

DELTA COLLEGE  
COUNSELING/ADVISING & CAREER SERVICES  
**BIOLOGIST**

Salary Range: \$34,300 – \$95,130

Personal Interests: Activities of a scientific and technical nature

Work Environment: Regular hours in offices or laboratories and are usually not exposed to unsafe or unhealthy conditions

**Description**

Biologists study living organisms and their relationship to their environment. Many work in research and development and some conduct basic research to advance knowledge of living organisms including viruses, bacteria, and other infectious agents. Past research has resulted in the development of vaccines, medicines, and treatments for cancer and other diseases. Basic biological and medical research continues to provide the building blocks necessary to develop solutions to human health problems and to preserve and repair the natural environment. Many biologists work independently in private industry, university, or government laboratories, often exploring new areas of research or expanding on specialized research started in graduate school. Those who are not wage and salary workers in private industry typically submit grant proposals to obtain funding for their projects. Colleges and universities, private industry, and federal government agencies, such as the National Institutes of Health and the National Science Foundation, contribute to the support of scientists whose research proposals are determined to be financially feasible and have the potential to advance new ideas or processes. Most biologists are further classified by the type of organism they study or by the specific activity they perform. Specialized occupations for biologists may be: microbiologists, physiologists, cytologists, geneticists,

zoologists, animal ecologists, plant pathologists or aquatic biologists.

**Working Conditions**

Biological scientists usually work regular hours in offices or laboratories and usually are not exposed to unsafe or unhealthy conditions. Those who work with dangerous organisms or toxic substances in the laboratory must follow strict safety procedures to avoid contamination. Many biological scientists take field trips that involve strenuous physical activity and primitive living conditions.

**Training, Other Qualifications**

A bachelor's degree is adequate for some non-research jobs in biology. Other graduates with a bachelor's degree start as biological scientists in testing and inspection or obtain jobs related to biological science such as technical sales or service representatives. In some cases, graduates with a bachelor's degree are able to work in a laboratory environment on their own projects, but this is unusual. Some may work as research assistants. Others become biological technicians, medical laboratory technologists or, with courses in education, high school biology teachers. Advanced degree programs include classroom and field work, laboratory research, and a thesis or dissertation. Biological scientists who have advanced degrees often take temporary postdoctoral research positions that provide specialized

research experience. For biological scientists, the Ph.D. degree usually is necessary for independent research and for advancement to administrative positions. A master's degree is sufficient for some jobs in applied research or product development and for jobs in management, inspection, sales, and service.

Delta College offers pre-biology curriculums that are transferable to several Michigan universities toward obtaining a bachelor's degree in biology. Students may obtain an associate's degree in arts or science. Interested students need to check with Counseling & Academic Advising to find out which universities and colleges have a transfer agreement with Delta College.

**Job Outlook**

The employment of biological scientists nationally is expected to increase faster than the average for all occupations through the year 2014. An average of 4,000 annual openings is expected. Additional openings will become available as workers change jobs or occupations.

The number of biological scientists employed in Michigan is expected to grow as a result of increased interest in preserving the natural environment and a continuing interest in medical research. Microbiologists will increase at a faster than average rate, but only 20 annual openings are expected. Zoologists and wildlife biologists will grow at a slower rate with only 7 annual openings expected.

Employment opportunities in industry and government should grow as environmental research and development increases and new laws and standards

protecting the environment are enacted. However, because the number of graduates of bachelor's degree programs in biological science will exceed the number of available positions, some graduates will have to find employment in related fields.

**Earnings**

Nationally, the average annual wage for all biological scientists was \$63,560. In Michigan, (May 2006) biological scientists earned:

TITLE	AVERAGE SALARY
Life Scientist	\$64,480
Microbiologist	\$65,200
Soil and Plant Scientists	\$59,330
Zoologist/Wildlife Biologist	\$52,1 20

**Related Occupations**

Occupations related to biologist are chemist, botanist, biochemist, agricultural scientist, forester, physicist, medical doctor, dentist and veterinarian.

biologist.doc crg 11/2003 updated 9/07  
Sources: Occupational Outlook Handbook, Michigan Occupational Information System, Delta College Catalog.

Career Center, D132  
Bay City/Saginaw (989) 686-9072  
Midland/Auburn (989) 495-4000 ext.9072  
Frankenmuth, Birch Run, Reese & Vassar: (989) 758-3400, ext. 9072  
<http://www.delta.edu/careercenter>

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