., grant proposal, policy paper, public health problem solving, etc), the process for institutional assurances and approvals (for human subjects research and animal care and use issues), and the integration of the core public health disciplines. Students will be encouraged to select a project which combines the project and practicum requirements if possible. By the end of the course, students will be able to develop and critique study proposals and describe the process of institutional assurances and approvals for research studies.		
	Prerequisites: Concurrence of Course Director		
	Winter	Hooper	1 Quarter Hour/Credit
PMO673	<u>MPH PROJECT/PRACTICUM IMPLEMENTATION AND EVALUATION</u>		
	This is the third and last in this seminar series on the MPH independent project and practicum. The course will be a forum for discussing and finding solutions to issues or problems related to project mentorship, authorship issues, funding issues, and/or study implementation, among others. Speakers will reinforce the oral and written communication skills essential for effective public health practice, including how to prepare scientific abstracts and posters. By the end of the course, students will be able to prepare, briefings, written reports, policy papers, abstracts, posters, and oral presentation slides related to public health practice or research. They will be able to effectively participate in the iterative process of manuscript development and demonstrate effective oral and written communication skills when reporting research findings to various audiences.		
	Prerequisites: Concurrence of Course Director		
	Spring	Hooper	1 Quarter Hour/Credit
PMO674	<u>MPH INDEPENDENT PROJECT</u>		
	This is a required course for all MPH/MTM&H students to receive credit for the products of their independent project: project proposal, oral presentation, and final written report.		
	Prerequisites: Eligibility for graduation		

	Summer	Hooper	3 Quarter Hours/Graded
PMO680	<u>INTRODUCTION TO PUBLIC HEALTH</u>		
	This course will include lectures providing an overview of the field of public health, including the history of public health and preventive medicine, legal and ethical issues associated with public health and current issues uniformed and civilian public health and preventive medicine officers are working. The objective is to provide students with a solid background in these topics as a foundation for the rest of the academic year.		
		Prerequisites: Concurrence of Course Director	
	Pre-Fall	Burnett	1 Quarter Hour/Credit
PMO682	<u>HISTORY OF PREVENTIVE MEDICINE</u>		
	The evolution and development of the medical and social aspects of public health and preventive medicine, and specialized disciplines (statistics, epidemiology) will be studied to explicate both the historical background of the present, and to extract the historical foundation for persistent concepts and functions.		
		Prerequisites: Concurrence of Course Director	
	Spring	D. Smith	2-4 Quarter Hours/Graded
PMO683	<u>CRITICAL READING SEMINAR</u>		
	The Critical Reading Seminar is part of the USU/WRAMC Fellowship Program in General Internal Medicine. It is designed to teach participants to read clinical literature critically, using epidemiologic and statistical techniques. The seminar in the Fall quarter is devoted to a study of the critical appraisal materials designed by the Department of Clinical Epidemiology and Biostatistics at McMaster University. Exercises are designed to provide a practical experience in employing McMaster's methodology to significant articles chosen to exemplify both excellent and problematic clinical investigation. Subsequently, participants choose their own critical reading packages. Each session is devoted to reading in depth about a single topic; all participants are provided with three to five articles to read critically prior to the seminar. During the seminar, participants rotate as facilitators; all participants discuss the chosen articles. The articles reviewed are primarily from the internal medicine literature and deal with major topics in preventive medicine, epidemiology, and utilization of diagnostic technology, causation, quality of care, economic analysis, prognosis, and therapy.		
		Prerequisites: Concurrence of Course Director	
	Fall/Winter/Spring	TBA	2 Quarter Hours/Credit
PMO684	<u>CLINICAL RESEARCH SEMINAR</u>		
	The Clinical Research Seminar is part of the WRAMC/USU Fellowship Program in General Preventive Medicine. The seminars concentrate on how to design clinical investigation projects, with a particular emphasis on areas in academic general medicine, such as ambulatory care, geriatrics, medical interviewing, preoperative evaluation, clinical decision making, medical education, behavioral medicine, and health services research. Speakers emphasize methodologic issues and, in particular, explore problems associated with clinical research. About 1/3 of the seminars will be conducted by WRAMC or USU investigators; 1/3 will focus on special topics in clinical research; and 1/3 will be led by speakers invited from outside agencies and institutions. The format is informal to allow a brisk dialogue between participants and speakers. Students will see how principles of clinical research and implemented in actual projects, and will learn how to identify methodologic problems when designing protocols and reading the literature.		
		Prerequisites: Concurrence of Course Director	
	Fall/Winter/Spring (2 Tues/mo)	Jackson	1 Quarter Hour/Credit
PMO685	<u>HEALTH POLICY SEMINAR</u>		
	The Health Policy Seminar is given as a part of the USU/WRAMC Fellowship Program in General Internal Medicine. Selected topics in both military and civilian medicine are addressed, such as biomedical ethics, legislative issues, health care utilization and manpower, and other health policy issues. Sessions will include invited speakers, selected readings with discussion, and		

occasionally a congressional field trip. Students will become more aware of how policy decisions impact upon the teaching and practice of medicine.

Prerequisites: Concurrence of Course Director  
Spring (2 Thurs/mo) Jackson 1 Quarter Hour/Credit

PMO688

INFORMATION GATHERING IN CLINICAL MEDICINE

Information gathered in the clinical setting becomes data used in epidemiological and health outcomes research. This course will provide opportunities for students to learn from research-oriented practicing clinicians in a clinical setting. Students will learn the problems involved in collecting accurate information from patients through history-taking, physical examination, laboratory testing, and questionnaire administration. Teaching methods will center on observation of the physician at work and, as much as possible, active participation of the students in collecting data, and will include assigned readings and tutorials.

Prerequisites: PMO511, 512, Concurrence of Course Director  
All Staff 2-12 Quarter Hours/Credit

PMO691

TEACHING PRACTICUM

As one of the requirements of the Dr.P.H. program, students serve as Teaching Assistants for at least one course per year. In addition to providing assistance to the course director, they are expected to expand and deepen their knowledge of the subject matter taught, sharpen their critical thinking skills, and gain experience in giving lectures, leading seminars, supervising laboratory exercises, preparing and grading examinations, reviewing homework, and counseling students.

Prerequisites: Concurrence of Course Director  
All TBA 3 Quarter Hours/Credit

PMO900

INTRODUCTION TO CLINICAL TRIALS

Presents students with the rationale for conducting clinical studies and introduces basic clinical trial methodology. Fundamentals of design, conduct, and analysis will be presented through modern and historical examples. Key ethical and regulatory issues related to clinical trials will be highlighted, as will the unique role of the military in past and present examples of clinical research. The course is intended to provide a basis for understanding clinical trial design and analysis. Students interested in developing the skills necessary to independently design clinical trials, including the development of an analysis plan, are advised to enroll in PMO 996Clinical Trial Design and Analysis.

Prerequisites: PMO 503 or Concurrence of Course Director  
Winter Ottolini 2 Quarter Hours/Credit

PMO970

DIRECTED STUDIES IN PREVENTIVE MEDICINE

Additionally, students may register for this course in order to receive credit for extra work on the MPH independent project. Selected students will use this independent study project to expand their knowledge in a specific area of Preventive Medicine or Public Health.

Prerequisites: Concurrence of Course Director  
All Staff 1-12 Quarter Hours/Graded or Credit

PMO971

PMB DOCTORAL STUDENT JOURNAL CLUB

This course is required for all PMB doctoral students. Each student in the class will read the selected scientific article and come prepared to discuss the salient points. A different student each week will present a current scientific paper published in the peer-reviewed scientific literature and lead the discussion. PMB faculty will attend the weekly seminar and are encouraged to join in the discussion. The major objective of the course is to develop and refine critical reading skills, as well as presentation skills.

Prerequisites: Concurrence of Course Director  
Fall, Winter, Spring Staff 1 Quarter Hour/Credit

PMO972

SEMINAR IN CRITICAL THINKING

The course is designed to teach methods for evaluating arguments and policies; identifying and assessing alternatives; and developing reasonable, persuasive positions of one's own. Students master specific logical, rhetorical, and critical techniques that they then use to examine published works in ethics, epistemology, literature, history, science, and mathematics. Taken together, these techniques should provide the student with the verbal skills essential to oral presentation, criticism, and defense, and a reliable method for producing clear, well-structured, and persuasive written arguments. Thus, the course requirements include a series of short written essays (250 to 500 words) and a brief weekly reading assignment followed by student-directed discussion in class. The class will meet twice a week, once to examine a family of analytic techniques and once to discuss a reading assignment related to those techniques. The course will last 24 weeks (2 hours per week.)

Prerequisites: Concurrence of Course Director

Winter-Spring

Heitman

4 Quarter Hours/Graded

PMO973

GENERAL PREVENTIVE AND OCCUPATIONAL & ENVIRONMENTAL MEDICINE RESIDENCY JOURNAL CLUB

The overall goals of the GPM/OEM Journal club are to teach problem-based learning to participants by identification of public health problems from "real-world" situations, reviewing the extant scientific literature and utilizing structured critical appraisal skills to determine the evidence-based recommendations that can be translated into policy and practice. The intent of the process is to instill in participants a habit of life-long learning to maintain current and valid knowledge relevant to preventive and occupational medicine. In addition, each student is expected to prepare, present and lead a critical appraisal discussion of an article one or more times during the academic year, as well as to read and participate in the weekly discussions of each article selected. Residency and graduate faculty and are encouraged to attend and contribute to all sessions. Faculty and invited guest speakers may also present "hot topics" of interest at times during the year. Secondary goals are to share experiences and expertise, pass on announcements and events of interests, and foster a sense of collegiality and identity within the residency programs and the graduate students in affiliated residency programs.

Prerequisites: Concurrence of Course Director

Fall-Winter-Spring

Burnett/Jankosky

1 Quarter Hours/Graded

PMO991

ETHICS IN PUBLIC HEALTH

This course is based on the Ethics and Public Health model curriculum developed by HRSA and ASPH in 2003. The course serves to encourage well-informed critical discussions of ethical issues in the field of public health. The scientific considerations in public health policy and interventions sometimes cause political and ethical conflicts. Central to public health practice are questions of autonomy, individual rights, coercion, justice, community, and multicultural values. The population-based perspective of public health goals should be ethically reconciled with the preservation of human rights and protection of civil liberties. The goals that guide this course curriculum are: stimulating the moral imagination, recognizing ethical issues, developing analytical skills, eliciting a sense of moral obligation and responsibility, and coping with moral ambiguity. The course will enable students to recognize, analyze, criticize, and evaluate ethical issues in public health, and equip them with practical knowledge to construct arguments and make decisions in public health practice.

Prerequisites: None

Spring

Faculty

3 Quarter Hours/Credit

PMO996

CLINICAL TRIAL DESIGN & ANALYSIS

This course is designed for MPH and other graduate students / researchers interested in synthesizing their learning from previous coursework/experience in the design and analysis of clinical trials. The course is intended for students interested in developing the skills necessary for a more independent role in designing clinical trials, including ones that contribute to effective collaboration in developing a statistical analysis plan. The course will survey advanced topics in clinical trials, discussing issues commonly faced, from the prospective planning phases, through

conducting and monitoring an ongoing study, to analyzing a completed study. Lectures will emphasize the conceptual aspects of design/analysis issues in this survey of topics, drawing on examples from the current literature. Each lecture is followed by a lab or a selection of breakout sessions, during which students engage in a topic of their choosing with in-depth coverage of issues and hands-on experience with analysis methods to handle them; pros and cons of various approaches and implementing methods using software will be emphasized.

Spring

Prerequisites: PMO 900 or Concurrence of Course Director  
Wilkins 2 Quarter Hours/Credit

**DEPARTMENT OF PREVENTIVE MEDICINE AND BIOMETRICS  
PRIMARY FACULTY APPOINTMENTS**

Quinnan, Gerald V., Jr., M.D. (St. Louis University School of Medicine); Professor and Chair; CAPT, USPHS  
Cruess, David F., Ph.D. (The Johns Hopkins University); Professor and Vice Chair for Biometrics; Director,  
Graduate Programs; Professor, Emerging Infectious Diseases  
Andre, Richard G., MSc. (North Carolina State University), Ph.D. (Iowa State University); Professor and Vice Chair  
for Research and Faculty Development; Professor, Emerging Infectious Diseases  
Hooper, Tomoko I., M.D. (University of California, San Francisco), M.P.H. (Uniformed Services University of the  
Health Sciences); Assistant Professor and Director, Graduate Research and Practicum Programs; Deputy  
Director, Graduate Programs  
Burnett, Daniel G., M.D. (University of Nevada), M.P.H. (San Diego State University); Assistant Professor and  
Director, General Preventive Medicine Residency; Col, USAF, MC, FS  
Mallon, Timothy, M.D. (Syracuse) Assistant Professor and Director, Occupational and Environmental Medicine  
Residency; COL, MC, USA  
Pearse, Lisa, M.D., MPH, Assistant Professor and Deputy Director, General Preventive Medicine Residency; CDR,  
MC, USN  
Jankosky, Christopher, M.D. (Georgetown University); M.P.H. (John Hopkins School of Hygiene and Public  
Health); Assistant Professor and Deputy Director, Occupational and Environmental Medicine Residency,  
CDR, MC, USNR

\*\*\*\*\*

Achee, Nicole, Ph.D. (Uniformed Service University of the Health Sciences), Assistant Professor (Tropical Public  
Health)  
Ainscough, Michael J, M.D. (Southern Illinois University), M.P.H. (University of Texas), Assistant Professor and  
Program Director International Health; Col, USAF, MC, CFS  
Anderson, Katherine, Ph.D. (University of Tennessee Health Science Center, Memphis), M.S. (University of  
Tennessee, Knoxville), B.S. (University of Tennessee, Knoxville) Assistant Professor (Health Services  
Administration)  
Artino, Anthony R., Jr., Ph.D. (University of Connecticut), Assistant Professor (Aerospace Physiology), LCDR,  
MSC, USN  
Barbour, Galen L., M.D. (University of Arkansas School of Medicine); Professor and Division Director (Health  
Services Administration)  
Barnes, Steven L., M.D. (Medical College of Wisconsin), M.P.H. (University of Utah): Assistant Professor  
(Aerospace Medicine) and Division Director (Occupational and Environmental Health Sciences); Col, USAF,  
MC, SFS  
Chan, Wing T., Ph.D. (McGill University, Canada), S.M. (Harvard University School of Public Health); Visiting  
Scientist (Environmental and Occupational Health)  
Chen, Dechang, PhD (SUNY, Buffalo); Assistant Professor (Epidemiology & Biostatistics)  
Coldren, Rodney L., M.D. (Albany Medical College), M.P.H. (Johns Hopkins Bloomberg School of Hygiene and  
Public Health)  
Corriere, Micheal A., Ph.D (American University), M.S. (Naval Postgraduate School): M.B.A (University of New  
Mexico): B.S. (United State Naval Academy); Assistant Professor (Health Services Administration): LCDR,  
MSC, USN  
Coyne, Jr., Philip E. MD (Uniformed Services University of the Health Sciences) MSPH (University of North  
Carolina at Chapel Hill), Assistant Professor, (Tropical Public Health), CAPT, US Public Health Service  
Crawford, Raymond S., III, M.D. (University of Arkansas), M.B.A. (Troy State University); Assistant Professor  
(Health Services Administration)  
Creel, Alisha H., Ph.D. (Johns Hopkins Bloomberg School of Public Health), Assistant Professor (Social and  
Behavioral Sciences)  
Criswell, Darrell, Ph.D., (University of North Texas) Assistant Professor (Aerospace Physiology); LtCol, USAF,  
BSC  
Cross, John H., M.A. (Miami University), Ph.D. (University of Texas Medical Branch); Professor (Tropical Public  
Health)  
Dela Cruz, Georgia, DMD, (University of Pennsylvania), MPH (University of North Carolina), Assistant Professor  
(Center for Oral Health Studies); LTC, DC, USA

DeLong, Gerald T., PhD. (Virginia Commonwealth University), Assistant Professor (Environmental and Occupational Health), LCDR, MSC, USN

Gallardo, Sandra, M.S. Community Health Nursing (Florida Atlantic University); B.S.N., (University of Puerto Rico); Assistant Professor (International Health); Major, USAF, NC

Gimbel, Ronald W., Ph.D. (SUNY-Albany), M.A. (Webster University); Assistant Professor (Health Services Administration); LCDR, MSC, USNR

Girasek, Deborah, C., M.P.H. (University of Michigan School of Public Health), Ph.D. (The Johns Hopkins University School of Hygiene and Public Health); Associate Professor and Division Director (Social and Behavioral Sciences)

Grieco, John P., Ph.D. (Uniformed Services University of the Health Sciences); Assistant Professor (Tropical Public Health)

Hickey, Patrick, M.D. (Uniformed Service University of the Health Sciences); Assistant Professor (Tropical Public Health); MAJ, MC, USA

Hout, Joseph J., MSPH (Uniformed Services University), Assistant Professor (Occupational and Environmental Health), CPT, MS, USA

Johnson, Richard N., Ph.D. (University of Florida); Assistant Professor (Tropical Public Health); COL, MS, USA

Kao, Tzu-Cheg, M.S. (National Tsing Hua University, Taiwan), Ph.D. (Purdue University); Professor (Biostatistics)

Kinnamon, Kenneth E., D.V.M. (Texas A&M University), M.S. (University of Rochester), Ph.D. (University of Tennessee); Professor Emeritus (Tropical Public Health)

Leiendecker, Thomas , DDS, (University of North Carolina), MPH (Uniformed Services University of the Health Sciences), Assistant Professor (Center for Oral Health Studies); CAPT, DC, USN

Lewis, Michael D., M.D. (Tulane University School of Medicine); M.P.H. (The John Hopkins University School of Hygiene and Public Health), M.B.A. (American Later Continental University); Assistant Professor (Epidemiology and Biostatistics); LTC, MC, USA

Martin, Gregory, MD, Assistant Professor (IDCRP)

Masuoka, Penny, M.S. (University of Tennessee); Assistant Professor (Tropical Public Health), NASA/Goddard Space Flight Center

Michelson, Edward H., M.S. (University of Florida), Ph.D. (Harvard University); Professor Emeritus

Mongeau, Susan W., D.D.S. (Emory University); M.P.H. (USU); DC Assistant Professor (Center for Oral Health Studies); Lt Col, USAF

Olsen, Cara H., M.S. (Cornell University), DrPH (Uniformed Service University of the Health Sciences); Assistant Professor and Biostatistical Consultant

Roberts, Donald R., M.S. (University of Missouri), Ph.D. (University of Texas School of Public Health); Professor Emeritus (Tropical Public Health)

Rouse, Douglas M., M.D. (Uniformed Services University of the Health Sciences), MPH (UT Houston School of Public Health); Assistant Professor (Preventive Medicine/Biometrics); Lt Col, MC, USAF, SFS

Rusiecki, Jennifer A., Ph.D. (Yale University, School of Medicine), MPH (Yale University, School of Medicine); Assistant Professor (Epidemiology and Biostatistics)

Scher, Ann I, Ph.D (The Johns Hopkins University School of Hygiene and Public Health), M.S. (University of Maryland); Associate Professor (Epidemiology and Biostatistics)

Smith, Philip A., PhD (Utah State University), MPH (University of California, Berkeley), CIH, Associate Professor (Occupational and Environmental Health), CDR, MSC, USN

Srikantan, Vasantha, Ph.D. (Indian Institute of Science, Bangalore), DVM (Veterinary College, U. of Agricultural Sciences, Bangalore); Research Assistant Professor

Tang, Douglas B., M.S., Ph.D. (University of Minnesota), Adjunct Professor (Epidemiology & Biostatistics)

Thompson, Beverly, MHSA, (George Washington University), Assistant Professor for Research (Health Services Administration)

Tribble, David, MD, MPH (Uniformed Service University of the Health Sciences), DrPH (USU), Associate Professor (IDCRP)

Wegner, Scott MD, Assistant Professor (IDCRP), Col, MC , USAF

White, Duvel W., PhD (University of South Carolina), Assistant Professor (Occupational and Environmental Health), MAJ, MS, USA

Wierzba, Rachel, MD, (University of Wisconsin), MPH, (Johns Hopkins University), Assistant Professor (IDCRP)

Wilkins, Kenneth, Ph.D., (Harvard University), Assistant Professor (IDCRP)

Zhang, Peng Fei, Ph.D. (National Vaccine and Serum Institute, Beijing); Research Associate Professor (Tropical Public Health)

## SECONDARY FACULTY APPOINTMENTS

Feuerstein, Michael, M.S., Ph.D., Professor, Department of Medical and Clinical Psychology  
Heitman, Kristin, M.A., Ph.D., Assistant Professor, Department of Medical History  
Jackson, Jeffrey L., M.D., M.P.H., Associate Professor; LTC, MC, USA; Department of Medicine  
Martin, Gregory J., M.D.; Assistant Professor; CAPT, MC, USN; Department of Medicine  
Smith, Dale C., Ph.D., Professor and Chair, Department of Medical History  
Wilson, Cindy C., Ph.D., Professor, Department of Family Medicine

## ADJUNCT AND VISITING FACULTY

Baine, William B., Adjunct Assistant Professor; CAPT, USPHS  
Baker, John E, J.D, LL.M.; Adjunct Assistant Professor; COL, JAG, USA (Retired)  
Bautista, Leonelo E., M.D., Dr.P.H., Adjunct Assistant Professor  
Bell, Micheal R., Adjunct Assistant Professor, Maj, MC, USA  
Blakely, William F., Ph.D., M.S.; Adjunct Assistant Professor  
Bonventre, Eugene, M.D., Adjunct Assistant Professor  
Bradshaw, Robert Dana, M.D., M.P.H., Adjunct Assistant Professor  
Bradshaw, Patrick P., Adjunct Assistant Professor; Lt Col, BSC, USAF  
Brady, Paul J., M.D., M.P.H.; Adjunct Assistant Professor; LCDR, MC, USPHS  
Brininger, Teresa L., PhD, MBA, OTR/L, CHT, Adjunct Assistant Professor, MAJ, MS, USA  
Brundage, John F., M.D., Adjunct Assistant Professor  
Buck, Alfred S., M.D., Adjunct Professor  
Buttery, Christopher M.G., M.B.B.S., M.P.H.; Adjunct Associate Professor  
Callison, Myna C., MA, OT, MAJ, MS, USA  
Calloway, Margaret., Assistant Professor, LCDR, MC, USNR  
Campbell, James R., M.S. Ph.D., M.P.H.; Adjunct Professor; CAPT, MSC, USN  
Carney, W. Patrick, Ph.D; Adjunct Professor  
Ching, Wei-Mei, Ph.D., Adjunct Associate Professor  
Claborn, David, DrPH, Adjunct Assistant Professor  
Cook, Greg, PhD, Assistant Professor; (Environmental and Occupational Health), LCDR, MSC, USN  
Cowan, David N., Ph.D., Adjunct Assistant Professor  
Crapo, Philip E, Adjunct Assistant Professor, LCDR, MSC, USN  
Culpepper, Randall., Adjunct Assistant Professor, CDR, MC, USN  
Cunnion, Stephen., Adjunct Assistant Professor; CAPT(Ret), MC, USN  
DeFraites, Robert, M.D., M.P.H.; Adjunct Assistant Professor; COL, MC, USA  
Eckenrode, Brian E., PhD; Adjunct Professor  
Erickson, Ralph L., Adjunct Assistant Professor; COL, MC, USA  
Feighner, Brian H., M.D. Associate Professor, COL, MC, USA  
Fitz, Robert, Adjunct Assistant Professor  
Friedman, Heidi, PH.D. Adjunct Assistant Professor  
Gabriele, Edward F., D. Min, Adjunct Assistant Professor  
Gardner, John W., MD, DrPH, Adjunct Professor; COL (Ret), MC, USA  
Gaydos, Joel C., M.D., M.P.H.; Adjunct Professor  
Gordon, Scott W., Assistant Professor; LTC, MSC, USA  
Granger, Elder, Adjunct Assistant Professor; MG, MC, USA  
Gray, Gregory C., M.D. Adjunct Professor  
Haffner, Marlene E., Adjunct Professor; RADM, USPHS  
Halstead, Scott B., M.D., Adjunct Professor  
Hanson, R. Kevin, M.D., M.P.H.; Adjunct Assistant Professor; CAPT (Ret), MC, USN  
Haverkos, Harry, MD, Adjunct Assistant Professor  
Heller, Jack, Ph.D., M.S.; Adjunct Assistant Professor  
Hickey, Thomas E., Adjunct Assistant Professor, LCDR, MSC, USN  
Hoffman, Kenneth J., M.D., M.P.H.; Adjunct Assistant Professor; COL (Ret), MC, USA  
Hoffman, Stephen L., M.D., D.T.M.H.& H; Adjunct Professor; CAPT, MC, USN;

Holland, Christopher S., M.D., Assistant Professor  
Hook, Gary, Adjunct Assistant Professor, CDR, MSC, USN  
Hshieh, Paul B., Adjunct Assistant Professor  
Jones, Bruce H., M.D., Adjunct Assistant Professor  
Jorgensen, Robert R., D.V.M., M.P.H.; Adjunct Assistant Professor  
Kang, Han K., Dr.P.H., Adjunct Assistant Professor  
Kazandjian, Vahe A., Ph.D., Adjunct Professor  
Keep, Lisa W., M.D., M.P.H., Adjunct Assistant Professor; COL (Ret), MC, USA  
Kelley, Patrick W., M.D., M.P.H.; Adjunct Assistant Professor; COL (Ret), MC, USA  
Kluchinsky, Timothy A. Jr., M.B.S.,M.S.P.H., Dr.PH, Adjunct Assistant Professor  
Krauss, Margot R., Adjunct Assistant Professor; COL(Ret), MC, USA  
Lapa, Joyce A., Adjunct Assistant Professor, CAPT, MC, USN  
LaPuma, Peter T., Ph.D, Adjunct Assistant Professor  
Lawyer, Phillip G., M.A., Ph.D., Associate Professor; COL (Ret), MS, USA  
Lee, Arthur P., Ph.D Adjunct Assistant Professor  
Liao, Ximan, Ph.D. Research Assistant Professor  
Lincoln, Andrew J., Sc.D, Adjunct Assistant Professor  
Litow, Francesca K., M.D., MPH , Adjunct Assistant Professor  
Madsen, James, M.D. Assistant Professor, COL, MC, USA  
Magill, Alan J., Adjunct Assistant Professor; COL, MC, USA  
Martin, David B., M.D., Adjunct Assistant Professor; MAJ, USAF, MC, FS  
McBride, Wayne Z., Adjunct Assistant Professor; CDR, MC, USN  
Moritsugu, Kenneth P., Adjunct Assistant Professor; RADM, USPHS  
Moss, David, D.D.S., M.P.H., Adjunct Assistant Professor  
Moultrie, Wilbert, Adjunct Assistant Professor  
Nicogossian, Arnauld, M.D., M.S.; Adjunct Assistant Professor  
Niebuhr, David W., Adjunct Assistant Professor, LTC, MC, USA  
Noah, Donald L., D.V.M., M.P.H.; Adjunct Assistant Professor; LtCol, USAF, BSC  
Patterson, Redford E., M.D., M.P.H.; Adjunct Assistant Professor; Col, USAF, MC  
Primack, Aron, M.A., M.D.; Adjunct Associate Professor; CDR USPHS  
Rayman, Russell B., M.D., M.P.H.; Adjunct Associate Professor  
Redington, Bryce C., Ph.D., Adjunct Assistant Professor  
Resta, John, Master of Civil Engineering, Adjunct Assistant Professor  
Reyes, Ricardo A., Ph.D., Adjunct Assistant Professor, MAJ, MS, USA  
Richards, Allen L., Ph.D., Adjunct Assistant Professor  
Richie, Thomas L., Adjunct Assistant Professor, CAPT, MC, USNR  
Roadman II, Charles H., M.D., Distinguished Professor  
Robert, Leon L Jr., Adjunct Associate Professor, LTC, MS, USA  
Rush, Vivian C., M.D. Adjunct Assistant Professor  
Russell, Kevin L., M.D., M.T.M.&H.; Adjunct Assistant Professor; CDR, MC, USN  
Russell, Philip K., M.D., Adjunct Professor  
Ryan, Margaret A. M.D., M.P.H.; Adjunct Assistant Professor; CDR, MC, USN  
Sardelis, Michael, M.S., Ph.D., Adjunct Assistant Professor  
Schinski, Veron D., Ph.D, Adjunct Assistant Professor  
Schultz, George W., Adjunct Assistant Professor, CDR, MC, USN  
Schutt, David C., M.D., Adjunct Assistant Professor  
Sjogren, Maria, M.D., Adjunct Associate Professor; COL, MC, USA  
Smoak, Bonnie L., M.D., Ph.D., M.P.H., Adjunct Associate Professor; COL (ret), MC, USA  
Stewart, Ann, D.V.M., Ph.D.; Adjunct Assistant Professor  
Thomas, Dana L., M.D., Adjunct Assistant Professor  
Thomas, Mason J., Ph.D., Adjunct Professor  
Thomas, Richard J., Associate Professor, CAPT (Ret), MC, USN  
Tinling, Walter W., Adjunct Assistant Professor  
Tornberg, David N., M.D, Adjunct Assistant Professor  
Trosper, James H., Ph.D., Adjunct Assistant Professor  
Turell, Michael J., Ph.D, Adjunct Associate Professor

Turner, Martha, Ph.D., Adjunct Assistant Professor  
Weese, Coleen B., M.D. Adjunct Assistant Professor  
Weina, Peter J., Adjunct Assistant Professor; LTC, MC, USA  
White, Donald J., M.S., Adjunct Assistant Professor  
Whitmeyer, Antoinette, M.S. Adjunct Assistant Professor, CAPT, MSC, USN  
Wilkerson, Richard C., M.S., Ph.D.; Adjunct Assistant Professor;  
Williams, Jackie L., Ph.D., Adjunct Assistant Professor; LTC, MSC, USA  
Willis, Gordon B., Ph.D., Adjunct Assistant Professor  
Wilson, Deborah E., Adjunct Assistant Professor; CAPT, USPHS  
Wirtz, Robert A., M.S., Ph.D.; Adjunct Associate Professor  
Wood, Owen L., Ph.D., Adjunct Assistant Professor  
Wu, Shuenn-Jue L., Ph.D, Adjunct Assistant Professor  
Yevich, Steven J., M.D. Adjunct Assistant Professor  
York, Andrew K., Adjunct Assistant Professor, CAPT, DC, USN  
Yund, Alan J., Adjunct Assistant Professor; CAPT, MC, USN  
Zhu, Kangmin, Ph.D, Adjunct Associate Professor

## GRADUATES

### 1983

FALK, Leo J., MD, MPH  
JACKSON, Frederick L., DO, MPH, CDR MC USN  
LONG, Truman E., MD, MPH, CDR MC USN  
MARAIST, Donald J., MD, MPH, CDR MC USN  
TECEC, Thomas G., DVM, MPH, CPT VC USA

### 1984

McGINLEY, John L., DDS, MPH, LCDR DC USN  
MIEDZINSKI, Mollie M., BS, MPH  
MITCHELL, Benjamin S., MD, MPH, LCDR MC USN  
PAULSEN, H. Jay, MD, MPH, CDR USPHS

### 1985

ARTHUR, James S., DDS, MPH, CDR DC USN  
BESSER, Yheskel, AB, MPH, COL, IDF  
BISHOP, William C., MD, MPH, CDR MC USN  
CLARKE, William R., MD, MTM&H, LtCol USAF MC  
DREIS, Michael W., BS Pharm, MPH, LCDR USPHS  
KELSEY, Charles, Jr., DVM, MPH, CPT VC USA  
LEVINE, Debra A., BSN, BA, MPH  
LYONS, Fred E., DVM, MPH, CPT VC USA  
ROSENSTOCK, Joel, MD, MPH, LCDR MC USNR

### 1986

BASH, Margaret C., MD, MPH, LT USPHS  
BEADLE, Christine, MD, MPH  
BLUMENBERG, Thomas L., BS Pharm, MPH, LCDR USPHS  
CALDWELL, M. Blake, MD, MPH, LCDR MC USNR  
IQBAL, Mohammed, MD, MPH, LtCol, Pakistan AMC  
MICHALOSKI, Cathleen, BSN, MPH  
PEARSON, Kay, BS Pharm, MPH, CAPT USPHS  
RECHES, Moshe, MSC, MPH, LtCol, Israeli Defence Forces  
SAVAGE, Gale, MD, MPH  
SIMMONS, John, MD, MPH, MAJ MC USA  
SMITH, Kermit, DO, MPH, CDR USPHS  
SUANSILPPONGSE, Aroon, MD, MPH  
TAMIR, Arnon, MD, MPH, MAJ, IDF  
WEIR, Robert, DVM, MPH, CPT VC USA  
YANEY, Sandra, M.N., MPH, CPT NC USA

### 1987

BORDERS, Rosa M., MD, MPH  
BURR, Peggy Q., BS, MPH  
DAVEY, Victoria, BSN, MPH  
GROCHMAL, David L., DDS, MPH, LCDR DC USN  
HEIBA, Ibrahim M., MD, MTM&H  
KIRKPATRICK, Laura, AB, MPH  
McNABB, Cheryl Hisatomi, BS, MPH  
OLSON, Richard, MD, MPH, CDR USPHS

PARKER, John A., MD, MTM&H, MAJ MC USA  
PEREZ, Thomas R., R.Ph., MA, MPH, LCDR USPHS  
RONISH, Ross, MD, MPH, Capt USAF MC  
ROSEN, Steven, BS, MPH  
STEWART, William R., MD, MPH, LCDR MC USN  
TEMPLE, Diana J., AB, MPH

### 1988

BERTSCHE, Patricia K., BSN, MPH  
BEYMER, Charles H., Dr Pharm, MPH, LT USPHS  
BRADY, William E., BS, MPH  
CHAUDRY, M. Ashraf, MBBS, MPH, Maj, Pakistan AMC  
DIEMER, Margretta M., MD, MPH, MAJ MC USA  
DORON, Eytan, BA, MPH, Lt Col, IDF  
GUM, Robert M., DO, MPH, CPT MC USA  
HANSON, Kevin, MD, MPH, LCDR MC USN  
HOOPER, E.Y., MD, MPH, CDR USPHS  
JOHNSON, George M., MD, MPH, Capt USAF MC  
LAI, Sheng-han, MD, MPH  
MIDDLETON, Timothy, M.E., MPH, Maj USAF BSC  
MILLER, Marissa A., DVM, MPH, LT USPHS  
PHILLIPS, Kenneth G., MD, MPH, CPT MC USA  
1988 (continued)  
SANBORN, Jill S., BS MPH  
SMERZ, Richard W., DO, MTM&H, LTC MC USA  
TONAT, Kevin, BA, MPH, LT USPHS  
TROULLOS, Emanuel S., DMD, MPH  
ZAFAR, Abdul, MBBS, MPH

### 1989

CABIRI, Mordechai, BA, MPH, Lt Col, IDF  
CANDLER, Wm H., Jr., MS, DO, MTM&H, CPT MC USA  
CARR, Michael W., DVM, MPH, MAJ MC USA  
CHEN, Kyone (Joe), MBBS, MPH  
KADLEC, Robert P., MD, MTM&H, Maj USAF MC  
LIU, Lei, MD, MPH  
MITCHELL, Glenn W., MD, MPH, LTC MC USA  
PRUETT, Richard K., MD, MPH  
REED, William W., MD, MPH, MAJ MC USA  
SCOTT, Steven G., MD, MPH, LT USPHS  
SHOSHAN, Nimrod, MD, MPH, Lt Col, IDF  
SMITH, Phillip L., MD, MPH, LCDR USPHS  
TAYLOR, Dewayne G., DVM, MPH, MAJ VC USA  
VINCENT, Dale S., MD, MPH, MAJ MC USA  
WARFE, Peter G., MBBS, MTM&H, Lt Col, RAAMC  
WEST, Peter Amory, MD, MPH

### 1990

ALSHECH, Itzhak, MD, MPH, Maj, IDF  
ANDERSON, James W., MD, MTM&H, MAJ, Canadian Forces  
BERGEISEN, Gershon H., MD, MPH, CDR USPHS  
CAUDLE, Lester C., III, MD, MTM&H, CPT MC USA  
1990 (continued)  
GOFORTH, Gary, MD, MTM&H, MAJ MC USA  
HEIL, John R., MD, MPH, LCDR MC USN

HOLDER, Keith, MD, MPH, LCDR MC USN  
JAJOSKY, Philip, MD, MPH, Ph.D., CDR USPHS  
KHAN, Ahmed, M.B.B.S., MPH, Maj, Pakistan AMC  
MAY, Laurel A, MD, MPH, LCDR MC USN  
McCARDLE, Peggy D., MPH, Ph.D.  
MYETTE, Thomas L., MD, MPH, CDR, Canadian Forces  
NOWAK, Rudolf Z., MD, MPH, MAJ, Canadian Forces  
OLESEN, Mark C., MD, MPH, LCDR MC USN  
PELLOSIE, Carmine, D.O., MPH, LCDR MC USN  
PESSONEY, John T, MD, MPH, CAPT MC USN  
POLANCO, Jorge A, MD, MPH, Belize MOH  
RAFORD, Paul, MD, MPH, LCDR USPHS  
REDFORD, Maryann, DDS, MPH  
SALAZAR, Guillermo J., MD, MPH  
SCHUCKENBROCK, David R., DVM, MPH, MAJ VC  
USA  
SCHWARTZ, Keith A., BS, MPH  
SHERMAN, Stephanie J., DVM, MPH, LTC VC USA  
STINSON, Nathaniel, MD, MPH, PhD, CDR USPHS  
TANCHEZ, Mario, MD, MPH, Maj USAF MC  
TANNER, Ann L., BS, MPH  
WILLIAMS, Richard P., MD, MPH, CDR MC USN  
ZABARI, Arnon, BA, MPH, Lt Col, IDF

#### 1991

BELIZARIO, Vicente Y Jr., MD, MTM&H  
BHATTY, Nusrat, MBBS, MPH  
BURTE, Francoise, MD, MPH  
CHANDLER, Bruce P., MD, MPH, CDR, USPHS  
CHEN, Xi, B.S., MPH  
CRAIG, Stephen C., DO, MTM&H, MAJ MC USA  
CUMMINGS, Curtis E., MD, MPH, CDR MC USN  
deJESUS, Antonita V., MD, MPH, CAPT MC USN  
HEATH, Stephen W., MD, MPH, CAPT USPHS  
HAR-NOY, Shmuel, MSc, MPH, Lt Col MC, IDF  
HUNTER, James R., BS, MPH, LCDR USPHS  
JAJOSKY, Ruth A., DMD, MPH  
JORDAN, Wanda M., BS, MPH  
KIM, Dong Hyun, MD, MPH  
LIMPERT, Scott F., MD, MPH, LCDR MC USN  
MASTERS, Carolyn F., BA, MPH  
MIRANDA, Jose R., MD, MPH, LCDR USPHS  
MOORHEAD, John A., MD, MPH, LCDR USNR  
OMORI, Deborah J., MD, MPH, MAJ MC USA  
VASUT, Debbie J., DVM, MPH, CPT VC USA  
YORK, Andrew K. II, DMD, MPH, LCDR DC USN

#### 1992

BURKE, Laurie B., BS, MPH, LT USPHS  
CRAIG, Peter George, MBBS, MTM&H  
FALLON, Ann P., MD, MPH, LT MC USN  
FERNANDEZ, Ildefonso S., MS, Ph.D.  
HIRA, Subhash K., MBBS, MPH  
KACZMARCZYK, Joseph M., DO, MPH, CDR USPHS  
KARNEI, Karen Z., BSN, MPH  
KEARY, Frank V., MD, MPH

GARKAPARTHI, Mohan Kishore, MBBS, MTM&H  
LANDRY, Frances J., MD, MPH, CPT MC USA  
LEE, Lionel Kim H., MBBS, MPH  
LEWIS, Drew E., MD, MTM&H, LCDR MC USN  
LYNCH, Kathryn Jo, PhD, MPH  
MARPLE, Richard, MD, MPH, MAJ MC USA  
McARTHUR, Jon A., BS, MPH, CDR USPHS  
McGUIRE-RUGH, Karen, BSN, MPH  
MEO, Ahmed Bashir, MBBS, DPH, MPH, MAJ MC  
Pakistan AMC  
OLIGNY, Christopher, BS, PA, MPH  
PELEG, Jacob, BA, MA, MPH, LtCol IDF  
PITTS, Michael B., MBBS, MPH  
RUELL, Ellen Mary, BS, MEd, MPH

#### 1993

BRAITHEWAITE, Lana L., BS, MPH  
CHADWICK, Gary, DPh, MPH, CAPT USPHS  
DOWNING, Denise M., BA, MPH  
FARRAR, Curtis Lynn, MPH, CDR USPHS  
GEFROH, Gary J., BS, MPH, LT USPHS  
HENDERSON, Kenrick G, BS, MPH  
MAAS, Vernon A, MD, MPH, LT USPHS  
MARLIN, Kay, BA, MPH  
McMAHON, David, BS, MPH, LTJG USPHS  
MURPHY, Frances M., MD, MPH  
NEALE, John Franklin, DDS, MPH, CDR USPHS  
PIERCE, Elizabeth A, BS, MPH  
ROHRER, Rebecca J, BS, MPH  
ROY, Michael, MD, MPH, CPT MC USA  
SCHUTT, Robert W., DDS, MPH, LCDR DC USN  
SCOTT-WRIGHT, Alicia O., MD, MPH, MTM&H,  
LCDR USPHS  
TAKASHIMA, Herbert T, MD, MPH, CAPT USPHS  
TANI, Yukiko, BSN, MPH, LT USPHS  
WATTENDORF, Nicole, BS, MPH  
WELLS, Glen, MD, MPH, Lt Col RAAMC

#### 1994

ALTARAC, Maja, MD, MPH  
AUSTER, Rosalie, MD, MPH  
BALL, Robert, MD, MPH, LCDR MC USN  
BONA, James D., BS, CDR USPHS, MPH  
CASERTA, Vito M., MD, MPH, CDR MC USPHS  
EVERETT, Nancy, RN, BS, MPH  
FEIGHT, Andrea G., DMD, MPH, CDR USPHS  
GOLDBERG, Avishy, MA, MPH, Lt Col, IDF  
GRAF, James A., DO, MPH, CDR MC USN  
HALL, Elvira L., DVM, MPH  
HOOPER, Tomoko I., MD, MPH  
HENDRICK, Byron B., MD, MPH, LCDR MC USNR  
KARLBERG, Kristen K., BS, MPH  
LEIENDECKER, Thomas, DDS, MPH, LCDR USN  
1994 (continued)  
LILLIE, Ralph B, BS, MPH, CDR USPHS, FDA  
MONDRAGON, Donald, MD, MPH, CPT MC USA

MORRIS, Carolyn Blank, BA, MPH  
MORRIS, Jeffrey S., BS, MPH, LTJG USPHS  
RYAN, Margaret A.K., MD, MPH, LT MC USNR  
SCHIBLY, Barbara A., PhD, MPH, MD, CDR MC USN  
SONG, Guan-hong, MS, PhD  
STOUTE, Ellen J., BS, MPH  
TIKASIN, Linda, BS, MPH, LTJG USPHS  
WAGNER, Cheryl A., BS, MPH  
YOSHINAGA, Mary F. Austen, BA, MPH

1995

ALLEN, James W., MD, MPH, CAPT MC USN  
BALEIX, John C., MD, MPH, LCDR MC USN  
BEAUJON, Jan R., MS, MPH, LT MSC USN  
CHAMBERLIN, Judith, BS, MPH  
CHAREONVIRIYAPHAP, Theeraphap, PhD  
COLE, Marlene N., DVM, MPH, CAPT VC USPHS  
EMERSON, Maura A., MD, MPH, CDR MC USN  
FLORIO, Emily, Ph.D., MPH  
GALLAURESI, Beverly A., RN, BS, MPH  
HOOPER, TOMOKO, I., MD, MPH  
JONES, David L., MD, MPH, MAJ MC USA  
JONES, Trevor R., MA, PhD, MPH, LCDR MSC USN  
KANESA-THASAN, Niranjana, MD, MTM&H, MAJ MC USA  
KARITIS, J. William, DMD, MPH, LCDR DC USN  
LANGE, Susan C., BS, MPH  
LI, Jun, MD, SMMC, PhD  
LINDQUIST, H.D. Alan, MEnvSci, PhD  
MAPES, Peter B, MD, MPH, MAJ MC USAF  
McBRIDE, Wayne Z., DO, MPH, LCDR MC USN  
McCLOSKEY, Carolyn A., MD, MPH  
MORGAN, Jacqueline, MD, MPH, Col MC USAF  
SHERMAN, S. Scott, MD, MPH, LCDR MC USN  
SMITH, April P., BS, MPH  
SWARTWORTH, Wm J., MD, MPH, LCDR MC USN  
TOWLE, Cynthia, PA, MPH  
WALTERS, Terry J., MD, MPH, MAJ MC USA  
WILCOX-RIGGS, Sandra L., MD, MPH, LTC MC USA  
YANCY, April D., DVM, MPH  
YUND, Alan J., MD, MPH, CDR MC USN

1996

BRIAND, Edward J., DVM, MPH, CPT VC USA  
BUCHANAN, Kelvin C., DVM, MPH, CPT VC USA  
CAMPBELL, James R., PhD, MPH, CDR MSC USN  
DEUSTER, Patricia A., PhD, MPH  
DIEHL, Mark C., DDS, MPH, CDR USN  
FREEMAN, Annette K., DVM, MPH, CPT VC USA  
FULLER, Linda J., DO, MPH, CDR MC USN  
GABRIEL, Mary E., MD, MTM&H, LtCol USAF MC  
HALL, Matthew D., MD, MPH, LCDR USPHS/USCG  
HARPER, Kristina, BA, MPH  
HAZOUT, Yehiel, MA, MPH, LtCol MC IDF  
HOHENHAUS, Guy S., DVM, MPH  
HOLLAND, John D., BS, MPH, LT USPHS

INOUE, Lisa S., MD, MPH, LT MC USNR  
JACKSON, Jeffrey L., MD, MPH, MAJ MC USA  
LaMAR II, James E., MD, MPH, LCDR MC USN  
MALAKOOTI, Mark A., MD, MTM&H, LT MC USNR  
MILLER, Kelly J., BA, MPH  
PETERSEN, Kenneth E., DVM, MPH  
RUSSELL, Kevin L., MD, MTM&H, LT MC USN  
SCHIRNER, Wayne A., DO, MPH, LTC MC USA  
SILVERS, Linda E., DVM, MPH  
SMITHWICK, Joel A., MD, MPH, LT MC USNR  
SNYDER, Ricky L., DO, MPH, LCDR MC USN  
SUTTON, Ernest L., MD, MPH, COL MC USA

1997

ARMSTONG, Karyn L., DVM, MPH, CPT VC USA  
BERNIER, J. Jean-Robert S., MD, MPH, MAJ Canadian Forces  
BRADSHAW, Robert D., MD, MPH, LtCol USAF MC  
deALMEIDA, Genevive, MS, MPH  
DUVERNOY, Tracy S., DVM, MPH  
ELTING, Jeffrey, MD, MPH, LTC MC USA  
FISHER, Carol A., DVM, MPH, Maj USAF BSC  
GIBBONS, Robert V., MD, MPH, CPT MC USA  
HAKRE, Shilpa, BSC, MPH  
HARRIS, Linda D., DVM, MPH, CPT VC USA  
HEFFLIN, Brockton J., MD, MPH, LCDR MC USPHS  
ISENBARGER, Daniel W., MD, MPH, MAJ MC USA  
LEISHMAN, Martha F., BSN, MPH  
MARINO, Karma D., MPH  
MAWN, Stephen V. MD, MPH, CDR MC USN  
McCARTHY, Michael C., MD, MPH, CDR MC USN  
McMILLAN, David L., MD, MPH, CDR MC USN  
MITTON, Robert H., DDS, MPH, LCDR MC USN  
NAHIN, Richard L., PhD, MPH  
POTTER, Robert N., DVM, MPH  
SNEAD, Thomas A., MD, MPH, CDR MC USN  
THORSON, Lisa T., MD, MPH, LCDR MC USN

1998

ARNESS, Mark K., MD, MTM&H, Maj USAF MC  
BAUGH, Keith J., MD, MPH, MAJ MC USA  
BENEDEK, Paul, MD, MPH, COL MC IDF  
BERG, Thomas C., DVM, MPH, Maj USAF BSC  
BETTENCOURT, Jr., Bernard M., DO, MPH, MAJ MC USA  
CAMARCA, Margaret M., BSN, MPH  
CHAUDHRY, Amjad M., DVM, MPH, CPT VC USA  
COOK, Keith W., BS, MPH, LT USPHS  
GRAHAM, Sherry L., DVM, MPH, CPT VC USA  
JAN, Moore, MD, MPH, LCDR MC USN  
1998 (continued)  
MALEY, Elizabeth A., MD, MPH, LT MC USN  
MALINER, Beverly I., DO, MPH, LTC MC USA  
McKULA, Melanie L., BS, MPH  
O'MALLEY, Patrick G., MD, MPH, MAJ MC USA

PETITT, Patricia L., DO, MPH, LT MC USN  
PRASCSAK, George M., BS, MPH, Maj USAF  
SANTORO, James A., MD, MPH, CPT MC USA  
SCHOR, Kenneth W., DO, MPH, CDR MC USN  
SHEETS, James T., DVM, MPH, CPT VC USA  
SMART, John D., BS, MPH, LT USPHS  
STATEN, Jr., David C., BS, MPH  
STAUDENMEIER, James J., MD, MPH, MAJ MC USA  
STUART, Kelly A., MD, MPH, CPT MC USA  
STUTLER, Shannon A., DVM, MPH, CPT VC USA  
SYLVESTER, Theresa K., BS, MPH  
TAKAFUJI, Julia A., BS, MPH  
TONEY, Steven D., DVM, MPH, Maj USAF BSC  
WEISS, Yosef, MA, MPH, LtCol MC IDF  
WEST, Norman S., MS, MPH, CPT USAF BSC

#### 1999

BANGS, Michael J., MSPH, PhD, LCDR MSC USN  
BLANKENSHIP, Tammy L., MD, MPH, LCDR MC USN  
BRADY, P. Jeffrey, MD, MPH, LT MC USNR  
BRYCE L. Michelle, DO, MTM&H, Maj USAF MC  
BUTLER, William P., DO, MTM&H, LtCol USAF MC  
CHAPMAN, Alice S., DVM, MPH, Capt USAF BSC  
DALAL, Stephen J., DVM, MPH, CPT VC USA  
DUQUE, Jr., David, DVM, MPH, Maj USAF BSC  
EGGLESTON, Thomas A., DVM, MPH, CPT VC USA  
FITZHARRIS, Joseph B., MD, MPH, COL MC USA  
HARRE, Joseph G., DVM, MPH, CPT VC USA  
KILBANE, Edward M., MD, MPH, CAPT MC USN  
MacINTOSH, Victor M., MD, MPH, LtCol USAF MC  
MAGUIRE, Jason D., MD, MPH, LT MC USN  
MARTSCHINSKE, Robert O., MD, MPH, LCDR MC USN  
McCORD, Cedric F., MD, MPH, CPT MC USA  
McDONALD, Kimberly K., MD, MPH, LT MC USN  
McKENZIE-GARNER, Pearline, MD, MPH, MAJ MC USA  
MULLINS, J. Andrew, DVM, MPH, Maj USAF BSC  
NESBY-O'DELL, Shanna L., DVM, MPH, CDR USPHS  
NIEBLAS, Minda G., MD, MPH, LT MC USN  
NIEHOFF, Steve, DVM, MPH, Maj USAF BSC  
O'MARA, Ann M., PhD, MPH  
PEDERSON, Charles L., MD, MPH, CPT MC USA  
PHINNEY, Lloyd T., DVM, MPH, CPT VC USA  
PROBST, Richard J., DVM, MPH, CPT VC USA  
SCHULTZ, Stephen T., DDS, MPH, LCDR DC USN  
SMITH, Doreen A., MS, MPH, Maj USAF NC  
TOMKINS, Glen E., MD, MPH, MAJ MC USA  
TRIBBLE, David R., MD, MPH, CDR MC USNR  
ZENTRICH, Eve C., MA, MS

#### 2000

ADESANYA, Margo R., DDS, MPH, CDR USPHS  
BATSEL, Tanis M., MD, MPH, LCDR MC USN  
BROWN, Linda M., MPH, DrPH, CAPT USPHS  
BURGESS, Timothy H., MD, MPH, LT MC USN  
CANNON, Loraine D., DVM, MPH,

CLAGETT, Christopher D., MD, MPH, LCDR MC USN  
CLARKE, Thomas F., MD, MPH, Maj USAF MC  
CROSLAND, Telita, MD, MPH, MAJ MC USA  
EKSTRAND, John R., MD, MPH, MAJ MC USA  
FLETCHER, David J., DVM, MPH  
GOLANI, Rafael, MA, MPH, LTC IDF  
GOODRICH, Scott G., DO, MPH, LTC DC USA  
GROSCH, Kit C., BS, MPH, LCDR USPHS  
GUTMANN, Frank D., MD, MPH  
HASKE, Terry L., MD, MPH, Maj USAF MC  
HAYNES, Margaret F., DVM, MPH, Capt USAF BSC  
HEBRINK, Scott T., DVM, MPH, Capt USAF BSC  
HOLT, Rebecca K., DVM, MPH, CPT VC USA  
HUANG, Grant D., MPH  
JACOCKS, John M., MD, MTM&H, LTC MC USA  
KATES, Christopher T., BS, MPH, LCDR USPHSR  
KELSEY, Fred C., DVM, MPH, LtCol USAF BSC  
KILIAN, Dennis B., MS, MSPH, CPT MS USA  
KLUCHINSKY, Jr., Timothy A., MBS, MSPH, CPT MS USA  
LANGSTEN, Randall L., DVM, MPH, Maj USAF BSC  
LOPEZ, Kenneth R., DVM, MPH, CPT VC USA  
LYNCH, John P., MD, Maj USAF MC  
MARTIN, Gregory J., MD, MPH, CPT MC USA  
MILLER, Barry A., MSPH, DrPH, CAPT USPHS  
NAITO, Neal A., MD, MPH, CDR MC USN  
OLLAYOS, Curtis W., MD, MPH, LCDR MC USN  
ORTMAN, Brian V., DVM, MPH, Maj USAF BSC  
RICO, Redro J., DVM, MPH, CPT VC USA  
SCHNEIDER, Diana L., MA, DrPH  
SCHWARTZ, Erica G., MD, MPH, LT MC USNR  
SEVILLA, Nereyda L., BS, MPH, 1LT USAF BSC  
SMITH, Pamela D., MD, MPH, Capt USAF MC  
STETTO, Jayne E., MD, MPH, Maj USAF NC  
THOMPSON, Jennifer C., MD, MPH, MAJ MC USAR  
WINTERTON, Brad S., DVM, MPH, Capt USAF BSC

#### 2001

AIMPUN, Pote, MD, DrPH, Capt MC Thai Army  
ANDERSON, Steven M., BS, MPH, Capt USAF BSC  
BAILEY, Rachel L., DO, MPH, CPT MC USA  
BELL, Michael R., MD, MPH, MAJ MC USA  
BLAZES, David L., MD, LCDR MC USN  
CHAMBERLIN, Judith A., MPH, DrPH  
CLABORN, David, MS, DrPH, LCDR MSC USN  
2001 (continued)  
DANE, Dana, DVM, MPH, Maj USAF BSC  
DAVIS, Barbara E., DVM, MPH, Maj USAFR BSC  
DEUTSCH, Wayne M., DDS, MPH, CDR USN DC  
FAIX, Dennis J., MD, MPH, LT MC USN  
GOULD, Philip L., MD, MPH, Maj USAF MC  
GRIECO, John P., MS, PhD  
HANSON, Chris E., DVM, MPH, MAJ VC USA  
HUYNH, Mylene T., MD, MPH, Maj USAF MC  
KETZENBERGER, Bryan K., DVM, MPH, MAJ VC USA  
KLUCHINSKY, Jr., Timothy A., MBS, MSPH, DrPH, CPT MS USA  
LANDRO, Frederick J., MD, MPH, CDR MC USN

MALONEY, Elizabeth, DrPH  
McCOY, Gretchen A., MD, MPH  
MONGEAU, Susan W., DDS, MPH, Lt Col USAF DC  
NISKA, Richard W., MD, MPH, CAPT USPHS  
SALERNO, Stephen M., MD, MPH, MAJ MC USA  
SARDELIS, Michael, PhD, MAJ, USA  
SHARMA, Archana N., MD, MPH  
TASHIRO, Ken M., MD, MPH, Lt Col USAF MC SFS  
THOMAS, Joseph G., MD, MPH, LCDR MC USN  
WEGNER, Mark V., MD, MPH  
WEI, Gina S., MD, MPH  
WELCH, Paul G., MD, MPH, COL MC USA  
ZINDERMAN, Craig E, MD, MPH, LT MC USN

### 2002

AMON, Joseph, PhD  
CARTER, Gary W., MPH, LT, USPHS  
COMPLETO, John D., MD, MPH, CPT, MC, USA  
CONNER, Bryon F., MD, MPH, LCDR, MC, USN  
DUNN II, James C., MD, CDR MC USN  
EADER, Scott A., MD, MPH, CPT, MC, USA  
FEUERSTEIN, Michael, MD, MPH  
FLYNN, Joseph M., MD, MPH, MAJ, MC, USA  
HALL, Tara L., BA, MSPH, CPT, MS, USA  
HARTZELL, Michael C, MPH, Lt Col, USAF, BSC  
HEMMER, Paul A., MD, MPH, Lt Col, USAF, MC  
HROCH, Brian E., MPH, LT, USPHS  
KASOWSKI, Eric J., MD, MPH, LCDR, MC, USN  
KAZEROUNI, Niloufar, DrPH  
KEELER, Natalie M., MPH, Capt, USAF, BSC  
KIMM, Gregory L., BS, MSPH, MAJ, MS, USA  
LAPA, Joyce A., MD, MPH, CAPT, MC, USN  
LYONS, Keegan M., MD, MPH, Capt, USAF, MC  
MAHER, Paul D., MD, MPH, LT, USPHS  
MCCANNON, Charles E., MD, MPH, LCDR, MC, USN  
MEIER, Michael J., MD, MPH, LCDR, MC, USN  
MISHOE, Helena O., MPH, CAPT, USPHS  
MURRAY, Len E., DVM, MPH, MAJ, VC, USA  
NEWMAN, Sara, DrPH  
ORTIZ, Jose M., MD, MPH, MAJ, MC, USA  
ROBINSON, Christopher S., MA, PhD, MPH, Maj USAF  
BSC  
SCOVILLE, Stephanie, DrPH  
SHEEHAN, James J., MD, MPH, MAJ, MC, USA  
STAKER, Michael L., MD, MPH, CPT, MC, USA  
SZETO, Astrid L., MPH, LCDR, USPHS  
TAI, Ting J., MD, MPH, CPT, MC, USA  
THOMAS-FUENTES, Maria R., MD, MPH  
THORNTON, Venita B., DVM, MPH, LCDR, USPHS  
TORRIE, Ian D., MD, MPH, Lt (N), Canadian Forces  
VAUGHN, Andrew F., MD, MPH, LCDR, MC, USN

### 2003

BENTZEL, David, DVM, MPH, MAJ, VC, USA

BERG, Sven, MD, MPH, LtCol, USAF, MC  
BRANCH, Stacey, DO, MS, MPH, Capt, USAF, MC  
BUFFETT, Stephanie J., RN, MSN, MPH, Capt, USAF,  
NC  
CHAMPINE, Jon D., MPH  
CIMINERA, Paul, MD, MPH, CPT, MC, USA  
DUFFY, Mark, MPH, Capt, USAF, BSC  
FELT, Stephen, DVM, MPH, MAJ, VC, USA  
FONSECA-RIVERA, Jose, MPA, MPH, Maj, USAF, BSC  
GIBBINS, John D., DVM, MPH, DACVPM, Maj, USAF, BSC  
HALL, Francis X., MD, MPH, LCDR, MC, USNR  
HATZIGEORGIOU, Christos, MD, MPH, MAJ, MC, USA  
HINDS, Sarah Bro, DVM, MPH, CPT, VC, USA  
HOLTZCLAW, Suezane, MPH, LCDR, MC, USN  
HAKRE, Shilpa, DrPH  
HOOK, Gary, PhD, LCDR, MSC, USN  
JACOBSEN, Kenneth, DVM, MPH, MAJ, VC, USA  
JACOBSON, Jon R., DO, MPH, CPT, MC, USA  
KELLER, Christopher, DVM, MPH, MAJ, VC, USA  
KUENY, Monica B., MPH, LCDR, USPHS/USCG  
LANGHAM, Gregory, DVM, MPH, LT, VC, USPHS  
LEAL, Joanne R., DDS, MPH, CDR, DC, USN  
MATIS, Steven, DDS, MPH, LCDR, DC, USN  
MERRILL, Nancy, DVM, MPH, CPT, VC, USA  
MILLIKAN, Amy, MD, MPH, CPT, MC, USA  
MORIN, Nathalie, DDS, MPH, MAJ, Canadian Forces  
Dental Services  
MULHALL, Brian, MD, MPH, MAJ, MC, USA  
NGUYEN, TRAM T., MPH  
OLSEN, Cara, MS, MPH  
PHILLIPS, Stephen, MD, MPH, LTC, MC, USA  
RICHARDSON, Joanne, MD, MPH, Maj, USAF, MC  
SEEMAN, Paul, MD, MPH, LCDR, MC, USN  
SHELTON, Larry, DVM, MPH, CPT, VC, USA  
STONE, Kari, MPH, Capt, USAF, NC  
TABATZKY, Christiane, MD, MPH  
TJADEN, Jeffrey, MD, MPH, LCDR, MC, USN  
TOMON, John, MSPH, LT, MSC, USN  
WHITE, Sharon, MPH, LCDR, USPHS  
WINGER, Kirk, DVM, MPH, Maj, USAF, BSC

### 2004

ACHEE, Nicole, DrPH  
AUSTIN-LANE, Joy, DrPH  
BECK, Kimberly, MD, MPH, CPT, MC, USA  
2004 (continued)  
BERBANO, Elizabeth, MD, MPH, MAJ, MC, USA  
BONHAGE, Michael, DVM, MPH, MAJ, MC, USA  
BOWDEN III, Lynden, MD, MPH, CPT, MC, USA  
BOYD, Sean, MPH, LCDR, USPHS  
BROSCH, Lorie, MD, MPH, Lt Col, USAF, MC  
COCKRUM, David, MD, MPH, Maj, USAF, MC  
COGSWELL, Brad, MPH, Capt, USAF, MSC  
CRAMER, David, MPH, LCDR, USPHS  
DANIEL, Colleen, CPT, USA

EATON, Melinda, Capt, DVM, MPH, USAF, BSC  
HACHEY, Wayne, MD, MPH, LTC, MC, USA  
HARMAN, Dale, MD, MPH, LCDR, MC, USN  
JOBANPUTRA, Nishith, MD, MPH, LCDR, MC, USN  
LANG, Bradford; MPH  
LAWLER, James, MD, MPH, LCDR, MC, USN  
LUKE, Thomas, MD, MPH, LCDR, MC, USN  
MACLARTY, Anne, MAJ, DVM, MPH, VC, USA  
MAY, Lisa, DrPH  
McPHERSON, Nicole, MPH  
MOORE, Brian, MPH, Maj, USAF, BSC  
Moore, Vincent, MAJ, USA  
OLSEN, Cara, MPH  
OSTRANDER, Gregory, MPH, LT, MSC, USN  
OTTO, William, MD, MPH, CPT, MC, USA  
POEL, Christine, DVM, MPH, Maj, USAF, BSC  
RITCHIE, Elspeth, MD, MPH, COL, MC, USA  
ROCKSWOLD, Paul, MD, MPH, CDR, MC, USN  
SCHAEFER, Richard, MD, MPH, COL, MC, USA  
SELENT, Monica, DVM, MPH, Maj, USAF, BSC  
SHUKAN, Evan, Maj, USAF, BSC  
STRAUSS, Mark, MPH, LT, USPHS  
SUNDSTROM, Julie, MPH, Capt, USAF, BSC  
VEST, Kelly, LT, USN  
WESTPHALL, Johann, MD, MPH, Maj, USAF, MC  
WILSON, Keith, MPH, Capt, USAF, NC

#### 2005

ABBOTT, Kevin, MD, MPH, LTC, USA, MC  
ASSEFF, David, MD, MTM&H, LCDR, USNR, MC  
BARTHEL, Robert, MD, MPH, LCDR, USN, MC  
BATZ, Raymond, MD, MPH, LDCR, USNR, MC  
CLARK, Krystyn, MSPH, Capt, USAF, BSC  
COLLINS, Todd, MPH, CPT, USA, VC  
DEZEE, Kent, MD, MPH, MAJ, USA, MC  
EAGAN, Paul, MPH, MAJ, Canada, CFMG  
FAERBER, Juliann, MD, MPH, LCDR, USN, MC  
FITZHUGH, Dawn, DVM, MPH, CPT, USA, MC  
FYFFE, James, MSPH, Lt, USAF, BSC  
GIBSON, Brent, MD, MPH, CPT, USA, MC  
GUTKE, Gregory, MD, MPH, Capt, USAF, MC  
HALVORSON, Heather, MD, MPH, CAPT USAF, MC  
HANCOCK, Miranda, MPH, Capt, USAF, BSC  
HEMLOCK, Bethany, MPH, Civ  
HUNT, James, MPH, LT, USN, MSC  
JOLIVET, Rima, MPH, CNM, MSN  
KOCH, David, MSPH, LCDR, USN, MSC  
KRAUTHEIM, Mark, MD, MPH, LtCol, USAF, MC  
LANKIN, Kenneth, MD, MPH, CDR, USN, MC  
LICINA, Derek, MPH, CPT, USA, MS  
MALONE, John, MD, MPH.  
MEDELLIN, Christopher, MD, MPH, MAJ, USA, MC  
MICHAEL, Nack, CPT, MS, USA  
O'CONNOR, Francis, MD, MPH, COL, USA, MC  
PARRISH, Douglas, PhD, LT, USN

PIPER, Williams, LT, USAF, BSC  
SHIAU, Danny, MD, MPH, LCDR, USN, MC  
SHIMEALL, William, MD, MPH, LCDR, USNR, MC  
SHINABERY, Lynn, DVM, MPH, Maj, USAF, BSC  
SMELSER, Christopher, MD, MPH, CPT, USAR, MC  
SUH, Ryung, MD, MPH, MAJ, USA, MC  
TAYLOR, Jean, DrPH  
THOMAS, Cynthia, DVM, MPH, USAF, BSC  
TRIBBLE, David, DrPH  
WILLIAMS, Piper, MSPH, Lt, USAF, BSC

#### 2006

BEAL, Jessica, MPH, 1LT, USAF, BSC  
BRADBURY, Meredith, Ph.D, MPH  
BROOKS, John, MC, MD, MPH, LCDR, USN, MC  
BRUDER, Catherine, M.A. MPH  
BRYANT, Chet, MSPH, Capt, USAF, BSC  
CARR, Deborah, MD, USAF, BSC  
COLLINS, Ryan, MPH  
DOUGLAS, Kevin, MD, MPH, MAJ, USA, MC  
FAJARDO, Kevin, MD, MTM&H, USAF, MC  
GARGES, Eric, MD, MTM&H, CPT, USA, MC  
GREEN, Kathy, MD, MPH, Maj, USAF, MC  
HAMMETT, Mark, MD, MPH, CDR, USN  
JOHANSON, Scott, MPH  
KAN, Waikwong, MSPH, Capt, USAF, BSC  
KRAHL, Pamela, MD, MPH, LCDR, USNR, MC  
KRYGIER, Julie, MD, MPH, Maj, USAF, BSC  
LAFORCE, Paul, Maj, MPH, Canadian Forces  
LAKIN, Terrence, MD, LTC, MPH, USA, MC  
LEIDEL, Jason, MSPH, Lt, USAF, BSC  
McGUIRE, Christopher, MD, CPT, MPH, USA, MC  
McMANUS, Catherine, VMD, MPH  
MORAN, Michael, MSPH, USAF, BSC  
NEWKIRK, Scott, MSPH, USA, MS  
OKAMOTO, Misa, MPH, USAF, BSC  
OZEROGLU, Muhammed, MSPH, LT, USN  
RODRIGUEZ, Anne, MD, Maj, MTM&H, USAF, MC  
SKINNER, Michael, MSPH, Capt, USAF, BSC  
SOLTIS, Bryony, MD, MAJ, MPH, USA, MC  
TAMMINGA, Cindy, MD, CDR, MPH, USN, MC  
WADLEY, Rodney, MD, MAJ, MPH, USA, MC  
WELLS, Natalie, MD, LT, MPH, USNR, MC  
WA, Hongu, MD, MPH  
WURAPA, Eyako, MD, MAJ, MTM&H, USA, MC  
WYNN, Michael, MD, MPH, USA, MC

#### 2007

Agee, Brian, MD, LtCol, MPH, USAF, MC  
Arnold, Sarah, MD, LCDR, MPH USN, MC  
Berti, Janice, MPH, USAF, NC  
Boetig, Bradley, MD, MPH, USAF, MC  
Burke, Robin, CPT, USA, VC  
Cook, Greg, Dr. P.H., LCDR, USN, MSC

Derrick, David, MPH, USA, MS  
 Florin, David, Dr. P.H, LCDR, USN, MSC  
 Gambino-Shirley, Kelly, Capt, MPH, USAF, BSC  
 Gleeson, Todd, MD, MPH, LCDR, USN, MC  
 Hauerstein, Paul, MPH, LCDR, USN, MSC  
 Kent, Robert, MD, MAJ, MPH, USAF, MC  
 Kim, Andrew, MD, MPH, USA, MC  
 Lacunza, Julia, MD, MPH, USN, MC  
 Lipsitz, Robert, MD, MPH, CDR, USN, MC  
 Llanos, Joseph, MD, MTM&H, MAJ, MC, USA  
 Lugo-Roman, Luis, DVM, MPH, CPT, VC, USA  
 Ma, Kai-Wood, MD, LtCol, MPH, USAF, MC  
 Moccia Krinon, DVM, MPH, MAJ, VC, USA  
 Money, Nisha, MD, MPH, Capt, USA, MC  
 Mozzachio, Alicia, MPH, LT, USPHS  
 Patterson, Steven, MD, MSPH, MAJ, USA, MS  
 Ramirez, Juan., MPH, Capt, USAF, BSC  
 Razuri, Hugo, MD, MPH  
 Reaves, Erik, MD, MTM&H, LT, MC, USN  
 Riley, Brian, MD, MPH, LCDR, USN, MC  
 Rodriguez, Christopher, MD, MPH, CPT, USA, MC  
 Rogers, Heather, M.S., MPH  
 Sensintaffer., Lowell, MD, MTM&H, LtCol, MC, USAF  
 Szpisjak, Dale, MD, MPH, CDR, USN, MC  
 Taylor, Brett, DVM, MPH, CPT, VC, USA,  
 Taylor, Kevin, MD, MTM&H, CPT, MC, USA  
 Terhakopian, Artin, MD, MPH, CPT, USA, MC  
 Wentworth, Michael, MD, MPH, LCDR, USN, MC  
 Wong, Jason, MD, MPH, LCDR, USN, MC  
 Woodlee, Charles, MPH, LT, USPHS  
 Woodring, Joseph, MD, MTM&H, CPT, MC, USA

HAWLEY, Robert, MSPH, LT, USN  
 HIGH, Patrick, DrPH  
 JACOBS, Michael, MD, MPH, CDR, USN, MC  
 KING, Stephanie, DVM, MSPH, Lt, USAF, BSC  
 LIVINGSTON, Brian, DVM, MSPH, Lt, USAF, BSC  
 LANG, Paul, MPH, CPT, USA  
 MCPHERSON, Nicole, DrPH  
 McKENZIE, Megan, MPH, Lt(N), Canadian Forces  
 MODY, Rupal, MD, MPH, CPT, USA, MC  
 MOORE, Thomas, MD, MPH, Maj, USAF, MC  
 MORRISON, Stephanie, MPH  
 MUNDACA, Carmen, MPH  
 OLSEN, Cara, MPH, DrPH  
 PAYNE, Kevin, MD, MPH, CPT, USA, MC  
 POWELL, Blaine, MD, MPH, LCDR, USN, MC  
 REYNOLDS, Mark, MD, MTM&H, MAJ, USA, MC  
 RIDDLE, Mark, MD, MSPH, LCDR, USN, MC  
 SANTIAGO, Patcho, MD, MPH, LCDR, USN, MC  
 SENSINTAFFAR, Lowell, MD, MPH, LtCol, USAF, MC  
 SESSIONS, Cecili, MD, MPH, Maj, USAF, MC  
 SHERMAN, Eric, MD, MPH, Capt, USAF, MC  
 SLOAN, Lloyd, MD, MPH, CDR, USN, MC  
 TARANTINO, David Jr, MD, MPH, CDR, USN, MC  
 WHEELER, Robbie, DVM, MSPH, Capt, USAF, BSC  
 WU, Hongyan, MD, MPH

2008

BEADLING, Matilda, MPH  
 BELLAND, Kris, MD, MPH CAPT, USN, MC  
 BOWENS, Michael, MPH  
 BRETT-MAJOR, David, MD, MPH, LCDR, USN, MC  
 BRITAIN, Rodney, LCDR, MPH, Canadian Forces  
 BROWN, Kevin, MD, MPH, LCDR, USN, MC  
 CHAPPELL, Mark, DVM, MPH, MAJ, USA, MC  
 CATYB, Joseph, DVM, MSPH, Capt, USAF, BSC  
 CHEN, Naili, MD, MPH, LtCol (Sel), USAF, MC, FS  
 CHERRY, Scott, MD, MPH, CPT, USA, MC  
 COOPER, Jared, MPH  
 DELZER, Jeffrey, MSPH, LT, USN  
 DOWLING, Glenn, MD, MPH, LCDR (Sel), USN, MC  
 EAGAN, Sheena, MPH  
 FINNELL, Val, MD, MPH, LtCol, USAF, MC  
 FLETCHER, Kendra, DVM, MSPH, Lt, USAF, BSC  
 FREEMAN, Randall, MD, MTM&H, MAJ, MC  
 GREENBURG, David, MD, MPH, CPT, USA, MC  
 HAINES, Joe, MD, MPH, LCDR, USN, MC  
 HARRINGTON, Cherise, MPH  
 HASAN, Nidal, MD, MPH, CPT, USA, MC



