

OHSU Institute of Environmental Health

Division of Environmental and Biomolecular Systems

The Division of Environmental & 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 in 2002 by merging two of the School of Science & Engineering's long-standing departments with 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



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

goals. Courses are taught by faculty who are experts in their respective fields and cover both the fundamental and applied aspects of biochemistry, molecular biology, environmental science, environmental engineering and environmental information technology.

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

Within the ESE degree, students can choose a track that emphasizes coastal science.

- Estuary and Ocean Systems (EOS)

Measuring personal care chemicals in Willamette River water using a liquid wave-guide sensor.



www.ogi.edu/ebs

Phone: 503 748-1070 E-mail: info@ebs.ogi.edu



Students and Alumni

Our graduate students are a diverse and balanced group from all over the United States and 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 nonmatriculated students are welcome.

These programs have many accomplished alumni in careers ranging from academia to government or corporate research laboratories, environmental or geotechnical engineering service companies, government regulatory agencies and nonprofit 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?

www.ogi.edu/ebs

E-mail: info@ebs.ogi.edu

phone: 503 748-1070

Division of Environmental and Biomolecular Systems
Oregon Health & Science University
20000 N.W. Walker Road
Beaverton, 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

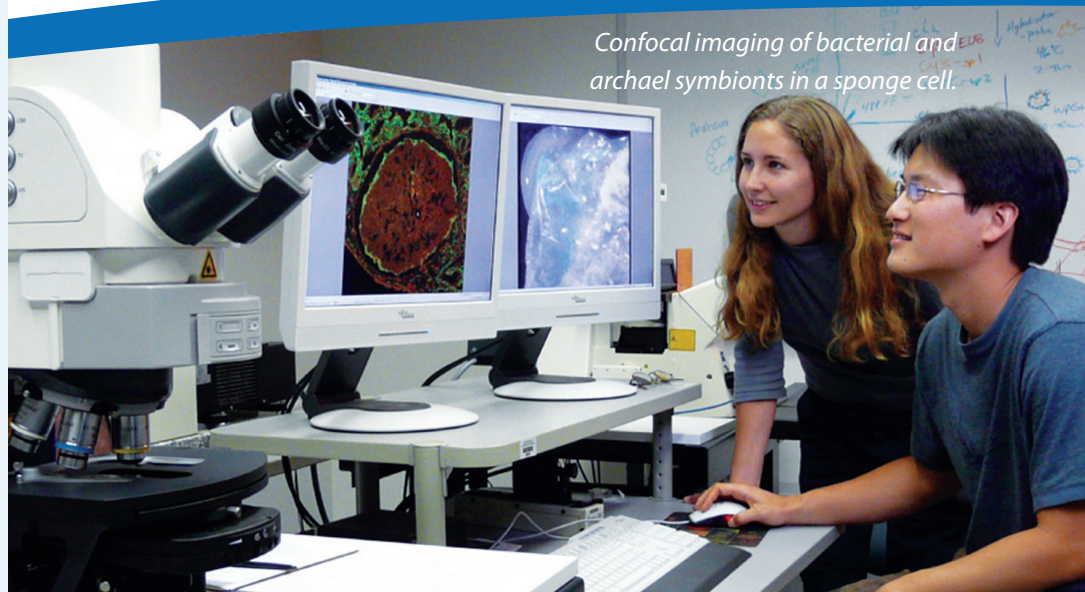
The EBS Division has multi-investigator concentrations in the following strategic and/or emerging research areas:

- 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), a multi-institutional partnership with Oregon State University and the University of Washington as anchor partners. 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: www.stccmop.org



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