Epidemiology, M.P.H., Ph.D.

Degrees Offered

- Master of Public Health
- Doctor of Philosophy

Nature of the Program

MPH IN EPIDEMIOLOGY

The MPH degree with a major in Epidemiology is designed for those who wish to acquire knowledge and skills necessary for epidemiologic practice and research. This degree will be appropriate for persons interested in a career studying the relationship of risk factors to a variety of disease, injury, and other health-related states.

WVU MPH graduates with major in Epidemiology are qualified to work and provide leadership in state, federal, and global health agencies (e.g. Centers for Disease Control and Prevention [CDC], The National Institute for Occupational Safety and Health [NIOSH]); hospitals; infection control departments in multiple industries; academic health centers and other healthcare organizations; research institutions, foundations; insurance and managed care organizations; and pharmaceutical and biotechnology companies.

PH.D. IN EPIDEMIOLOGY

The Doctor of Philosophy (Ph.D.) in Public Health Sciences, Epidemiology Major, prepares students for careers in research, teaching, and consulting. Students develop research and teaching skills in epidemiology through coursework and practice opportunities. The curriculum provides rigorous and comprehensive training in epidemiologic methods for clinical and population-based research including study design, statistical analysis and interpretation of results, as well as research areas of focus for epidemiologic research including chronic diseases, infectious diseases, injury, and gene by environment interactions. The program’s etiologic orientation is based on the premise that knowledge of genetic, physiologic, behavioral, and environmental factors contribute to understanding the underlying causes of complex human diseases needed to develop and evaluate effective preventive and treatment measures. The first years of the program emphasize research and statistical methods complemented by theoretical and process-oriented coursework relevant to epidemiology. The latter years will largely be dedicated to dissertation research.

Ph.D. graduates in the Epidemiology Major work as faculty members in academic institutions; scientists in research centers, e.g., the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC) or the pharmaceutical industry; or may assume leadership positions in state or federal health agencies (such as CDC, Food and Drug Administration [FDA], and the Environmental Protection Agency [EPA]).

FACULTY

INTERIM CHAIR
- Erik Carlton - Dr. P.H. (University of Kentucky)

PROFESSOR
- Gordon Smith - MB, ChB (MD equivalent), MPH (University of Otago Medical School, Harvard School of Public Health)

ASSOCIATE PROFESSOR
- Diane Gross - DVM, Ph. D. (Ohio State University)

ASSISTANT PROFESSORS
- Ruchi Bhandari - Ph. D. (West Virginia University)
- Brian Hendricks - Ph.D. (West Virginia University)
- Toni Rudisill - Ph. D. (West Virginia University)

ADJUNCT ASSOCIATE PROFESSORS
- Robert Bossarte - Ph.D. (University of Notre Dame)
- Robin Pollini - Ph.D. (Johns Hopkins University)

ADJUNCT ASSISTANT PROFESSOR
- Miguela Mark-Cares - Ph.D. (Cornell University)
  Office of Epidemiology and Prevention Services, WV DHHS
EMERITUS

- Kimberly Innes - Ph.D. (Cornell University)
- Sarah Knox - Ph.D. (University of Stockholm)
- Ian R. H. Rockett - Ph.D. (Brown University)

Admissions

If you are ready to apply to West Virginia University School of Public Health, the admissions team is here to assist you.

MASTER OF PUBLIC HEALTH (MPH) IN EPIDEMIOLOGY

ADMISSION GUIDELINES

- A baccalaureate degree from an accredited college or university (required)
- Preferred minimum GPA of 3.0
- Preferred minimum GRE scores of 150 (verbal), 155 (quantitive), and 4.0 (analytical writing)
- Personal Statement
- Three academic letters of recommendation
- TOEFL scores (minimum 550 paper-based, 213 computer-based, 80 internet-based), IELTS (minimum 6.5), or PTE score of 53-55.

APPLICATION PROCESS

Our CEPH accredited Master of Public Health program participates in the Schools of Public Health Application Service (SOPHAS), http://www.sophas.org/. The MPH Admissions process has two steps. (1) All MPH applications must be submitted through the national SOPHAS service and (2) applicants must also submit a WVU Graduate application, https://graduateadmissions.wvu.edu/.

In addition to the application, applicants must submit to SOPHAS a statement of purpose and objectives, official GRE test scores, three letters of reference, a current resume/curriculum vitae, and all university transcripts. SOPHAS requires original transcripts from ALL U.S. and International institutions attended (even Study Abroad).

There is a SOPHAS application fee. Applicants must indicate their first choice of MPH major and may also indicate a second choice. A maximum of two choices is allowed.

- E-submit your application as soon as the applicant entered information is complete. Do NOT wait for SOPHAS to receive transcripts, recommendations or test scores.
- Plan Ahead! Allow up to 4 weeks for SOPHAS to verify grades, process, and mail your application to your designated institutions after your documents have been received.
- SOPHAS grants fee waivers based upon financial need for Peace Corps Volunteers, McNair Scholars, Gates Millennium Scholars Program, AmeriCorps, U.S., and International applicants.

Once the department has reviewed the SOPHAS application, students will receive a communication from the WVU School of Public Health regarding their recommendation for acceptance and instructions to complete the WVU graduate application and pay the application fee.

Important: When sending GRE scores for consideration for admission to WVU, please use the WVU School of Public Health College GRE code: 0157. This code MUST be used, otherwise, your GRE score will not be reported to SOPHAS and your application will be incomplete. Incomplete applications cannot be reviewed for an admissions decision. [Each program at West Virginia University has a specific code.]

DOCTOR OF PHILOSOPHY (PH.D.) IN PUBLIC HEALTH SCIENCES (EPIDEMIOLOGY MAJOR)

ADMISSION GUIDELINES

- A Master’s degree in Public Health or a closely related field is strongly preferred. Exceptional applicants with a Bachelor’s degree in a relevant field may also be considered.
- A minimum GPA of 3.0 is required, 3.5 is preferred.
- Preferred GRE scores of 150 Verbal; 155 Quantitive; and 3.5 Writing.
- WVU requires international students to submit TOEFL scores. Preferred scores are as follows: 550 on the paper-based test; 213 on the computer-based test; and 80 on the internet-based test. The IELTS (minimum score 6.5) or PTE (score of 53-55) can be used in lieu of TOEFL.
APPLICATION PROCESS
Applying to the Ph.D. program is a two-step process in which prospective students first submit an application through the national SOPHAS service, http://www.sophas.org/. If you are accepted into the Ph.D. program by the School, the next step is for you to complete a WVU Graduate Application, https://graduateadmissions.wvu.edu/.

The SOPHAS application requires:

- Official test scores
- Official transcripts from all US institutions attended
- A Personal Statement
- 3 Letters of Recommendation
- Current CV/Resume

Applicants must indicate their first choice of Major and may indicate a second choice (you are allowed a maximum of two choices).

There is a SOPHAS application fee. However, SOPHAS grants fee waivers based upon financial need for McNair Scholars, Gates Millennium Scholars, as well as for AmeriCorps and Peace Corps Volunteers.

TIPS for completing the SOPHAS application:

- APPLY EARLY! Allow up to 4 weeks for SOPHAS to verify your transcripts and test scores and send them to the Universities to which you have applied. Your application may not be reviewed if it does not contain verified transcripts and test scores.
- When submitting your GRE scores, be sure to use the college code 0157 for the WVU School of Public Health. This code MUST be used so that verified scores are sent by SOPHAS to the WVU School of Public Health for review.
- Submit your application once you have provided the required information. DO NOT wait for SOPHAS to receive transcripts, recommendations or test scores prior to submitting your application.

Personal Statement
The Personal Statement is a critical piece of the application. The content of the Statement and the applicant's writing skills will be evaluated in the admissions decision. The Statement should address the following in no more than 1000 words:

- What is it about Public Health that interests you?
- What is it about your selected major, specifically, that interests you?
- What are your career goals?
- What topics or areas of research do you wish to pursue and why? If you have identified a potential dissertation topic, briefly describe that as well.
- Which faculty members in the SPH do you see as being potential mentors to help you succeed in your area of interest?

Applicants should also include any additional information about their interests, background, prior experience, or special circumstances that may be helpful to the School of Public Health Admissions Committee.

Letters of Recommendation
Three letters of recommendation are required. At least two of these should be from people who can attest to your academic abilities.

Deadlines
Please refer to SOPHAS for the current deadline. Applications received after this deadline will not be considered. All admissions are for the Fall semester. We do not admit students into the Ph.D. program in the Spring or Summer semesters.

Review process
All completed and verified SOPHAS applications are first reviewed by the Admissions Committees of the major to which an applicant has applied (EPID, OEHS, or SBHS). Candidates that are recommended for admission at this level, are put forth to the School of Public Health Doctoral Admissions Committee, which makes the final decisions on admissions and funding.

Advanced Standing for Applicants with a Master's Degree
Students who enter the Ph.D. program with an MPH or approved Master's degree are eligible for Advanced Standing. This allows students to complete an abbreviated course of study that takes between 2 and 3 years to complete, depending on the student's past course work and current interests.

MPH Major Code: 8405
PhD Major Code: 8411
Epidemiology, M.P.H.
For specific information on this program, please use the link to the right.

- Epidemiology, M.P.H.

Epidemiology, Ph.D.
For specific information on this program, please use the link to the right.

- Epidemiology, Ph.D.

COURSES

**EPID 601. Public Health Epidemiology. 3 Hours.**
Examines mortality and morbidity trends, disease and injury models, data sources classification, measures of frequency and association, research design, casual assessment, data interpretation, and screening from an epidemiological perspective.

**EPID 611. Concepts and Methods of Epidemiology. 3 Hours.**
PR: BIOS 610. An in-depth examination of the theory of epidemiology and its application to general epidemiologic research, including problem conceptualization, sound study design, research conduct, and interpretation of findings with depth of understanding expected of masters-level students.

**EPID 612. Applied Epidemiology for Public Health. 3 Hours.**
PR: BIOS 601 and EPID 610 and EPID 611. Applied quantitative methods essential to core training of epidemiology majors. Covering analysis of large public health datasets, methods of summarizing results, calculation of confidence intervals, standardization, calculation of measures of association.

**EPID 623. Epidemiology and Public Health Practice at the Health Department. 3 Hours.**
An introduction to public health practice at the Health Department. The class will strengthen students' perspective and understanding of the work performed by epidemiologists at local and state health departments. Each class will cover a separate area of work for the Health Department. This class will consist of lectures, discussions, case based exercises and field experiences.

**EPID 625. Principles of Clinical Trials. 3 Hours.**
Students will apply the core elements of clinical trials and learn to address their major challenges by critically evaluating clinical trial literature, designing original clinical trials and developing grant proposals in clinical trial research.

**EPID 629. Epidemiology Capstone. 2 Hours.**
The Epidemiology Capstone is the culminating experience for MPH students in epidemiology. It requires students to demonstrate their ability to synthesize and integrate the core public health and epidemiology knowledge and competencies via a paper and oral presentation. (Grading will be Pass/ Fail.).

**EPID 663. Public Health Surveillance. 3 Hours.**
This course includes presentations and discussions of epidemiologic principles, basic statistical analysis, public health surveillance, field investigations, surveys and sampling, and epidemiologic aspects of current major public health problems in international health. The course will cover chronic and infectious diseases surveillance, and procedures and policies for data collection, compilation, and reporting. Metrics developed by the WHO will be used.

**EPID 675. GIS Applications in Public Health. 3 Hours.**
PR: PUBH 611 and PUBH 612. This course provides students with foundational GIS skills to access, store, manipulate, and descriptively analyze spatially referenced health data. Students will gain intermediate proficiency with ESRI ArcGIS software, and gain exposure to GIS capabilities within R.

**EPID 676. Spatial Epidemiology. 3 Hours.**
PR: EPID 675. The purpose of this course is to provide students with technical training in spatial epidemiology. A wide range of statistical methods and software packages for analysis of areal and point data are covered. Instruction is focused on the practical application of methodologies and concepts in spatial epidemiology in public health research.

**EPID 690. Teaching Practicum. 1-3 Hours.**
PR: Consent. Supervised practice in college teaching of epidemiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It also provides a mechanism for students not on assistantships to gain teaching experience.

**EPID 691. Advanced Topics. 1-6 Hours.**
PR: Consent. Investigation in advanced topics that are not covered in regularly scheduled courses.

**EPID 692. Directed Study. 1-6 Hours.**
Directed study, reading, and/or research.

**EPID 695. Independent Study. 1-9 Hours.**
Faculty-supervised study of topics not available through regular course offerings.

**EPID 696. Graduate Seminar. 1-3 Hours.**
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.
EPID 711. Methodological Issues in Design & Analysis of Cohort Studies. 3 Hours.
PR: Consent. An in-depth examination of methodological issues related to the design and analysis of epidemiologic cohort studies. Comparison of different approaches to the analysis of epidemiologic data. Investigation of the role analytic methods decisions play in determining the accuracy, validity, and meaningfulness of analytic outcomes.

EPID 712. Quantitative Methods in Epidemiology. 3 Hours.
PR: EPID 711 and BIOS 603. Applied quantitative methods essential to core training of epidemiology majors. Prepares students to conceptualize and conduct epidemiologic research using secondary database. Develops an understanding of the underlying principles, practical application, and correct interpretation of the epidemiologic results using appropriate multivariable models.

EPID 740. Gene X Environmental Interactions and Chronic Diseases. 3 Hours.
The goal of this course is to inform students about the role of environmental factors in gene expression related to complex diseases such as CVD and cancer.

EPID 766. Physical Activity Epidemiology. 3 Hours.
PR: EPID 710. This course provides an in-depth examination of the epidemiology of physical activity. The course builds upon basic epidemiological methods and explores the relationship between physical activity and chronic diseases.

EPID 769. Occupational Epidemiology. 3 Hours.
PR: BIOS 610 for MPH students and EPID 710 for PhD students. Application of epidemiology to occupational disease and injury. Occupational hazards, including concepts of exposure and dose, as well as study design considerations unique to occupational studies, especially design challenges and analytic implications, will be covered.

EPID 770. Nutritional Epidemiology. 3 Hours.
This course addresses the role of nutrition and food components in primary, secondary, and tertiary disease prevention. Through cooperative learning, students will practice critical thinking skills in the study of nutrition in chronic disease prevention.

EPID 771. Infectious Diseases Epidemiology. 3 Hours.
PR: PUBH 611 or EPID 611 or consent of the instructor. This course is designed to cover the basic epidemiological, public health, economic, surveillance, prevention and other issues related to infectious diseases. The focus includes the major infectious diseases experienced globally as well as those specific to the United States.

EPID 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of (subject matter determined by department/division/college/school offering the course). NOTE: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It also provides a mechanism for students not on assistantships to gain teaching experience.

EPID 791. Advanced Topics. 1-6 Hours.
Investigation of advanced topics not covered in regularly scheduled courses.

EPID 793. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

EPID 795. Independent Study. 1-9 Hours.
PR: Consent. Faculty-supervised study of topics not available through regular course offerings.

EPID 796. Graduate Seminar. 1-3 Hours.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

EPID 797. Research. 1-9 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U).