

DEPARTMENT OF MICROBIOLOGY

Microbiology is one of the most relevant, dynamic and exciting disciplines in the biological sciences. In the Department of Microbiology at Montana State University, our main goal is to prepare students for leadership roles as microbiologists in industry, government agencies, health related fields, environmental health, and university teaching and research.

DEGREES OFFERED

M.S. IN MICROBIOLOGY

PH.D. IN MICROBIOLOGY

Our research facilities at MSU include modern, well-equipped laboratories and specialized state of the art equipment for instruction and research. In addition, the department hosts three major university facilities, currently supported through the Montana IDeA Network of Biomedical Research Excellence (INBRE) program, including:

- Functional Genomics Core Facility
- Bioinformatics Teaching and Research Facility
- Environmental Health Analytical Facility

Our faculty are internationally recognized for their research and are committed to teaching, training and inspiring students in the microbiological sciences. Faculty research interests include:

- Environmental fields such as environmental microbiology, biology of extreme environments, geomicrobiology, aquatic microbiology, microbial communities and ecology
- Medically related areas such as medical mycology, mechanisms of pathogenicity, molecular and cellular immunology, immunoparasitology, virology, leukocyte and cell molecular biology.



DEPARTMENT OF
MICROBIOLOGY
MONTANA STATE UNIVERSITY

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MONTANA STATE UNIVERSITY
DIVISION OF GRADUATE EDUCATION





All students gain a strong background in microbiology, however, interdisciplinary programs with strong ties to other departments and programs are encouraged.

Students interested in the environmental sciences can include areas such as ecology, chemistry, entomology, plant and soil sciences, plant pathology and interaction through the Center for Biofilm Engineering.

Students interested in the biomedical sciences can include areas such as biology, biochemistry and veterinary science through the WWAMI Medical Education Program.

Each graduate student develops a program of study and research designed specifically to fit their own experience and interests. A more detailed description of our entire graduate program can be found in the Graduate Student Handbook on our website. This site also includes application requirements and procedures.

If you have questions, please contact:

Kari Cargill
Academic Coordinator
kcargill@montana.edu
406-994-5675

FACULTY

Mark Jutila, Interim Department Head & Professor, Veterinary Molecular Biology, Ph.D., Washington State University, 1986. Inflammatory disease and developmental immunology.

Anne Camper, Affiliate Professor, Ph.D., Montana State University, 1995. Bacterial attachment to surfaces, treatment of drinking water and microbial regrowth in distribution systems.

Kari Cargill, Academic Coordinator and Adjunct Instructor, M.S., Montana State University, 1990. Science education.

Keith Cooksey, Research Professor Emeritus, Ph.D., University of Birmingham, United Kingdom, 1956. Cellular adhesion, marine and fresh water microbial ecology, industrial microbiology, biofilms.

Mensur Dlakic, Assistant Professor, Ph.D., University of Nevada, Reno, 1997. Bioinformatics, biochemical and molecular biology.

Matthew Fields, Assistant Professor, Ph.D., Cornell University, 2001. Anaerobic microbiology, physiology and ecology, bioremediation, environmental genomics.

Michael Franklin, Associate Professor, Ph.D., University of Tennessee, Knoxville, 1991. Molecular genetics, biofilms, microbial exopolymer production.

Gill Geesey, Professor, Ph.D., Oregon State University, 1975. Biofilm microbiology, industrial biotechnology.

Robin Gerlach, Affiliate Professor, Ph.D., Montana State University, 2001. Biofilms for control of contaminated soils and water.

Sandra Halonen, Assistant professor, Ph.D., Louisiana State University, 1993. Intracellular protozoan pathogens with emphasis on *Toxoplasma gondii* in the central nervous system.

Barbara Hudson, MT (ASCP), CLS, Medical Laboratory Science Program Director, M.S., University of North Dakota, 2001. Medical bacteriology, parasitology, hematology.

Algirdas Jesaitis, Professor, Ph.D., California Institute of Technology, 1973. Molecular basis of signal transduction, host defense in human neutrophils.

Zbigniew Lewandowski, Affiliate Professor, Ph.D., Polish National Academy of Sciences, 1976. Microsensor design, chemical gradients/biofilm structure relationships, hydrodynamics, kinetics in biofilms.

Aurelian Mazurie, Research Associate with Bioinformatics, Ph.D., Pierre and Marie Curie University, Paris, France, 2005. Bioinformatics (exploitation of high-throughput biological data sets), integrative biology, evolution and structure.

Marcie McClure, Professor, Ph.D., Washington University, 1984. Genomics, computational biology.

Tim McDermott, Affiliate Professor, Ph.D., University of Minnesota, 1989. Soil microbe-plant interactions, biological transformations in soils, microbial diversity in extreme thermal soil.

Heini Miettinen, Associate Research Professor, Ph.D., Yale University, 1990. Function of inflammatory receptors, cell signaling, intracellular trafficking of chemoattractant receptors.

John Mills, Assistant Research Professor, Ph.D., Ohio State University, 1983. Effects of polymorphisms of the formyl peptide receptor on receptor function, study of the interactions of anti-HIV drugs on the HIV co-receptor CCR5.

Brent Peyton, Affiliate Professor, Ph.D., Montana State University, 1992. Extremophilic bioprocessing, in situ biocatalyzed heavy metal biotransformations.

Barry Pyle, Associate Research Professor, Ph.D., Lincoln College, University of Canterbury, New Zealand, 1985. Environmental microbiology, biofilms, water microbiology, microbial ecology, gravitational microbiology.

Linda M. Sherwood, Adjunct Instructor, Ph.D., Michigan State University, 1985. Microbial genetics, science education.

Jean Starkey, Associate Research Professor, D.V.M. University of Glasgow, Scotland, 1968, Ph.D. University of Pennsylvania, 1974. Tumor invasion and metastasis and photodynamic therapy.

Martin Teintze, Affiliate Associate Professor, Ph.D., University of California, San Diego, 1981. HIV vaccine antigens and HIV entry inhibitors based on chemokine receptor antagonists.

David Ward, Affiliate Professor, Ph.D., University of Wisconsin, Madison, 1975. Microbial ecology, microbiology of extreme environments, composition of microbial communities, biochemical markers.

Mark Young, Affiliate Professor, Ph.D., University of California, Davis, 1987. Spherical virus assembly and disassembly, viral protein cages for nanomaterials synthesis, isolation of viruses from extreme thermal environments.