University of Missouri

Mizzou

University of Missouri

Biological Sciences

J. Walker, Director
College of Arts and Science
105 Tucker Hall
(573) 882-6659

The Division of Biological Sciences offers both a Bachelor of Arts and a Bachelor of Science with a major in Biological Sciences, in addition to a minor in biological sciences for students majoring in other departments. The department also offers MA and PhD degrees in Biological Sciences.

Faculty

Research Assistant Professor: R. Bhandari, J. Taylor
Teaching Associate Professor: S. L. Bush*, R. D. Hurst, B. Stone*
Distinguished Teaching-Professor Emeritus: J. E. Carrel**
Professor Emeritus: B. G. Cumbie, A. Eisenstark, P. H. S. Jen, D. Mertz, C. D. Miles
Associate Professor Emeritus: L. Chapman, T. Holtsford, D. L. Worcester

- Graduate Faculty Member - membership is required to teach graduate-level courses, chair master’s thesis committees, and serve on doctoral examination and dissertation committees.
- Doctoral Faculty Member - membership is required to chair doctoral examination or dissertation committees. Graduate faculty membership is a prerequisite for Doctoral faculty membership.

Undergraduate

- Department Level Requirements (http://catalog.missouri.edu/undergraduategraduate/collegeofartsandscience/biologicalsciences/biological_science_major_requirements)
- BA in Biological Sciences (http://catalog.missouri.edu/undergraduategraduate/collegeofartsandscience/biologicalsciences/ma-biological-sciences)
- PhD in Biological Sciences (http://catalog.missouri.edu/undergraduategraduate/collegeofartsandscience/biologicalsciences/phd-biological-sciences)

College of Arts and Science
218 Tucker Hall
1-800-553-5698
573-882-1847
http://biology.missouri.edu

Co-Director of Graduate Studies: Raymond Semlitsch
Co-Director of Graduate Studies: Steve Alexander

About Biological Sciences

The Division of Biological Sciences offers a unique integration of world-class research, award-winning graduate and undergraduate training, and outstanding community outreach. Our research mission includes the acquisition of new knowledge through basic research, and coordinated translational research to improve human health, our food supply, and our environment. Graduate training programs emphasize the excitement of discovery and the development of individual creativity and critical reasoning skills, with graduate mentors who are experts at the frontiers of their field. Because science exposure in the pre-college years is critical to the development of both scientists and informed citizens, we also offer special outreach programs for secondary school science teachers, students and citizens in Missouri.

The Division of Biological Sciences actively recruits outstanding graduate students from both national and international pools. Selected candidates are interviewed. The best are admitted to the division for graduate study.

Graduate

- MA in Biological Sciences (http://catalog.missouri.edu/undergraduategraduate/collegeofartsandscience/biologicalsciences/ma-biological-sciences)
- PhD in Biological Sciences (http://catalog.missouri.edu/undergraduategraduate/collegeofartsandscience/biologicalsciences/phd-biological-sciences)

Departmental Honors

The department strongly encourages participation in departmental honors. The heart of the honors program is a year-long experience in laboratory, field, or theoretical work in any area of biology. Students work directly with outstanding faculty mentors from the Division of Biological Sciences or other life science units on campus.

Students may earn degrees with honors by completing BIO_SC 4950H and BIO_SC 4952H (6 credits) and preparing a manuscript suitable for publication in a journal or the abstract of an oral or poster presentation at an on-campus symposium or at a regional or national meeting of a professional society. Students should meet with the honors program director to arrange their research experience. The honors program requires sophomore standing or higher and a GPA of 3.3. Students with a GPA between 3.0 and 3.29 may petition the director of the honors program for admission. Students must however graduate with a GPA of 3.3 to receive departmental honors. The honors program director is Professor David Setzer, 410 Tucker, 882-6821, setzerd@missouri.edu.

Carol Martin
martino@missouri.edu

Nicholas Holladay
holladayj@missouri.edu

Jordan Parshall
parshallj@missouri.edu

Graduate Program

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Even more important than the quantitative Grade Point Average and GRE scores, we are interested in evidence of critical qualitative characteristics including: undergraduate research experiences and presentation of research results; ability to face and overcome obstacles; exceptional motivation, work ethic, intellectual vitality, initiative, creativity, critical thinking ability and leadership ability.

**Areas of Study**

The division offers primarily PhD degrees. General areas of research emphasis within the division include evolutionary biology, ecology and behavior; genetic, cellular, molecular and developmental biology; neurobiology and behavior; and plant sciences. Within these general areas, students may devise more specific graduate programs in, for example, plant genetics, invertebrate chemical communication or neurophysiology.

**Interdisciplinary Research**

Several students are currently involved in interdepartmental programs in neurosciences, genetics, plant biochemistry and physiology, cellular and molecular biology, the Conservation Biology Program, microbiology and physiology. In addition, the presence on this campus of a School of Medicine, College of Agriculture, Food and Natural Resources and College of Veterinary Medicine provides opportunities for direct interaction with a variety of established research scientists. Faculty in the division also participate in the Genetics Area Program, the Pathobiology Area Program, the Molecular Biology Program, the Interdisciplinary Program in Plant Biochemistry and Physiology, the Interdisciplinary Neuroscience Program and the Conservation Biology Program.

All entering graduate students should have a broad background in biology and should have completed courses in mathematics through integral calculus, chemistry through organic chemistry and a year of physics. Exceptions may be made for individual students. Outstanding students with undergraduate degrees in areas other than biology (such as chemistry, physics, engineering, mathematics or psychology) are encouraged to apply with the understanding that subject matter in biology will be addressed in the first year of graduate study.

**Research Facilities and Resources**

Divisional faculty have ready access to the campus computing network and microcomputers in their laboratories. Beyond the specialized equipment in each faculty research laboratory, departmental and campus equipment and facilities available to graduate students include:

- Molecular and cellular biology core facilities, including DNA (with Next Generation Sequencing), Electron Microscopy, Cell and Immunobiology, Informatics, Nuclear Magnetic Resonance, Molecular Cytology, Proteomics, Structural Biology, and Transgenic Animal;
- a 250,000-specimen herbarium;
- a new 15,000-square-foot greenhouse complex;
- animal-care facilities suitable for mice, bats, rats, rabbits and amphibians;
- a 14-acre botany preserve on the campus and a 146-acre prairie research station;
- 24 walk-in plant growth chambers with regulated light, temperature and humidity controls;
- cell and tissue culture facilities;
- growth chambers;
- scanning spectrophotometers and kinetic fluorimeters;
- ultracentrifuges and scintillation counters;
- HPLC facilities;
- sound isolation acoustic chambers;
- neurophysiological recorders, oscilloscopes and amplifiers; and,
- microneurosurgery facilities and equipment.

**Funding**

Financial support is available through research training grants, fellowships, scholarships, graduate research assistantships, and graduate teaching assistantships.