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

2004-2005

Revised August 2004

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

GRADUATE PROGRAMS ACADEMIC CALENDAR, 2004-2005

PRE-FALL SESSION

Tuesday, July 6	Orientation and Registration (New Students)
Wednesday, July 7	Pre-Fall Session Classes Begin
Monday—Friday, Aug 4-8	Fall Quarter Registration
Wednesday, August 18	Pre-Fall Session Ends
Wednesday—Thursday, Aug 18-19	USU Orientation
Thursday, August 20	USU Welcoming Ceremony (Attendance Required)

FALL QUARTER

Monday, August 23	Fall Quarter Classes Begin
Monday, September 6	Labor Day (Holiday)
Tuesday, September 3	Last Day to Drop/Add Courses Pre-Fall Session Grades Due
Monday, October 11	Columbus Day (Holiday)
Monday-Friday, Oct 25-29	Winter Quarter Registration
Tuesday, November 11	Veterans' Day (Holiday)
Friday, November 12	Fall Quarter Ends

WINTER QUARTER

Monday, November 15	Winter Quarter Classes Begin
Friday, November 26	and Last Day to Drop/Add Courses Fall Quarter Grades Due
Thursday-Sunday, Nov 25-28	Thanksgiving Recess
Saturday, Dec 18—Sunday, Jan 2	Winter Recess
Monday, January 17	Martin Luther King, Jr. Birthday (Holiday)
Monday—Friday, 31 Jan- February 4	Spring Quarter Registration
Monday, February 21	President's Day (Holiday)
Friday, February 18	Winter Quarter Ends

SPRING QUARTER

Tuesday, February 22	Spring Quarter Classes Begin
Monday, March 8	Last Day to Drop/Add Classes Winter Quarter Grades Due
Saturday, March 19—Sunday, March 27	Spring Recess
Monday, May 2—Friday, May 6	Summer Session Registration
Saturday, May 21	USUHS Graduation
Wednesday, May 20	Spring Quarter Ends

SUMMER SESSSION

Monday, May 23	Summer Session Begins
Monday, May 30	Memorial Day (Holiday)
Monday, June 3	Last Day to Drop/Add Courses Spring Quarter Grades Due
Friday, June 24	Summer Session Ends—**Academic Year Ends**
Wednesday, June 17	Summer Session Grades Due
Friday, June 24	PMB Graduation Ceremony (Attendance Required)

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UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

The Uniformed Services University of the Health Sciences (USUHS) 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 Federal health sciences educational facility, 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 in Bethesda, Maryland, it is conveniently close to several federal health facilities, including the National Institutes of Health, the Walter Reed Army Medical Center, the National Naval Medical Center, the Armed Forces Institute of Pathology, the Armed Forces Radiobiology Research Institute, the National Library of Medicine, to mention just a few.

Within the F. Edward Hébert School of Medicine, the Department of Preventive Medicine and Biometrics 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. The mission of the Department's Graduate Programs in Public Health is to produce knowledgeable and highly skilled public health professionals in support of the health missions of the Uniformed Services.

The graduate programs at USUHS 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 1998, our MPH program received full accreditation for the maximum seven-year term and in 2003 was ranked among the top 6 programs in the country by US News and World Reports.

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

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 combined maximum number of students that will be accepted into the MPH, MTM&H, and MSPH programs during any given academic year is approximately 35.

The graduate programs in the Department of Preventive Medicine and Biometrics are conducted in facilities on the campus of the Uniformed Services University. Well-equipped modern laboratories support the tropical medicine and environmental health programs. Automated data-processing equipment is available at the University 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 United States Army and Navy biomedical research laboratories in Bangkok, Thailand; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and Lima, Peru. The University currently has an affiliation with the Ministry of Health Laboratory in Belize City, Belize. A formal affiliation with the US Army Center for Health Promotion and Preventive Medicine provides additional opportunities for our students.

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 meant 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, or several other public health specialties. Matriculants may include physicians, who wish to apply the disciplines of

epidemiology and biostatistics to other specialty areas, as well as other academically qualified health professionals, such as veterinarians, dentists, sanitary engineers, microbiologists, entomologists, environmental scientists, nurses, and pharmacists. 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, graduates will have completed a "concentration" of required and elective course work in a specific area of public health and demonstrated the ability to apply the knowledge and skills acquired to their chosen field.

In response to a service-specific requirement for formal training in health services administration as a prerequisite for assuming military health care command positions, the PMB Department offers a Master of Public Health degree with a concentration in Health Services Administration. This concentration requires students to have a faculty advisor (or co-advisor) from the Division of Health Services Administration (HSA), to complete their assigned project and practicum experience within this core public health discipline, and to earn a grade of "B" or better in required HSA courses.

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 and be able to assess the health needs of communities and to investigate the impact of biological, environmental, and behavioral factors on community health. They will also be able to compare and contrast the wide variety of health delivery systems in other countries with those in the United States. Graduates will acquire an in-depth knowledge of the agents of tropical diseases, medical parasitology, and vector biology and will have the opportunity for hands-on experience with the epidemiology, pathology, diagnosis, management, treatment, prevention 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 are both 12-month degree programs. Each program consists of a minimum of 60 quarter credit hours. The MPH degree requires specific 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. The project can take a number of forms, and the objective is the synthesis, integration, and application of core public health concepts and principles to solve public health problems. The requirements for the MPH 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 required courses in tropical medicine and tropical public health. One rotation of at least six weeks is spent at an affiliated overseas facility and involves clinical diagnosis and treatment, as well as field study of diseases endemic to tropical regions. This overseas rotation satisfies the requirement for a practicum experience. Associated travel and per diem expenses are the responsibility of the applicant or applicant's sponsoring institution or Service. This curriculum offers less opportunity for elective courses than the MPH degree program.

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 to take the ASTMH Certificate of Knowledge Examination. This comprehensive lecture, seminar, laboratory, and case-based curriculum incorporates ongoing courses which are a part of the MPH/MTM&H program. See the ASTMH website for additional information (http://www.astmh.org/certification/cert.html).

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 environmental health sciences, industrial hygiene, health physics, or medical entomology. Graduates of this program will acquire the same basic knowledge and skills as graduates of the MPH program, plus in-depth knowledge in a selected area of concentration. The graduate will gain competence in the recognition, evaluation, and control of a variety of public 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.

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 course 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 should 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 on 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. Health care professionals 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 should 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.

MPH AREAS OF CONCENTRATION

In addition to completing the core courses, each MPH student selects an area of concentration from among the following: aerospace physiology, epidemiology and biostatistics, environmental and occupational health, general preventive medicine and public health, health services administration, international health specialist, tropical public health, and occupational ergonomics. Each of the concentrations builds upon the foundation of the core curriculum with additional required and elective courses. A brief description of the areas of concentration, including learning objectives and course requirements, follows. The General Preventive Medicine and Public Health area of concentration offers a broad-based educational experience.

AEROSPACE PHYSIOLOGY: This concentration will enable students to be eligible to take the Aerospace Physiology Certification examination administered by the Aerospace Physiologist Society of the Aerospace Medical Association. Students will be able to identify and evaluate the effect of human factors on performance in military operational settings and will gain fundamental knowledge of the major issues involved in aviation mishap investigation.

Required courses are PMO841-Aerospace Physiology I, PMO842-Aerospace Physiology II, PMO845-Human Factors in Aviation, and PMO599-Introduction to Risk Communication. A total of six (6) courses are required to fulfill the concentration in Aerospace Physiology---four required courses and at least two electives. Electives include, but are not limited to, MEM833-Issues in Aerospace Medicine, PMO548-Joint Medical Operations and Humanitarian Assistance, PMO549-Principles of Toxicology, PMO554-Health Effects of Ionizing/NonIonizing Radiation, PMO606-NonIonizing Radiation, PMO846-Aerospace Exercise Physiology, and PMO847-Aerospace Performance and Health. Other electives courses within the University may be selected from the following areas: Neurophysiology, Pulmonary Physiology and/or Advanced Cardiovascular Physiology.

EPIDEMIOLOGY AND BIOSTATISTICS: Students will acquire the knowledge and skills to apply the basic principles of epidemiology, interpret epidemiologic evidence, and select the appropriate statistical test or analytic approach and use statistical software to evaluate public health problems in specified populations.

Required courses include PMO512-Epidemiologic Methods and PMO513-Advanced Epidemiologic Methods. Students must select at least four additional electives from among the following: PMO514-Epidemiology and Control of Infectious Diseases, PMO515-Epidemiology and Control of Non-Infectious Diseases, 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, including a foundation in epidemiology and biostatistics, toxicology, industrial hygiene, and a survey of occupational/environmental diseases.

In addition to the core requirements, this concentration requires PMO549-Principles of Toxicology and PMO550-Industrial Hygiene I and Laboratory. Students are also required to choose five electives from among the courses offered by the Division of Environmental and Occupational Health or a course from another Division closely related to this field.

GENERAL PREVENTIVE MEDICINE AND PUBLIC HEALTH: This generalist pathway will enable students to 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.

A minimum of six courses are to be selected from among the following electives: PMO514-Epidemiology and Control of Infectious Diseases, PMO515-Epidemiology and Control of Non-infectious Diseases, PMO531-Program Planning & Development, PMO548-Joint Medical Operations and Humanitarian Assistance, PMO630-Environmental Health Policy, and any other course that has been identified as a requirement for the other core areas of concentration.

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 health promotion and 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.

Required courses include PMO527-Principles of Health Care Management, PMO528-International Health I, PMO529-Health Care Financial Management, PMO532-Quality Assessment and Improvement in Health Care, PMO533-Decision Making in Health Services, and PMO535-The Law of Health Care. The Division of Health Services Administration offers other electives.

INTERNATIONAL HEALTH SPECIALIST: The USU/IHS program's mission is to prepare globally focused military professionals for positions in support of complex contingencies and medical crises around the world, in wartime and peacetime.
The program emphasizes interoperability in military-military and military-civilian activities. The roles of health organizations, both public and private are addressed. International Health is defined and the scope of the field is explored. 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 *IHS* student upon completion of additional IHS specific requirements will:
a. have a basic knowledge of major international health issues, ethical and cultural considerations and their influence in a global context
b. understand the role that the US military and other organizations and agencies play in addressing issues
c. be able to apply public health principles toward assessing international health needs and in planning, conducting, and evaluating international health-related activities and projects

Additional requirements for the students enrolled in the IHD program, in addition to MPH requirements are: International Health I (PMO528); International Health II (PMO 539); Medical Anthropology (PMO534); Joint Medical Operations and Humanitarian Assistance (PMO548); Public Health Issues in Disasters (PMO613); Historical Perspectives of International Health (PMO538); and Introduction to Epidemiology II (PMO512); Ethics PMO991

Students must also select three additional electives from the following courses: Program Planning & Development (PMO531); Principles of Healthcare Management (PMO527); Decision Making in Health Services (PMO533); Principles and Practice of Tropical Medicine (PMO560); Malaria Epidemiology and Control (PMO569); Travel Medicine Practicum (PMO990).

TROPICAL PUBLIC HEALTH: This concentration will enable students to function effectively worldwide as a General Preventive Medicine Officer in the Uniformed Services. Graduates of the program will be able to apply the basic concepts and principles of tropical medicine, medical parasitology, and vector biology to the epidemiology, diagnosis, treatment, prevention, and control of tropical diseases.

Required courses are, PMO512-Epidemiologic Methods, PMO560-Principles and Practice of Tropical Medicine, PMO561-Medical Parasitology, PMO565-Vector Biology, PMO569-Malaria Epidemiology and Control, and PMO661-Medical Zoology Seminar. Two additional electives are to be selected from among the following: PMO514-Epidemiology and Control of Infectious Diseases, PMO528-International Health I, PMO539-International Health II, and any other courses offered by the Division of Tropical Public Health.

OCCUPATIONAL ERGONOMICS: This concentration focuses on public health concerns raised by workplace injuries and their associated costs. Students will acquire additional knowledge and skills in technical human factors engineering and occupational ergonomics to have competency in the assessment, prevention, control, and management of work-related musculoskeletal disorders, disease non-battle injuries (DNBI), and garrison, field, and training injuries in military and civilian settings. This area of concentration within the MPH curriculum is the first part of a two-year training program, which is followed by a year-long practicum phase conducted and supervised by the U.S. Army Center for Health Promotion and Preventive Medicine.

Required courses for this concentration are PMO615-Human Factors Engineering, PMO652-Occupational Ergonomics; PMO653-Work Analysis Methods, PMO654-Safety Engineering, and PMO655-Current Injury Prevention Issues and Initiatives (Seminar).

DEPARTMENT OF PMB
MPH/MTM&H CURRICULUM*

PRE-FALL REQUIRED CORE COURSES

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

PRE-FALL ELECTIVE COURSES *

PMO558 Intro to Occupational Health (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 MTM&H

PMO528 International Health I (2)
PMO565 Vector Biology (2)

FALL ELECTIVECOURSES *

PMO528 International Health I (2)
PMO538 Historical Perspectives of International Health (1)
PMO546 Selected Topics in EOH (2)
PMO548 Joint Med Ops & Humanitarian Assistance (3)
PMO565 Vector Biology (2)
PMO567 Chg Patterns of Arthropod-borne Dz (4)
PMO577 Introduction to GIS Methods in PH (2)
PMO584 Introduction to Health Physics (3)
PMO587 Nuclear Reactors Criticality & Shielding (3)
PMO600 Fundamentals of Human Physiology (2)
PMO606 Non-ionizing Radiation (3)
PMO651 Human Factors Engineering (3)
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 Physiology I (3)
PMO973 Gen Prev Med & Occ Med Residency J Club (1)
PMO971 Doctoral Student Journal Club (1)

WINTER REQUIRED CORE COURSES

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

ADDITIONAL REQUIRED COURSES FOR MTM&H

PMO512 Epidemiology II (4)
PMO539 International Health II (2)
PMO661 Medical Zoology Seminar (1)

WINTER ELECTIVE COURSES *

PMO502 Intro to SAS (1)
PMO512 Introduction to Epidemiology II (4)
PMO514 Epi and Control of Infectious Diseases (2)
PMO527 Principles of Healthcare Management (2)
PMO531 Program Planning & Development (3)
PMO535 The Law of Health Care (2)
PMO539 International Health II (2)
PMO546 Selected Topics in EOH (2)
PMO550 Industrial Hygiene I & Lab (4)
PMO554 Hlth Effects of Ionizing & Non-Ionizing Rad (3)
PMO555 Industrial Ventilation (3)
PMO566 Phys Params of Vector Competence (4)
PMO571 Biosystematics in Med Zool (2)
PMO578 Remote Sensing Methods in PH (3)
PMO581 Radiation Dosimetry (3)
PMO585 Environmental Health Physics (3)
PMO588 Instrumentation of Ionizing Radiation (3)
PMO601 Environmental Health Risk Assessment (2)
PMO611 Classic Studies in Epi (2)
PMO615 Sand Flies and Disease (3)
PMO654 Safety Engineering (3)
PMO661 Medical Zoology Seminar (1)
PMO683 Critical Reading Seminar (2)
PMO684 Clinical Research Seminar (1)
PMO701 Advanced Biometrics Tutorial (1-12)
PMO842 Aerospace Physiology II (3)
PMO971 PMB Doctoral Student Journal Club (1)
PMO972 Seminar in Critical Thinking (4)
PMO973 Gen Prev Med & Occ Med Residency J Club (1)
PMO991 Ethics in Public Health

*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).

SPRING REQUIRED CORE COURSES

PM0673 MPH Proj/Practicum Implementation & Eval (1)

ADDITIONAL REQUIRED COURSES FOR MTM&H

PMO560 Principles & Practice of Tropical Medicine (6)
PMO561 Medical Parasitology (2)
PMO564 Epi & Control of Arboviruses (Lec-2)
PMO569 Malaria Epidemiology and Control (3)
PMO661 Medical Zoology Seminar (1)

SPRING ELECTIVE COURSES *

PMO508 Biostatistics III (5)
PMO513 Advanced Epidemiologic Methods (4)
PMO515 Epi & Control of Non-Infectious Diseases (2)
PMO519 Occupational & Environmental Epidemiology (2)
PMO520 Molecular Epidemiology (2)
PMO521 Concepts in Molecular Biology & Immunology (2)
PMO522 Meta Analysis (1)
PMO523 Fundamentals of US Healthcare Policy (1)
PMO524 Health Care Performance Improvement (2)
PMO529 Health Care Financial Management (2)
PMO532 Qual Assessment & Improvement in Health Care (2)
PMO533 Decision Making in Health Services (2)
PMO537 Clinical Decision Making (1)
PMO538 Historical Perspectives of International Health (1)
PMO542 Clin Occ & Environ Medicine (4)
PMO549 Principles of Toxicology (4)
PMO550 Industrial Hygiene I & Lab (4)
PMO552 Industrial Hygiene II & Lab (4)
PMO557 Introduction to Military Occupational Health (1)
PMO560 Principles & Practice of Tropical Medicine (6)
PMO561 Medical Parasitology (2)
PMO564 Epidemiology and Control of Arboviruses (Lec-2)
PMO569 Malaria Epidemiology and Control (3)
PMO576 Human Resources for Healthcare Executive (2)
PMO582 Radiation Biology (2)
PMO599 Intro to Health Risk Communication (2)
PMO602 Solid & Hazardous Wastes (3)
PMO603 Deployment Envtl Exposures (3)
PMO605 Analytical Instr Meth in Envtl Health (3)
PMO613 Health & Med Care in Tropics (4)
PMO614 Tropical Medicine Rounds (2)
PMO630 Environmental Health Policy (3)
PMO631 MSPH Journal Club: (1 credit over 3 quarters)
PMO635 Military Radiological Operations in Peacetime (1)
PMO636 Military Radiological Operations in Conflict (1)
PMO637 Military/Civilian Radiological Ops & Interactions (1)
PMO653 Work Analysis Methods (3)
PMO655 Current Injury Prevention Issues & Initiatives (Sem) (2)
PMO661 Medical Zoology Seminar (1)
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)
PMO990 Travel Medicine Practicum (2)
PMO971 PMB Doctoral Student Journal Club (1)
PMO973 Gen Prev Med & Occ Med Residency J Club (1)

SUMMER REQUIRED CORE COURSES

REQUIRED COURSES FOR MPH

PMO670 Public Health Practicum (3)
PMO674 MPH Independent Project (3)
PMO681 Current Probs & Prac of Prev Med & PH (1)

ADDITIONAL REQUIRED COURSES FOR MTM&H

Overseas Rotation (satisfies practicum requirement)
PMO563 Clinical Tropical Medicine (1-12)

SUMMER ELECTIVE COURSES *

PMO553 Ind Hygiene Field Studies (1)
PMO562 Selected Diseases of the Tropics (4)
PMO564 Epi & Control of Arboviruses (Lab-4)
PMO568 Medical Acarology (4)
PMO570 Mod Tech & Vector-borne Dis (4)
PMO572 Intro to Medical Malacology (3)
PMO582 Radiation Biology (2)
PMO630 Environmental Health Policy (3)

MASTER OF SCIENCE IN PUBLIC HEALTH (MSPH)

The MSPH is a two-year, 120 credit-hour program requiring at least 60 credit hours of coursework (non-research hours). The 60 credit hours of coursework will include a practicum experience and at least 2 credit hours of journal club. The coursework hours may also include electives and independent studies. The courses listed in the MSPH curriculum (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 substitute 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 that the percentage of, pass-fail course credits does not exceed 25% of the total 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 the PMB Department's *Clinical and Graduate Programs Information Handbook* (PMB "Handbook") published each year in July. In lieu of PM0670, *Public Health Practicum,* for MPH students, MSPH students enroll in PM0942, *Environmental/Occupational Health Directed Rotations*, during the third or fourth quarter of Year One or any quarter of Year Two, with the approval of their Research Advisor (Academic Advisor may substitute if a Research Advisor has not yet been selected).

Journal Club Students receive credit for Journal Club participation by enrolling in PM0631, *MSPH Journal Club: EOH Case Studies*, during the Spring Quarter of Years One and Two. Students meet once a month for at least eight sessions, one and-a-half hour each, during the Fall, Winter, and Spring quarters. Students receive one credit hour for participating in MSPH Journal Club at the completion of each Spring Quarter in Year One and Year Two.

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. The student's Research Advisor must have an academic appointment in the PMB Department. In preparation for their MSPH thesis, students have the option to enroll in the series of seminar courses designed to provide guidance for MPH students on their independent projects: PM0671 (Fall Quarter), PM0672 (Winter Quarter), and PM0673 (Spring Quarter). Students who desire to take this series should do so during Year One. Credit for research is received by enrolling in PM0941, *Environmental Occupational Health Directed Research*, during Years One and Two, with the approval of the student's Academic Advisor. The EOH Directed Research hours 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 chairman, 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 division for the specialty track that the student is enrolled. In order for MSPH students to participate in the USUHS 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 three Specialty Tracks within the MSPH degree program: Environmental and Occupational Health (EOH), Health Physics (HP), and Medical Entomology (ME). Students are expected to select one specialty track and may take elective courses from other specialties. 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 and have a basic understanding of the other specialty areas.

ENVIRONMENTAL AND OCCUPATIONAL HEALTH: The EOH Specialty Track is guided by a Joint Steering Committee whose membership includes related specialty leaders from Air Force, Army, and Navy service branches. The EOH specialty track includes the following areas: industrial hygiene, environmental chemistry, health physics, environmental health risk assessment, analytical instrumentation, environmental surveillance, and toxicology.

HEALTH PHYSICS: The Health Physics Specialty Track is an interdepartmental effort with the Department of

Radiology and Radiological Sciences and the Armed Forces Radiobiology and Research Institute. Students will gain the knowledge and skills necessary to function as a Health Physicist. Studies include ionizing and non-ionizing radiation, radiation dosimetry, biological effects of radiation, radiation instrumentation, industrial hygiene, ventilation, toxicology, environmental or occupational regulatory issues, laboratory analytical methodologies, and principles of medical physics. Upon completion of the Health Physics track, the student will be eligible to take the American Board of Health Physics examination.

MEDICAL ENTOMOLOGY: Students 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.

MSPH CURRICULUM

YEAR ONE

PRE-FALL CORE/REQUIRED

PM0505 Microcomputer Fundamentals (1)
PM0530 Behavioral & Soc Sciences Applied to PH (4)
PM0540 Environmental Health (4)
PM0680 Intro to Public Health (1)

FALL CORE/REQUIRED

PM0503 Biostatistics I (4)
PM0511 Introduction to Epidemiology I (4)
PM0671 Intro to MPH Project and Practicum (1)

Add for EOH Specialty Track
PM0584 Introduction to Health Physics (3)
PM0600 Fundamentals of Human Physiology (2)
EOH Journal Club **

Add for HP Specialty Track
PM0584 Introduction to Health Physics (3)
PM0600 Fundamentals of Human Physiology (2)
EOH Journal Club **

Add for ME Specialty Track
PM0526 Health Systems (4)
PM0567 Changing Patterns of Arthropod-Borne Diseases (4)
PM0577 Introduction to Geographic Information Systems (3)

WINTER CORE/REQUIRED

PM0504 Biostatistics II (4)

Add for EOH Specialty Track
PM0549 Principles of Toxicology (4)
PM0550 Industrial Hygiene I & Lab (4)
PM0607 Environmental Chemistry (3)
PM0601 Environmental Health Risk Assessment (2)
PM0672 MPH Project/Practicum Design and Development (1)
EOH Journal Club **

Add for HP Specialty Track
PM0581 Radiation Dosimetry (3)
PM0550 Industrial Hygiene I & Lab (4)
PM0941 EOH Directed Research (1-15)
EOH Journal Club **

Add for ME Specialty Track
PM0512 Epidemiological Methods
PM0571 Biosystematics in Medical Zoology (2)
PM0566 Physiological Parameters of Vector Competence (4)
PM0578 Remote Sensing Methods in Public Health (2)

SPRING CORE/REQUIRED

Add for EOH Specialty Track
PM0549 Principles of Toxicology (4)
PM0605 Analytical Instr Meth in Envir Health (3)
PM0555 Industrial Ventilation (4)
PM0552 Industrial Hygiene 2 (CBRNE Detection) (4)
PM0631 EOH Journal Club (1)

Add for HP Specialty Track
PM0549 Principles of Toxicology (4)
PM0582 Radiation Biology (3)
PM0589 Intro to Medical Physics (3)
PM0631 EOH Journal Club (1)
PM0941 EOH Directed Research (1-15)

Add for ME Specialty Track
PM0673 MPH Project/Practicum Implementation & Eval (1)
PM0564 Epidemiology and Control of Arboviruses Lec (2)
PM0569 Malaria Epidemiology and Control (3)
PM0661 Medical Zoology Seminar (1)

SUMMER CORE/REQUIRED

PM0681 Current Probs & Prac in Prev Med & PH (1)

Add for EOH and HP Specialty Tracks
PM0941 EOH Directed Research (1-15)

* Electives are listed in the "Course Descriptions" section of this handbook.

YEAR TWO

PRE-FALL CORE/REQUIRED

None

Add for EOH and HP Specialty Tracks
PM0942 MSPH Directed Rotation (Field Experience) (3)

FALL CORE/REQUIRED

None

Add for EOH Specialty Track
PM0941 EOH Directed Research (1-15)
EOH Journal Club **

Add for HP Specialty Track
PM0587 Nuclear Reactors, Criticality and Shielding (3)
PM0606 Non-ionizing Radiation (3)
PM0941 EOH Directed Research (1-15)
EOH Journal Club **

Add for ME Specialty Track
PM0964 Research in Medical Zoology (8)

WINTER CORE/REQUIRED

None

Add for EOH Specialty Track
PM0941 EOH Directed Research (1-15)
EOH Journal Club **

Add for HP Specialty Track
PM0585 Environmental Health Physics (3)
PM0588 Instrumentation of Ionizing Radiation (3)
PM0941 EOH Directed Research (1-15)
EOH Journal Club **

Add for ME Specialty Track
PM0661 Medical Zoology Seminar (1)
PM0964 Research in Medical Zoology (4)

SPRING CORE/REQUIRED

None

Add for EOH and HP Specialty Tracks
PM0941 EOH Directed Research (1-15)
PM0631 EOH Journal Club (1)

Add for ME Specialty Track
PM0661 Medical Zoology Seminar (1)
PM0964 Research in Medical Zoology (4)

SUMMER CORE/REQUIRED

Add for EOH and HP Specialty Tracks
PM0941 EOH Directed Research (1-15)

Add for ME Specialty Track
PM0964 Research in Medical Zoology (4)

** EOH Journal Club continues monthly through fall, winter and spring quarters but only register for PM0631 in the Spring Quarter of each year for 1 credit

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. 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 (USUHS 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 USUHS faculty member, the student is encouraged to recruit a Co-Project Mentor from among the USUHS 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 early in the Winter Quarter. All pre-proposals will be reviewed for appropriateness and the need for institutional assurances and/or approvals (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' 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 feasible. This will prove to be a time-efficient way of meeting the two separate requirements.

Federal and USUHS 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 USUHS 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, such as certain survey studies, may receive an expedited review. The University is held accountable for reviewing all human-use protocols prior to the conduct of the study and on at least a yearly basis thereafter, should the study continue 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 time-lines 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. 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 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 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

Time-line 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 time-line for project completion. 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 and the Director of Graduate Research and Practicum Programs before definitive work begins. The proposal is a four to five-page description of the project including study design, sampling methods and sample size calculations, data sources and/or survey instruments, and should be accompanied by the appropriate forms for institutional assurances. References from a preliminary literature search are also expected. This document is submitted no later than the beginning of the Spring Quarter.

4. **Oral presentations** of the independent projects (approximately 15 minutes in length) 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 requirement for a practicum was recently instituted by the Council on Education for Public Health (CEPH), one of the national accrediting bodies for our Graduate Programs. The CEPH guidelines state in part:

> "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 USUHS 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, 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 analysis; 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 beginning of the Spring 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 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).

DOCTOR OF PUBLIC HEALTH

The DrPH 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. They then apply this knowledge in the design, development, and execution of an original research project culminating in a doctoral dissertation. 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 objective of the DrPH program is to produce scholarly health professionals who are knowledgeable in the diverse fields 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. Applicants without a graduate degree in a health-related field may also be considered for admission; however, the minimum requirements include a Master's degree with an outstanding academic record, some health-related work or volunteer experience, and a demonstrated interest in pursuing a public health career. Students without a strong educational background in the biomedical sciences would be required to take additional courses to introduce them to clinical concepts, including pathophysiology and disease transmission. Civilian applicants will be considered for admission on a space-available basis, with preference given to physicians and other health professionals sponsored by U.S. government agencies.

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

- Basic academic foundation consisting of the MPH curriculum
- Additional required advanced electives
- Critical thinking seminar series and journal clubs
- Minimum of one teaching assistant assignment per year
- A 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 courses to meet the MPH and DrPH requirements, with the approval of the Director of Graduate Programs, the PMB Doctoral Committee, and the Associate Dean for Graduate Education. However, 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. All DrPH students/candidates are required to complete the following core courses.

Core Courses:		Quarter Credit Hours
PMO503	Biostatistics I*	4
PMO504	Biostatistics II*	2
PMO508	Biostatistics III	5
PMO505	Microcomputer Applications*	1
PMO502	Introduction to SAS	1
PMO511	Intro to Epidemiology *	4
PMO512	Epidemiologic Methods	4
PMO513	Advanced Epidemiologic Methods	4
PMO526	Health Systems*	3
PMO527	Principles of Healthcare Management	2
PMO530	Behavioral & Social Sciences Applied to Public Health*	4
PMO533	Decision Making in Health Services	2
PMO540	Environmental Health*	4
PMO560	Principles and Practice of Tropical Medicine	6
PMO671	Introduction to the MPH Project and Practicum*	1
PMO672	MPH Project/Practicum Design and Development*	1

PMO673	MPH Project/Practicum Implementation and Evaluation*	1
PMO680	Introduction to Public Health*	1
PMO681	Current Problems & Practice of Prev Med & Public Health*	1

*core courses for the MPH degree

Students without a professional degree in a biomedical science or health-related field must take the additional courses listed below:

PMO692	Clinical Concepts for Doctoral Students - Part 1	1-2
PMO693	Clinical Concepts for Doctoral Students - Part 2	1-2
PMO688	Information Gathering in Clinical Medicine	2-12

Required seminars and journal club

PMO971	PMB Doctoral Student Journal Club (Fall, Winter, Spring - required until successful thesis defense)	variable (1/qtr)
PMO972	Seminar in Critical Thinking	4

Required additional course work in major area of study 20

Required University courses:

IDO704	Ethics and the Responsible Conduct of Research	1
IDO511	Educational Methods	3

Electives: See MPH course offerings

Teaching Assistant Assignments: DrPH students are required to serve as teaching assistants (TA) at least once each academic year, beginning in the second year of the doctoral degree program. Priority will be given to MPH core courses for TA support, but DrPH students are encouraged to serve as TAs in more than one course per year. For each TA assignment, doctoral students/candidates are expected to make significant and measurable contributions to the courses in which they participate, sharing responsibility with the Course Director. Since each course is unique, the contributions of a TA may vary. The following are examples of the ways in which TAs may contribute to teaching and learning:

Preview/pretest lectures, lecture notes, tests, laboratory sessions
Prepare and present lectures; lead labs or small group discussions
Prepare and grade quizzes and examinations
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 TA 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.

Academic Advisor, Advisory Committee, Dissertation Advisor, and Dissertation Committee: The Director, Graduate Programs, will appoint an Academic Advisor and an Advisory Committee for each incoming student. After passing the written qualifying examination, a Dissertation Advisor and a Dissertation Committee will be constructed and appointed by the Director of Graduate Programs (with the advice and consent of the PMB Doctoral Committee).

Qualifying Examination: To achieve candidate status within the DrPH program requires satisfactory performance on both the written and oral portions of a Qualifying Examination. The written examination is comprehensive and is designed to test the student's knowledge and understanding in the core areas of public health. The oral examination, conducted by the Dissertation Committee, is also comprehensive, and the questions are usually in the context of the student's thesis proposal.

Thesis Requirement: All doctoral candidates must submit a thesis proposal to their Dissertation Committee for approval. The final thesis must be presented and defended before the candidate's Dissertation Committee, followed by a public defense. It 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/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 authorized for the thesis. The elements of the thesis must still result in a unified product representing the original work of the student.

All major changes to the proposal must be submitted to the Advisory or Dissertation Committee (depending on the phase of research) for approval. **The candidate will begin research activities only after obtaining the appropriate institutional approvals and assurances**. The thesis format is selected after the student successfully completes both portions of the Qualifying Examination, and the decision should be made jointly by the student and his/her Dissertation Committee. Since the manuscript-based thesis is considered to be an acceptable alternative to the more traditional thesis format, and in no way represents any change in either content or quality, the student and his/her Dissertation Committee can select either format.

Defense of Thesis: The Dissertation Committee consists of at least five members and includes the student's Dissertation Advisor and four other faculty members at the rank of Assistant Professor or above. At least three members must be full-time faculty members with a primary appointment in the PMB Department, and at least one member must be from another USUHS department. Additional members may hold either a USUHS faculty appointment or have an appointment at another accredited college or university. Committee appointments will be recommended by the Director of Graduate Programs and approved by the Associate Dean for Graduate Educaton. The majority of the Committee members must be full-time PMB faculty.

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.

This doctoral program is open only to members of the Uniformed Services, and 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 five faculty members (including a chairperson, an advisor, and three 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 graded 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
Environmental Chemistry	3
Environmental Health	4
Environmental/Occupational Health Science Seminar	3
Epidemiology I and II	8
Principles of Toxicology	4
Introduction to Health Physics	3
Occupational and Environmental Epidemiology	2
Scientific Ethics and the Responsible Conduct of Research	1
Grant Writing	2
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Elective Courses: In addition to the courses offered by our Department, several other courses offered by other USUHS Departments may be suitable as electives for students in the EHS program, including courses offered by the interdisciplinary Emerging Infectious Diseases 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 portion is comprehensive and tests 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 five 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 USUHS 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 five 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 USUHS department, with no 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 in Med Zoo 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 five 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 resident study 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 USUHS 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 + II	8
Malaria Epidemiology and Control	3
Medical Parasitology	3
Medical Zoology Seminar	2
Principles and Practice of Tropical Medicine	6
Ethics and the Responsible Conduct of Research	1
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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
Remote Sensing and GIS 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 first-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 five 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 USUHS department, or have an appointment outside of USUHS. Additional members, if desired, may be USUHS 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 five persons with doctoral degrees. At least three of these must be USUHS 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 USUHS. Additional members may either hold a faculty position at USUHS or have an appointment outside of USUHS. 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 15th 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 USUHS web site: http://www.usuhs.mil/geo/Application.pdf

In addition to the USUHS 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 of career objectives. **The number used to identify USUHS 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. The completed application form and supporting documents must be submitted to the Associate Dean for Graduate Education by January 15th 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. 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. 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.

Early, complete application packages from uniformed applicants will be reviewed and the applicant notified as to acceptance or non-acceptance usually within 6-8 weeks; early civilian applicants will also be notified of provisional acceptance or non-acceptance. Confirmation of provisional acceptance will be made later in the spring, depending on space availability. 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 USUSH 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. Civilians accepted as MPH students are not eligible for a stipend, and there are no USUHS sources of financial aid.

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. 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

As in all PMB Graduate Programs, preference for admission will be given to military personnel on active duty in one of the preventive medicine 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. Civilian applicants will 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.

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. Most students in the DrPH program will be salaried employees of the U.S. government. Civilian doctoral students are eligible for USUHS graduate student stipends if they meet the University eligibility criteria.

PhD Programs

Preferential admission will be offered to active duty officers in the Uniformed Services serving in a field related to their desired degree program. At a minimum, applicants must have a Master's degree with an outstanding academic record (undergraduate transcript, GRE scores) and documented successful completion of rigorous coursework related to their desired area of graduate study. Civilian applicants will be considered on a space-available basis, with preference given to health professionals sponsored by other U.S. government agencies. 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 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 USUHS 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.

HEALTH INSURANCE COVERAGE FOR GRADUATE STUDENTS

All civilian students admitted for graduate study must provide proof of health insurance coverage prior to matriculation. Civilian students are ineligible for care through the military health care system, including the USUHS student health clinic, except in emergencies.

OFFICER STUDENT STATUS

USUHS 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 USUHS.

While a graduate student at USUHS, 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 USUHS. 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.

STUDENT EVALUATION

Grading: Student performance in all formal courses taken for credit, whether at USUHS 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 USUHS 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 USUHS policy on academic "cheating" is articulated in USUHS 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 USUHS 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 USUHS 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 USUHS 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 USUHS 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 USUHS Graduate Education Committee for the process of review and possible dismissal from the program.

INCLEMENT WEATHER POLICY

THE INCLEMENT WEATHER MESSAGES AND COLOR CODES ARE AS FOLLOWS:

COLOR CODE	MESSAGE NO.	MESSAGE
GREEN	**MESSAGE 1**	"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."
YELLOW	**MESSAGE 2**	"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."
BLUE	**MESSAGE 3**	"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."
ORANGE	**MESSAGE 4**	"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."
RED	**MESSAGE 5**	"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."
WHITE	**MESSAGE 6**	"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.

In summary, if the Federal Government is closed due to extreme weather conditions (such as heavy snow or ice on the roads), then the University is closed and all classes for that day are canceled. Otherwise, classes are held as scheduled.

GRADUATE MEDICAL EDUCATION PROGRAMS (RESIDENCIES)

The Department of Preventive Medicine and Biometrics hosts Graduate Medical Education (GME) programs in Occupational and Environmental Medicine (OEM) and General Preventive Medicine (GPM). These programs are part of the National Capital Consortium, which sponsors over 40 military GME programs in the Washington area. Both programs are fully accredited by the Accreditation Council on Graduate Medical Education (ACGME) and lead to eligibility for certification by the American Board of Preventive Medicine. For detailed information, please visit our website at "www.usuhs.mil/pmb/pmb.html".

GENERAL PREVENTIVE MEDICINE RESIDENCY

Mission: To produce highly competent preventive medicine specialists who are eligible to be certified by the American Board of Preventive Medicine. Graduates of the program will be capable of serving in a wide variety of military settings, from the direct support of operational forces to the highest policy-making levels. Graduates will also possess the skills and knowledge needed to practice Preventive Medicine in a broad range of civilian settings.

Overall Residency Structure

The GPM residency is a two-year program for military physicians, consisting of an academic and practicum year. To enter the residency, candidates must have already completed a clinical internship or first year of a clinical residency program. During the academic year, the resident obtains a Master of Public Health (MPH) or Master of Tropical Medicine & Hygiene (MTM&H) degree at USUHS. The primary objective of the academic year is to provide a solid foundation in the core disciplines of public health: epidemiology, biostatistics, environmental health, health services administration, and social/behavioral aspects of public health. GPM residents in the MPH program typically elect a specialty track in epidemiology, tropical public health, health services administration, or a generalist track.

Throughout the two year program, GPM residents also participate in a weekly journal club/seminar series (PMO973). These sessions review articles from the medical and public health literature and provide presentations on special topics in occupational and preventive medicine.

Practicum Year Structure

The practicum year, which begins immediately after the academic year, is structured as a series of rotations typically lasting eight weeks. Each rotation is built so that the resident gains proficiency in specific competencies, as outlined by the American College of Preventive Medicine. A designated preceptor, usually an experienced public health practitioner, supervises and guides the resident. The resident is expected to fully participate in a "hands-on" mode during practicum rotations. The preceptor will typically assign a specific project or series of projects for the resident to complete.

Core Rotations:

Montgomery County Health Department - Residents spend eight weeks at this busy suburban health department, participating in a wide variety of activities, including disease surveillance, outbreak investigation, environmental health programs, health promotion, health needs assessment, communicable disease control, and local health policy.

Navy Environmental and Preventive Medicine Unit (NEPMU) - Navy residents complete an eight-week rotation at one of the Navy's four NEPMUs worldwide. They work with experienced Navy PM physicians providing a wide range of PM support to Navy and Marine Corps operational forces deployed all over the world.

Defense Medical Surveillance System (DMSS) - Residents spend eight weeks at the DMSS, located on the campus of the Walter Reed Army Medical Center in Washington. This organization collects and analyzes health data from multiple sources, including inpatient and outpatient databases, serum repositories, and military disease reporting systems. Residents participate in the analysis and reporting of this data.

Agency for Healthcare Research and Quality (AHRQ)- Residents work with senior staff to generate and disseminate information, guidelines, and recommendations that can improve the delivery of healthcare.

Air Force Surgeon General's Office - Air Force residents complete a rotation within the Office of the Air Force Surgeon General, where they participate in health policy-making activities.

The GPM residency at USUHS offers a wide range of elective rotations, which can be tailored to an individual resident's interest and experience. These may include (but are not limited to) the following:

Policy Electives
- Office of the Assistant Secretary for Health Affairs, VA
- Navy Bureau of Medicine and Surgery, Washington, DC
- Headquarters Marine Corps, Washington, DC
- Institute for Environment, Safety, and Occupational Health Risk Analysis (Brooks Air Force Base), San Antonio, TX

Public Health Electives
- State of Maryland Department of Health and Mental Hygiene, Baltimore, MD
- Walter Reed Army Medical Center, Preventive Medicine Department, Washington, DC
- National Naval Medical Center, Bethesda, MD
- Navy Environmental Health Center, Norfolk, VA
- Armed Forces Medical Intelligence Center, Frederick, MD
- Centers for Disease Control, Atlanta, GA

Management/Clinical Epidemiology Electives
- Agency for Healthcare Research and Quality, Rockville, MD
- National Committee for Quality Assurance, Washington, DC
- Tricare Management Agency, Falls Church, VA
- Health Maintenance Organizations

Research Electives
- Navy Health Research Center, San Diego, CA
- Naval Medical Research Institute, (Bethesda, MD, or Lima, Peru)
- Walter Reed Army Institute of Research (Washington, DC, or Nairobi, Kenya)
- Army and Navy Overseas Infectious Disease Research Laboratories
- USUHS Department of Preventive Medicine and Biometrics

Electives can be established for an individual resident as needed. In addition to the rotations, residents will also work one morning or afternoon per week in the Travel Medicine Clinic at the National Naval Medical Center for a 12-week period during either the practicum or academic years. During the practicum year, residents also attend national and international conferences (military and civilian) and take various short courses on topics such as biological/chemical warfare and risk communication.

OCCUPATIONAL AND ENVIRONMENTAL MEDICINE RESIDENCY

Mission: To train and graduate physicians who will be capable of developing and managing an occupational health program for military and civilian personnel at any size military installation. They will be aware of the duties and responsibilities of the other members of the occupational health "team" and work with other team members in preventing, diagnosing, and treating occupational injury and illness.

The National Capital Consortium Occupational and Environmental Medicine (OEM) Residency is a two-year training program for Uniformed Services physicians. The program consists of an academic year or post-graduate year two (PGY-2) and practicum year or PGY-3. Since the USUHS OEM residency does not offer a PGY-1 or internship year, all physicians must have completed a clinical PGY-1 year and be eligible for a medical license before beginning training.

Academic Year Structure

During the academic year, the residents complete all requirements for a Master of Public Health (MPH) degree in the Environmental and Occupational Health concentration (see MPH areas of concentration). The objective of the academic year is to provide the resident with a foundation in the core disciplines of public health and to prepare the resident for occupational medicine practice during the practicum year. In addition to the required core MPH courses described in this Handbook, the OEM resident will take PM0512, Epidemiologic Methods, and PMO973, General Preventive Medicine and Occupational/Medicine Residency Journal Club, as well as classes in toxicology, industrial hygiene, and clinical and administrative occupational health.

Practicum Year Structure

The practicum year, which immediately follows the academic year, consists of series of rotations where the resident is given the opportunity to attain competence in many aspects of occupational medicine by working with practicing occupational health professionals who serve as preceptors. The typical practicum year includes six to eight rotations,

which are four to eight weeks long. All residents complete two 2-month rotations at organizations with a full-service occupational health program (these rotations are referred to as "industrial" rotations) and a two-month rotation at the US Department of Labor, Occupational Safety and Health Administration, Office of Occupational Medicine. US Army physicians also complete a required two-month rotation at the US Army Center for Preventive Medicine and Health Promotion. For the remaining four to six months of the practicum year, the resident is allowed to choose from among elective rotations in various aspects of clinical and administrative occupational medicine. An example of a typical occupational and environmental resident schedule follows:

OSHA, Office of Occupational Medicine (2-month required rotation)

Industrial rotation (two 2-month required rotations selected from among the following):
- National Security Agency
- Walter Reed Army Medical Center
- Naval Branch Clinic Indian Head
- National Naval Medical Center
- Naval Medical Center, Portsmouth, VA
- US Coast Guard Shipyard, Baltimore, MD
- Lockheed Martin Corporation

US Army Center of Health Promotion and Preventive Medicine (2-month required rotation for US Army physicians; elective rotation for all others)

Electives (clinical, administrative, or industrial sites selected for 1-2 month rotations)
- Clinical rotations at USUHS-affiliated teaching hospitals
  - Pulmonary Medicine
  - Flight Medicine
  - Dear Army Clinic
  - Dermatology
  - Sports/Rehabilitation Medicine
  - Travel Medicine
- Administrative rotations
  - Navy Environmental Health Center
  - Centers for Disease Control and Prevention
  - National Institute for Occupational Safety and Health
  - Agency for Toxic Substances and Disease Registry
  - Disability management corporation
  - Health maintenance organization
  - Occupational health research

The practicum year also includes selected courses and occupational medicine conferences such as the following:
- Medical Management of Chemical Casualties
- Toxic Chemical Training Course for Medical Support Personnel
- Medical Effects of Ionizing Radiation
- Current Concepts in Environmental and Operational Medicine
- Environmental Risk Communication
- American Occupational Health Conference
- Medical Officer Review Course
- Impairment and Disability Evaluation Course
- Service specific Occupational Medicine Conference

In addition to the academic and practicum training described above, the residents participate in weekly journal club and seminars throughout the entire two years of training. The journal clubs offer opportunities for critical review of the literature in occupational and environmental medicine and general preventive medicine and public health. The seminars include special emphasis on military-unique aspects of occupational medicine.

RESIDENCY APPLICATION AND ADMISSION PROCEDURES

Application to NCC GPM or OEM residencies is a two-part procedure. Military physicians must apply to NCC GPM or OEM residencies through the Joint Graduate Medical Education Selection Board (GMESB). Individuals should contact their service-specific GME offices for information and to obtain the DoD GME application form. Additionally, **each candidate must also apply directly to the USUHS Office of Graduate Education by January 15th** for acceptance to the MPH or MTM&H program (see section on admission procedures).

Officers applying to USUHS are strongly encouraged to contact the appropriate Residency Program Director by phone or e-mail to arrange an interview:

OEM Residency Program Director
PMB Department
(301) 295-3717

GPM Residency Program Director
PMB Department
(301)295-3717(Program Administrator)

ENVIRONMENTAL HEALTH POSTGRADUATE TRAINING PROGRAM

The Environmental Health Postgraduate Training (EHPT) Program is a 12-month training program, which began in 1992 as a joint effort between the U.S. Public Health Service Indian Health Service and USUHS. The EHPT program is designed to provide specialized training in the area of environmental and occupational health and safety to Masters'-trained individuals.

Applicants are eligible upon completion of a graduate degree in an environmental health or physical science, or upon approval by the Director, EHPT Program. Most trainees are graduates of the USUHS Master of Public Health degree program with a concentration in environmental health or industrial hygiene, including elective courses, directed studies, and a major project.

The postgraduate year of training is a series of practicum rotations and short courses tailored to the needs of individual students. Practicum rotations are available at the Walter Reed Army Medical Center, National Naval Medical Center, National Institutes of Health (NIH), U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM), Federal Occupational Safety and Health Administration, and other organizations. Rotations with the Environmental Protection Agency and the environmental staff of other Federal agencies can also be arranged for individuals interested in governmental procedures and policy setting. Short courses in topics of current interest or concern are offered to students needing specialized training.

For students interested in institutional environmental control, typical rotations would be at major DoD hospitals or the NIH hospital in the preventive medicine or safety departments. During hospital rotations, the student is expected to participate in all types of health and safety activities, such as industrial hygiene monitoring, radiation protection surveys, and tuberculosis control and surveillance. At CHPPM, a number of practicum options are available, such as work with the Health Care Hazards Management branch and rotations in environmental services and industrial hygiene.

ADMISSION AND APPLICATION

For specific information about the EHPT and agency funding requirements, contact:

Director, Environmental Health Postgraduate Training Program
Department of Preventive Medicine and Biometrics
Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799
Telephone (301) 319-6970; DSN 295-6990; FAX (301) 295-9298

LIST OF COURSES

Course No.	Title	Division	Page
PMO502	Introduction to SAS (1)	EPI/BIOST	44
PMO503	Biostatistics I (4)	EPI/BIOST	44
PMO504	Biostatistics II (4)	EPI/BIOST	44
PMO505	Microcomputer Applications (1)	EPI/BIOST	44
PMO508	Biostatistics III (5)	EPI/BIOST	44
PMO511	Introduction to Epidemiology I (4)	EPI/BIOST	44
PMO512	Epidemiologic Methods (4)	EPI/BIOST	45
PMO513	Advanced Epidemiologic Methods (4)	EPI/BIOST	45
PMO514	Epidemiology and Control of Infectious Diseases (2)	EPI/BIOST	45
PMO515	Epidemiology and Control of Non-Infectious Diseases (3)	EPI/BIOST	45
PMO516	Design and Analysis of Follow-up Studies (3)	EPI/BIOST	45
PMO519	Occupational & Environmental Epidemiology (2)	EPI/BIOST	45
PMO520	Molecular Epidemiology (2)	EPI/BIOST	45
PMO521	Concepts in Molecular Biology & Immunology (2)	EPI/BIOST	45
PMO522	Meta Analysis (1)	EPI/BIOST	46
PMO523	Fundamentals of U.S. Healthcare Policy (1)	HSA	46
PMO524	Health Care Performance Improvement (1)	HSA	46
PMO526	Health Systems (4)	HSA	46
PMO527	Principles of Healthcare Management (2)	HSA	47
PMO528	International Health I (2)	HSA	47
PMO529	Health Care Financial Management (2)	HSA	47
PMO530	Behavioral and Soc Sciences Applied to Public Health (4)	SOC/BEHAV	48
PMO531	Program Planning and Development (3)	SOC/BEHAV	48
PMO532	Quality Assessment and Improvement in Health Care (2)	HSA	47
PMO533	Decision Making in Health Services (2)	HSA	47
PMO534	Medical Anthropology (2)	HSA	47
PMO535	The Law of Health Care (2)	HSA	47
PMO537	Clinical Decision Making (1)	HSA	47
PMO538	Historical Perspectives of International Health (1)	HSA	48
PMO539	International Health II (2)	HSA	48
PMO540	Environmental Health (4)	EOH	38
PMO542	Clinical Occupational and Environmental Medicine (4)	EOH	38
PMO546	Selected Topics in Environmental/Occupational Health (2)	EOH	38
PMO548	Joint Medical Operations & Humanitarian Assistance (3)	EOH	38
PMO549	Principles of Toxicology (4)	EOH	38
PMO550	Industrial Hygiene I and Laboratory (4)	EOH	38
PMO552	Industrial Hygiene II and Laboratory (4)	EOH	38/39
PMO553	Industrial Hygiene Field Studies (1)	EOH	39
PMO554	Health Effects of Ionizing and Non-Ionizing Radiation (3)	EOH	39
PMO555	Industrial Ventilation (3)	EOH	39
PMO557	Introduction to Military Occupational (1)	EOH	39
PMO558	Introduction to Occupational Health (1)	DEPT	53
PMO560	Principles & Practice of Tropical Medicine (6)	TPH	49
PMO561	Medical Parasitology (2)	TPH	49
PMO562	Selected Diseases of the Tropics (4)	TPH	49
PMO563	Clinical Tropical Medicine (1-12)	TPH	49
PMO564	Epidemiology and Control of Arboviruses (Lec-2 and Lab-4)	TPH	49

PMO565	Vector Biology (2)	TPH	49
PMO566	Physiological Parameters of Vector Competence (4)	TPH	49
PMO567	Changing Patterns of Arthropod-borne Diseases (4)	TPH	50
PMO568	Medical Acarology (4)	TPH	50
PMO569	Malaria Epidemiology and Control (3)	TPH	50
PMO570	Modern Technology and Vector-borne Disease (4)	TPH	50
PMO571	Biosystematics in Medical Zoology (2)	TPH	50
PMO572	Introduction to Medical Malacology (3)	TPH	50
PMO573	Epidemiology and Prevention of Vaccine-preventable Diseases (1-2)	TPH	51
PMO576	Human Resources for Healthcare Executive	HSA	48
PMO577	Introduction to GIS in Public Health (4)	TPH	51
PMO578	Remote Sensing Methods in Public Health (4)	TPH	51
PMO581	Radiation Dosimetry (3)	EOH	39
PMO582	Radiation Biology (2)	EOH	39/40
PMO584	Introduction to Health Physics (3)	EOH	40
PMO585	Environmental Health Physics (3)	EOH	40
PMO587	Nuclear Reactors, Criticality, and Shielding (3)	EOH	40
PMO588	Instrumentation of Ionizing Radiation (3)	EOH	40
PMO589	Introduction to Medical Physics (3)	EOH	40
PMO599	Introduction to Health Risk Communication (2)	EOH	40
PMO600	Fundamentals of Human Physiology (1)	EOH	41
PMO601	Environmental Health Risk Assessment (3)	EOH	41
PMO603	Deployment Environmental Exposures (5)	EOH	41
PMO605	Analytical Instrumentation Methodologies in Environmental Health (3)	EOH	41
PMO606	Non-Ionizing Radiation (3)	EOH	41
PMO607	Environmental Chemistry (4)	EOH	41
PMO611	Classic Studies in Epidemiology (2)	EPI/BIOST	46
PMO612	Clinical Medicine in the Tropics (3-5)	TPH	51
PMO613	Public Health Issues of Disasters in Developing Countries (4)	TPH	51
PMO614	Tropical Medicine Rounds (2)	TPH	51
PMO615	Sand Flies and Disease (3)	TPH	51/52
PMO630	Environmental Health Policy (3)	EOH	41/42
PMO631	MSPH Journal Club: Environmental and Occupational Health Case Studies (1 credit over 3 quarters)	EOH	42
PMO635	Military Radiological Operations in Peacetime	EOH	42
PMO636	Military Radiological Operations in Conflict	EOH	42
PMO637	Military/Civilian Radiological Operations and Interactions	EOH	42
PMO640	Environmental/Occupational Health Seminar (1-2)	EOH	43
PMO641	Occupational and Environmental Health Program Management Seminar (1)	EOH	43
PMO651	Human Factors Engineering (3)	EOH	43
PMO652	Occupational Ergonomics (3)	EOH	43
PMO653	Work Analysis Methods (3)	EOH	43
PMO654	Safety Engineering (3)	EOH	43
PMO655	Current Injury Prevention Issues and Initiatives (2)	EOH	43
PMO661	Medical Zoology Seminar (1)	TPH	52
PMO670	Public Health Practicum (1-3)	DEPT	53
PMO671	Introduction to the MPH Project and Practicum (1)	DEPT	53
PMO672	MPH Project/Practicum Design and Development (1)	DEPT	54

PMO673	MPH Project/Practicum Implementation and Evaluation (1)	DEPT	54
PMO674	MPH Independent Project (3)	DEPT	54
PMO680	Introduction to Public Health (1)	DEPT	54
PMO681	Current Problems and Practice of Preventive Medicine and Public Health (1)	DEPT	54
PMO682	History of Preventive Medicine (2-4)	DEPT	54
PMO683	Critical Reading Seminar (2)	DEPT	54
PMO684	Clinical Research Seminar (1)	DEPT	55
PMO685	Health Policy Seminar (1)	DEPT	55
PMO688	Information Gathering in Clinical Medicine (2-12)	DEPT	55
PMO691	Teaching Practicum (3)	DEPT	55
PMO692	Clinical Concepts for Doctoral Students - Part 1 (1-2)	DEPT	55
PMO693	Clinical Concepts for Doctoral Students - Part 2 (1-2)	DEPT	55
PMO701	Advanced Biometrics Tutorial (1-12)	EPI/BIOST	46
PMO760	Tropical Medicine Research Tutorial (1-12)	TPH	52
PMO761	Immunoparasitology Tutorial (3)	TPH	52
PMO763	Tutorial in Medical Zoology (1-12)	TPH	52
PMO764	Tutorial in Aquatic Biology (4)	TPH	52
PMO811	Independent Study in Epidemiology (1-12)	EPI/BIOST	46
PMO830	Independent Study in Social and Behavioral Science (1-12)	SOC/BEHAV	48
PMO841	Aerospace Operational Physiology I (3)	AEROSP	37
PMO842	Aerospace Operational Physiology II (3)	AEROSP	37
PMO845	Human Factors in Aviation (3)	AEROSP	37
PMO846	Aerospace Exercise Physiology (3)	AEROSP	37
PMO847	Aerospace Performance and Health (3)	AEROSP	36
PMO861	Topics in Medical Zoology (1-12)	TPH	52
PMO881	Military Preventive Medicine Study Topics (1-12)	DEPT	55
PMO911	Research in Epidemiology (1-12)	EPI/BIOST	46
PMO926	Health Services Administration Directed Research (1-12)	HSA	48
PMO940	Environmental/Occupational Health Directed Studies (1-12)	EOH	43
PMO941	Environmental/Occupational Health Directed Research (1-12)	EOH	44
PMO942	Environmental/Occupational Health Directed Rotations (1-12)	EOH	44
PMO960	Directed Laboratory Research (1-12)	TPH	52
PMO962	Directed Clinical Research (1-12)	TPH	53
PMO963	Directed Field Research (1-12)	TPH	53
PMO964	Research in Medical Zoology (1-12)	TPH	53
PMO970	Directed Studies in Preventive Medicine (1-12)	DEPT	56
PMO971	PMB Doctoral Student Journal Club (1)	DEPT	56
PMO972	Seminar in Critical Thinking (4)	DEPT	56
PMO973	General Preventive Medicine and Occupational & Medicine Residency Journal Club (1)	DEPT	56
PMO975	Introduction to Aerospace Medicine Seminar (2)	AEROSP	37
PMO990	Travel Medicine Practicum (2)	TPH	53
PMO991	Ethics in Public Health	DEPT	56

COURSE DESCRIPTIONS

AEROSPACE MEDICINE (AEROSP)

PMO841 AEROSPACE OPERATIONAL PHYSIOLOGY I

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

Fall | Johanson | 3 Quarter Hours/Graded

PMO842 AEROSPACE OPERATIONAL PHYSIOLOGY II

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

Winter | Johanson | 3 Quarter Hours/Graded

PMO845 HUMAN FACTORS IN AVIATION

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 | Johanson | 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 | Johanson | 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 factors 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 | Johanson | 3 Quarter Hours/Graded

PMO975 INTRODUCTION TO AEROSPACE MEDICINE SEMINAR

This course will introduce students to the exciting, demanding, and unique challenges faced by those who live, work, and play in the aviation and space environment. Topics covered include the history of aerospace medicine, aerospace physiology and human factors, aerodynamics, clinical aviation medicine, operational aviation medicine, and accident prevention and investigation. The diverse practice settings of aerospace medicine in the military, NASA, FAA, and civilian sector will also be highlighted.

Prerequisites: Concurrence of Course Director

Winter | Butler | 2 Quarter Hours/Credit

ENVIRONMENTAL AND OCCUPATIONAL HEALTH (EOH)

PMO540 INTRODUCTION TO ENVIRONMENTAL HEALTH

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.

Prerequisites: None

Pre-Fall LaPuma 4 Quarter Hours/Graded

PMO542 CLINICAL OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

This course constitutes a review of the health risks associated with chemical, physical, and biological exposures in the workplace. It provides an introduction to the complex work 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 R. Thomas/ Mallon 4 Quarter Hours/Graded

PMO546 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

Winter R. Thomas/ Mallon 1 Quarter Hour/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 non-battle 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, as well as present (in groups) their independent assessment of an historical or recent joint military or humanitarian assistance deployment operation.

Prerequisites: Concurrence of Course Director

Fall Mallon/Fitz 3 Quarter Hours/Graded

PMO549 PRINCIPLES OF TOXICOLOGY

This course is a survey course designed to provide the student with the fundamental principles of toxicology, poisonings, and hazard interpretation. General principles of toxicology are emphasized and systemic injuries are discussed. The course emphasizes occupational and environmental toxicology and hazard interpretation. Real world examples are used to aid the students' understanding. Previous exposure to biology and organic or biochemistry is very useful.

Prerequisites: Concurrence of Course Director

Recommended: PMO600 (if limited background in biomedical sciences)

Spring Neal 4 Quarter Hours/Graded

PMO550 INDUSTRIAL HYGIENE I AND LABORATORY

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.

Prerequisites: Concurrence of Course Director

Winter LaPuma 4 Quarter Hours/Graded

PMO552 INDUSTRIAL HYGIENE II AND LABORATORY

IH2 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.

Prerequisites: PMO550, Concurrence of Course Director

Spring | LaPuma/Hook | 4 Quarter Hours/Graded

PMO553 INDUSTRIAL HYGIENE FIELD STUDIES

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.

Prerequisites: PMO550/Concurrence of Course Director

Summer | Hook | 1 Quarter Hour/Graded

PMO554 HEALTH EFFECTS OF IONIZING AND NON-IONIZING RADIATION

Traditional ionizing radiation topics will be covered including, but not limited to basic battlefield effects, terrorist threats, and medical imaging. The background for current medical imaging techniques along with their limitations and precautions for use in military settings will be examined. Radio Frequency, microwave, and laser shipboard, battlefield and airfield medical effects will be discussed. A significant portion of the course will cover the latest lasers used on the modern battlefield, as well as medical procedures involving state of the art laser imaging, diagnosis and treatment. The course is designed as a survey to give the student a well rounded background of ionizing and non-ionizing issues concerning the health care professional. The course assumes no prior background on the part of the student. It is set up so that students with a limited background in physics and mathematics can gain a conceptual understanding of the subject.

Prerequisites: Concurrence of Course Director

Winter | Nemmers/Johnson | 3 Quarter Hours/Graded

PMO555 INDUSTRIAL VENTILATION

This course is intended to give in-depth and specialized instruction in the areas of industrial ventilation systems and local exhaust hoods. The engineering design of industrial ventilation systems will be evaluated to include contaminate generation, principles of air flow, ventilation of specific contaminants, design of local exhaust hoods, layout and sizing of ducts, balancing ventilation systems, and selection of fans, collectors, and testing instruments. Upon completion of the course, the student should be able to evaluate the effectiveness of any industrial or laboratory ventilation system.

Prerequisites: PMO550, 552 and Concurrence of Course Director

Winter | Hook | 3 Quarter Hours/Graded

PM0557 INTRODUCTION TO MILITARY OCCUPATIONAL HEALTH

Course designed for occupational medicine residents of all military services. This course will complement PM0543 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 July of each year in San Antonio, Texas.

Pre-Fall | R.Thomas/Mallon | 1 Quarter hour graded

PMO581 RADIATION DOSIMETRY

Students will be able to do internal dose calculations based on the methods used in ICRP 30 and ICRP 60, and based on the Medical Internal Radiation Dose (MIRD) method. Students will acquire a working knowledge of ICRP and NCRP reports relevant to the calculation of external and internal dosimetry calculations such as ICRP 51 "Data for Use in Protection Against External Radiation", NCRP Report No. 65 "Management of Persons Accidentally Contaminated with Radionuclides", etc. Students will acquire a working knowledge of NUREG/ CR-4884 "Interpretation of Bioassay Measurements" relevant to the calculation of internal dose. Students will learn the fundamental principles, design, and operating characteristics behind passive and active personnel dosimetry systems such as Electronic Personal Dosimeters (EPDs), Optically Stimulated Luminescent (OSL) dosimeters, EEPROM type dosimeters, Thermoluminescent Dosimeters (TLDs), Film Dosimetry, etc. Students will learn the fundamental principles, design, and operating characteristics of dosimetry area monitoring and environmental devices. Students will learn the fundamental principles of whole body, extremity, and environmental dosimetry.

Prerequisites: Concurrence of Course Director

Winter | St John | 3 Quarter Hours/Graded or Credit

PMO582 RADIATION BIOLOGY

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.

Prerequisites: Concurrence of Course Director

Spring	Blakely	3 Quarter Hours/Graded or Credit

PMO584 INTRODUCTION TO HEALTH PHYSICS

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.

Prerequisites: Concurrence of Course Director

Fall	Johnson	3 Quarter Hours/Graded or Credit

PMO585 ENVIRONMENTAL HEALTH PHYSICS

Upon completion of this course, the student will be able to: Perform atmospheric modeling calculations using Pasquill Gifford equations for both continuous and puff sources and understand the model limitations; describe the accumulation of nuclides in a lake or pond and the doses associated with utilizing this water for drinking, fishing or swimming; determine doses from sewage effluents; understand MARSSIM and how to apply it; determine environmental sampling strategies; understand air, water, and soil sampling principals; calculate doses to personnel from various environmental pathways; and transportation of radioactive waste.

Prerequisites: PMO584 & Concurrence of Course Director

Winter	Johnson	3 Quarter Hours/Graded or Credit

PMO587 NUCLEAR REACTORS, CRITICALITY, AND SHIELDING

Upon completion of this course, students will be able to explain basic atomic and nuclear physics concepts. They will be able to explain the interactions of radiation with matter. Students will learn the fundamental principles, design, and operating characteristics of several types of nuclear reactors including pressurized water reactors, boiling water reactors, heavy water reactors, liquid metal reactors, and research reactors. Students learn how to write a technical laboratory report and perform laboratory experiments in neutron activation and reactor criticality at the Armed Forces Radiobiology Radiation Institute (AFRRI). They will become familiar with and use available computer codes and programs used in radiation interactions, reactor modeling, and shielding design. Students will be able to do radiation and reactor shielding calculations. Students will be become familiar with nuclear reactor; safety, environmental, and regulatory issues.

Prerequisites: Concurrence of Course Director

Fall	Nemmers	3 Quarter Hours/Graded or Credit

PMO588 INSTRUMENTATION OF IONIZING RADIATION

By the end of this course students will be able to calculate all of the statistical descriptors associated with counting; and will demonstrate a fundamental understanding of radiation detectors including (1) Particle counting instruments, (2) Dose measuring devices, and (3) Neutron detectors. Students will also be able to determine calibration characteristics for a given detector and calculate theoretical response of detectors and understand their theoretical operation.

Prerequisites: PMO584 & Concurrence of Course Director

Winter	Nemmers	3 Quarter Hours/Graded or Credit

PMO589 INTRODUCTION TO MEDICAL PHYSICS

This introductory course will cover three of the core disciplines of medical physics: Diagnostic and therapeutic radiological physics, and medical nuclear physics. At the end of the course the student will demonstrate an understanding of the diagnostic applications of x-rays, gamma rays from sealed sources, radio frequency radiation, magnetic fields and ultrasonic radiation; the therapeutic applications of x-rays, gamma rays, electron and charged particle beams, neutrons and radiations from sealed radionuclide sources; the diagnostic and therapeutic applications of radionuclides (except those used in sealed sources for therapeutic purposes); the equipment associated with their production, use, measurement and evaluation; and the quality of images resulting from their production and use.

Prerequisites: PMO581 & Concurrence of Course Director

Spring	Nemmers	3 Quarter Hours/Graded or Credit

PMO599 INTRODUCTION TO HEALTH RISK COMMUNICATION

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.

Prerequisites: None

Spring	Lynch/Batter	2 Quarter Hours/Credit

PMO600 FUNDAMENTALS OF HUMAN PHYSIOLOGY FOR PUBLIC HEALTH

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 to prepare the student for Environmental Toxicology (PMO549). The major topic areas covered are cell physiology, genetics, cancer, general toxicology concepts, liver, kidney, nervous system, immune system, endocrine system, and reproductive system.

Prerequisites: None

Fall | Neal | 2 Quarter Hour/Graded

PMO601 ENVIRONMENTAL HEALTH RISK ASSESSMENT

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. Two comprehensive projects will reinforce understanding of a risk assessment.

Prerequisites: PMO540 and Concurrence of Course Director

Winter | LaPuma | 2 Quarter Hours/Graded

PMO603 DEPLOYMENT ENVIRONMENTAL EXPOSURES

Students will learn how environmental exposures are qualified, recorded, analyzed, and interpreted into usable information no only for ground commanders' immediate use, but subsequently for later use by DoD, the Veterans Administration, and others. Students will be offered the opportunity to go TDY/TAD with environmental experts during mission work relating to environmental exposure surveillance.

Prerequisites: PMO540 and Concurrence of Course Director

Spring | Staff | 3 Quarter Hours/Graded

PMO605 ANALYTICAL INSTRUMENTATION METHODOLOGIES IN ENVIRONMENTAL HEALTH

The 2nd year MSPH student 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 be atomic absorption spectrophotometry, mass spectroscopy, inductively coupled plasma spectrometry, ICP-MS, 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, QA/QC, application, and sample preparation. The student will also understand the regulatory source of these methodologies and their application to different classes of environmental media, and the requirements for laboratory accreditation and certification. The course is conducted through lectures, demonstrations and laboratory exercises. The course grade is based on two examinations and course participation. Some laboratories may be conducted at the U.S. Army Center for Health Promotion and Preventive Medicine.

Prerequisites: Concurrence of Course Director

Spring | Hook | 3 Quarter Hours/Graded

PMO606 NON-IONIZING RADIATION

The electromagnetic spectrum, transmission and absorption, biological effects, units of exposure, protection standards, measurement and control of UV, IR, microwaves, and lasers for both military and industrial use will be examined in detail. Actual measurements will be performed in laboratories and at various local military bases.

Prerequisites: Concurrence of Course Director

Fall | Johnson | 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, Concurrence of Course Director

Winter | Hook | 3 Quarter Hours/Graded

PMO630 ENVIRONMENTAL HEALTH POLICY

Students will explore policy formulation, implementation, and evaluation for environmental health at DoD staff, DoD service (Army, Navy, Air Force), USPHS organizations, other Federal agencies, and national levels. The scope will include specific environmental health policy and current management concerns and issues. Lectures will cover risk assessment, risk management, environmental assessments, health hazard assessments, standard setting, restoring the environment, and more.

Prerequisites: PMO540, Concurrence of Course Director

Summer | EOH Staff | 3 Quarter Hours/Graded

PMO631 EOH JOURNAL CLUB: ENVIRONMENTAL AND OCCUPATIONAL HEALTH CASE STUDIES

From an in depth examination of selected case studies the class will identify policy issues from the perspective of the DOD, individual military services, and other federal agencies such as EPA, OSHA, and the US Public Health Service. The class will describe research requirements needed to address problems identified in the case studies. The class will formulate possible organizational changes and resource shifts needed to addresses issues raised by the in-depth examination, and list lessons learned from the perspective of public health/preventive medicine good practice, federal statutes and standards, DOD regulations, and service specific guidance and requirements. For the course grade, each student will independently research from the scientific literature a case study, prepare a written in-depth analysis, and provide a short oral briefing. NOTE: This course is intended for students in the two-year MSPH program. Students will be expected to attend a monthly one and-a-half hour session during the Fall, Winter, and Spring Quarters of both years of the MSPH program. Students will receive one credit for each year of attendance by registering for this course during the Spring Quarter of each year.

Prerequisites: Concurrence of Course Director

Fall, Winter, and Spring | Hook | 1 Quarter Hour/Credit

PMO635 <u>Military Radiological Operations in Peacetime</u>

Description: The seminar will familiarize students with the multifaceted health physics aspects of the peacetime operations of the Army, Navy and Air Force. Experts in various levels and positions will present "mini-courses" of their area of expertise. New and established reference documents, texts and modeling software will be reviewed. The course is designed to be a dynamic presentation of issues that graduates will be exposed to post graduation. The course will cover a wide range of operational topics ranging from the duties and responsibilities of a medical health physicist to casualty estimations from nuclear weapons or radiological dispersal devices, from low level environmental measurements to issues of mass hysteria caused by potential releases of biological, chemical or radiological agents. Classified material may be discussed in some of the presentation. Course Objectives to be met by the students by the end of this seminar course series include: (1) students will discuss the differences and similarity between the Navy, Army and Air Force peace time health physics/medical physics programs and operations, (2) students will grasp the peace time health physics operations of the various services and joint operations and recognize how they interact during peace time, (3) students will identify and appreciate classified and unclassified modeling software that is used to provide appropriate information to regulators, (4) students will be familiar with an assortment of electronic and written reference publications, reports, fact sheets, and regulations.

Prerequisites: PMO 584 or Concurrence of Course Director

Fall | Nemmers | 1 Quarter Hours/ Credit

PMO636 <u>Military Radiological Operations in Conflict</u>

The seminar will familiarize students with the multifaceted health physics aspects of the operations of the Army, Navy and Air Force during conflict. Experts in various levels and positions will present "mini-courses" of their area of expertise. New and established reference documents, texts and modeling software will be reviewed. The course is designed to be a dynamic presentation of issues that graduates will be exposed to post graduation. The course will cover a wide range of operational topics ranging from the duties and responsibilities of a medical health physicist in the field to casualty estimations from nuclear weapons or radiological dispersal devices, from low level environmental measurements to issues of mass hysteria caused by potential releases of biological, chemical or radiological agents. Classified material may be discussed in some of the presentation. Course Objectives to be met by the students by the end of this seminar course series include: (1) students will discuss the differences and similarity between the Navy, Army and Air Force health physics/medical physics operations during conflict and emergency responses, (2) students will grasp the health physics operations of the various services and joint operations, (3) students will identify and appreciate classified and unclassified modeling software that is used to provide appropriate information to war fighters, (4) students will be familiar with an assortment of electronic and written reference publications, reports, fact sheets, and regulations.

Prerequisites: PMO 584 and Concurrence of Course Director

Winter | Nemmers | 1 Quarter Hours/Credit

PMO637 <u>Military/Civilian Radiological Operations and Interactions</u>

The seminar will familiarize students with the multifaceted health physics aspects of the operations of the Army, Navy and Air Force and how they interact with the various civilian emergency response agencies. Experts in various levels and positions will present "mini-courses" of their area of expertise. New and established reference documents, texts and modeling software will be reviewed. The course is designed to be a dynamic presentation of issues that graduates will be exposed to post graduation. The course will cover a wide range of operational topics ranging from the duties and responsibilities of a military health physicist supporting an emergency situation to casualty estimations from nuclear weapons or radiological dispersal devices, from low level environmental measurements to issues of mass hysteria caused by potential releases of biological, chemical or radiological agents. Classified material may be discussed in some of the presentation. Course Objectives to be met by the students by the end of this seminar course series include: (1) students will discuss the capabilities and expertise of the Navy, Army and Air Force health physicist/medical physicists operations during conflict and emergency responses, (2) students will grasp the health physics operations and capabilities of the various civilian response agencies and teams, (3) students will identify and appreciate the classified and unclassified modeling software that is used to provide appropriate information in emergency situations, (4) students will be familiar with an assortment of electronic and written reference publications, reports, fact sheets, and regulations.

Prerequisites: PMO 584 and Concurrence of Course Director

Spring Nemmers 1 Quarter Hours/Credit

PMO640 ENVIRONMENTAL/OCCUPATIONAL HEALTH SEMINAR

The seminar will be organized as a series of presentations by faculty, students and visiting lecturers. The seminar is intended to allow presentations on current topics in the fields of industrial hygiene, safety, environmental health and occupational medicine. Additionally, the fall and spring seminars will provide faculty, residents and students the opportunity to present research projects and findings.

Prerequisites: Concurrence of Course Director

Fall, Winter, Spring Staff 2 Quarter Hours/Credit

PMO641 OCCUPATIONAL AND ENVIRONMENTAL HEALTH PROGRAM MANAGEMENT SEMINAR

The seminar is organized as a series of faculty and guest presentations that outline management techniques appropriate to large occupational health programs. Group discussions by seminar members will follow the presentations.

Prerequisites: Concurrence of Course Director

Winter Staff 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 Feuerstein 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

Fall Feuerstein 3 Quarter Hours/Graded

PMO653 WORK ANALYSIS METHODS

This course will familiarize students with ergonomic analysis techniques using traditional industrial engineering approaches such as time-motion 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

Winter Feuerstein 3 Quarter Hours/Graded

PMO654 SAFETY ENGINEERING

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

Spring Neal 3 Quarter Hours/Graded

PMO655 CURRENT INJURY PREVENTION ISSUES AND INITIATIVES (Seminar)

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

Spring Staff 2 Quarter Hours/Graded

PMO940 ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED STUDIES

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.

Prerequisites: Concurrence of Course Director

All	Staff	1-12 Quarter Hours/Graded or Credit

PMO941 ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED RESEARCH

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.

Prerequisites: Concurrence of Course Director

All	Staff	1-12 Quarter Hours/Graded or Credit

PMO942 ENVIRONMENTAL/OCCUPATIONAL HEALTH DIRECTED ROTATIONS

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.

Prerequisites: Concurrence of Course Director

All	Staff	1-12 Quarter Hours/Graded or Credit

EPIDEMIOLOGY AND BIOSTATISTICS (EPI/BIOST)

PMO502 INTRODUCTION TO SAS

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.

Prerequisites: PMO503, PMO504A and PMO504B concurrently

Winter	Chen	1 Quarter Hour/Graded

PMO503 BIOSTATISTICS I

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.

Prerequisites: None

Fall	Cruess	4 Quarter Hours/Graded

PMO504 BIOSTATISTICS II

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, principles of experiment design, analysis of variance, multiple regression, logistic regression, and analysis of survival data.

Prerequisites: PMO503

Winter	Chen	4 Quarter Hours/Graded

PMO505 MICROCOMPUTER APPLICATIONS

This course is an introduction to the software packaged used at the University to email, utilize the Internet, transfer files, manage references, and analyze data.

Prerequisites: None

Pre-Fall	Bradshaw	1 Quarter Hour/Pass/Fail

PMO508 BIOSTATISTICS III

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 and SUDAAN: basic analysis of complex surveys by using SAS-callable SUDAAN, generalized linear models, Poisson regression, advanced analysis of multiple linear regression and logistic regression, multinomial logistic regression, generalized estimating equations (GEE), Cox proportional hazards model, and extended Cox model.

Prerequisites: PMO502, 503, 504A, 504B, and Concurrence of Course Director

Spring	Kao	5 Quarter Hours/Graded

PMO511 INTRODUCTION TO EPIDEMIOLOGY I

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.

Prerequisites: None

Fall	Lipnick/Taylor	4 Quarter Hours/Graded

PMO512 EPIDEMIOLOGIC METHODS

This course expands upon the basic concepts of epidemiology presented in PMO511. Methodologic issues discussed include sampling, measurement error, bias, confounding and study design with special emphasis on how to analyze categorical data.

Prerequisites: PMO503, 504A/B concurrently, 511

Winter	Lipnick/Taylor	4 Quarter Hours/Graded

PMO513 ADVANCED EPIDEMIOLOGIC METHODS

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.

Prerequisites: PMO503, 504A, 504B, 511, 512 and Concurrence of Course Director

Spring	Scher	4 Quarter Hours/Graded

PMO514 EPIDEMIOLOGY AND CONTROL OF INFECTIOUS DISEASES

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.

Prerequisites: PMO511, Concurrence of Course Director

Winter	Tribble/Gackstetter	3 Quarter Hours/Graded

PMO515 EPIDEMIOLOGY AND CONTROL OF NON-INFECTIOUS DISEASES

The current strategies for the control of selected non-infectious conditions are presented in the context of their epidemiology (definition, distribution patterns, natural history and risk factors of etiologic or prognostic significance).

Prerequisites: PMO511, 512, Concurrence of Course Director

Spring	Bulter	2 Quarter Hours/Graded

PMO516 DESIGN AND ANALYSIS OF EPIDEMIOLOGIC STUDIES

This course is designed primarily for the doctoral student. The students will use the knowledge and abilities acquired in previous epidemiologic courses to conduct a cohort or a case-control study. This includes writing the study protocol, analyzing and interpreting the data, and writing a final report in the way of a journal article. The study will be based on existing databases and students will work under the supervision of a faculty member.

Prerequisites: PMO513, Concurrence of Course Director

Fall	TBD	3 Quarter Hours/Graded

PMO519 OCCUPATIONAL AND ENVIRONMENTAL EPIDEMIOLOGY

This course emphasizes the epidemiologic methods/tools used in assessing occupational and environmental risk factors. A series of lectures, case studies and exercises are integrated in order to teach various methodologic and analytic approaches to studying the relationship between occupational and environmental exposures and outcome measures in specific populations.

Prerequisites: PMO503, 504A, 511, 512

Spring	R.Thomas/Mallon	2 Quarter Hours/Graded

PMO520 MOLECULAR EPIDEMIOLOGY

This course reviews the application of techniques in molecular biology to the study of epidemiological problems. The range of techniques discussed includes variations of the polymerase chain reaction, nucleic acid hybridization, mutation screening, solid phase immunoassays, flourescence activated cell scanning, and other immunoassay techniques. The application of these techniques is discussed in relation to the epidemiological study of transmission, pathogenesis, and etiology of infectious diseases, genetic predisposition to cancer and other diseases, gene discovery, and the genome project. A prerequisite for this course is the course, "Concepts in Molecular Biology and Immunology," unless the requirement is waived by the course director. It is the goal of these two related courses that each student will develop the capability to critically evaluate use of and apply molecular techniques in epidemiological studies.

Prerequisites: PMO521, Concurrence of Course Director

Spring (Alternates with PMO521)	Quinnan	2 Quarter Hours/Graded

PMO521 CONCEPTS IN MOLECULAR BIOLOGY AND IMMUNOLOGY

This course is intended as an overview of current concepts in molecular and cell biology and immunology that will serve as a useful background for understanding the application of molecular techniques to the study of epidemiological problems. Conceptual areas reviewed include the nature, synthesis, and function of macromolecules, cellular structure, organization and function, techniques in molecular biology commonly used in epidemiology, important principles and techniques in immunology, and genetics. The concepts are presented at a level appropriate for allied health professionals, or as an update for individuals with doctoral degrees in human or animal health fields. The course is generally intended as a prerequisite for the course, "Molecular Epidemiology," although individuals who are already knowledgeable about the areas covered may have the requirement for this course waived by the course director.

Prerequisites: Concurrence of Course Director

Spring (Alternates with PMO520) Quinnan 2 Quarter Hours/Graded

PMO522 META-ANALYSIS

Using interactive, small group self-directed learning techniques, the course objectives are to (1) understand the strengths and weaknesses of meta-analysis and when the method is appropriate; (2) understand the steps of meta-analysis, including question definition, literature review, data 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

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 Trump 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 USUHS.

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

After successfully completing this course, participants will be able to: 1) discuss the ways in which health can be conceptualized by a society; 2) Discuss the impact of health policies on health services in terms of money, Human resources, and technology used to produce these services; 3) discuss the consequences of health policy for individuals, for health-related organizations and systems, and for interest groups; 4) compare and contrast the pluralist and elitist perspectives on interest groups in the political marketplace; 5) define power and influence. What are the sources of power in political markets?; 6) describe, in general terms, the implementation phase or the public policymaking process; and 7) discuss the economic case and the health case for a health-related organization or system practicing corporate citizenship.

Prerequisites: Concurrence of Course Director

Spring Quarter Munson 1 Quarter Hour/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 skill 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 | 1 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 | Munson | 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 | Shepherd | 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:

a. the major determinants, cultural considerations and methods for addressing specific global health problems.

b. political, economic and socio-cultural factors influencing assessment, intervention, and evaluation processes.

Prerequisites: Concurrence of Course Director

Fall | Turner | 2 Quarter Hours/Graded

PMO529 HEALTH CARE FINANCIAL MANAGEMENT

This course provides the student with an overview of financial management in health care organizations and the concepts influencing an organization's financial performance. The goal of the course is to familiarize students with health care resource issues and economic policy issues, and the interrelationship of business and clinical decision-making. The student will gain an understanding of how health care organizations are financed, to include sources of funding, budgeting and resource allocation. The student will also learn to conduct cost analyses and interpret financial statements.

Prerequisites: PMO526 and PMO527 or Concurrence of Course Director

Spring | Munson | 2 Quarter Hours/Graded

PMO532 QUALITY ASSESSMENT AND IMPROVEMENT IN HEALTH CARE

This course provides students with a perspective on current quality of health care with attention to the measurement of quality and the methods for making improvements in critical areas. Subject matter will include national (Federal and non-governmental) and local programs for measurement and assessment. Upon completion, students will be able to apply a variety of methods to improve delivery processes and outcomes of health care in the Military Health System.

Prerequisites: PMO526 and PMO527 or Concurrence of Course Director

Spring | Barbour | 2 Quarter Hours/Graded

PMO533 DECISION MAKING IN HEALTH SERVICES

This course is designed to acquaint students with quantitative and qualitative decision making tools needed for the assessment and continual improvement of health services activities.

Prerequisites: PMO526 and PMO527 or Concurrence of Course Director

Spring | Crawford | 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 population they serve. Presumably from this understanding will flow 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 behavior 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/Turner | 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 the 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

PMO538 HISTORICAL PERSPECTIVES OF INTERNATIONAL HEALTH

The Course will focus on the evolution of international health practices in different civilizations, from antiquity to modern times drawing lessons for the future. The following will be addressed: a. social considerations b. political influences and c. economic impacts. The course will highlight the emergence of Western Medicine as a political tool and the decline and resurgence of the eastern medical practices and outcomes. At the completion of the course, students will understand issues dealing with public health provisions in different cultures and throughout the ages, their interdependencies and evolution, including impact on modern medical practices and policies. Students will be able to extract the lesson learned applicable to decision-making process for international health care planning and delivery, and will have developed a familiarity with a multicultural, diverse aspect of public health practice and research. The course will provide information on current evolution of health policies and practices for emerging and reemerging infections and global terrorism. International aspects of public health preparedness in the context of modern global threat of Bioterrorism will be discussed.

Prerequisites: Concurrence of Course Director

Fall | Nicogossian/Turner | 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:

a. major health systems and programs in place throughout the world and their influence on global health

the role of US and foreign military services, other agencies and organizations Prerequisites: PMO528 and Concurrence of Course Director

Winter | TBD | 2 Quarter Hours/Graded

PMO576 HUMAN RESOURCES FOR HEALTHCARE EXECUTIVES

This course provides an overview of the myriad of human resource programs and Challenges facing the healthcare executives in the 21st century. Learning objectives will be approached from the middle management perspective. Six essential disciplines within human resources will be covered: employment law, training, compensation and benefits, employee relations/labor relations, and health, safety, and security.

Prerequisites: None

Spring | Moran | 2 Quarter Hours/Credit

PMO926 HEALTH SERVICES ADMINISTRATION DIRECTED RESEARCH

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).

Prerequisites: Concurrence of Course Director

All | 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.

Prerequisites: None

Pre-Fall Palmer 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 practical skills is emphasized throughout the quarter. Program implementation and evaluation will also be covered, as will ethical issues relevant to health promotion.

Prerequisites: PMO530, Concurrence of Course Director

Winter 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.

Prerequisites: Concurrence of Course Director

All 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 major symptoms complex perspective (i.e., diarrhea, coma, skin lesions). 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. The course is a requirement for MPH students in the Tropical Medicine tract, MTM&H candidates, DrPH students, and those interested in qualifying to sit for the American Society of Tropical Medicine and Hygiene's certifying examination in Tropical Medicine and Travelers' Health.

Prerequisites: Concurrence of Course Director

Spring Keep 6 Quarter Hours/Graded

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.

Prerequisites: Concurrence of Course Director

Spring Cross 2 Quarter Hours/Graded

PMO562 SELECTED DISEASES OF THE TROPICS

This course will be made up of self-contained finite blocks covering specific disease subtitles such as malaria, schistosomiasis, trypanosomiasis, arboviral diseases, etc. Instruction will be didactic and cover the epidemiology, natural history, diagnosis, pathology and medical management of the diseases. The selection of diseases to be covered will depend on the needs and interests of the student(s).

Prerequisites: PMO560 or Concurrence of Course Director

Summer Keep 4 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. The course is clinically oriented and exposes the student to patients at selected health care facilities in Asia, Africa, Central and South America. Emphasis is placed on the infectious diseases but noninfectious tropical diseases are also reviewed, emphasizing recent advances in diagnosis and treatment.

Prerequisites: Concurrence of Course Director

All (Overseas) Keep 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.

Prerequisites: Concurrence of Course Director

Spring(Lec)/Summer(Lab) Sardelis 2(Lec), 4(Lab) Quarter Hours/Graded

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.

Prerequisites: Concurrence of Course Director

Fall	Roberts	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.

Prerequisites: Concurrence of Course Director

Winter	Andre	4 Quarter Hours/Graded

PMO567 CHANGING PATTERNS OF ARTHROPOD-BORNE DISEASES

This course provides students with an overview of the current status of arthropod-borne diseases in the world today. Lectures and discussions will cover the biology and ecology of major groups of arthropod vectors, epidemiology of vector-borne diseases, arthropod-borne disease surveillance techniques and control measures. Laboratory sessions will acquaint students with the basic techniques used in medical entomology, including field collection methods, specimen preparation, preservation and storage, use of taxonomic resources for specimen identification and implementation of simple surveillance and control measures to reduce disease transmission.

Prerequisites: Concurrence of Course Director

Fall	Schultz	4 Quarter Hours/Graded

PMO568 MEDICAL ACAROLOGY

This is a survey course designed to familiarize students with the major groupings of medically important mites, ticks, spiders and scorpions. Lectures will be presented on morphology, classification, behavior, ecology and control of the major groups of acarines, spiders and scorpions. Emphasis will be placed on those families of greatest medical importance. Procedures for collecting, preserving, clearing, mounting and identifying specimens will be covered in the laboratory sessions. Students will be required to complete a class project.

Prerequisites: PMO567, Concurrence of Course Director

Summer/Fall	Roberts	4 Quarter Hours/Graded

PMO569 MALARIA EPIDEMIOLOGY AND CONTROL

This course covers the epidemiology, prevention and control of malaria parasites that are biologically transmitted by anopheline mosquitoes. At the end of the course, students should have an extensive understanding of how malaria parasites may cause outbreaks of human disease in urban and/or rural environments, how to assess risk of exposure to these parasites, and how to prevent and/or treat malaria. Lectures and discussions will cover such topics as the history of malaria, the biology of the anopheline vectors and of the malaria parasite, the clinical course and pathology of malaria, current chemotherapy and chemoprophylactic regimens for malaria, immunological aspects of malaria and the prospect of vaccines against malaria, the epidemiology of malaria, and the strategies for the prevention and control of malaria. In the laboratory, the student will learn how to identify malaria parasites and vectors, to diagnose human malaria using various techniques, to grow the malaria parasites and vectors in the laboratory, to conduct malaria surveys, and to control the anopheline vectors.

Prerequisites: Concurrence of Course Director

Spring	Andre	3 Quarter Hours/Graded

PMO570 MODERN TECHNOLOGY AND VECTOR-BORNE DISEASE

This course provides an in-depth look at vector-host-parasite-reservoir relationships and the modern techniques utilized to study the causes of outbreaks of arthropod-borne human diseases. The lectures and discussions will focus on the factors that lead to the successful transmission of human pathogens by particular arthropod species under various ecological conditions. Laboratories will focus on utilizing the latest research techniques to examine various aspects of vector biology and disease transmission ecology. Students will have the opportunity to read and discuss a wide variety of current, cutting-edge scientific articles.

Prerequisites: Graduate-level medical entomology course
Concurrence of Course Director

Summer	Andre	4 Quarter Hours/Graded

PMO571 BIOSYSTEMATICS IN MEDICAL ZOOLOGY

This course will be presented in the form of lectures, discussion, demonstrations, and individual projects. The first half of the course will consist of lectures on the history and importance of systematics, the International Code of Zoological Nomenclature, the concept of species, sources of variation, population genetics and mimicry. The second half of the course will examine the major 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	Schultz	2 Quarter Hours/Graded

PMO572 INTRODUCTION TO MEDICAL MALACOLOGY

This course is intended for students interested in the transmission of pathogens by invertebrates. It is designed to introduce students to those groups of mollusks which: (1) serve as passive agents for the dispersal of pathogens, including toxins; (2) actively inject neurotoxins into humans, and (3) serve as intermediate or paratenic hosts of helminthic parasites infecting humans and domestic animals. This course will cover those aspects of molluscan ecology, taxonomy, morphology, and physiology requisite to an understanding of the factors involved in the transmission of molluscan-borne diseases and the control of those mollusks. In addition, students will be introduced to techniques required for identification, collection, examination, maintenance and control of molluscan hosts.

Prerequisites: Concurrence of Course Director

Summer | Carney | 3 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. Depending on availability, the course features a live interactive teleconference from the National Immunizations program at the Centers for Disease Control and Prevention in Atlanta, GA. Topics to be discussed include (1) principles of vaccination, general recommendations on immunization, and the Childhood Immunization Initiative; (2) diphtheria, tetanus, pertussis, hepatitis B; (3) measles, mumps, rubella, varicella; and (4) polio, haemophilus influenzae type b and adult immunizations. For each vaccine-preventable disease, students will be able to name the most common symptom or sign, the major complications, the highest risk groups, characteristics and recommendations for use of the vaccine, identify contraindications to vaccination, and list vaccine adverse events.

Prerequisites: Concurrence of Course Director

Summer | TBD | 1-2 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 | 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

PMO612 CLINICAL MEDICINE IN THE TROPICS

This course consists of advanced and applied training, at the bedside, in the diagnosis and management of diseases in the tropics. Emphasis is placed on the infectious diseases, but non-infectious tropical disease problems are also reviewed. There will be extensive use of clinical cases from wards at hospitals associated with the University's overseas research and training program in tropical infectious diseases. Training conducted at NAMRU-3.

Prerequisites: PMO650, Concurrence of Course Director

Summer | Staff | 3-5 Quarter Hours/Credit

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 | Gonzales/C. Thomas | 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, epidemiologic 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.

Prerequisites: Concurrence of Course Director

Spring | Keep | 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 parasite-vector and vector-host 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.

Prerequisites: Concurrence of Course Director

Winter | Lawyer | 3 Quarter Hours/Graded

PMO661 MEDICAL ZOOLOGY SEMINAR

This seminar series presents reviews of current concepts and research in Medical Parasitology and Medical Entomology. Guest speakers, faculty members, postdoctoral fellows, and enrolled graduate students present weekly seminars on selected topics. As this seminar series is scheduled for two quarters, topics presented will vary each quarter. Students will present a review of their own research or currently published literature each quarter they are enrolled.

Prerequisites: Concurrence of Course Director

Fall/Winter/Spring | Cross/Andre | 1 Quarter Hour/Credit

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.

Prerequisites: PMO560, Concurrence of Course Director

All | Keep | 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.

Prerequisites: Concurrence of Course Director

Spring | Staff | 3 Quarter Hours/Credit

PMO763 TUTORIAL IN MEDICAL ZOOLOGY

The faculty will prescribe a literature review to cover a broad background in medical parasitology and vector biology. The students will meet with the faculty member for discussion of the material.

Prerequisites: Concurrence of Course Director

All | Staff | 1-12 Quarter Hours/Credit

PMO764 TUTORIAL IN AQUATIC BIOLOGY

This course is designed to familiarize the student with the major groupings of aquatic arthropods, with emphasis on those families which are vectors of disease, which prey on disease vectors; and which serve as useful indicators of environmental pollution. Lectures will be presented on morphology, classification, behavior and ecology of the major groups. Procedures for collecting, preserving, mounting and identifying the different groups of aquatic arthropods will be covered in the laboratory sessions. Students will be required to develop and turn in an extensive collection, complete with field notes, of preserved and identified specimens of genera represented in the locale of Washington, DC.

Prerequisites: Concurrence of Course Director

Summer/Fall | Roberts | 4 Quarter Hours/Graded

PMO861 TOPICS IN MEDICAL ZOOLOGY

Topics of current research interest in medical parasitology or vector biology will be selected. The student will carry out a literature review and prepare an oral or a written report for presentation. The presentation may include a laboratory demonstration.

Prerequisites: Concurrence of Course Director

All | Staff | 1-12 Quarter Hours/Credit

PMO960 DIRECTED LABORATORY RESEARCH

The student may elect a mini-project under the supervision of a faculty member. The aim of the directed research is to provide practical experience in laboratory methods and the acquisition of data of publishable quality. The graduate student will, with faculty review, design the study, conduct the experiments and data collection, do the appropriate analysis, including a literature review, and prepare an oral presentation and a written report. This directed research may be overseas.

Prerequisites: Concurrence of Course Director

All | Staff | 1-12 Quarter Hours/Graded

PMO962 DIRECTED CLINICAL RESEARCH

A project under the supervision of a specified faculty member will be undertaken to meet the requirements of this directed clinical research course. The aim will be to provide practical experience in the clinical practice of medicine as it specifically relates to the tropics and to the development of research protocols that are related to the tropical condition.

The graduate student will, with faculty review, design the study, conduct the experiments and data collection, do the appropriate analysis, including a literature review, and prepare an oral presentation and a written report.

Prerequisites: Concurrence of Course Director

All (Overseas) | Keep | 1-12 Quarter Hours/Graded

PMO963 DIRECTED FIELD RESEARCH

The student may elect a mini-project under the supervision of a faculty member in a field study. The aim of this directed research is to provide practical field experience in epidemiological and clinical research. The graduate student will, with faculty review, design the study, conduct the experiments and data collection, do the appropriate analysis, including a literature review, and prepare an oral presentation and a written report.

Prerequisites: Concurrence of Course Director

All (Overseas) | Staff | 1-12 Quarter Hours/Graded

PMO964 RESEARCH IN MEDICAL ZOOLOGY

Graduate students will conduct a project of original research under the supervision of a faculty member. The graduate student will, with faculty review, design the study, conduct the experiments and data collection, do the appropriate analysis, including a literature review, and prepare oral presentations and a written dissertation.

Prerequisites: Concurrence of Course Director

All | Staff | 1-12 Quarter Hours/Credit

PMO990 TRAVEL MEDICINE PRACTICUM

This clinically oriented lecture and clinic care course will teach and demonstrate the principles of travelers' medicine from the perspective of the tourist and, to a lesser extent, the military unit. The course will consist of lectures and evaluation of patients. The Travel Clinic at the National Naval Medical Center will be used to teach the clinical requirements for preparing tourists and business travelers of all ages and health states to travel safely abroad. Students will be introduced to multiple sources of travelers' health information, including travel medicine computer software, published sources, and the Centers for Disease Control and Prevention via the Internet. Preventive medicine will be emphasized, including the use of vaccines, personal protective measure, and malaria chemoprophylaxis. After travel evaluation and care of ill travelers will be taught.

Prerequisites: M.D., P.A., N.P., Concurrence of Course Director

All | Keep | 2 Quarter Hours/Credit

DEPARTMENTAL COURSES (DEPT)

PMO558 Fundamentals of Clinical Occupational Environmental, And Preventive Medicine

This course is an introduction to the National Capital Consortium Residencies in Occupational and Environmental 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 MPH-year NCC OEM resident

Pre-fall | R. Thomas/Mallon | 1 Quarter Hour/Graded

PMO670 PUBLIC HEALTH PRACTICUM

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.

Prerequisites: PMO503,511,526,530,540
Concurrence of Course Director

All	Hooper	1-3 Quarter Hours/Credit

PMO671 INTRODUCTION TO THE MPH PROJECT AND PRACTICUM

This seminar course is designed to introduce students to the year-long 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/Gackstetter	1 Quarter Hour/Credit

PMO672 MPH PROJECT/PRACTICUM DESIGN AND DEVELOPMENT

Building on the introductory course in this series, students will receive guidance on formulating a research question, developing a pre-proposal 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/Gackstetter	1 Quarter Hour/Credit

PMO673 MPH PROJECT/PRACTICUM IMPLEMENTATION AND EVALUATION

In the third and last in this seminar series on the MPH independent project and practicum, students will present their projects in near final form for peer review and to receive feedback from PMB faculty, Program Directors, and/or their classmates. This 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 proposals, 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/Gackstetter	1 Quarter Hour/Credit

PMO674 MPH INDEPENDENT PROJECT

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 INTRODUCTION TO PUBLIC HEALTH

This course will include lectures on ethics, the history of preventive medicine, and effective oral presentations. 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	Butler	1 Quarter Hour/Credit

PMO681 CURRENT PROBLEMS AND PRACTICE OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

This course is designed to provide students with exposure to real-world issues from a variety of public health practice settings. Guest speakers are drawn from a wide range of organizations, local or national, with a public health-related mission, from both civilian and military sectors. Speakers describe the typical public health concerns they address, as well as approaches to problem solving. The course surveys topics of current interest and public health significance and demonstrates the application of principles from the core disciplines of public health.

Prerequisites: Concurrence of Course Director

Summer	Butler	1 Quarter Hour/Credit

PMO682 HISTORY OF PREVENTIVE MEDICINE

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 CRITICAL READING SEMINAR

The Critical Reading Seminar is part of the USUHS/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 Jackson 2 Quarter Hours/Credit

PMO684 CLINICAL RESEARCH SEMINAR

The Clinical Research Seminar is part of the WRAMC/USUHS 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 USUHS 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 HEALTH POLICY SEMINAR

The Health Policy Seminar is given as a part of the USUHS/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 Gackstetter 3 Quarter Hours/Credit

PMO692 CLINICAL CONCEPTS FOR DOCTORAL STUDENTS – PART 1

This course is required for all Doctor of Public Health (DrPH) candidates without a strong background in the biomedical sciences. Students will be introduced to the mainstays of clinical practice: diagnosis, treatment, prognosis, and prevention of illness or injury. An overview of the pathophysiologic basis of disease will be presented along with basic concepts of clinical decision-making. Case studies or clinical vignettes will be incorporated throughout the course to introduce students to medical terminology and to illustrate important concepts. Students will gain a sense of the "mystery and majesty of the human condition" and the complexities of the healing process as they relate to the "art and science of medicine."

Prerequisites: Doctoral Candidate Status/Concurrence of Course Director

Spring Hooper 1-2 Quarter Hours/Graded or Credit

PMO693 CLINICAL CONCEPTS FOR DOCTORAL STUDENTS – PART 2

This required follow-up course will continue to explore the concepts introduced in Part 1 and relate them to the major public health problems addressed in the "Healthy People 2010" goals and objectives. Major conditions of public health importance will be used to illustrate how clinicians integrate basic science knowledge and clinical reasoning skills to improve the health of populations. Evidence-based medicine and clinical decision analysis will be introduced as approaches to managing the uncertainty in clinical practice. Clinical examples will be incorporated throughout the course to reinforce concepts and to foster discussion on the clinical underpinnings of the population-based practice of public health. The overarching purpose of this two-part course is for doctoral candidates with diverse backgrounds to acquire an understanding of the clinical domain in order to facilitate partnerships among health professionals who share the common goal of improving public health.

Prerequisites: PMO692 and Concurrence of Course Director

Summer	Hooper	1-2 Quarter Hours/Graded or Credit

PMO881 MILITARY PREVENTIVE MEDICINE STUDY TOPICS

The student, with the advice of the instructor, will select a topic of Military Preventive Medicine interest. It may be a current unresolved problem, an established procedure or traditional program, or a practice of the past. The topic may be approached as a program design, a program evaluation or as an historical review. The student will develop his information sources and in periodic tutorial sessions discuss with the instructor his data and the need and sources of more material. The final written report will be in military staff study format or as modified with the instructor's permission.

Prerequisites: Concurrence of Course Director

All	Staff	1-12 Quarter Hours/Graded

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	Gackstetter	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

PMO 973 GENERAL PREVENTIVE MEDICINE AND OCCUPATIONAL & MEDICINE RESIDENCY JOURNAL CLUB

Each resident physician in the class will read the selected scientific article and come prepared to discuss the salient points. A different resident each week will present a current scientific paper published in the peer-reviewed scientific literature and lead the discussion. National Capital Consortium (NCC) Residency directors/deputy directors in OEM and GPM will also volunteer to lead the discussion during some sessions. PMB faculty members are encouraged to attend the weekly sessions and join in the discussion.

Prerequisites: Concurrence of Course Director

Fall-Winter-Spring	Mallon/Bradshaw	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. In the introduction Jennings (2003) explains why the curriculum was created. Controversy produces and surrounds public health policy and interventions. The scientific considerations in Public Health blend with political and ethical conflicts. Central to PH practice are questions of autonomy, individual rights, coercion, justice, community, and multicultural values. The goals that guide the 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

Winter	Turner	3 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
Carney, W. Patrick, Ph.D. (University of Montana), M.P.H. (The Johns Hopkins University School of Hygiene and Public Health); Professor and Vice Chair
Cruess, David F., Ph.D. (The Johns Hopkins University); Professor and Vice Chair for Biometrics and Program Development
Andre, Richard G., MS.c. (North Carolina State University), Ph.D. (Iowa State University); Professor and Vice Chair for Research and Faculty Development
Gackstetter, Gary D., D.V.M. (Iowa State University), M.P.H. (Boston University), Ph.D. (University of Minnesota); Associate Professor and Director, Graduate Programs; Col, USAF, BSC
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
Bradshaw, Robert Dana, M.D. (University of Texas), M.P.H. (Uniformed Services University of the Health Sciences); Assistant Professor and Director, General Preventive Medical Residency; Col, USAF, MC
Thomas, Richard J. M.D. (Georgetown University); M.P.H. (The Johns Hopkins University School of Hygiene & Public Health); CAPT, MC, USN, Assistant Professor and Director, Occupational Medicine Residency
Mallon, Timothy, M.D. (Syracuse) Assistant Professor and Deputy Director, Occupational and Environmental Medicine Residency; COL, MC, USA
Turner, Martha, Ph.D. (University of Minnesota); Assistant Professor, Director, AF International Health Specialist Program; Col, USAF, NC
Schlick, Rebecca (Loyola University of Chicago and Texas Christian University); Deputy Program Director, International Health, , Lt Col, USAF, NC

****

Barbour, Galen L., M.D. (University of Arkansas School of Medicine); Professor and Division Director (Health Services Administration)
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)
Crawford, Raymond S., III, M.D. (University of Arkansas), M.B.A. (Troy State University); Assistant Professor (Health Services Administration)
Cross, John H., M.A. (Miami University), Ph.D. (University of Texas Medical Branch); Professor (Tropical Public Health)
Fitz, Robert J., Jr., M.P.H. (University of California School of Public Health, Berkeley), M.S.P.H. (University of North Carolina School of Public Health); Assistant Professor (Environmental and Occupational Health); COL (ret), MS, USA
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); Assistant Professor and Division Director (Social and Behavioral Sciences)
Gonzalez-Moreno, Jesus M., M.D. (Universidad Autonoma de Madrid), M.P.H. (Universidad Autonoma Barcelona); Assistant Professor (Tropical Public Health)
Grieco, John P., Ph.D. (Uniformed Services University of the Health Sciences); Research Assistant Professor (Tropical Public Health)
Heitman, Kristin, M.A., Ph.D. (The Johns Hopkins University School of Arts and Sciences); Assistant Professor
Hickey, Thomas E, Assistant Professor, (Military Tropical Medicine Course); LCDR, MSC, USN
Huang, Grant D., M.S., M.P.H., Ph.D. (Uniformed Services University of the Health Sciences), Assistant Professor, Department of Medical and Clinical Psychology
Hook, Gary L., M.P.H. (The Johns Hopkins University School of Hygiene and Public Health), Ph.D (Uniformed Services University of the Health Sciences).; Assistant Professor (Environmental and Occupational Health); CDR, MSC, USN
Johanson, David C., Ph.D., M.S., (Drexel University); Assistant Professor (Aerospace Medicine); CAPT, MSC, USN
Johnson, Thomas E., Ph.D. (Purdue University), M.S. (Northwestern University); Assistant Professor (Environmental & Occupational Health)
Kao, Tzu-Cheg, M.S. (National Tsing Hua University, Taiwan), Ph.D. (Purdue University); Professor (Biostatistics)
Keep, Lisa W., M.D. (University of Miami), Assistant Professor; LTC, MC, USA
Kinnamon, Kenneth E., D.V.M. (Texas A&M University), M.S. (University of Rochester), Ph.D. (University of Tennessee); Professor (Tropical Public Health) and Director, PMB Centers for Preventive Medicine & Public Health
LaPuma, Peter T., Ph.D. (University of Florida); Assistant Professor (Environmental and Occupational Health); LtCol, USAF, BSC
Lawyer, Phillip G., M.A. (University of Utah), Ph.D. (University of Florida); Associate Professor (Tropical Public Health); COL (ret), MS, USA
Lee, Arthur P., M. Engr. (Pennsylvania State University), Ph.D. (Pennsylvania State University); Assistant Professor (Environmental and Occupational Health); LTC (ret), MS, USA
Lipnick, Robert J., Sc.D. (Harvard University School of Public Health), M.S. (University of Massachusetts); Assistant Professor and Division Director (Epidemiology and Biostatistics); COL, MS, USA,

Masuoka, Penny, M.S. (University of Tennessee); Assistant Professor (Tropical Public Health), NASA/Goddard Space Flight Center
Merchant, P. Glenn, Jr., M.D. (Medical University of South Carolina), M.P.H.&T.M. (Tulane University School of Public Health and Tropical Medicine); Assistant Professor (Aerospace Medicine); CAPT, MC, USN
Michelson, Edward H., M.S. (University of Florida), Ph.D. (Harvard University); Professor Emeritus
Moss, David, D.D.S. (University of Iowa), M.P.H. (Emory University); Assistant Professor (Center for Oral Health Studies); LTC, DC, USA
Mongeau, Susan W., D.D.S. (Emory University); M.P.H. (USUHS); DC Assistant Professor (Center for Oral Health Studies); Lt Col, USAF
Munson, Mark A., M.S. (Financial Management, Naval Postgraduate School); M.S. (Education, Old Dominion University); Assistant Professor CAPT, MSC, USN
Nemmers, Scott A., Ph.D. (University of North Dakota), M.S. (University of North Dakota); (Environmental and Occupational Health); Maj, USAF, BSC
Olsen, Cara H., M.S. (Cornell University); Assistant Professor and Biostatistical Consultant
Roberts, Donald R., M.S. (University of Missouri), Ph.D. (University of Texas School of Public Health); Professor (Tropical Public Health)
Schinski, Vernon D., M.S. (Wayne State University), Ph.D. (University of Maryland); Assistant Professor (Tropical Public Health)
Schultz, George W., Ph.D. (Washington State University); Assistant Professor; CDR, MSC, USN
Smoak, Bonnie L., M.D. (University of Chicago); Ph.D. (Michigan State University); M.P.H. (Harvard University); Associate Professor and Division Director (Tropical Public Health); COL, MC, USA
Tang, Douglas B., M.S., Ph.D. (University of Minnesota), Adjunct Professor (Volunteer) (Epidemiology & Biostatistics)
Trump, David H., M.D. (Jefferson Medical College, Thomas Jefferson University), M.P.H. (The Johns Hopkins University School of Hygiene and Public Health); Associate Professor (Epidemiology and Biostatistics); Director, Medical Student Education Programs; CAPT, MC, USN
York, Andrew, D.D.S. (University of Kentucky); M.P.H. (Uniformed Services University of the Health Sciences); Assistant Professor (Center for Oral Health Studies); CAPT, DC, USN
Zhang, Peng Fei, Ph.D. (National Vaccine and Serum Institute, Beijing); Research Associate Professor (Tropical Public Health)

SECONDARY FACULTY APPOINTMENTS

Calloway, Margaret, M.D. (Creighton University); Assistant Professor (Tropical Public Health); LCDR, MC, USNR
Feuerstein, Michael, M.S., Ph.D. (University of Georgia); Professor, Department of Medical and Clinical Psychology
Fletcher, Douglas W., Assistant Professor; LT, MSC, USN
Jackson, Jeffrey L., M.D. (Washington University at St. Louis), M.P.H. (Uniformed Services University of the Health Sciences); Associate Professor (Health Services Administration); LTC, MC, USA; Department of Medicine
Langreth, Susan G., Ph.D. (University of Chicago); Associate Professor (Tropical Public Health); Department of Microbiology
Llewellyn, Craig H., M.D. (Yale University), M.S., M.P.H. (Harvard University); Professor (Epidemiology and Biostatistics); Professor and Chairman, Department of Military and Emergency Medicine
Mannix, Charles R., Jr., J.D. (Duquesne University), L.L.M. (Georgetown University); Assistant Professor (Health Services Administration); Office of General Counsel
Martin, Gregory J., M.D.; Assistant Professor; CAPT, MC, USN; Department of Medicine
Wilson, Cindy C., Ph.D., Associate Professor, Department of Family Medicine

ADJUNCT AND VISITING FACULTY

Baine, William B., Adjunct Assistant Professor; CAPT, USPHS
Baker, John E., J.D, LL.M.; Assistant Professor; COL, JAG, USA
Blakely, William F., Ph.D., M.S.; Adjunct Assistant Professor
Blow, Jamie, A., Adjunct Assistant Professor; MAJ, MSC, USA
Bradshaw, Patrick P., Adjunct Assistant Professor; Lt Col, BSC, USAF
Brady, Paul J., M.D., M.P.H.; Adjunct Assistant Professor; LCDR, MC, USPHS
Brundage, John F., M.D., Adjunct Assistant Professor
Bryan, Joe P., M.D., Professor
Buck, Alfred S., M.D., Adjunct Professor
Buttery, Christopher M.G., M.B.B.S., M.P.H.; Adjunct Associate Professor
Campbell, James R., M.S. Ph.D., M.P.H.; Adjunct Professor; CAPT, MSC, USN
Carucci, Daniel J., Adjunct Assistant Professor; CAPT, MC, USN
Chen, D.W., M.P.H., M.D.; Adjunct Assistant Professor; CDR, MC, USPHS
Ching, Wei-Mei, Ph.D., Adjunct Associate Professor
Cowan, David N., Ph.D., Adjunct Assistant Professor
Coyne, Phillip E., Jr., M.D., M.S.P.H; Adjunct Assistant Professor; LCDR, MC, USN
Crapo, Philip E, Adjunct Assistant Professor, LCDR, MSC, USN
Cunnion, Stephen, Adjunct Assistant Professor,
Debboun, Mustapha, M.D. Adjunct Assistant Professor; LTC, MS, USA
DeFraites, Robert, M.D., M.P.H.; Adjunct Assistant Professor
Drifmeyer, Jeffrey E., Ph.D., Adjunct Assistant Professor
Echeverria, Peter D., M.D.; Adjunct Professor; COL, MC, USA
El-Masry, Nabil Ayad, Adjunct Professor
Erickson, R. Loren, M.D., M.P.H., Dr.P.H; Adjunct Assistant Professor; LTC, MC, USA
Evans, Edward S., Jr., M.S., Ph.D.; Adjunct Assistant Professor
Evans, Sandra R., B.A., Adjunct Assistant Professor;
Feighner, Brian H., M.D. Associate Professor, COL, MC, USA

Feuerstein, Douglas, PH.D., Professor
Fitz, Robert, Assistant Professor
Fogelman, Vicky, Assistant Professor, Col, MC, USAF
Friedman, Heidi, PH.D. Adjunct Assistant Professor
Gardner, John W., Ph. D, Adjunct Professor; COL, MC, USA
Gargan, Thomas P., II, M.S., Dr.P.H.; Adjunct Assistant Professor
Garvey, Carol W., M.D., Adjunct Assistant Professor
Gaydos, Joel C., M.D., M.P.H.; Adjunct Professor
Gordon, Scott W., Assistant Professor; LTC, MSC, USA
Gray, Gregory C., M.D. Adjunct Professor
Haffner, Marlene E., Adjunct Assistant Professor; RADM, USPHS
Halstead, Scott B., M.D., Adjunct Professor
Hanson, R. Kevin, M.D., M.P.H.; Adjunct Assistant Professor; CAPT, MC, USN
Hayunga, Eugene G., Ph.D., Adjunct Professor
Heller, Jack, Ph.D., M.S.; Adjunct Assistant Professor
Hoffman, Kenneth J., M.D., M.P.H.; Adjunct Assistant Professor; COL, MC, USA
Hoffman, Stephen L., M.D., D.T.M.H.& H; Adjunct Professor; CAPT, MC, USN;
Holland, Christopher S., M.D., Assistant Professor
Jackson, Joan E., M.S., Ph.D.; Adjunct Assistant Professor
Jederberg, Warren W., Adjunct Assistant Professor; CDR, MSC, USN
Johnson, Richard N., Ph.D., Adjunct Assistant Professor; MAJ (P), MS, USA
Jones, Bruce H., M.D., Adjunct Assistant Professor
Jorgensen, Robert R., D.V.M., M.P.H.; Adjunct Assistant Professor
Kanesa-Thasan, Nirajan, M.D., M.T.M.&H.; Adjunct Assistant Professor; MAJ, MC, USA
Kark, John A., M.D., M.A.; Adjunct Assistant Professor; Howard University Hospital
Kelley, Patrick W., M.D., M.P.H.; Adjunct Assistant Professor; COL, MC, USA
Kluchinsky, Timothy A., Adjunct Assistant Professor; CPT, MS, USA
Krakauer, Henry, M.D., Ph.D.; Adjunct Professor; CAPT, USPHS
Krauss, Margot R., Adjunct Assistant Professor; COL, MC, USA
LeDuc, James W., M.S., Ph.D.; Adjunct Associate Professor;
Litow, Francesca K., Adjunct Assistant Professor; LCDR, MC, USNR
Lopez, Mary, M.S., Ph.D.; Adjunct Assistant Professor; LTC, MS, USA
Louis, David, M.D. Adjunct Professor, Col, USAF, MC
Lyerly, William H., Jr., Adjunct Assistant Professor
Madsen, James, M.D. Assistant Professor, COL, MC, USA
Maley, Elizabeth (Annie), M.D. Assistant Professor and, LCDR, MC, USN
Magill, Alan J., Adjunct Assistant Professor; LTC, MC, USN
Martin, Edward D., Adjunct Assistant Professor; RADM, USPHS
McBride, Wayne Z.,. Adjunct Assistant Professor; CDR, MC, USN
McDermott, Glenn D., M.D. Adjunct Professor, COL, MC, USA
Meier, Michael J., Teaching Fellow; LCDR, MC, USN
Meyer, Gregg S., M.D., Adjunct Associate Professor
Mihara, Thomas G., Adjunct Assistant Professor; CDR, MSC, USN
Milhous, Wilbur K., M.S., Ph.D.; Adjunct Associate Professor; LTC, MS, USA
Moritsugu, Kenneth P., Adjunct Assistant Professor; RADM, USPHS
Naito, Neal A., Research Assistant Professor; CDR, MC, USN
Nicogossian, Arnauld, M.D., M.S.; Adjunct Assistant Professor
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., Assistant Professor
Resta, John, Master of Civil Engineering, Adjunct Assistant Professor
Richards, Allen L., Adjunct Assistant Professor; LCDR, MSC, USN
Roach, William P., Adjunct Professor; Lt Col, BSC, USAF
Roadman II, Charles H., M.D., Distinguished 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
Schutt, David C., M.D., Adjunct Assistant Professor
Sharp, Trueman W., M.D. Adjunct Professor; CAPT, MC, USN
Sjogren, Maria, M.D., Adjunct Associate Professor; COL, MC, USA
Southby, Richard F., M.P.A., Ph.D.; Adjunct Professor
Smith, Philip A., M.P.H. Adjunct Professor, CDR, MSC, USN
Stewart, Ann, D.V.M., Ph.D.; Adjunct Assistant Professor
Strickman, Daniel A., Ph.D., Adjunct Assistant Professor; LTC (P), MS, USA
Takafuji, Ernest T., M.D., M.P.H.; Adjunct Assistant Professor; COL, MC, USA
Tornberg, David N., M.D, Adjunct Assistant Professor

Tribble, David R., M.D., M.P.H; Adjunct Assistant Professor; CDR, MC, USN
Trosper, James H., Ph.D., Adjunct Assistant Professor
Van De Merwe, Willem P., Ph.D., Adjunct Associate Professor
Weed, Douglas L., Ph.D., M.P.H., M.D.; Adjunct Associate Professor
Weina, Peter J., Adjunct Assistant Professor; LTC, MC, USA
Whitmeyer, Antoinette, M.S. Adjunct Professor, CDR, 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, Cody L., Ph.D., Adjunct Assistant Professor; LT, MSC, USNR
Wilson, Deborah E., Adjunct Assistant Professor; CAPT, USPHS
Wirtz, Robert A., M.S., Ph.D.; Adjunct Associate Professor
Withers, Benjamin G., M.D., M.P.H.; LTC, MC, USA
Wood, Owen L., Ph.D., Adjunct Assistant Professor
Wu, Shuenn-Jue L., Ph.D, Adjunct Assistant Professor
Yund, Alan J., Adjunct Assistant Professor; CAPT, MC, USN
Zyzak, Michael D., Ph.D., M.S.; Adjunct Assistant Professor; LCDR, MSC, USN

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
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

1991 (continued)
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
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
TIOKASIN, Linda, BS, MPH, LTJG USPHS
1994 (continued)
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, Niranjan, 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
INOUYE, 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
1997 (continued)
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
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

2000 Continued
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
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, Archna 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, LTC, 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
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
CLARK, Krystyn, MSPH, Capt, USAF, BSC
COCKRUM, David, MD, MPH, Maj, USAF, MC
COGSWELL, Brad, MPH, Capt, USAF, MSC
CRAMER, David, MPH, LCDR, USPHS
EATON, Melinda, Capt, DVM, MPH, USAF, BSC
HACHEY, Wayne, MD, MPH, LTC, MC, USA
HARMAN, Dale, MD, MPH, LCDR, MC, USN
JOBANPUTRA, Nishith, MD, MTM&H, LCDR, MC, USN
BRADFORD, Lang, J.D, MPH
LAWLER, James, MD, MPH, LCDR, MC, USN
LUKE, Thomas, MD, MTM&H LCDR, MC, USN
NACK, Michael, MSPH, CPT, USA, MS
MACLARTY, Anne, MAJ, DVM, MPH, VC, USA
MAY, Lisa, DrPH, MAJ, USAF, BSC
MCPHERSON, Nicole, MPH
MOORE, Brian, MPH, Maj, USAF, BSC
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
STRAUSS, Mark, MPH, LT, USPHS
SUNDSTROM, Julie, MPH, Capt, USAF, BSC
WESTPHALL, Johann, MD, MPH, Maj, USAF, MC
Williams, Piper, MSPH, 1LT, USAF, BSC
WILSON, Keith, MPH, Capt, USAF, NC