

DEPARTMENT OF MICROBIOLOGY

Microbiology, a split College of Science and College of Agricultural Sciences department, is a vigorous coalition of educators and researchers who study bacteria, archaea, fungi, protozoa, and viruses at all levels, from molecular biology and genomics to human and animal disease and global ecology measured from space. Microbial cells play important roles in most natural biological processes and are harnessed as sources of new antibiotics and green biotechnologies. We focus on student training and research in microbiome science, a new branch of microbiology.

Degree Programs

Undergraduate

Microbiology and BioHealth Sciences

Graduate

The OSU Microbiology department offers a multidisciplinary graduate training program that encompasses field microbiology, pathogenic microbiology, cellular biology, and quantitative genome science.

Microbiology | M.S. | Ph.D.

Experiential Learning Opportunities

Vigorously funded research programs offer diverse opportunities for undergraduate and graduate student engagement in scientific exploration.

In Nash Hall laboratories and our collaborations with National Laboratories, students study cell-cell communication, molecular mechanisms of disease, and the systems biology of carbon-transforming cells.

A long-term field and lab research program in the Klamath basin involves students in studying impacts of changing land and water use on fish diseases caused by pathogenic microbes.

Large programs in oceanography, especially coral reef ecology and disease, and carbon cycling by plankton, send our students to field stations and ships around the world.



Faces of AgSci

“ I came to OSU Microbiology for graduate school because it’s a competitive research program that has regional involvement in fisheries.”

Benjamin Americus
2021 MacVicar Animal Scholar

Read more at agsci.oregonstate.edu

MICROBIOLOGY AT A GLANCE

19



Faculty

920



Undergraduate Students

42

Graduate Students



Research

2022 Research Expenditures: \$1,688,857

Research Focus Areas:

- Gut microbiome impacts on health and cognition in humans and animals
- Fish and coral reef disease
- Cell systems biology of microbial plankton carbon metabolism

The Future of the Department Microbiology

Microbiological science is growing worldwide, fueled by new technologies and new challenges from global disease and environmental change. It recognizes that microbes are unseen agents that mediate many natural processes that we need to understand and harness. Microbiology's rapidly growing educational programs place students in an expanding world of opportunities in professional health fields, biomedical, biotechnological and basic research, and industrial, food and agricultural microbiology.

Attracting top-tier research faculty and graduate students to OSU, Microbiology collaborates with units across campus, bringing a focus on microbial cell biology to interdisciplinary projects. Our work impinges on engineered biological systems, disease, soil and water ecology and food security and offers opportunities for partnerships where our experience with the computational and genome technology and the immense diversity of microbial cells are an asset.

Our most important challenges and opportunities are to:

- Maintain a balance in training and technology that keeps our faculty on the leading edge of research in our fast-paced discipline,
- Expand our research and teaching in microbial biotechnology to engage more students in careers in the emerging green economy,
- Maintain a balanced portfolio of biomedical research that addresses the needs and interests of students in BioHealth Sciences, our largest major.

