

## Environmental Health Sciences

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### Affiliated Faculty

**Samir Elmir**, Director, Environmental Health and Engineering, Miami-Dade County Health Department

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The Department offers a Graduate Certificate in Environmental Health Sciences (EHS), a Master's degree in Public Health (MPH) with a major in EHS and MPH in EHS with a concentration in Brain, Behavior and the Environment (BBE). The department also offers a Ph.D. in Public Health with a major in the EHS with concentrations in Environmental Toxicology or Brain, Behavior and the Environment (BBE).

### MPH in the Environmental Health Sciences Major

The graduate training programs in the Environmental Health Sciences are both interdisciplinary and interdepartmental. The Department of Environmental Health Sciences performs high quality mechanism- and evidence-based translational research, which impacts our teaching and training for future Environmental Health leaders. Our multidisciplinary EHS Faculty conduct world class research to investigate and prevent human diseases caused by environmental exposure, that goes beyond the traditional focus on hazardous agents.

### Admission Requirements

Applicants to the MPH program with a major in Environmental Health Sciences (EHS) must meet the following requirements:

1. A Bachelor's (or Master's) degree in biology, chemistry, physics, nursing, medicine, engineering, or other appropriate field with at least one (1) undergraduate biology, and one (1) undergraduate chemistry course from an accredited college or university or, in the case of foreign students, an institution recognized in its own country as preparing students for further study at the graduate level.

2. A minimum 3.0 GPA (on the last 60 undergraduate hours). In addition, applicants are required to submit 1) a current resume; and 2) a written statement of purpose (career goals).
3. International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 80 on the iBT TOEFL or 6.5 overall on the IELTS is required.
4. Submission of official GRE scores is optional. If a student decides to submit GRE scores, the scores must be less than 5 years old.

### Curriculum and Course Requirements

For the MPH with a major in Environmental Health Sciences, ALL students must complete the MPH core (15 credits) and departmental core courses (12 credits), EHS selected elective courses (12 credits), a Practicum (3 credits) and Integrative Seminar (3 credits) course.

#### MPH Core Curriculum: (15 credits)

PHC 6000	Epidemiology I: Introduction to Public Health Epidemiology	3
PHC 6052	Biostatistics I	3
PHC 6102	Introduction to Public Health Policy and Management	3
PHC 6315	Introduction to Environmental Health Sciences	3
PHC 6410	Health Behavior and Public Health	3

#### Major in Environmental Health Sciences Core Courses: (12 credits)

PHC 6310	Environmental Toxicology	3
PHC 6311	Environmental Health Risk Assessment	3
PHC 6355	Environmental Health and Safety	3
PHC 6374	Environmental Disasters & Human Health	3

#### Elective Courses: (12 credits)

PHC 6312C	Health Impacts of Air, Water, and Land Pollution	3
PHC 6422	Regulatory Aspects of Environmental Health Sciences	3
PHC 6442	Global Environmental Public Health	3
PHC 6538	Gene & Environment Interaction	3
PHC 6907	Independent Study in Public Health	1-3
PHC 6914L	Current Topics in Environmental Health Sciences Research Lab	1-9
PHC 6920	Special Topics in Environmental Health Sciences	3
PHC 6921	Environmental Health Sciences Seminar	1
PHC 6380	Introduction to Neurotoxicology	3
PHC 6730C	Neurotoxicology Research Methods	3
PHC 6382	Neuropharmacology	3
PHC 6383C	Neurobehavioral Techniques	3
PHC 7374	Organ-Specific Toxicology	4
PHC 7713	Advanced Environmental Toxicology Research Methods	2
PHC 6328	Molecular & Cellular Toxicology	4
PHC 6329	Biomarkers	3

#### Practicum and Culminating Experience: (6 credits)

PHC 6945	Practicum in Public Health	3
PHC 6930C	Integrative Seminar in Public Health	3

PHC 6945 (Practicum) and PHC 6930C (culminating experience) are both required for all MPH students. The Practicum may be taken after completing a minimum of 30 hours, including all core courses. The Practicum may be waived if the student has at least 3 years of relevant practice experience working in a public health practice setting. The waiver request is prepared and submitted by the student, through their Faculty Advisor and Department Chair, for final approval/disapproval by the Academic Public Health Director. If the Practicum requirement is waived, the student will need to substitute 3 additional approved hours so that the total curriculum hour requirement of 45 is met. MPH students are expected to complete PHC 6930C Integrative Seminar in Public Health during their last semester in the program.

## MPH in the Environmental Health Sciences with a Concentration in Brain, Behavior and the Environment

The total credit requirement for the MPH is 45 credits. The BBE concentration is part of the MPH Environmental Health Sciences major, which includes five courses (15) credits in the MPH Core Curriculum, four courses (12 credits) in the EHS major, and two courses (6 credits) in the Practicum and Culminating Experience. The other 12 credits will be from the BBE concentration required coursework.

### MPH Core Curriculum: (15 credits)

PHC 6000	Epidemiology I: Introduction to Public Health Epidemiology	3
PHC 6052	Biostatistics I	3
PHC 6102	Introduction to Public Health Policy and Management	3
PHC 6315	Introduction to Environmental Health Sciences	3
PHC 6410	Health Behavior and Public Health	3

### Major in Environmental Health Sciences Core Courses: (12 credits)

PHC 6310	Environmental Toxicology	3
PHC 6311	Environmental Health Risk Assessment	3
PHC 6355	Environmental Health and Safety	3
PHC 6374	Environmental Disasters & Human Health	3

### Concentration in Brain, Behavior and the Environment Required Courses: (12 credits)

PHC 6380	Introduction to Neurotoxicology	3
PHC 6730C	Neurotoxicology Research Methods	3
PHC 6382C	Neuropharmacology	3
PHC 6283C	Neurobehavioral Techniques	3

### Practicum and Culminating Experience: (6 credits)

PHC 6945	Practicum in Public Health	3
PHC 6930C	Integrative Seminar in Public Health	3

## Doctor of Philosophy in Public Health Major in Environmental Health Sciences with a Concentration in Environmental Toxicology or Brain, Behavior and the Environment

The Doctor of Philosophy (Ph.D.) in Public Health is available with a major in Environmental Health Sciences, with concentrations either in: Environmental Toxicology, or Brain, Behavior and the Environment. Students will be expected to demonstrate significant research capacity by completing 60 credits beyond the Master's degree and through the writing of an original dissertation.

### Doctoral Admissions

Applicants must meet the University's general graduate admission requirements:

1. A four-year bachelor's degree or equivalent from a nationally accredited institution or, in the case of foreign students, from a well established institution of higher learning that is authorized to grant degrees by appropriate authorities in that country.
2. A minimum of a 3.0 GPA, "B" average, in the last 60 upper-division undergraduate coursework, or a graduate degree from a nationally accredited institution.
3. Official GRE scores (scores must be no more than five years old).
4. International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 80 on the iBT TOEFL or a 6.5 overall on the IELTS is required.

The College also requires:

1. A current resumé.
2. Three letters of recommendation.
3. A writing sample (Master's thesis or research project, published manuscript, or some other document which demonstrates writing ability).
4. A personal statement of research interest.

Potential applicants are strongly encouraged to contact individual faculty to discuss common research interests since admission decisions require identification of a faculty mentor, and evaluation of fit to the program.

### Doctoral Requirements

A student may enroll for dissertation credits after completing all coursework, passing the candidacy examination, and being advanced to candidacy. Dissertation credits cannot be taken before advancement to candidacy.

The candidacy examination will be prepared and graded by a committee consisting of a minimum of three faculty members. Admission to candidacy requires that a majority of the committee members agree that the student passed the examination. A candidacy examination may not be passed conditionally. A "Pass" on the examination cannot be made contingent upon other factors such as the completion of additional coursework or the preparation of extra research projects. Students will be allowed only two attempts to pass the candidacy examination.

After a doctoral student is admitted to candidacy, continuous registration for at least 3 dissertation credit hours each semester (including the summer term) is required until the dissertation requirement is fulfilled.

### Required Courses

The major requires a minimum of 75 credit hours beyond the baccalaureate which includes a minimum of credit

hours of dissertation credits. There are three components to the Ph.D. curriculum. The first is a core curriculum shared across all majors (12 credit hours). The second component is specific to the major (9 credit hours). The third component is specific to the concentration (12 credit hours), followed by content and secondary field courses (to total a minimum of 18 required credit hours). The fourth component consists of the dissertation, including a minimum of 15 dissertation credit hours. The remaining credit hours to add up to the minimum university requirement of 75 credits will be determined in consultation with the student's advisor.

**Shared Core Courses: (12 credits)**

PHC 6601	Emerging Issues in Public Health	3
PHC 6091	Biostatistics 2 (or other approved Quantitative Methods course)	3
PHC 7981	Research Concepts and Proposal Development	3
PHC 7705	Methods in Evidence Based Public Health	3

**Courses for Environmental Health Sciences Major** requires 9 hours of EHS Major Core Courses; 12 hours of concentration courses, and 9 hours of content and secondary field courses. Overall this must include a minimum of 9 hours at the 7000 level.

**Environmental Health Sciences Major Core Courses: (9 credits)**

PHC 6328	Molecular & Cellular Toxicology	4
PHC 6329	Biomarkers	3
PHC 7732C	Research Ethics & Scientific Integrity	1
PHC 6921	Environmental Health Sciences Seminar	1

**Environmental Toxicology Concentration: (12 credits)**

PHC 7300	Biological Basis of Environmental Diseases	4
PHC 7327	Emerging issues in the Environmental Health Sciences	2
PHC 7374	Organ-specific Toxicology	4
PHC 7713	Advanced Environmental Toxicology Research Methods	2

**Brain Behavior and the Environment Concentration: (12 credits)**

PHC 7381C	Neuroscience	4
PHC 7731C	Advanced Neurotoxicology Research Methods	2
PHC 7384	Advanced Neurotoxicology	4
PHC 7385C	Emerging Issues in Neurotoxicology	2

**Content Courses: (a minimum of 9 credits are required)**

PHC 6310	Environmental Toxicology	3
PHC 6311	Environmental Health Risk Assessment	3
PHC 6312C	Health Impacts of Air, Water, and Land Pollution	3
PHC 6355	Environmental Health and Safety	3
PHC 6374	Environmental Disasters & Human Health	3
PHC 6442	Global Environmental Public Health	3
PHC 6422	Regulatory Aspects of Environmental Health Sciences	3
PHC 6538	Gene & Environment Interaction	3
PHC 6907	Independent Study in Public Health	3
PHC 6914L	Current Topics in Environmental Health Sciences Research Lab	1-9

PHC 7917	Pre Doctoral Research	1-6
PHC 6920	Special Topics in Environmental Health Sciences	3
PHC 6380	Introduction to Neurotoxicology	3
PHC 6730C	Neurotoxicology Research Methods	3
PHC 6382	Neuropharmacology	3
PHC 6383C	Neurobehavioral Techniques	3
PHC 7300	Biological Basis of Environmental Diseases	4
PHC 7327	Emerging Issues in the Environmental Health Sciences	2
PHC 7374	Organ-Specific Toxicology	4
PHC 7713	Advanced Environmental Toxicology Research Methods	2
PHC 7381C	Neuroscience	4
PHC 7731C	Advanced Neurotoxicology Research Methods	2
PHC 7384	Advanced Neurotoxicology	4
PHC 7385C	Emerging Issues in Neurotoxicology	2

**Secondary Field Courses: (a minimum of 9 credits are required)**

At least 9 credit hours of approved secondary field courses. Secondary field courses may be selected from approved graduate school courses in consultation with the student's academic advisor.

**Dissertation Requirements: (a minimum of 15 credits are required))**

PHC 7980	Dissertation	15
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<http://stempel.fiu.edu/students/advisina/index.html>.

And

To learn about faculty and EHS research areas, please visit our EHS website:

[https://stempel.fiu.edu/faculty/?\\_sft\\_units=04-environmental-health-sciences](https://stempel.fiu.edu/faculty/?_sft_units=04-environmental-health-sciences)