

Biological Sciences

Training in the Department of Biological Sciences emphasizes learning and discovery. The curriculum is comprehensive, and virtually all students engage in original research. A degree in Biological Sciences prepares students for careers in several areas, including research, biotechnology, environmental management, education and the health professions.

At Missouri all Biological Sciences courses are taught by S&T faculty members active in research. Classes are generally small, providing exceptional opportunity for interaction. Most undergraduate students participate in research, learning techniques and developing skills that prepare them for future careers. A background in mathematics and physical sciences, together with supporting course work in the humanities and social sciences provides a well-rounded educational experience. Consequently, Biological Science graduates have an excellent and sustained record of success in employment and acceptance into graduate and professional schools.

Scholarship Information

A wide variety of university scholarships and loans, as well as departmental scholarships, are available for biological sciences students.

Faculty

Professors:

Robert S. Aronstam, (Chair), Ph.D., University of Rochester
Roger Brown, Ph.D., Colorado State
Melanie Mormile, Ph.D., Oklahoma

Associate Professors:

Ronald L. Frank, Ph.D. Ohio State
Yue-Wern Huang, Ph.D., Wisconsin-Madison
Dev Niyogi, Ph.D., Colorado
David Westenberg, Ph.D., UCLA

Assistant Professors:

Katie Shannon, Ph.D., Harvard Medical School
Chen Hou, Ph.D., University of Missouri-Columbia
Matthew Thimgan, Ph.D. University of North Carolina

Associate Teaching Professor, Assistant Affiliate Director

Terry Wilson, M.S., Missouri State

Adjunct Faculty:

Daniel Oerther, Ph.D., University of Illinois
Dwayne A. Elias, Ph.D.

Degree Options and Minors

Bachelor of Arts, Biological Sciences
Bachelor of Arts, Biological Sciences, Teacher Certification
Bachelor of Arts, Biological Sciences, emphasis in Pre-Med
Bachelor of Science, Biological Sciences
Minor, Biological Sciences
Minor, Bioinformatics

Student Organizations and Undergraduate Research

The department sponsors Helix Club for biological sciences students, a student chapter of Phi Sigma (a national biology honor society), and Scrubs (an organization open to pre-med and other pre-health profession students on the campus). Undergraduate research opportunities are available for student participation in faculty research projects either as volunteers, research assistantships, members of an genetic engineering design team, or through Missouri S&T's Opportunities for Undergraduate Research Experience program.

Entry-Level Job Titles

- Teacher
- Lab Assistant
- Lab Technician
- Research Assistant
- Pharmacy Technician
- Pharmaceutical Sales Representative

Employment and Graduate Studies

Acceptance of Missouri S&T graduates to professional schools of medicine, dentistry, veterinary medicine and pharmacy, and subsequent performance has been exceptionally high. Many biological sciences graduate have been accepted into prestigious graduate study programs in a variety of areas, including biochemistry, microbiology, immunology, molecular genetics and genetic engineering, marine biology, cell and mammalian physiology, human physiology and evolution. Employment opportunities vary and future prospects for graduates in the biological sciences remain promising.

Co-op and Internship Availability

Co-op, summer intern and job shadowing programs are available to students. These programs provide students with the opportunity to integrate their classroom studies with learning through productive work experiences in a field related to a student's academic or career goals.

Departmental Contact Information:

105 Schrenk Hall 573.341.4861
biosci.mst.edu biosci@mst.edu
Department Chair: Dr. Robert Aronstam

Bachelor of Arts

Biological Sciences 120 credit hours

General B.A. Core Requirements

| | Credit |
|---|--------|
| Humanities..... | 18 |
| (Including English 1120 & English 1160) | |
| Math and Physical Science..... | 9 |
| Chemistry..... | 17 |
| (Including Chem 1310, 1319, 1320, 1100, 2210, 2220) | |
| Foreign Language..... | 11 |
| Social Sciences..... | 18 |
| (Including Hist 1100 or 1200 & Hist 1300 or 1310, Pol Sci 1200) | |
| Computer Science or Statistics..... | 3 |

Biological Sciences Degree Requirements

| | |
|---|----|
| Biological Sciences Requirements..... | 21 |
| Bio Sci 1201-Introduction to Biological Sciences | |
| Bio Sci 1213 & 1219-Principles of Biology and Lab | |
| Bio Sci 1223 & 1229-Biodiversity and Lab | |
| Bio Sci 2213 & 2219-Cellular Biology with Lab | |
| Bio Sci 2223-Genetics | |
| Bio Sci 2263-Ecology | |
| Bio Sci 4010-Seminar | |
| Advanced Biological Sciences Electives..... | 9 |

Minor Requirements and Electives

| | |
|-------------------------|--------|
| Minor Requirements..... | varies |
| Electives..... | varies |

minor requirements and elective courses required until student reaches a total of: **120 credit hours

Bachelor of Arts

Biological Sciences w/ Pre-Med Emphasis 120 credit hours

The requirements are the same as the B.A. degree in Biological Sciences, plus the following additions:

| | |
|--|------|
| Organic Chemistry Labs (2219 & 2229)..... | 2 |
| Physics with Lab (1111 or 1145, 1119, 2111 or 2145, & 2119)..... | 8-10 |

Bachelor of Arts

Biological Sciences w/ Teacher Certification 137 credit hours

| | |
|---|----|
| Communication Skills..... | 9 |
| (English 1120, 1160 & Speech 1185) | |
| Humanities..... | 12 |
| Social Sciences..... | 15 |
| (Hist 1100 or 1200 & Hist 1300 or 1310, Pol Sci 1200, Psych 1101) | |
| Math and Physical Science..... | 29 |
| (Physics, Math, Statistics, Comp Sci, Chem) | |
| Biological Sciences..... | 30 |
| Professional..... | 26 |
| Clinical..... | 16 |

Notes

Detailed information on course equivalencies, acceptable credits for elective coursework, grade requirements and prerequisites is available from Missouri S&T's Registrar's Office at registrar.mst.edu

Bachelor of Science

Biological Sciences 130 credit hours

| | |
|---|--------|
| Humanities..... | 12 |
| (Including English 1120 & English 1160) | |
| Social Sciences..... | 9 |
| (History, Economics & Political Science) | |
| Physics..... | 8-10 |
| Physics 1111 or 1145, 1119, 2111 or 2145, 2119 | |
| Chemistry..... | 22 |
| General Chemistry (Chem 1310, 1319, 1320, 1100); Biochemistry (Chem 4610); Organic Chemistry with lab (Chem 2210, 2219, 2220, 2229) | |
| Mathematics..... | varies |
| Calculus (Math 1208 or 1214) | |
| Biological Sciences Requirements..... | 24 |
| Bio Sci 1201-Introduction to Biological Sciences | |
| Bio Sci 1213 & 1219-Principles of Biology and Lab | |
| Bio Sci 1223 & 1229-Biodiversity and Lab | |
| Bio Sci 2213 & 2219-Cellular Biology with Lab | |
| Bio Sci 2223-Genetics | |
| Bio Sci 235-Evolution | |
| Bio Sci 2263-Ecology | |
| Bio Sci 4010-Seminar | |
| Advanced Biological Sciences Electives..... | 22 |
| Free Electives..... | varies |

Biological Sciences Minor

This minor requires a minimum of 20 credit hours which must include:

- Bio 1113/1213 & 1219: General Biology/Principles of Biology
- Bio 2213 & 2219: Cellular Biology
- Seven hours of advanced (4000 level) Bio Sci courses to be taken in consultation with departmental advisor.

Bioinformatics Minor

- Bio 1113 & 1213: Principles of Biology
- Bio 2213 or 2223: Cellular Biology/General Genetics
- Bio 4323: Molecular Genetics
- Com Sci 1570 & 1580: Intro Programming and Labs
- Comp Sci 1510: Data Structures I
- Comp Sci 2300: File Structure and Intro to Database Systems
- Bio 5323: Bioinformatics
- Stat 5425: Biostatistics
- One additional course

***Check the course catalog for more detailed information on all course degree and minor programs.**