# EPIDEMIOLOGY, PHD

Epidemiology is the scientific discipline primarily concerned with identifying the distribution and causes of disease in populations. It encompasses a rich methodology including observational and experimental study designs, statistical methods, an understanding of pathogens, environmental and behavioral risk factors, and human biology. Epidemiological methods have evolved to meet threats of global infectious diseases and the complex health challenges presented by an aging population, as well as to capitalize on the expanding understanding of human genetics. As the fundamental discipline of public health, epidemiology provides essential knowledge to design, implement, and assess approaches to effectively prevent disease and improve quality of life in the population.

The research-oriented degree programs are designed to provide rigorous training to develop students' abilities to synthesize knowledge and skills needed to address today's health-related problems. Faculty, staff, and students in the Department of Population Health Sciences engage in a wide variety of world-class epidemiological and health services research projects. The interdisciplinary focus allows students the flexibility to work with a wide array of research/faculty on campus.

The department offers two graduate degree programs: an MS and a PhD in epidemiology and an MS and PhD in population health. While the program is based on a sequence of core courses, students, in consultation with their major professor, have some flexibility to design advanced study and research that best prepares them for their chosen area of interest.

## ADMISSIONS

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Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. ***Applicants must meet* the minimum requirements *(https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).*** Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

| Requirements | Detail |
|---|---|
| Fall Deadline | December 1 |
| Spring Deadline | This program does not admit in the spring. |
| Summer Deadline | This program does not admit in the summer. |
| GRE (Graduate Record Examinations) | Not Required |
| English Proficiency Test | Every applicant whose native language is not English, or whose undergraduate instruction was not exclusively in English, must provide an English proficiency test score earned within two years of the anticipated term of enrollment. Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/). |
| Other Test(s) (e.g., GMAT, MCAT) | n/a |
| Letters of Recommendation Required | 3 |

Applicants with diverse academic backgrounds are welcome. Applicants with strong quantitative skills and academic preparation in the biological sciences are strongly encouraged to apply. New admitted applicants start in the fall semester of each school year. Applications are due by the fall deadline listed above of each year. Late applications are not accepted.

### MINIMUM REQUIREMENTS

- Applicants must have an undergraduate degree with a grade point average of 3.0 (on a 4.0 scale), although successful applicants generally have GPAs above 3.0.
- International degree-seeking applicants must prove English proficiency using the Graduate School's requirements (https://grad.wisc.edu/apply/requirements/).
- A personal statement and three letters of recommendation are required.
- Applicants must meet both departmental admission requirements and the Graduate School admission requirements.
- Upon entry to the graduate program, applicants are matched with a faculty advisor. Faculty advisors help students hone their interests, assist with identifying research projects, provide support for career development, and link students to the greater campus community. Students have the benefit of regular dialogues with faculty members. Seminars and integrated discussion groups allow for increased interaction with core faculty and community lecturers. Finally, the work of students is valued as evidenced by their entries in the annual department poster session, participation in public health symposia, authorship of publications, and involvement in community/research projects.

## FUNDING

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### GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

### PROGRAM RESOURCES

Students admitted to our degree programs are automatically considered for any available scholarships, traineeships, or graduate assistant positions in the department. The most common forms of funding support for our students are assistantships, traineeships, and fellowships.

## REQUIREMENTS

# MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

# MAJOR REQUIREMENTS

## MODE OF INSTRUCTION

| Face to Face | Evening/ Weekend | Online | Hybrid | Accelerated |
|---|---|---|---|---|
| Yes | No | No | Yes | No |

### Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

**Evening/Weekend:** Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW-Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

## CURRICULAR REQUIREMENTS

| Requirement | Detail |
|---|---|
| Minimum Credit Requirement | 60 credits |
| Minimum Residence Credit Requirement | 48 credits |
| Minimum Graduate Coursework Requirement | 60 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/). |
| Overall Graduate GPA Requirement | Students must maintain a cumulative GPA of at least 3.25 in all graduate work (including transfer credits) unless conditions for probationary status require higher grades. Students must also maintain a cumulative GPA of 3.25 or better in all coursework completed while enrolled in the graduate program. No grade of BC or lower in required courses will be accepted for the degree. |
| Other Grade Requirements | Students may maintain no more than 6 credits of Incomplete (I) grades during any semester. |
| Assessments and Examinations | Full-time students have up until the end of their third year to pass the Qualifying Exam and their first sitting must occur no later than the end of their second year. Part-time students are expected to pass the exam before the end of their fourth year (regardless of whether the student is continuously enrolled) and their first sitting must occur no later than the end of their third year. |
| Language Requirements | No language requirements. |
| Graduate School Breadth Requirement | All doctoral students are required to complete a doctoral minor or graduate/professional certificate. Refer to the Graduate School: Breadth Requirement in Doctoral Training policy: https://policy.wisc.edu/library/UW-1200 (https://policy.wisc.edu/library/UW-1200/). |

## REQUIRED COURSES

| Code | Title | Credits |
|---|---|---|
| **Core** | | |
| POP HLTH/B M I 451 | Introduction to SAS Programming for Population Health | 2 |
| POP HLTH/B M I 551 | Introduction to Biostatistics for Population Health | 3 |
| POP HLTH/ B M I 552 | Regression Methods for Population Health | 3 |
| POP HLTH/B M I 651 | Advanced Regression Methods for Population Health | 3 |
| POP HLTH/ SOC 797 | Introduction to Epidemiology | 3 |
| POP HLTH 798 | Epidemiologic Methods | 3 |
| POP HLTH 805 | Advanced Epidemiology: Causal Inference in Epidemiological Studies | 3 |
| POP HLTH 806 | Advanced Epidemiology: Practice of Epidemiology | 3 |
| PhD students must take POP HLTH 820 twice. | | 2 |
| Students may take up to 6 credits of POP HLTH 699 in consultation with their advisor. | | 0-6 |
| Students may use up to 11 credits of POP HLTH 990 Research toward the PhD requirements in consultation with their advisor. | | 0-11 |
| **Responsible Conduct of Research** | | |
| Select a minimum of 1 credit of course work in "the responsible conduct of research" | | 1 |
| B M I 738 | Ethics for Data Scientists | |
| MED HIST 545 | Ethical and Regulatory Issues in Clinical Investigation (Offered in Fall. MED HIST 545 does not fulfill all the NIH requirements for training in the responsible conduct of research for certain T and F awards.) | |
| NURSING 802 | Ethics and the Responsible Conduct of Research (Offered in Spring) | |
| SURG SCI 812 | | |
| OBS&GYN 955 | Responsible Conduct of Research for Biomedical Graduate Students (Offered in Fall) | |

| | | |
|---|---|---|
| OBS&GYN 956 | Advanced Responsible Conduct of Research for Biomedical Students (Offered in Spring) | |
| Other courses may be substituted as approved by the advisor and the Director of Graduate Studies. | | |
| **Epidemiology Specialization Courses** | | |
| PhD students must complete at least 8 additional credits of specialization work from the list below. | | 8 |
| STAT/B M I 542 | Introduction to Clinical Trials I | |
| POP HLTH/ NUTR SCI 621 | Introduction to Nutritional Epidemiology | |
| POP HLTH/ GENETICS/ MD GENET 636 | Public Health Genomics | |
| POP HLTH 650 | Special Topics (Topics: Environ. Health Epidemiology; Connections: Epidemiology Past, Present, and Future) | |
| POP HLTH 713 | Epidemiology of HIV/AIDS | |
| POP HLTH 750 | Cancer Epidemiology | |
| SOC 751 | Survey Methods for Social Research | |
| SOC 752 | Measurement and Questionnaires for Survey Research | |
| POP HLTH/ M&ENVTOX 789 | Principles of Environmental Health: A Systems Thinking Approach | |
| POP HLTH/ KINES 791 | Physical Activity Epidemiology | |
| POP HLTH 801 | Epidemiology of Infectious Diseases | |
| POP HLTH 805 | Advanced Epidemiology: Causal Inference in Epidemiological Studies | |
| POP HLTH 806 | Advanced Epidemiology: Practice of Epidemiology | |
| POP HLTH/ OBS&GYN 807 | Reproductive and Perinatal Epidemiology | |
| POP HLTH 810 | Global Health Epidemiology | |
| POP HLTH 847 | Cardiovascular Epidemiology | |
| POP HLTH/ AN SCI/ GENETICS 849 | Genetic Epidemiology | |
| POP HLTH/ KINES 955 | Seminar - Physical Activity Epidemiology | |
| **Fourth Semester Biostatistics** | | |
| B M I/ POP HLTH 652 | Topics in Biostatistics for Epidemiology | 3 |
| **Breadth Requirement** | | **9** |
| **Total Credits** | | **60** |

# POLICIES

# GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

# MAJOR-SPECIFIC POLICIES

## PRIOR COURSEWORK

### Graduate Credits Earned at Other Institutions

With program approval, students are allowed to transfer a maximum of 12 credits of graduate coursework taken from other institutions as a graduate student. Coursework earned five or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

### Undergraduate Credits Earned at Other Institutions or UW-Madison

No credits from an other institution or UW–Madison undergraduate degree are allowed to transfer.

### Credits Earned as a Professional Student at UW-Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

### Credits Earned as a University Special Student at UW–Madison

With program approval, students are allowed to transfer no more than 12 credits of coursework numbered 300 or above taken as a UW–Madison University Special student. Coursework earned five or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

## PROBATION

A student not meeting guidelines for satisfactory progress will be placed on probation for one semester and will be reviewed by the Steering Committee following the probationary semester. Students may be dropped or allowed to continue by the committee based on review of progress during the probationary semester.

## ADVISOR / COMMITTEE

Students must meet with their advisor at least once each semester for academic advising.

## CREDITS PER TERM ALLOWED

15 credits

## TIME LIMITS

Refer to the Graduate School: Time Limits (https://policy.wisc.edu/library/UW-1221/) policy.

## GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
  - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
- Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and

conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)

- Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office Student Assistance and Support (OSAS) (https://osas.wisc.edu/) (for all students to seek grievance assistance and support)
- Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

## Grievance Policy for Graduate Programs in the School of Medicine and Public Health

Any student in a School of Medicine and Public Health graduate program who feels that they have been treated unfairly in regards to educational decisions and/or outcomes or issues specific to the graduate program, including academic standing, progress to degree, professional activities, appropriate advising, and a program's community standards by a faculty member, staff member, postdoc, or student has the right to complain about the treatment and to receive a prompt hearing of the grievance following these grievance procedures. Any student who discusses, inquiries about, or participates in the grievance procedure may do so openly and shall not be subject to intimidation, discipline, or retaliation because of such activity. Each program's grievance advisor is listed on the "Research" tab of the SMPH intranet (https://intranet.med.wisc.edu/).

### Exclusions

This policy does not apply to employment-related issues for Graduate Assistants in TA, PA and/or RA appointments. Graduate Assistants will utilize the Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/) (GAPP) grievance process to resolve employment-related issues.

This policy does not apply to instances when a graduate student wishes to report research misconduct. For such reports refer to the UW-Madison Policy for Reporting Research Misconduct for Graduate Students and Postdoctoral Research Associates (https://research.wisc.edu/kb-article/?id=84924).

### Requirements for Programs

The School of Medicine and Public Health Office of Basic Research, Biotechnology and Graduate Studies requires that each graduate program designate a grievance advisor, who should be a tenured faculty member, and will request the name of the grievance advisor annually. The program director will serve as the alternate grievance advisor in the event that the grievance advisor is named in the grievance. The program must notify students of the grievance advisor, including posting the grievance advisor's name on the program's Guide page and handbook.

The grievance advisor or program director may be approached for possible grievances of all types. They will spearhead the grievance response process described below for issues specific to the graduate program, including but not limited to academic standing, progress to degree, professional activities, appropriate advising, and a program's community standards. They will ensure students are advised on reporting procedures for other types of possible grievances and are supported throughout the reporting process. Resources (https://grad.wisc.edu/current-students/#reporting-incidents) on identifying and reporting other issues have been compiled by the Graduate School.

### Procedures

1. The student is advised to initiate a written record containing dates, times, persons, and description of activities, and to update this record while completing the procedures described below.
2. If the student is comfortable doing so, efforts should be made to resolve complaints informally between individuals before pursuing a formal grievance.
3. Should a satisfactory resolution not be achieved, the student should contact the program's grievance advisor or program director to discuss the complaint. The student may approach the grievance advisor or program director alone or with a UW-Madison faculty or staff member. The grievance advisor or program director should keep a record of contacts with regards to possible grievances. The first attempt is to help the student informally address the complaint prior to pursuing a formal grievance. The student is also encouraged to talk with their faculty advisor regarding concerns or difficulties.
4. If the issue is not resolved to the student's satisfaction, the student may submit a formal grievance to the grievance advisor or program director in writing, within 60 calendar days from the date the grievant first became aware of, or should have become aware of with the exercise of reasonable diligence, the cause of the grievance. To the fullest extent possible, a grievance shall contain a clear and concise statement of the grievance and indicate the issue(s) involved, the relief sought, the date(s) the incident or violation took place, and any specific policy involved.
5. On receipt of a written grievance, the following steps will occur. The final step must be completed within 30 business days from the date the grievance was received. The program must store documentation of the grievance for seven years. Significant grievances that set a precedent may be stored indefinitely.
    a. The grievance advisor or program director will convene a faculty committee composed of at least three members to manage the grievance. Any faculty member involved in the grievance or who feels that they cannot be impartial may not participate in the committee. Committee composition should reflect diverse viewpoints within the program.
    b. The faculty committee, through the grievance advisor or program director, will obtain a written response from the person or persons toward whom the grievance is directed. The grievance advisor or program director will inform this person that their response will be shared with the student filing the grievance.
    c. The grievance advisor or program director will share the response with the student filing the grievance.
    d. The faculty committee will make a decision regarding the grievance. The committee's review shall be fair, impartial, and timely. The grievance advisor or

program director will report on the action taken by the committee in writing to both the student and the person toward whom the grievance was directed.

6. If either party (the student or the person or persons toward whom the grievance is directed) is unsatisfied with the decision of the program's faculty committee, the party may file a written appeal to the SMPH senior associate dean for basic research, biotechnology and graduate studies within 10 business days from the date of notification of the program's faculty committee. The following steps will occur:
    a. The grievant will be notified in writing, within 5 business days of the written appeal, acknowledging receipt of the formal appeal and establishing a timeline for the review to be completed.
    b. The senior associate dean or their designee may request additional materials and/or arrange meetings with the grievant and/or others. If meetings occur, the senior associate dean or their designee will meet with both the grievant and the person or persons toward whom the grievance is directed.
    c. The senior associate dean or their designee will assemble an ad hoc committee of faculty from outside of the student's graduate program and ask them to prepare a written recommendation on whether to uphold or reverse the decision of the program on the student's initial grievance. The committee may request additional materials and/or arrange meetings with the grievant and/or others. If meetings occur, the committee will meet with both the grievant and the person or persons toward whom the grievance is directed.
    d. The senior associate dean or their designee will make a final decision within 20 business days of receipt of the committee's recommendation.
    e. The SMPH Office of Basic Research, Biotechnology, and Graduate Studies must store documentation of the grievance for seven years. Grievances that set a precedent may be stored indefinitely.
7. The student may file an appeal of the School of Medicine and Public Health decision with the Graduate School. See the Grievances and Appeals section of the Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/documents/grievances-and-appeals/).

**Time Limits**

Steps in the grievance procedures must be initiated and completed within the designated time periods except when modified by mutual consent. If the student fails to initiate the next step in the grievance procedure within the designated time period, the grievance will be considered resolved by the decision at the last completed step.

## OTHER

n/a

# PROFESSIONAL DEVELOPMENT

## PROFESSIONAL DEVELOPMENT

### GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

# LEARNING OUTCOMES

## LEARNING OUTCOMES

1. Articulate research problems, potentials, and limits with respect to theory, knowledge, and practice of Epidemiology based on understanding of its methodological, biostatistical, and biologic foundations.
2. Assemble, evaluate and synthesize evidence from literature and data sources to formulate ideas, concepts, designs, and/or techniques beyond the current boundaries of knowledge about causes, distribution, and prognosis of diseases and other factors related to health.
3. Demonstrate breadth and depth of knowledge of Epidemiology in a specific substantive area, such as, but not limited to, infectious diseases, genetics, sleep, chronic diseases, environmental, and social epidemiology.
4. Create research that makes a substantive contribution to the knowledge base of Epidemiology.
5. Develop mastery of scholarship in Epidemiology relevant to generate knowledge useful to inform research needs and public health and patient care policies
6. Communicate complex ideas both in writing and orally in a clear and understandable manner.
7. Recognize and apply principles of ethical and professional conduct in their scholarship.

# PEOPLE

## PEOPLE

**Faculty:** Professors Durkin (chair), Cruickshanks, Gangnon, Kanarek, Patz, Remington, Trentham-Dietz; Associate Professors Astor, Bautista, Ehrenthal, Engleman, Gangnon, Malecki, Peppard, Sethi; Assistant Professor Warren-Andersen