OHSU Institute of Environmental Health

Division of Environmental and Biomolecular Systems

M.S. and Ph.D. in Biochemistry and Molecular Biology

OHSU Division of Environmental and Biomolecular Systems (EBS) offers M.S. and Ph.D. degrees in Biochemistry and Molecular Biology (BMB).

M.S. Degree
The M.S. in BMB prepares students for careers in biotechnology or health science monitoring and diagnostics. It also can be useful preparation for higher degrees in biochemistry, molecular biology, microbiology, and medicine.

Ph.D. Degree
The Ph.D. in BMB prepares students for careers in academic research and/or teaching, or research in the biotechnology and medical products industries.

The emphasis of this degree program reflects the division’s strength in research on the structure and function of macromolecules and their integration into biological processes. Students learn state-of-the-art methods in metallobiochemistry, structural biology, spectroscopy, proteomics, microbial genetics, and genomics while working to uncover new molecular details of enzyme mechanisms, signal transduction, and control of gene expression.

Collaborations with other programs within OHSU’s Institute of Environmental Health allow our students to engage in multidisciplinary research involving the application of molecular biology and genetics to environmental health, observation, and biogeochemistry.

Degree Tracks

Degrees are available in three tracks:
- Biochemistry and Molecular Biology (BMB)
- Environmental and Biomolecular Systems (EBS)
- Estuary and Ocean Systems (EOS)

The BMB track is for students who prefer a traditional emphasis or biomedical applications. The EBS track is for students interested in environmental health or biogeochemical applications. The EOS track is focused on multidisciplinary approaches to understanding marine systems.

M.S. students can choose thesis or nonthesis options. The nonthesis option involves a laboratory research project, and can be completed in one year.

For more information:
www.ohsu.edu/ebs
Phone: 503 346-3411
Email: greenva@ohsu.edu
Curriculum

The curriculum is designed to ensure a common foundation of core concepts and skills, but also to allow considerable flexibility for customization to provide the optimal educational experience for each student.

Core concepts and skills are taught through a series of three required core courses, with the remaining coursework consisting of advanced electives, readings groups and special topics courses selected in consultation with the student’s advisory committee.

Nonthesis M.S. students spend about 1/3 of their time involved in laboratory research, thereby gaining hands-on experience with state-of-the-art methods and instrumentation. M.S. thesis students must prepare and defend a thesis based on their original research.

Ph.D. students must pass qualifying exams near the end of their first year, prepare and defend a dissertation proposal in their second year, conduct original research leading to multiple peer-reviewed publications, and finally submit a written dissertation and complete an oral defense of the dissertation.

Admissions

Most students accepted into the BMB M.S. program have undergraduate degrees in the physical or biological sciences, engineering or related disciplines (e.g., computer science). Prospective students with different backgrounds are encouraged to inquire, if they have professional or other experience that might provide adequate preparation.

M.S. students may be full-time or part-time. Applications are considered year round, but prospective M.S. students are encouraged to apply by July 31 and Ph.D. students by January 31, for admission to start in the following Fall quarter. Some students take BMB classes without matriculation before deciding to apply.

Faculty

The following EBS faculty advise BMB degree students:

Bradley Tebo, Ph.D., Division Head
Geomicrobiology
Ninian Blackburn, Ph.D.
Metalloenzymes
Margo Haygood, Ph.D.
Marine Biotechnology
Pierre Moënne-Loccoz, Ph.D.
Protein Structure/Function
Michiko Nakano, Ph.D.
Gene Regulation
Holly Simon, Ph.D.
Microbial Genomics
James Whittaker, Ph.D.
Enzyme Structure
Peter Zuber, Ph.D.
Signal Transduction

Want to Know More?

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Division of Environmental and Biomolecular Systems
Oregon Health & Science University
3181 SW Sam Jackson Park Road
Portland, OR 97006