Biology

FROM STUDY TO SKILLS

All academic programs offered at the UM help students develop valuable transferable skills. Biologists study life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy. Subfields range widely from biochemistry and molecular biology to physiology and ecology.

The various biology concentrations are intended to be part of the broad intellectual experience of a liberal arts education; at the same time they may prepare students for graduate and professional school. As a biology concentrator, you will develop project skills from research and investigation to analysis and communication.

Related fields include Program in the Environment, Chemistry, Psychology, Anthropology, Museum Studies, Pharmacy, Public Health, Medicine, and Statistics.

SKILLS AND ABILITIES

Investigative Skills
Identifying problems
Assessing risks
Defining expected/potential results
Inspecting specimens
Cataloging information

Research/Quantitative Skills
Defining problems
Designing experiments
Utilizing laboratory equipment
Using computers for computation/simulation
Conducting studies
Recording observations
Interpreting results
Utilizing statistical tests to predict outcomes
Preparing statistical reports

Analytical Skills
Examining components of problems/ideas
Reasoning logically
Categorizing data
Making projections from data
Organizing ideas/information
Evaluating the effects of phenomena

Communication Skills
Writing research proposals
Contributing to teams
Summarizing research findings
Explaining complex ideas for technical and nontechnical audiences
Designing charts, graphs and other visual aides
Reporting results and conclusions orally and in writing
Presenting alternative explanations

BUILDING YOUR SKILLS OUTSIDE THE CLASSROOM

Employers seek out individuals who can demonstrate excellent verbal and written communication skills, teamwork and interpersonal skills, initiative, and a strong work ethic. Student organizations and campus employment offer valuable opportunities to add to the skills you are developing in your classes. The Society of Biology Students is sponsored by MCB and EEB and presents seminars and sponsors other events, as initiated by the student membership. Other options include study abroad, off-campus employment or volunteering in the community. Finally, a summer internship may be the best way of all to test out a career field and develop marketable skills.
FROM SKILLS TO CAREER

Biology concentrators develop both general and technical skills applicable to a wide range of careers in the sciences, health care, business, government, and education. For example, the ability to conduct investigations and perform analyses may be equally useful whether working as a college administrator, director of biomedical communications, curator of a natural history museum, or teacher. Many concentrators go on to graduate or professional school. The list below is a sample of careers undertaken by Biology graduates.

Investigative Skills
- Environmental protection specialist
- Public health officer
- Water quality inspector
- Food and drug inspector
- Conservationist
- Industrial hygienist
- Pest control consultant

Quantitative/Research Skills
- Biological researcher
- Biochemist
- Biostatistician
- Data analyst
- Aquarist
- Parasitologist
- Marine biologist
- Botanist
- Zoologist
- Ichthyologist
- Entomologist
- Curator, botanical garden
- Geneticist
- Food technician
- Toxicologist
- Bacteriologist
- Epidemiologist

Analytical Skills
- Programmer/analyst
- Hunger policy analyst
- College professor
- College administrator
- Administrator, nuclear waste program
- Ecologist
- Bioengineer
- Molecular biologist
- Veterinarian
- Physician
- Health policy consultant
- Administrator, HMO
- Medical librarian

Communication Skills
- Park ranger
- Park naturalist
- K-12 teacher
- Fundraiser, environmental organization
- Science magazine editor
- Technical writer
- Wildlife photographer
- Medical illustrator
- Pharmaceutical sales rep
- Trainer

For more career information, see O*Net at http://online.onetcenter.org/

CONCENTRATION REQUIREMENTS

The undergraduate biology program offers seven different concentrations: Biology, Cellular and Molecular Biology (CMB), Ecology and Evolutionary Biology (EEB), General Biology, Microbiology, Neuroscience, and Plant Biology. We also participate in interdepartmental concentrations in Anthropology-Zoology, Program in the Environment, Biochemistry, and Biophysics. In addition, we offer minors in Biology, EEB, and Plant Biology, along with an Honors program.

NEXT STEPS/RESOURCES

To begin connecting to professionals in fields that interest you, create your own LinkedIn account:
www.careercenter.umich.edu/students/networking/linkedin_intro.html

To identify internships or job opportunities, visit Career Center Connector:
www.careercenter.umich.edu/c3student/

On campus jobs (work-study and non work-study jobs) are listed at:
https://studentemployment.umich.edu/JobX_Home.aspx

Maize Pages list hundreds of organizations for students to get involved in:
http://studentorgs.umich.edu/maize

Volunteer Connection lists volunteer opportunities in local organizations:
http://volunteer-connection.umich.edu/

The Career Center
3200 Student Activities Building
734-764-7460
www.careercenter.umich.edu
www.facebook.com/careercenter.umich
http://twitter.com/careercenter

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