OHSU Institute of Environmental Health

Division of Environmental & Biomolecular Systems

The Division of Environmental and Biomolecular Systems (EBS) is a unique multidisciplinary program that combines study of the physical, chemical, and biological processes that affect human and environmental health.

Vision

As the world increasingly looks to technology to address many environmental and health issues—such as exposure to toxic substances, water quality, climate change, and other anthropogenic impacts—today's scientists must draw from a wide range of technical fields, including computer science, bioinformatics, nanotechnology, and many other traditional and emerging disciplines.

In recognition of the need for more interdisciplinarity—specifically where the biological and environmental sciences overlap with human and ecological health—OHSU formed the Division of Environmental and Biomolecular Systems (EBS) in 2002 by merging two of the School of Science & Engineering's longstanding departments, which had overlapping interests: Environmental Science and Engineering (ESE) and Biochemistry and Molecular Biology (BMB).

The EBS Division retains—and is building upon—strengths in four complementary areas where our faculty have strong international reputations (environmental chemistry, metallobiochemistry, microbial molecular biology, and hydrodynamic modeling). Emerging areas of strength include sensors, nanotechnology, biogeochemistry, microbial ecology, and natural products chemistry.

Education

The EBS Division offers a range of degree programs that allows flexibility to accommodate the educational goals of students coming from various backgrounds (biology, chemistry, engineering, etc.) and pursuing a range of career goals. Courses are taught by faculty who are experts in their fields and cover the fundamental and applied aspects of biochemistry, molecular biology, environmental science, environmental engineering, and environmental information technology.

A team of students participating in a research cruise in the Columbia River Estuary

The EBS Division offers M.S. (thesis or non-thesis) and Ph.D. degrees in:

- Biochemistry and Molecular Biology (BMB)
- Environmental Science and Engineering (ESE)

Within both degrees, students can opt for a track that emphasizes the full interdisciplinary scope of the Division:

- Environmental and Biomolecular Systems

Or students can choose a track that emphasizes coastal science.

- Estuary and Ocean Systems (EOS)

For more information:

www.ohsu.edu/ebs

Phone: 503 346-3411

Email: greenva@ohsu.edu

OREGON HEALTH & SCIENCE UNIVERSITY

Students and Alumni

Our graduate students are a diverse and balanced group from all over the United States and the world. They generally hold Bachelor's or Master's degrees in physical or biological science, engineering, or related disciplines (e.g., computer science). Most are full time, but part-time and non-matriculated students are welcome.

Our programs have many accomplished alumni in careers including academia, government or corporate research laboratories, environmental or geotechnical engineering service companies, government regulatory agencies, and non-profit organizations. Some graduates with M.S. degrees go on to higher degrees in the sciences, medicine, law, or business.

The alumni community in the Portland area is particularly strong, but worldwide our alumni provide a network that creates professional and social opportunities long after graduation.

Want to know more?

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Oregon Health & Science University
3181 SW Sam Jackson Park Road
Portland, OR 97006

Collaborative and Innovative Research

The EBS Division emphasizes intense, collaborative, cutting-edge research in areas of high scientific and societal impact. All of our faculty are highly productive leaders in their fields. Most students begin participating in research immediately upon matriculation in one of the Division's academic programs.

Research performed within the Division addresses physical, chemical and biological processes that occur within and at the interface of biomolecular systems, including the natural environment and living organisms.

Three overarching goals characterize our research programs:

- Fundamental understanding of processes at molecular, cellular, and particle levels;
- Holistic, process-based understanding of ecosystems, and individual organisms;
- Effective use of science in society's approaches to ecosystems health, human health, and economic development.

Our research has national and international impact, as well as serving the specific needs of the Pacific Northwest.

MAJOR RESEARCH GROUPS

The EBS Division has multi-investigator concentrations in the following strategic and/or emerging research areas:

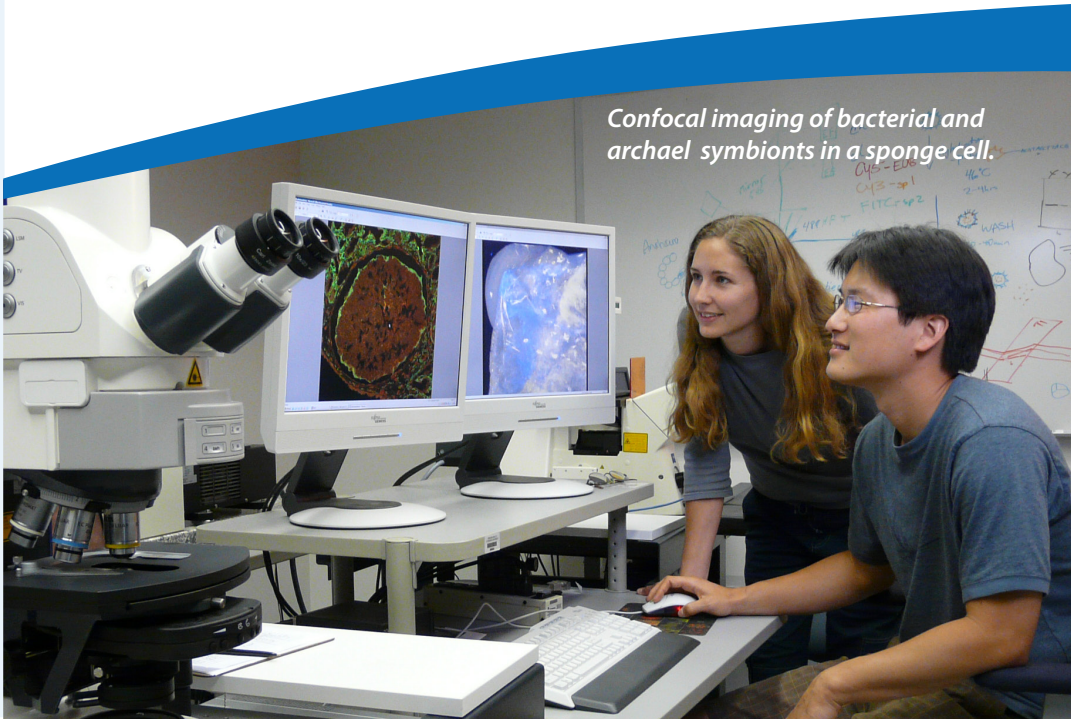
- Microbiology
- Biogeochemistry
- Metallobiochemistry
- Environmental Chemistry
- Contaminant Remediation
- Sensor Technologies
- Observation Systems

COLLABORATIONS

The EBS Division shares research and education programs with the NSF Science and Technology Center for Coastal Margin Observation and Prediction (CMOP), which also involves Oregon State University and the University of Washington. CMOP conducts interdisciplinary research, technology development, education, and knowledge transfer to achieve a better understanding of physical, chemical, and biological processes regulating river-to-ocean ecosystems.

More details on CMOP research and other activities are available online at:

http://www.stccmop.org



Confocal imaging of bacterial and archael symbionts in a sponge cell.