

MASTER OF SCIENCE IN THE FIELD OF PUBLIC HEALTH MICROBIOLOGY AND EMERGING INFECTIOUS DISEASES

Program Co-Directors: M. Ghosh and I. Kuo

Mission

The mission of the master of science (MS) in the field of public health microbiology and emerging infectious diseases degree program is to provide training to a new generation of public health professionals to expand knowledge and expertise in the areas of disease mechanisms, with an emphasis on microbial pathogens, the use and application of modern biotechnologies, and in epidemiologic skills relevant to the prevention and control of problems in the community arising from infectious diseases.

Graduates of the MS program have an in-depth understanding of the major laboratory, clinical, and public health aspects of humankind's microbial pathogens, and acquire epidemiologic skills relevant to the prevention and control of problems arising from infectious diseases and modern biotechnologies. Areas of emphasis include the design and analysis of epidemiologic data; emerging infections; tropical diseases; and applications of genomics, proteomics, and bioinformatics. MS graduates are employed in academic and industrial research laboratories, international health agencies, NGOs, and private consulting groups. In addition, they may work in federal, state, and local public health agencies or state and local public health laboratories where their technical expertise and population-based perspective are extremely useful. Students earning this degree help meet a national demand that has reached critical proportions for a trained workforce in biodefense and emerging infections, and an international demand for training in diseases that affect the developing countries.

Goals

The goals of the MS program in the field of public health microbiology and emerging infectious diseases are to ensure that graduates:

- Identify the biological complexities of microbial pathogens and the diseases they cause
- Recognize the major epidemiologic and clinical features of microbial disease
- Identify how new biotechnologies (including genomics, proteomics, and bioinformatics) can be applied to the study and control of microbial pathogens
- Develop an in-depth understanding of epidemiologic principles and practice

- Apply the principles of epidemiology, microbiology, and public health practice toward the detection, surveillance, investigation, and control of microbial diseases

Visit the program website (<https://publichealth.gwu.edu/programs/public-health-microbiology-and-emerging-infectious-diseases-ms/>) for additional information.

ADMISSIONS

Admission deadlines:

Fall - March 15 (Applications must be complete by December 15 for priority scholarship consideration)

Spring - October 1

Summer - December 15

Individuals interested in applying to this program should submit their application and supporting documents through SOPHAS, a general online application for schools of public health. A graduated fee is charged for this application, depending on the number of accredited schools to which you apply.

Standardized test scores:

GRE general test (institutional code 5268), LSAT, MCAT, or GMAT. Waived for applicants who hold a graduate degree (i.e., MA, MS, JD).

Recommendations required:

Two (2) recommendations

Prior academic records:

Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Transcripts must be forwarded to SOPHAS (<http://www.sophas.org/>) in their original sealed envelopes directly from the institution. Official transcripts from institutions outside the United States must be accompanied by an official transcript evaluation from an accredited independent evaluating agency. Please be sure you request a detailed evaluation that includes all course titles, credit hours, grade-point average (GPA), United States degree equivalency, and date of degree conferral. Please see the list of acceptable foreign credential evaluation services (<http://www.naces.org/members/>).

Statement of purpose:

In no more than 1500 words, state your purpose in undertaking graduate study in your chosen field. Include your academic objectives, research interests, and career plans. Also discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned in the application.

The Committee reviews your Statement of Purpose to determine your motivation for pursuing a career in public health.

International applicants only: Please review International Applicant Information (<http://graduate.admissions.gwu.edu/international-applicants/>) carefully for details on required documents, earlier deadlines for applicants requiring an I-20 GW, and English language requirements. Detailed documentation needed for this program is available here (<https://publichealth.gwu.edu/admissions/graduate-admissions/>). PLEASE NOTE that all programs in the Milken Institute School of Public Health require the following minimum English language test scores for admission:

- Academic IELTS: an overall band score of 7.0 with no individual band score below 6.0.
- TOEFL: 100 on Internet-based.

Supporting documents not submitted online should be mailed to:

Office of Admissions
Suite 200
Milken Institute School of Public Health
950 New Hampshire Ave. NW
Washington, DC 20052

Contact for questions:

GWSPHAdmit@gwu.edu ~ 202-994-2160 (phone)
<http://publichealth.gwu.edu/admissions> (<http://publichealth.gwu.edu/admissions/>)
9:00 am – 5:00 pm, Monday through Friday

REQUIREMENTS

The following requirements must be fulfilled: 45 credits, including 10 credits in foundational core courses, 23 credits in program-specific courses, 8 credits in elective courses, and 4 credits in field/laboratory experience and final project.

| Code | Title | Credits |
|--|---|---------|
| Required | | |
| Foundation courses | | |
| PUBH 6002 | Biostatistical Applications for Public Health | |
| PUBH 6003 | Principles and Practices of Epidemiology | |
| PUBH 6007 | Social and Behavioral Approaches to Public Health | |
| PUBH 6275 | Essential Public Health Laboratory Skills | |
| PUBH 6080 | Pathways to Public Health | |
| Program-specific courses | | |
| PUBH 6245 | Infectious Disease Epidemiology | |
| PUBH 6247 | Epidemiologic Methods I: Design of Health Studies | |
| PUBH 6259 | Epidemiology Surveillance in Public Health | |
| PUBH 6262 | Introduction to Geographic Information Systems | |
| PUBH 6276 | Public Health Microbiology | |
| PUBH 6278 | Public Health Virology | |
| PUBH 6853 | Use of Statistical Packages for Data Management and Data Analysis | |
| PUBH 6861 | Public Health Genomics | |
| MICR 8210 | Infection and Immunity | |
| Electives | | |
| 8 credit in courses selected from the following and/or other courses approved in advance by the advisor. | | |
| PUBH 6011 | Environmental and Biological Foundations of Public Health | |

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| PUBH 6127 | Introduction to Environmental Health Microbiology | PUBH 6484 | Prevention and Control of Vector Borne Diseases |
| PUBH 6199 | Topics in Environmental and Occupational Health (Microbiomes and Microbial Ecology in Public Health) * | PUBH 6486 | Global Health Programs and Approaches to the Control of Infectious Diseases |
| PUBH 6233 | Epidemiologic Principles and Practice of Disease Eradication | MICR 6292 | Tropical Infectious Diseases |
| PUBH 6234 | Epidemiologic Methods in Neglected Tropical Disease Control | MICR 8230 | Molecular and Cellular Immunology |
| PUBH 6238 | Molecular Epidemiology | Field/laboratory experience and final project | |
| PUBH 6239 | Epidemiology of Foodborne and Waterborne Diseases | PUBH 6016 | Field/Laboratory Experience |
| PUBH 6240 | Pediatric HIV/AIDS | PUBH 6280 | Microbiology and Emerging Infectious Diseases Final Project |
| PUBH 6242 | Clinical Epidemiology and Public Health: Reading the Research | *For PUBH 6199 and PUBH 6299, only the specified topics count toward program requirements. | |
| PUBH 6243 | Topics in Clinical Epidemiology and Public Health: Reading the Research | | |
| PUBH 6250 | Epidemiology of HIV/AIDS | | |
| PUBH 6252 | Epidemiologic Methods II: Advanced Epidemiologic Methods | | |
| PUBH 6253 | Issues in HIV Care and Treatment | | |
| PUBH 6255 | Organizational Responses to the Local, National, and Global HIV/AIDS Epidemics | | |
| PUBH 6263 | Advanced GIS | | |
| PUBH 6271 | Disaster Epidemiology | | |
| PUBH 6272 | Epidemiology of Infectious Agents Associated with Human Cancer | | |
| PUBH 6282 | Introduction to R Programming for Epidemiology | | |
| PUBH 6299 | Topics in Epidemiology (Epidemiology of Sexually Transmitted Infections) * | | |
| PUBH 6299 | Topics in Epidemiology (HIV Prevention Epi and Methods) * | | |
| PUBH 6299 | Topics in Epidemiology (Cancer Immunotherapy) * | | |
| PUBH 6299 | Topics in Epidemiology (Public Health Lab Response to EID) * | | |
| PUBH 6299 | Topics in Epidemiology (Next Gen Sequencing Laboratory Skills) * | | |
| PUBH 6455 | Global Vaccinology | | |