

*The Johns Hopkins University*

# DEPARTMENT OF ENVIRONMENTAL HEALTH & ENGINEERING



JOHNS HOPKINS  
ENVIRONMENTAL HEALTH  
& ENGINEERING

## Masters Student Handbook

## 2024-2025



**JOHNS HOPKINS**  
ENVIRONMENTAL HEALTH  
& ENGINEERING

**Academic Year 2024-2025**

# Table of Contents

DEPARTMENT WELCOME AND GOALS .....	4
Welcome from the Department Chair .....	4
Mission of the Department .....	6
Goals of the Department .....	6
DEPARTMENT ORGANIZATION AND DIRECTORY .....	7
Chair and Deputy Chairs .....	7
EHE Central Administration .....	7
Academic Core Leadership.....	9
Program Directors.....	9
DEPARTMENT OF ENVIRONMENTAL HEALTH AND ENGINEERING STUDENT ORGANIZATION (EHESO) .....	10
2024-25 Board Members.....	10
GRADUATE DEGREE PROGRAMS IN ENVIRONMENTAL HEALTH AND ENGINEERING.....	11
Overview of EHE Graduate Degree Programs.....	11
EHE Graduate Program General Policies and Procedures.....	11
Student Grievance Procedure.....	16
Health And Well-Being Resources.....	16
Career Development Resources.....	17
MHS in Environmental Health Sciences.....	18
Degree Program Requirements .....	20
2024-25 Timeline.....	22
Policies .....	23
Curriculum.....	24
MHS Full-Time Requirements and Elective Options .....	24
Full-Time Online MHS Curriculum.....	24
MHS Full-Time Sample Academic Plan.....	24
MHS Part-Time Requirements and Elective Options.....	25
ScM in Environmental Health .....	26
ScM Sample Program .....	29
MS in Geography and Environmental Engineering.....	30
MS GEE Sample Programs .....	30
MSE GEE Sample Programs .....	31
MS in Occupational and Environmental Hygiene.....	32
Full-Time Curriculum Sample Program.....	33
Part-Time Curriculum Sample Program .....	33
MS in Toxicology for Human Risk Assessment .....	34
MS TOX Full-Time Sample Program.....	35
MS-TOX Part-Time Sample Program .....	35

# DEPARTMENT WELCOME AND GOALS

## Welcome from the Department Chair

Dear Students:

It is with great pleasure that I welcome you to the Department of Environmental Health and Engineering (EHE) at the beginning of the 2024-2025 Academic Year. You are joining a department which is uniquely situated at the interface of engineering and public health.

We are committed to applying the principles of environmental health and engineering to solving the local and global environmental challenges of the 21st century and beyond. At no other time in history is environmental health more important than at the present time-in face of the looming existential climate crisis. EHE faculty members are at the forefront of their fields, seeking solutions to the world's most pressing environmental challenges. They conduct cutting-edge research and develop policy on topics including the physical environment (air, water, soil, food) and the fate and transport of pollutants through the environment and the resulting human exposures, their health consequences, and mitigation strategies. Their expertise ranges from basic physical, chemical, and biological sciences to population studies to engineering controls and policy interventions. Our faculty and students have applied their diverse skills to confront the major environmental challenges of the day including climate change and its health consequences, global pandemics, and environmental justice concerns.

EHE is committed to a diverse and inclusive Departmental community that provides unparalleled training for the next generation of environmental scientists, environmental engineers, and public health practitioners to generate and translate fundamental science and engineering into transformative environmental policies and practice. Our program emphasizes the role of context and complexity, including the ways environmental, socioeconomic, biological, and other factors intertwine and interact to shape outcomes and possibilities.

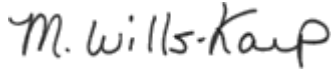
The Department's master's, doctoral and postdoctoral programs offer trainees a wide range of opportunities to advance their careers in environmental health and engineering. Our broad, interdisciplinary approach creates a collaborative and supportive learning atmosphere for students with diverse backgrounds and interests, while assisting them in developing lifetime careers in environmental and public health research and practice. Our graduates are prepared for diverse careers, including working in academic research institutions, multiple levels of government, intergovernmental bodies, non-profit/non-governmental organizations, and private industry in the U.S. and in many countries around the world.

The 2024-2025 edition of our Department of EHE Student Handbook introduces you to the Department and helps you to set and meet your educational goals and to have a productive and enjoyable year. The Student Handbook summarizes the required and recommended courses and the requirements for each of the degree and non-degree programs offered by our department, and other essential information you will need. Because the Student Handbook is revised annually, please be sure to use this 2024-2025 edition of the Handbook in planning and following

your academic program in the Department. Of course, this is not a contract, and changes do occur occasionally.

We are extremely excited about you joining us in our commitment to tackling the most pressing environmental challenges and preserving the health of our environment and its inhabitants. Faculty and staff join me in wishing you a rich and rewarding experience, both academically and personally. We look forward to getting to know each of you over the course of this academic year. Welcome!

Warm regards,

A handwritten signature in black ink that reads "M. Wills-Karp". The signature is written in a cursive, slightly slanted style.

Marsha Wills-Karp, Ph.D.  
Anna M. Baetjer Professor of Environmental Health Sciences  
Bloomberg Centennial Professor  
Chair, Department of Environmental Health and Engineering

## **Mission of the Department**

EHE's mission is to use scientific and engineering principles to improve the health of the environment, communities, and people. The health and sustainability of humanity and life on Earth depends on protection against threats to our environment and ensuring the health of environmental resources and systems.

Paramount to our mission is a commitment to inspire and educate the next generation of diverse scholars to solve environmental challenges of the 21<sup>st</sup> century and beyond ranging in scale from molecular to global. EHE is committed to fostering collaboration, encouraging diversity, and embracing inclusion of all people in our educational and research endeavors.

## **Goals of the Department**

The goals of the Department of Environmental Health and Engineering are to:

1. pursue research to advance knowledge in environmental health and engineering through interdisciplinary approaches to research and discovery;
2. educate undergraduate, graduate, and postdoctoral students and fellows in the multidisciplinary fields that underpin environmental health and engineering and inspire them to become scholars, practitioners, and leaders in the field;
3. translate science into practice and policy by applying foundational knowledge to public health policy and practice in local, regional, national, and international settings in environmental health.

# DEPARTMENT ORGANIZATION AND DIRECTORY

## Chair and Deputy Chairs

The Chair and Deputy Chairs are responsible for leading the academic and research vision of the Department.

### Chair

Marsha Wills-Karp, PhD

Email: [mwkarp@jhu.edu](mailto:mwkarp@jhu.edu)

Phone: 410-955-2452; BSPH E7527A

### Deputy Chairs

Gurumurthy Ramachandran, PhD

Email: [gramach5@jhu.edu](mailto:gramach5@jhu.edu)

Phone: 410-501-0182; BSPH E6634

### Chair's Office

Christina Price

Administrative Specialist

Email: [cprice@jhmi.edu](mailto:cprice@jhmi.edu)

Phone: 410-955-2452; BSPH E7527

Marlee Rendel

Sr. Administrative Coordinator

Email: [mrendel1@jh.edu](mailto:mrendel1@jh.edu)

Phone: 410-955-5214; BSPH W7032

## EHE Central Administration

EHE Administration oversees the Department's financial management, research administration, human resources and payroll, and degree program leadership.

### Business and Finance Offices

Alex Galea, Sr. Administrator

Email: [agalea1@jhmi.edu](mailto:agalea1@jhmi.edu)

Phone: 443-927-3492; BSPH E7523

Tracy Russo, Assistant Administrator

Email: [trusso1@jhu.edu](mailto:trusso1@jhu.edu)

Phone: 443-927-3371; BSPH E7523

Raisa Supan, Sr. Grants and Contract Analyst

Email: [rsupan2@jhu.edu](mailto:rsupan2@jhu.edu)

Phone: 410-927-3495; BSPH E7534

Jana Mihalic, Sr. Grants & Contracts Analyst

Email: [jmihali1@jh.edu](mailto:jmihali1@jh.edu)

Phone: 410-502-2054; BSPH E7534

Dave Kiefaber, (WSE) Sr. Administrative Coordinator

Email: [dkiefab1@jh.edu](mailto:dkiefab1@jh.edu)

Phone: 667-306-9560; WSE Ames 313

C. Carter Polston, Executive Specialist

Email: [cpolsto1@jhu.edu](mailto:cpolsto1@jhu.edu)

Phone: 443-927-3370, WSE Ames 313A

Cilicia Lawson, (BSPH) Administrative Coordinator

Email: [clawso14@jhu.edu](mailto:clawso14@jhu.edu)

Phone: 443-927-3494; BSPH E7031

### **Communications**

Danielle Underferth, Communication and Marketing Manager

Email: [dunderf1@jhmi.edu](mailto:dunderf1@jhmi.edu)

Phone: 443-927-3496; BSPH E5132

Nicole Hughes, MA, Communications Associate

Email: [nhughes4@jhu.edu](mailto:nhughes4@jhu.edu)

Phone: Phone: 443-287-2905; BSPH E7032

### **Whiting/BSPH School Labs**

Makenson Deroly, Teaching Laboratories Coordinator

Email: [mderoly1@jhu.edu](mailto:mderoly1@jhu.edu)

Phone: 443-927-3373; Ames Hall 314A



## Academic Core Leadership

### Academic Program Co-Chairs

Meghan F. Davis, DVM, Ph.D.

Email: mdavis65@jhu.edu

Phone: 410-614-8283; BSPH E7612

## Program Directors

### Director, Undergraduate Environmental Engineering Program

Sarah Preheim, PhD

Email: sprehei1@jh.edu

Phone: 410-516-6632; Ames Hall 205

### Director, Masters' Programs

Megan Weil Latshaw, PhD Email: mlatshaw@jhu.edu

Phone: 410-502-8948; BSPH E7533

### Director, Doctoral Programs (DGS)

Meghan Davis, DVM, PhD

Email: mdavis65@jhu.edu

Phone: 410-614-8283; BSPH E7612

### Academic Program Coordinators

Taylor Voelkel, Academic Program Administrator

Email: tvoelke3@jh.edu

Phone: 443-927-3497; Ames Hall 311/BSPH E7039

Stormi Ryan, Academic Program Manager

Email: sryan39@jh.edu

Ames Hall 311/BSPH W7032

# DEPARTMENT OF ENVIRONMENTAL HEALTH AND ENGINEERING STUDENT ORGANIZATION (EHESO)

EHESO is the departmental student organization formed for the purpose of facilitating social, intellectual, and service-oriented interaction between students, staff, and faculty of the Department of Environmental Health and Engineering. EHESO unites students from the different disciplines of the Department and provides a forum for students to voice their opinions, concerns and share ideas and research. Networking opportunities, social events, student-sponsored conferences, and lectures are all benefits of EHESO. For further information, please contact [JHSPH.EHESO@jhu.edu](mailto:JHSPH.EHESO@jhu.edu), visit the [EHESO webpage](#), or the EHESO Facebook page.

## 2024-25 Board Members

**President:** Grant Tore

**Pres-elect:** Elizabeth Chatpar

**Treasurer:** Shifali Mathews

**WSE Educational Program Committee Representative:** Daisy Grace

**BSPH Educational Program Committee Representative:** Erin Bennett

**WSE Research Committee Representative:** Kate Burgener

**BSPH Research Committee Representative:** Zachary Smith

**BSPH Practice & Policy Committee Representative:** Kate Marquess

**WSE Practice & Policy Committee Representative:** Stephanie Wilcox

**WSE Sustainability Leadership Council:** Dylan Gaeta

**BSPH Student Assembly Representative:** Dionne Mitcham

**BSPH Doctoral Student Council:** Rashida Callender

**IDARE Representative:** Salvatore Milletich

**Postdoctoral Representative:** Dr. Jack Thornton

**BSPH Master's Student Representative:** Riley Demo

**Faculty Representative:** Dr. Sara Lupolt

**Secretary, WSE grad rep, WSE masters student rep all TBD**

# GRADUATE DEGREE PROGRAMS IN ENVIRONMENTAL HEALTH AND ENGINEERING

## Overview of EHE Graduate Degree Programs

The Department's cross-divisional affiliation enables us to offer a range of interdisciplinary graduate programs at the intersection of public health and engineering. Our interdisciplinary approach enables students to design a course of study that can be tailored to meet their specific career goals. Our students benefit from broad and deep expertise in areas ranging from the science of biological processes and environmental engineering to population exposures and health outcomes to sustainability and resilience of our infrastructure to pandemic surveillance and preparedness.

Our objective is to develop solutions to key challenges in local, national, and global environmental health, from the molecular to population-wide impacts. This is accomplished by investigating sources and distributions of exposures, mechanisms of action, biomarkers of exposure and biological effects, individual and population-based responses, and susceptibility factors at both the individual (molecular, cellular, organ, whole-body) and societal levels. In addition, environmental risks are assessed, and we devise and evaluate both prevention and intervention strategies.

Our graduates are prepared for careers in academia, government, national laboratories, non-profit organizations, and the private sector, both nationally and internationally.

## EHE Graduate Program General Policies and Procedures

Students are expected to adhere to the policies stated within this EHE Student Handbook and their respective program: the [BSPH Student Policies website](#) and the [Policy and Procedure Manual](#), or the [WSE Student Policies website](#).

These policies include those related to grade requirements, registration, academic progress, deadlines, satisfactory completion of exams, and [BSPH's Academic Ethics Code](#) or [WSE's Academic Ethics Code](#). Students who fail to follow or meet the established policies may be subject to dismissal.

### Cumulative GPA

Master's students in EHE must maintain a cumulative GPA of 2.75 and cannot get more than one C in a required course. The Whiting School of Engineering does not track graduate student grade point averages, but WSE students should not get more than two C's (anywhere from a C- to a C+) in department courses.

The Bloomberg School of Public Health places students with a GPA falling below 2.75 on academic warning. They will have one term of registration in which to raise their GPA above the threshold for their degree. The Academic Program Manager will notify students placed on academic warning and their performance will be reviewed by the Department's Educational Programs Committee (EPC). All recommendations about academic standing will be then presented to the Department's Executive Committee for final disposition. BSPH students not meeting the minimum GPA after one

term may be granted additional term(s) on academic warning if academic progress has been shown in the cumulative GPA; that approval beyond one term must be reported to the School's Committee on Academic Standards.

Students on academic warning must meet with their academic adviser and program director (or academic program administrator) each term to review their academic plan and receive approval for their course schedule prior to registering for courses. Students with a cumulative GPA below the minimum may not register for more than 18 credits per term. Any repeated courses count towards this 18-credit limit.

### **Code Of Conduct**

The fundamental purpose of the Johns Hopkins University's (the "University" or "JHU") regulation of student conduct is to promote and to protect the health, safety, welfare, property, and rights of all members of the University community as well as to promote the orderly operation of the University and to safeguard its property and facilities. As members of the University community, students accept certain responsibilities which support the educational mission and create an environment in which all students are afforded the same opportunity to succeed academically.

Allegations of sexual misconduct are covered by JHU's [Sexual Misconduct Policy and Procedures](#) for faculty, staff, and students. The University encourages individuals to report incidents of sexual misconduct and provides a variety of avenues, both formal and informal, by which individuals can report complaints of sexual harassment. Allegations of sexual harassment by students are covered under the JHU program and under the [Student Conduct Code](#).

### **Information for BSPH students**

All members of the Johns Hopkins community are responsible for immediately informing the Academic Ethics Board of the Bloomberg School of Public Health of any suspected violations of its Constitution. The Ethics Board, composed of six students and four faculty members, is responsible for implementing its Constitution according to the procedures set forth therein. This includes formal hearings of suspected violations.

Allegations of fraud in research by students will be handled and resolved according to the policies and procedures specified in Faculty PPM 7 – Research Misconduct. Penalties for students who are found responsible for engaging in fraud in research under Faculty PPM 7 may be selected from among the penalties specified in the Student Academic Ethics Code (Student PPM 1) as appropriate.

Allegations of violations of academic integrity by students in the School are covered under the policies and procedures contained in PPM for Students - 1 (Academic Ethics) and the School's Academic Ethics Code. Allegations of unsatisfactory performance or unacceptable behavior by faculty are covered by PPM Faculty - 8 (Procedure for Handling Allegations of Unsatisfactory Performance or Unacceptable Behavior), and allegations of fraud or misconduct during the conduct of research by faculty are covered by PPM Faculty - 7 (Fraud in Research).

Allegations of misconduct by staff are covered by policies and procedures established by the University Office of Human Resources as stated in the Personnel Policy Manual. (This

information is taken from the School's [POLICY AND PROCEDURE MEMORANDUM STUDENTS – 1, SUBJECT: Academic Ethics](#)).

### **Information for WSE students**

All members of the Johns Hopkins community are responsible for immediately informing the WSE Dean of Student Life of any suspected violations of the Code of Conduct. The faculty and students at the Whiting School of Engineering have the joint responsibility for maintaining academic integrity and guaranteeing the high standard of conduct of this institution.

Students enrolled in the Whiting School of Engineering assume an obligation to conduct themselves appropriately to The Johns Hopkins University's mission as an institution of higher education. A student is obligated to refrain from acts which he or she knows, or under the circumstances has reason to know, impair the academic integrity of the University. Allegations of violations of academic and research integrity by WSE students are covered under the policies and procedures contained in the General Academic Misconduct Policy and the General Misconduct Policy.

### **Human Subjects Research**

The Johns Hopkins University is committed to protecting the rights and welfare of all individuals participating as subjects in research. To meet this obligation, the Bloomberg School has two on-site Institutional Review Boards and an external IRB (the Western IRB) that review studies on the School's behalf. All faculty and students who are involved in human subject research must meet the compliance training requirements of the Bloomberg School IRB. It is the responsibility of students and faculty to make certain that approval is obtained from the IRB before beginning any research involving human subjects. The IRB is also responsible for determining whether certain research activities qualify for exempt status under the regulations and institution policy.

For IRB announcements and updates, and for additional information and requirements on conducting human research, please contact either the: Bloomberg School's IRB Office, Room E1100, Wolfe Street Building (410-955-3193); email at [jhsph.irboffice@jhu.edu](mailto:jhsph.irboffice@jhu.edu), or Homewood IRB Office (410-516-4820); email at [levans22@jhu.edu](mailto:levans22@jhu.edu); <https://homewoodirb.jhu.edu/participants/>

### **Animal Research**

The Johns Hopkins University is committed to protecting the rights and welfare of animals used in research. All students involved in animal research must first complete an online training module, Animal Care and Use, available through myLearning in the JHU Portal, before beginning work with animals. Additional training may also be required. Students must also be listed as student investigators on projects they are working on that involve animals.

The care and use of animal subjects are regulated by the Animal Welfare Act, which is implemented by the U.S. Department of Agriculture. The University has one assurance with the federal government (the Office of Laboratory Animal Welfare [OLAW]) and, therefore, the University has one animal care and use committee (IACUC). Faculty from the Bloomberg School, the School of Medicine, and the Homewood campus serve on this committee. An approved protocol MUST be obtained before animals can be purchased. Questions regarding submission of animal research protocols should be addressed to the IACUC Office at 443-287- 3738. Animal

care and procurement are under the purview of [Johns Hopkins Research Animal Resources](#).

For those exposed to animals either directly or indirectly, their bedding, waste products, fresh animal tissues, or equipment involved in animal use and care, Johns Hopkins requires the following to reduce health risks associated with animal exposures. You may view the full animal research policy [here](#).

### **Leave of Absence**

Academic leave of absence refers to, and is limited to, students in a degree program requiring continuous enrollment who, while in good academic standing, are forced to withdraw temporarily from graduate work due to maternity/paternal/family leave or reasons beyond their control, such as illness, military service, or pressing personal reasons justifying an interruption of the degree program. Students may be given a leave of absence for other reasons (e.g., involuntary, medical leave). Leaves of absence are typically limited to one year except for military service.

Students requiring additional terms of leave beyond one year must reapply. Students who have had federal financial aid may be subject to additional restrictions and should check with the Financial Aid Office before extending a leave of absence. No more than two years of leave may be granted.

If it becomes necessary to take a break from studies, students should contact their adviser and academic program manager to determine if a formal leave of absence (LOA) is necessary. Any request for change of status must be discussed with the program or track director(s) and academic program manager and approved by the department and school.

### **[SPH Student LOA Policy](#)** **[WSE Student LOA Policy and Form](#)**

### **International Travel**

The following policy applies to students enrolled in BSPH. The Whiting School of Engineering does not have a formal travel policy; however, resources and recommendations are offered. Students enrolled in WSE should check the [Travel Resources page](#) provided by the Office of Graduate and Postdoctoral Affairs.

While BSPH encourages participation in opportunities to supplement your education or research in other countries, international tensions can be high and the resources on [the U.S. international travel website](#) may assist you in making an informed decision.

Students are not obligated to travel internationally, and each student has the right to decline to travel abroad. If the student is supported by a research project that requires such travel and the student chooses not to travel, the student may be removed from that project following discussions with the principal investigator and the EHE program or track directors.

Graduate students who decide to travel abroad must demonstrate that they understand and voluntarily accept the risks inherent in international travel. To do so, students must first receive the appropriate departmental approvals for the trip through their adviser and program or track

director(s). Students should also evaluate options for registering travel and obtaining pre-travel immunizations through the school or health care system.

### **Immunizations**

If you are traveling to a less developed part of the world, you should be certain to contact your health care provider or the Johns Hopkins International Travel clinic to learn about recommended immunizations and other matters to guard your health. Located on the East Baltimore campus, you can reach the [International Travel Clinic](#) by telephone at 410-955- 8931.

### **Stay Informed**

Students are encouraged to vigilantly monitor consular and press reports regarding the country (or countries) where they plan to travel. Students may also check the consular reports of countries friendly to the U.S. (e.g., [Australia](#), [Canada](#), [United Kingdom](#)) as well as reports from other international agencies (e.g., United Nations). Students should participate in the security briefings offered by other organizations with whom they may be working.

### **Maintain Communication**

When traveling in an area where regular communication is difficult, students are encouraged to maintain contact with their adviser and/or the academic program manager.

### **State Department Registration**

For students who are likely to stay for a prolonged period in a high- risk area of the world, registration at the U.S. embassy or consulate is essential.

### **International Students**

OIS may be contacted at 410-955-3371. International students must contact the Office of International Services (OIS) well in advance of any travel to avoid compliance issues with their visa status.

### **Healix International**

Johns Hopkins has implemented a comprehensive travel assistance program supported by Healix International. For more information visit the [International Travel for the University & Health System](#) page.

### **Parental Accommodations**

Please see the university page on [parental accommodations](#) for full-time graduate students and post-doctoral fellows.

### **Personal Relationships**

The Johns Hopkins University is committed to the personal, academic, and professional well- being and development of its students, trainees, faculty, staff, postdoctoral fellows, clinical residents, and all other members of the University community. The University seeks to maintain an atmosphere of mutual respect, collegiality, fairness, and trust. The [Personal Relationships Policy](#) implements the University's commitment to maintaining the integrity of its educational and working environment. This policy focuses on the conflict of interest that may exist when individuals simultaneously engage in both personal and professional relationships in which one individual has the potential to exert substantial academic or professional influence over the other.

## Student Grievance Procedure

On occasion, problems may arise between students and other members of the JHU community. The purpose of these guidelines is to help resolve disputes informally between students and other members of the Hopkins community. The student is encouraged to make a good faith effort to resolve the dispute informally prior to initiating formal grievance procedures. For those disputes that cannot be resolved informally, a BSPH Student Grievance Procedure and a WSE Student Grievance Procedure has been created to provide students and student groups with a formal process to seek resolution of a grievance. In certain circumstances, other governing bodies also assist in these situations. A student who has a concern about an academic decision or act of a faculty, staff member, or student of the Department of Environmental Health and Engineering, should follow the steps outlined below.

1. The student should first approach the person or parties (e.g., academic adviser, related office, etc.) directly involved as soon as possible to discuss questions or concerns.
2. If the issue or concern is not resolved informally, the student should contact the program for assistance. A written request for problem resolution is requested at this stage. This request should include specific details about the problem, documentation if appropriate, and a suggestion for resolution.
3. If no resolution can be found in prior steps, the matter will be referred to a Grievance Arbitration sub-Committee within the EPC, who will address the problem as they deem necessary, and make a recommendation to the Department Chair.
4. If the matter is not resolved within the Department or requires review and/or decision at the School or University level, a student should refer to the Bloomberg School's Student Grievance Procedure document or the Whiting School of Engineering's Grievance Procedure document.

## Health And Well-Being Resources

Johns Hopkins University is committed to helping you thrive personally and professionally and providing an environment that supports your health and well-being. We encourage you to seek support from the following JHU resources, particularly if you are experiencing anxiety, stress, depression, or other concerns related to your health and well-being.

### **Information for students enrolled in BSPH**

[The Office of Student Life at BSPH](#) is available to assist students by providing support in navigating resources pertaining to personal and academic challenges. If you would like to schedule a one-on-one appointment with a staff member in the Office of Student Life, you can contact [jhsph-studentlife@jhu.edu](mailto:jhsph-studentlife@jhu.edu) or 410-502- 2487.

Students can also contact the [Johns Hopkins Student Assistance Program \(JHSAP\)](#) which provides resources to assist students across the Johns Hopkins community with any pressures and difficulties they may face during their academic careers. Getting help is free, convenient, and confidential. Counselors are available to speak with you 24 hours a day, 7 days a week at 443-287-7000. Services include short-term counseling, crisis response, healthy relationship support, school-life coaching and adjustment and educational workshops.



Students have access to [University Health Services \(UHS\)](#) which offers primary care and mental health clinical services. Primary care appointments can be made by calling 410-955- 3250. UHS-Mental Health provides psychiatric assessment and follow-up, medication management and individual psychotherapy. To make an appointment, call 410-955-1892.

If you or someone you know is in crisis, call JHSAP at 443-287-7000 for help immediately. In an emergency, call 911 or go to the nearest emergency room.

### **Information for students enrolled in WSE**

[The Office of Graduate Academic Affairs](#) serves the master's, doctoral, and post-doctoral communities of WSE and provides the support, resources, and information students need to succeed at the Whiting School.

To make an appointment to discuss a personal or academic challenge, please reach out to Allison Leventhal, Outreach and Support Case Manager at [aleventhal@jhu.edu](mailto:aleventhal@jhu.edu) (410-516-2328), or to Christine Kavanagh, Assistant Dean for Graduate and Postdoctoral Academic Affairs at [christinekavanagh@jhu.edu](mailto:christinekavanagh@jhu.edu) (410-516- 0777). Additional resources are available through the [Homewood Counseling Center](#).

If you are feeling overwhelmed and stress is impacting your mental health, you may contact the Counseling Center for safe and confidential services. Students have a wide variety of services available, including workshops, group therapy, medication management, psychiatric assessment, and 24/7 crisis intervention services. All counseling services are offered free of charge to students. Please contact the Counseling Center at 410-516-8278. To reach an after-hours on-call counselor, call 410-516-8278 and press "1".

WSE students can seek medical attention and health care services through the [Student Health and Wellness Center](#). Services include acute and chronic illness care, alcohol and other drug problem assessments, allergy injections, international travel consults and immunizations, physical exams, and routine immunizations. Please contact the center at 410-516-8270.

## **Career Development Resources**

[The WSE Life Design Lab \(LDL\)](#) provides professional development and career services to master's students. LDL offers workshops, events, content, and drop-in office hours to help students through education, access to opportunities, and experiences to intentionally design your life on-campus and beyond.

BSPH's [Career Services](#) office provides resources and guidance, including:

- Personal career and life-design planning for students and alumni
- Career workshops and events throughout the year
- A comprehensive Career Planner with resume template
- Exclusive access to sponsored career resources
- An outstanding Public Health Career Fair held each spring
- A robust database of public health jobs, internships, and public health employers

# MASTER'S DEGREE PROGRAMS IN ENVIRONMENTAL HEALTH AND ENGINEERING

## MHS in Environmental Health Sciences

The Master of Health Science in Environmental Health program provides a firm academic foundation in the field of environmental health. The program primarily targets individuals holding a bachelor's degree who see a place for environmental health in their future academic or career goals. Some graduates pursue doctoral degrees in public health, medicine, and law, while others work for governmental agencies, non-profit organizations, or the private sector. The program also accommodates the educational needs of those already working in these sectors, who want to develop a stronger knowledge base in environmental health.

Graduates have competence in the following: basic biological mechanisms; toxicology; statistical evaluation of data; epidemiological studies in environmental health; risk sciences and public policy; research ethics; and public health perspectives in research. If desired, the MHS further offers specialization in the following areas:

- Food Systems, Water and Environmental Sustainability
- Health Security
- Population Environmental Health
- Pre-medicine
- Toxicology and Risk Assessment

In addition to coursework, MHS students prepare an essay addressing an environmental health problem and make a formal presentation on the topic to an audience of faculty and students.

### Part-Time or Online Options

The MHS in Environmental Health program offers a part-time or online option with all of the required courses being available online. Those programs have the same requirements as the full-time program. Upon enrollment, students will work with their adviser to develop a course plan for completion of the degree, which must be completed in four years.

### Areas of Interest

Students may choose an area of interest from the following options, or they may develop their own path in consultation with their adviser. The area of interest does not appear on student's transcript or diploma, rather it simply helps students choose classes in line with their personal educational goals.

*Food Systems, Water, and Environmental Sustainability:* The Food systems, Water, and Environmental Sustainability area of interest provides a deeper understanding of changes in the global environment and how their consequences affect human health at the individual and population levels. Graduates understand the environmental health implications of a rapidly increasing global population, at a time of diminishing food and fuel resources, and a changing climate.

Coursework and seminars expose students to a range of sustainability topics: food production, security and systems; energy source impacts on public health; water supply and reuse; policy and health impacts of climate change, urban sprawl, and the green movement. Students critically analyze the complex interactions of global environmental problems, such as climate change, loss of biodiversity, ecosystem degradation and the depletion of other global resources, all in the context of their impact on health. These students often pursue the [Food System, Environment and Public Health Certificate](#). Ideal for students with a strong background in environmental science and sustainability.

*Health Security:* The Health Security area of interest provides an understanding of domestic and international health threats, including epidemics, natural disasters, technological accidents, and intentional attacks. Students examine major organizations and initiatives designed to prevent, detect, and respond to health security threats; assess the current status of health security preparedness, and evaluate strategies to enhance health security. The area of interest is designed for individuals who would like careers in public health and healthcare preparedness, global health security, outbreak and epidemic management, disaster response, and related fields. A subset of courses are taught by faculty from the Johns Hopkins Center for Health Security and informed by the Center's two decades of scholarship and advocacy on health security policy.

*Population Environmental Health:* The Population Environmental Health area of interest presents a population view of environmental health with courses in epidemiology, statistics, and environmental health principles. Through coursework and optional direct participation, students develop an understanding of the problems that affect subsets of the population, as well as challenges faced in their solution. Students master the use of statistical approaches to public health and develop skills in epidemiologic research. Individuals interested in applying environmental health sciences in a community or clinical setting benefit from this focus. The [Risk Sciences and Public Policy Certificate](#) is often completed concurrently. Ideal for students with a good basic science and quantitative foundation.

*Pre-Medicine:* The Pre-medicine area of interest provides a foundation for students planning to attend medical school. Core courses lead to basic mastery of statistics as well as an understanding of epidemiology. Elective courses in physiology, advanced toxicology, and environmental and occupational disease not only emphasize knowledge covered on the MCAT, but they also differentiate graduates from the typical medical school applicant. Electives in biochemistry and molecular biology, among others, may help improve the biology, chemistry, physics, math GPA that some med schools emphasize in their application review. Ideal candidates possess a strong foundation in the basic sciences and math.

*Toxicology for Human Risk Assessment:* Toxicology for human risk assessment emphasizes laboratory and basic science approaches to the study of environmental agents that affect health. Building upon the required introductory course in toxicology, additional courses cover advanced toxicology, environment-related disease, and laboratory-based statistics. Through lectures, discussion and class assignments, students develop a solid understanding of the ways in which environmental exposures can translate into health risks, as well as ways in which these risks can be evaluated and mitigated. Many students also complete requirements for the [Risk Sciences and Public Policy Certificate](#). Ideal candidates possess a strong background in the basic sciences,

including biology and chemistry.

## Degree Program Requirements

### Coursework

Students complete a core curriculum that comprises less than 40 of the 64 credits required for graduation. Required core courses include environmental health, toxicology, epidemiology, risk sciences, and statistics. Students have flexibility to customize the remaining elective credits of their curriculum to their area of interest to achieve an appropriate balance between depth and breadth.

Students should consult the [student resources page](#) which lists all core requirements as well as electives in the department and get formal approval from their faculty adviser prior to registration. To substitute a course with something not listed, approval must be granted by the program director. Students may also consider earning [certificates](#) while earning the MHS. Discuss with your adviser options for meeting the biostatistics and epidemiology course requirements. There are several options ranging from introductory to advanced; choosing between them involves a discussion of student goals, background in these areas, schedule, and area of interest.

### Statistics

The program requires two terms of statistics. Based on focus area, we typically recommend:

- FSWES, PM, THRA - two-terms of the Statistical Reasoning (140.611-12) sequence HS –
- two terms Statistical Methods (140.621-22)
- PEH - three-terms of the Statistical Methods sequence (140.621-23)

However, this varies according to an individual's background:

- Students seeking strong quantitative skills that include programming in R or STATA, who have a solid background in statistics, should consider Statistical Methods (140.621- 22).
- Students did *not* do well in college math should consider Statistics for Laboratory Scientists I and II (140.615.01-02) in 3rd & 4th terms.
- Those who fall in the middle should consider Statistical Reasoning (140.611-12).

### Epidemiology

The program requires at least one epidemiology course. Below is what we recommend:

FSWES, PM & THRA - Epidemiologic Inference in Public Health I & II (340.721-22) in terms 1-2 or online in terms 3-4

HS & PEH – four terms of epidemiology, modified somewhat to meet their career needs. For most, this begins with Epidemiologic Inference in Public Health I & II.

Students with an epidemiology foundation or a strong drive to do epidemiology, can enroll in the Epidemiological Methods 1-3 (340.751-53), which is coordinated with the Statistical Methods I-III sequence. Professional Epidemiological Methods (340.763) may be taken in Term 3 as an alternative to Epidemiological Methods III. All PEH students should take Environmental &

Occupational Epidemiology (340.680) 4th term.

### **Pre-Medicine Students**

The school contracts with Kaplan to offer our students a significant discount on MCAT preparation courses. Interested students register through the BSPH registration system: <https://solutions.jhu.edu/> or directly at the MCAT site: <https://solutions.jhu.edu/mcat>. An email is sent to the department to verify that the student is active, and the Kaplan Code is correct with the date. The department approves registration. BSPH MCAT registration goes to Academic Affairs and registration is shared with Kaplan and Student Accounts for payment. If you have questions about the med school application process, reach out to Aisha Rivera Margarin (Director of the Occupational & Environmental Medicine Residency).

Additionally, premedical students might consider taking Premedical Seminars: Planning and Preparing for Medical School Application (120.607) in terms 1, 2, 3, or 4, which supports students in putting together a strong application to medical schools. Topics include assessing the portfolio and identifying areas that need strengthening, how to best plan for MCAT, which courses to take, writing a strong personal statement, identifying proper activities for the list of 15 experiences and much more.

Additionally, Aspiring Physicians Enacting Change Through Community Engagement (1 credit, 120.609 in term 1 and 120.611 in terms 2-4; 120.609 is a prerequisite for 120.611) supports students in becoming more competitive medical school applicants. There is a practicum component allowing students to work with Baltimore's community organizations in a number of settings - of clinical and non-clinical nature (for variable credits, depending on student's availability). In the process, students will hone the competencies which medical schools seek.

### **Special Studies & Quarterly Meetings**

MHS students formally meet as a group four times during the academic year. These meetings aim to build community, provide professional development, and share information about administrative, course, or other programmatic issues. Attendance is mandatory for MHS students, as is attendance at the EHE Grand Rounds seminars scheduled on the second Friday of each month, and at the master's presentations in May.

This attendance, along with monthly check-ins with advisers, and meeting deadlines for the essay, forms the basis of the grade for special studies courses in terms 2-4 (181.845 MHS Special Studies & Research in term 2 and 181.850 MHS Essay in terms 3 and 4). Students who do not successfully complete the requirements for all three terms these special studies courses face dismissal from the program. Failure to complete the program within four years from the date of matriculation also serves as grounds for dismissal.

### **Essay**

MHS students write an essay and present a summary of it during a formal symposium. The essay serves as an integrating experience for students, representing an application of knowledge learned during the degree program. The content addresses a current environmental health problem pertinent to the educational goals of the student and ideally something that can advance the work of their adviser (although they are allowed to find a separate essay adviser if they prefer). Students will conduct a literature review, data analysis, field work, policy analysis,

or some other project. They will write a five-page project summary (or another paper format approved by the essay adviser) for a pre- specified target audience (e.g., policymakers, organization stakeholders, funders, etc.). Students should consider taking advantage of the school’s [Writing Center](#).

Students should arrange to meet with their adviser throughout the essay-writing process to ensure fulfillment of essay requirements, as well as assure that the essay is properly prepared for presentation and final approval. The essay must be reviewed and approved by the adviser. The MHS essay must be prepared in a timely manner, so that the adviser has adequate time to provide comments to be incorporated into the final document. timely manner, so that the adviser has adequate time to provide comments to be incorporated into the final document.

## 2024-25 Timeline

The chart below contains the list of milestones and deadlines that must be met for full-time students, or part- time students finishing up their essay. Note that meeting these expectations is linked to receiving a grade of “pass” in the Special Studies courses. It is ultimately the student’s responsibility to meet the benchmarks and deadlines listed below. Students should confirm the timeline and review period needed with their adviser. Any student who fails to meet the April or May deadlines will be automatically removed from the May graduation list. [Conferral deadlines can be found here](#).

Date	Deliverable
Oct 9	Quarterly Masters Student Meeting at noon
Nov 1	Essay topic approved by adviser & sent to Program Director, cc EHE Academic email
Nov 6	Quarterly Masters Student Meeting at noon
Nov 25	Draft outline and literature review sent to adviser (cc EHE Academic email) for suggestions
Jan 20	First draft of essay submitted to adviser for suggested modifications (cc EHE Academic email )
Feb 5	Quarterly Masters Student Meeting at noon
Feb 20	Second draft of essay submitted to adviser for suggestions (cc EHE Academic email)
Mar 20	Final version of essay to adviser (cc EHE Academic email)
Mar 31	Essay approved by adviser (email forwarded to EHE Academic email)
Apr 9	Quarterly Masters Student Meeting at noon
May 7-9	MHS & 2nd-year ScM presentations

### Presentation

All students completing the MHS are required to make at least one presentation of their essay to an audience of faculty and students of the Department. This presentation will be based on the student's essay. Each student is allotted 10 minutes for the presentation and 5 minutes for questions and answers.

## Policies

### Credit Transfer

A limited number of course credits taken at Johns Hopkins prior to matriculation into the Master's Program (e.g., up to 16 as a special student and 32 credits from another degree program) can be applied toward the 64 total credits, provided the courses were completed not more than 5 years prior to the date of matriculation into the Master's Program. Students must have earned a grade of B or higher in courses to fulfill a program requirement; grades of C may only be transferred towards elective credits. Bachelors/Masters students in the public health studies major must fulfill the requirement for 15 credits of coursework taken at BSPH while a senior. Up to one-half, but no more than 16, of the BSPH credits taken as a public health studies undergraduate student may be applied to the MHS program.

### Course Waivers

Waivers and substitutions for students are only approved by the student matters subcommittee, not the adviser. The sr. academic program coordinator will notify the student of the outcome and a copy of the form will be kept in the students' academic file.

In some exceptional circumstances, students may be granted a modification of some core requirements if they can demonstrate and document that they have previously acquired the associated core competencies. Even if a modification is granted of a core course, a minimum of 64 credits are still required for graduation.

Subject	Modification Requirement	Contact
Biostatistics	Requires taking an examination	Dr. Marie Diener-West, mdiener@jhu.edu
Epidemiology	Requires taking an examination	Allyn Arnold aarnold2@jhu.edu

### MHS to ScM Transfer Process

The Department asks MHS students interested in transferring to the ScM to formally apply at the start of term 2. Identification of an appropriate and willing adviser serves as an essential step in the process, which the student should initiate as early as possible, preferably while an applicant to the MHS program. A list of faculty who commonly accept ScM students can be found [here](#).

By the middle of term 2, MHS students submit an ScM transfer request form. The form includes a brief explanation of how the ScM research opportunity fits with the student's educational and research goals. It must be signed by the current MHS adviser. In addition, the proposed research faculty needs to provide a letter of willingness to assume the role and responsibilities of ScM thesis adviser (this person may or may not be the current MHS adviser). A transcript of grades (obtained by the academic team) completes the file for review. Students must demonstrate excellent academic success at the graduate level (minimum GPA of 3.0)

A sub-group of the ScM research faculty will review the file to confirm that the requirements have been met and based on that input, the program director will approve or disapprove of the request for degree transfer. The academic team will inform the Office of Records and Registration of the degree transfer and adviser change (if appropriate) to be effective term 3. Following approval, MHS-to- ScM students shift from drafting an essay to drafting a proposal. In the third term, the transfer from MHS to ScM is finalized and students begin taking the 183.840 ScM Special Studies & Research instead of the MHS Special Studies course.

### **Course load and time commitment**

Each credit represents, on average, about a three to four-hour time commitment during each week of the eight-week term. Most full-time students take approximately 12-18 credits per term. No student may exceed twenty-two credits in a single term per School policy. It is also not recommended to take this many credits as it's a very heavy course load to complete in an 8-week term. One academic credit at JHSPH during the regular 8-week term consists of one hour of classroom learning activities and at least 2 hours of homework per week.

## **Curriculum**

MHS students need 64 credits to graduate. Each term they should register for the required courses listed below, then choose from among the elective courses. Please refer to the course directory for the most current information. If you would like to substitute a course with something not listed, contact the program director.

### **MHS Full-Time Requirements and Elective Options**

#### **Full-Time Online MHS Curriculum**

#### **MHS Full-Time Sample Academic Plan**

Students should plan to reach the 64-total credit requirement within four years. Please refer to the [course directory](#) for the most current information. If you would like to substitute a course with something not listed, contact the program director.



## **MHS Part-Time Requirements and Elective Options**

Please see the electives list linked above for elective class options to bring your total credits to 64. Lastly, 3 credits related to the MHS Essay is required for completion of the program –181.845 for two consecutive terms, followed by 181.850. When ready to begin working on the essay, students should register for the following consecutive classes in consultation with the adviser.

- 181.845 (1 credit) - development and approval of the essay outline and literature review
- 181.845 (2 credit) - development and approval of a final draft of the essay
- 181.850 (1 credit) – 2nd reader approval of the essay and the formal presentation to faculty and students.

## ScM in Environmental Health

The two-year ScM degree provides an opportunity to do a year-long research project with a faculty member. ScM students are responsible for identifying a faculty member who matches their research interest and is willing to take them on in the second year of the program. It is recommended that students find a faculty member before arriving or as late as the end of their first term. The first year of the program follows the full-time MHS guidance above and focuses on coursework designed to provide a strong foundation in environmental health. Instead of writing an essay, first-year ScM students write a research proposal. Like the MHS program, ScM students may or may not choose an area of interest.

### Degree Program Requirements

For all ScM students, their research project must represent original work. Their first-year product resembles a NIH R21 or F31 research proposal, including an in-depth review of the literature. The page limit for the specific aims is 1 page and for the research strategy is 6 pages (references not included in the page limit). The proposal fulfills the written portion of the ScM comprehensive exam degree requirements. It serves as the written basis for the presentation in May. Both require the student to show their knowledge of the proposed research – its rationale, approaches, and methodologies – and its relevance and potential contributions within the broader perspective of environmental health. Such a broad perspective will draw upon courses the student took in their first year.

The only course difference between the MHS and first-year ScM curriculum is that the latter students take 183.840 ScM Special Studies & Research instead of the MHS Special Studies courses. This allows the adviser to evaluate the student's progress in completing the proposal and attendance at required meetings. ScM advisers may also require students to attend a relevant journal club. Deadlines for first-year ScM students are the same as deadlines for MHS students (substitute the words 'ScM proposal' for 'MHS essay').

### Written Proposal and Research Committee

The written proposal serves as the written comprehensive examination and requires the student to demonstrate their knowledge of the proposed research – its rationale, approaches and methodologies – as well as its relevance and potential contributions within the broader perspective of environmental health. Such a broader perspective will draw upon courses the student took in their first year.

The research committee will have a minimum of two people, consisting of the research adviser and one to two other faculty members. These members should include at least one other member from the department and may include someone from outside the department, whose expertise is valuable to the student's project. These individuals will serve as a student resource throughout the research year.

The Committee typically meets in late spring, as the student finishes their first-year coursework and the adviser has approved a first draft of their proposal. At least two weeks before the first meeting, students must submit a completed ScM Research Committee Form to the academic team. The student's adviser serves as chair of the Committee and will get the student's file from the academic team prior to the first meeting.

Typically, the student presentation lasts 15-20 minutes, followed by 45-60 minutes of comments and questions. In private, the Committee members discuss suggestions for what the student should explore with their adviser as it pertains to their research project. The adviser returns the file to the academic team who then notifies the Registrar and CAS (the Committee on Academic Standards) of the outcome of the exam.

If the Committee provides specific recommendations, these must be presented in detail to the student, along with the plan for confirming their fulfillment. The conditions must be fulfilled prior to the start of full-time research, unless otherwise decided by the committee. The Masters Tuition Scholarship will not be applied if students haven't completed these steps before the beginning of the 1st term in their second year.

### Second Year

After completing fourth-term coursework and a successful first meeting with their committee, the student begins a year-long research project under the direction of their adviser. We highly recommend that ScM students begin research in the summer between the program's first and second year. Students should take four credits during the summer and enroll in 188.840 under their adviser. These credits will be added to the first term of the second year, so tuition is not required.

During the second year, full-time enrollment must be maintained by taking a minimum of 16 credits of 183.825 ScM Thesis Research in each of the four terms. Students are required to participate in all journal clubs, seminars, and meetings deemed necessary by the faculty research adviser. Students must complete the program at the end of their second year's fourth term and graduate in May.

If at any point after the first year, the student is unable to successfully complete their research project and thesis, the student will be transferred back to the MHS program and be eligible for graduation with that degree. The completed research document will be considered as fulfilling the MHS essay requirement. Deadlines for the second year can be found on the master's candidate page; these dates are subject to change each year so the dates in the table at the end of this section are meant to give a general idea for planning purposes. Students should use the master's candidate page for official deadlines and make sure advisers approve of their timeline.

Timeframe	Deliverable
Early February	Verify with the senior academic team that you are on track to graduate
Early March	Submit first draft of your thesis to adviser for feedback, submit thesis form to BSPHExams@jhu.edu
Mid March	Submit thesis reader appointment form to the Office of Records & Registration (BSPHExams@jhu.edu)
Early April	Submit final draft of your thesis to your adviser and thesis reader
Late April	Submit thesis to JHU Electronic Thesis or Dissertation (ETD) system
Early May	Submit thesis acceptance letters to the Office of Records & Registration and approval of electronic copy of thesis from Sheridan Library.
Early May	MHS/ScM Presentations

## Research and Thesis Requirements

The ScM degree requires successful completion of a research project and the writing of a master's thesis based on that work. A thesis form must be submitted to [BSPHExams@jhu.edu](mailto:BSPHExams@jhu.edu) approximately six months after completing the written comprehensive exam. This form can be found in the students resource. The research will be completed under the direction of a faculty mentor (research adviser) who is a member of the Department of Environmental Health and Engineering. The work must represent an original hypothesis-driven investigation on a topic of interest to the student and agreed upon by the adviser. The format will adhere to University guidelines which can be found on the Johns Hopkins Sheridan Libraries website. The document quality must be suitable for publication in a peer-reviewed scientific journal. Example sections include: Abstract, Background, Methods, Publishable Paper, Conclusions, Appendix (Raw Analysis Results).

## Appointment of the Committee of Thesis Readers

The thesis committee comprises the student's research adviser and at least one other faculty member from any department within the Johns Hopkins University. Only one committee member may be an adjunct; the other(s) must be full-time (professor, scientist, lecturer, instructor of any rank). Emeriti faculty may serve on the committee; however, visiting faculty may not. The student and research adviser should identify a second thesis reader and obtain their agreement to serve on the committee.

Once a thesis reader has agreed to serve on the committee, the student must submit a thesis reader appointment form to the academic team by the deadline proposed by the registrar. You can find these deadlines in the student resources page. The form requires the signatures of the research adviser, department chair, and academic team; it certifies that the student has completed all school and departmental requirements for the degree, except for the thesis.

The student is responsible for distributing the thesis to their research adviser and the thesis reader at least four weeks before the student expects to complete the degree. The adviser and thesis reader should review the thesis in a timely manner and send a letter to the student listing any recommended changes. The thesis reader will also send the adviser a copy of the letter. It is the responsibility of the adviser to adjudicate suggested revisions and approve the final version of the thesis. The adviser will then submit a letter to that effect to the registrar.

Completion of the degree is not finalized until the registrar receives letters from the adviser and thesis reader approving the thesis, and the student submits an electronic version of the dissertation to the JHU Electronic Theses & Dissertations (ETD) system.

## Presentation

Graduating students must present their research during the MHS & ScM Student Presentations in May. Presentations should be 10 minutes in length followed by 5 minutes of questions and answers from faculty and students. The academic team will work with students to schedule the presentations.

The Department requests one bound copy of the thesis; all copies are placed in W7023. The School recommends using [Thesis on Demand](#). The binding should be black and include the

students name, degree, and year on the spine; the thesis title and name on the front.

### **Program Funding**

Partial tuition support is available for second-year students enrolled full-time in the ScM program. Second-year students must have successfully completed 64 credits of coursework in their first year and have successfully completed the ScM Written Proposal and Research Committee Meeting to be considered for the [Master's Tuition Scholarship \(MTS\)](#) in the second year. Students must meet all curriculum, grade, Grade Point Average (GPA), and registration requirements. In addition, ScM students must complete at least 12 credits of formal coursework outside of EHE. At least six of these credits must be taken in the School of Public Health. The MTS is worth up to 75% off tuition.

### **[ScM Sample Program](#)**

## MS in Geography and Environmental Engineering

The MS in Geography and Environmental Engineering is open to students with undergraduate degrees in engineering, mathematics, biology, chemistry, physics, geology, and other scientific disciplines. The MS degree requires a minimum of two semesters of coursework. MS students have the option to complete an independent research project, submitted as a formal essay.

MS students can choose from two tracks within the program: Environmental Science, or Environmental Science and Policy. MS students may also choose to follow the curricula of tracks within the MSE degree program. Each student's program of study involves planning by the student in consultation with department faculty and must be approved by the faculty adviser before the student registers.

### Degree Program Requirements

- A minimum of 30 credits - including no more than 1 credit of seminar, 1 credit of intersession course work, 1.5 credits from the Center for Leadership Education (with adviser approval) and 6 credits of independent research.
- At least 50% of the 30 credits must come from courses within the department. The department's course codes are 570, 180-5, and 187-8.
- Up to four courses from AAP or EP may be taken and counted to receive a master's degree as long as there is sufficient rigor and prior approval as deemed by the adviser. Students must have written consent from adviser (an email will suffice) prior to signing up for the course.
- All courses applied to a WSE graduate degree must be at the 600-level or higher.

### [MS GEE Sample Programs](#)

## MSE in Geography and Environmental Engineering

The MSE in Geography and Environmental Engineering is open to students with ABET-accredited undergraduate degrees in engineering, mathematics, biology, chemistry, physics, geology, and other scientific disciplines. The MSE degree requires a minimum of two semesters of coursework. MSE students have the option to complete an independent research project, submitted as a formal essay.

MSE students can choose from four tracks within the program: Environmental Engineering and Science, Hydrology and Water Resources Engineering, Data Science and Analytics in Environmental Health and Engineering, and Environmental Management and Economics. Each student's program of study involves planning by the student in consultation with department faculty and must be approved by the faculty adviser.

### Degree Program Requirements

- A minimum of 30 credits - including no more than 1 credit of seminar, 1 credit of intersession course work, 1.5 credits from the Center for Leadership Education (with adviser approval) and 6 credits of independent research
- At least 50% of the 30 credits must come from courses within the department. The department's course codes are 570, 180-5, and 187-8.
- 5-6 required courses and 4-5 recommended elective courses depending on concentration. In order to substitute an alternate course for a recommended elective, students must receive written approval from their adviser prior to registering.
- Up to four courses from AAP or EP may be taken and counted to receive a master's degree as long as there is sufficient rigor and prior approval as deemed by the adviser. Students must have written consent from adviser (an email will suffice) prior to signing up for the course.
- BSE/MSE students who take a required course in their undergrad program but do not use it towards program-required graduation credits may count that course towards their 30-credit program requirement. In order to take advantage of this exception, students must:
  - Take courses at the 600-level (a 400 or 500 level course may be approved for transfer with prior approval in extenuating circumstances)
  - Work with their advisers to confirm that the courses are required for their master's program

### MSE GEE Sample Programs

## MS in Occupational and Environmental Hygiene

The Master of Science (MS) in Occupational and Environmental Hygiene (OEH) program is a professional degree designed for students interested in advancing their careers in occupational and environmental risk assessment and management. Graduates of the program work in consulting, private industry, or government; many pursue doctoral studies in environmental health sciences.

For students particularly interested in careers in occupational hygiene, the program is accredited by the Applied and Natural Science Accreditation Commission (ANSAC) of the Accreditation Board for Engineering and Technology (ABET). Additionally, the program helps prepare students for the Certified Industrial Hygienist (CIH) examination administered by the Board of Global Credentialing (BGC).

Affiliated with the Department's NIOSH- sponsored Education and Research Center in Occupational Safety and Health, the OEH program has four broad educational objectives:

- Anticipate, recognize, evaluate, and control factors in the workplace and the environment that may cause illness, injury, or impairment;
- Build a successful career and obtain professional certification using the comprehensive education and training received;
- Integrate industrial hygiene techniques, biostatistics, epidemiology, management, and environmental health concepts into a broader occupational/environmental health practice;
- Pursue continuing education in research and professional practice of Occupational and Environmental Health.

In addition to the five core areas mentioned in #3 above, coursework includes toxicology, occupational health, occupational and environmental hygiene, air pollution, environmental sampling, exposure assessment, and program management, as well as risk assessment, risk management and risk communication.

### **Internship or Independent Professional Project & Essay Requirement**

Each student must complete an internship or independent professional project (IPP), write a culminating essay, and present their work in a formal seminar. For full-time students a three-month internship will provide professional experience tailored to the needs and interests of each student. During the internship, the student assumes independent responsibility for a professional project, described in a culminating essay that serves as a review of the entire educational experience. Field mentors evaluate the student's performance and students evaluate their internship. Students will register for 182.810 MS Field Placement. For part-time students, the IPP can be completed in the context of a student's employment.

The essay should serve as an integrating experience for the students, with content based on an occupational or environmental health problem pertinent to the educational goals of the student (and approved by the adviser). The essay typically represents the product of the internship or employment experience. It involves a substantive application of professional technical skills through collecting and summarizing data and reviewing appropriate literature. Where possible, students should consider essay topics that can lead to a publishable manuscript.



### **Students Seeking Additional Research/Internship Opportunities**

Additional laboratory and internship opportunities are assessed on a case-by-case basis and should be discussed with your adviser before starting any work. Students who would like credit for working in a faculty lab can register for 182.845. Students who would like credit for additional internship hours outside of JHU can enroll in 182.810. This applies to both domestic students and international students (who need to meet visa requirements).

### **Course Requirements**

Although the degree is granted by the Whiting School of Engineering, Bloomberg School of Public Health houses the curriculum for the MS in Occupational and Environmental Hygiene. Please note that BSPH schedules all courses by term rather than semester. Responsible conduct of research (AS.360.624) as well as Academic Ethics (EN.500.603) are required courses that must be taken in the first semester of enrollment.

### **Full-Time Curriculum Sample Program**

### **Part-Time Curriculum Sample Program**

Successful completion of 3 credits related to the Independent Professional Project (IPP) is required for completion of the program. The related course requirements will be undertaken over several terms. Students should register for these classes on the following basis: 1 credit will be awarded for 182.810 upon submission of the IPP proposal and completion of the IPP data collection; 1 credit will be awarded for 182.850 upon submission of a completed draft of the essay; and 1 credit will be awarded for 182.850 upon submission of a final draft of the essay and the formal presentation of a seminar on the IPP to faculty and fellow students. The registration timeline for these courses is decided between the student and their adviser.

**Total Program Credits:      76 Credits**

Students who would like to pursue the Risk Sciences and Public Policy Certificate should take the courses listed on that web page. They are not required for this degree.

## MS in Toxicology for Human Risk Assessment

The Master of Science in Toxicology for Human Risk Assessment is intended for students interested in toxicity testing and risk assessment. The degree emphasizes the integration of traditional in vivo models and emerging in vitro and in silico models into work by regulators and risk assessors. Graduates can play an essential role in the scientific evaluation of such toxicity testing information. Students completing the program will also fulfill the requirements to earn the Certificate in Risk Sciences and Public Policy.

The full-time program consists of nine months of coursework focused on the fundamental concepts and testing approaches used in classic risk assessment processes, as well as those used in the new paradigm for toxicity in the 21st Century, and an internship with a government agency, non-governmental organization, industry, or private sector group.

### Program Requirements

The curriculum consists of core courses that will be taken during the first year of the program, during the four 8-week terms from September to mid-May. The internship and a capstone essay will be completed in the second year.

### Internship

Students in this professional degree program assume responsibility for a professional project to be carried out off-site at a governmental agency, non-governmental organization, industry, or private sector company. Students will work with the faculty adviser to identify internship opportunities. The minimum duration of the internship will be four months (two academic terms). The student will be directed in the internship experience by an on-site mentor and will regularly communicate with their academic adviser. The overall length of the project period may be extended beyond the minimum requirement.

For full-time students, the internship involves 32 course credits of 182.810 MS Field Placement. For part-time students, it involves 3 credits. The latter students should register for these classes on the following basis: 1 credit of 182.810 for preparation of the internship proposal and data collection; 1 credit of 182.850 to draft the essay; and 1 credit of 182.850 for finalizing the essay and formally presenting it at a seminar with faculty and fellow students. The registration timeline for these courses is decided between the student and their adviser.

### Essay and Presentation

Students in professional programs at the Johns Hopkins School of Public Health must successfully submit a culminating project that demonstrates integration of the skills developed during the coursework and internship experiences. For students in the MS program, this project takes the form of an in-depth capstone essay.

The topic of the essay will be linked to the specific or general focus of the internship experience and will be chosen in consultation with the adviser, who must approve it. Ideally, students select a topic that will lend itself to publication in a scientific journal. Following approval of the essay, students must make a formal oral presentation to the Department.

## Essay Format

- Title page Abstract (1 page)
- Table of contents/list of figures
- Introduction/background (approx. 5-10 pages) - Include objectives of the project and explain the significance of the objectives
- Methods (approx. 5-8 pages) Results (approx. 4-8 pages)
- Discussion and conclusions (approx. 5-10 pages) - In addition to discussing the results, include any steps your organization will take to continue the project. Also, describe the benefit of the project to industry, government (local, state and/or federal), and the regulatory community. References - refer to the PNAS style, which includes published articles, books and websites.

## Milestones for December 2023 Degree Conferral

(S) – student responsibility, (F) – faculty responsibility

- July 1 (or one month after beginning the internship) – An organizational meeting will be conducted that includes the student, internship adviser, and the academic adviser. A draft of the introduction is submitted prior to the meeting (S).
- July 16 – Project approved and data collection begins (F)
- Sept. 1 – Paper outline is submitted to academic adviser (S)
- Sept. 15 – Comments from adviser are due (F)
- Oct. 1 – First draft is submitted (S)
- Oct. 15 – Comments from adviser are due (F)
- Nov. 1 – Second draft is submitted (S)
- Nov. 15 – Comments from program adviser are due (F)
- Dec. 1 – Final draft is submitted (S)
- Dec. 15 – Completion letter is signed (F)
- TBA – 30-minute presentation to MS faculty (S, F)

## Program Funding

Partial tuition support is available for second-year students enrolled full-time in the MS program. Eligibility for the Master's Tuition Scholarship (MTS) requires students are in good academic standing and pay tuition for at least 64 approved credits. In addition, MS students must complete at least 12 credits of formal coursework outside of EHE. At least six of these credits must be taken in the School of Public Health. The MTS is worth up to 75% off tuition.

**[MS TOX Full-Time Sample Program](#)**

**[MS-TOX Part-Time Sample Program](#)**