

Biological Scientist

■ Job Description

Biological scientists study living organisms and their relationship to their environment. Most specialize in some area of biology such as ornithology (the study of birds), microbiology (the study of microscopic organisms), or neurobiology (the study of the nervous system). About two-fifths of all biological scientists work in research and development. Some conduct basic research to increase the knowledge of living organisms. Others apply research to provide knowledge to improve medicine, the environment, or agriculture.

Biological scientists may work in laboratories and use laboratory animals in their research with the electron microscopes, computers, electronic instruments, or a wide variety of other equipment. Research is often performed outside the laboratory. In the state of Illinois, these scientists work for the Illinois Natural History Survey, Illinois Department of Natural Resources, or the Illinois Department of Transportation.

Other biological scientists work in management or administration. They may plan and administer programs for testing foods or drugs, direct activities in zoos, or in botanical gardens.

Others may work as consultants to business firms or to government. Advances in basic biological knowledge, especially at the genetic level have initiated the new field of biotechnology. The applications of this technology have been extremely important in the health field in creating new drugs or in development and manufacturing of old drugs.

Biological scientists often are classified as aquatic biologists, biochemists, botanists, microbiologists, physiologists, zoologists, or ecologists.

■ Job Settings

Scientists generally work in offices, laboratories, or classrooms associated with colleges, universities, or medical schools. Many are also associated with government or private industry such as pharmaceutical companies. Four in ten biological scientists are employed by local, state, or federal governments.

■ Projected Need

Both nationally, and in Illinois, employment of biological scientists is expected to grow faster than average through 2010. Much of this growth is expected to come from increased medical research. Research related to health issues is expected to expand. Funding for AIDS, cancer and Alzheimer's disease research will also result in employment growth.

Despite this growth, competition will be keen for basic research positions. Many factors will create this competition. One, funding sources such as the federal government will be awarding smaller grants. As a result, fewer scientists will be hired under each grant. Two, the number of newly trained scientists will increase faster than current scientists are retiring. Thus, more people will be trying to win the same number of grants. Finally, growth of new biotechnology companies has begun to slow down.

When the economy slows down, biological and medical scientists are less likely to lose their jobs than those in other occupations. However, a recession could further tighten funding sources for new research.

About 980 medical scientists and 1,570 biological scientists were employed in Illinois in 2000

■ Salaries

Wages vary widely by employer and in different areas of the country. Wages may also vary depending on the scientist's education and professional reputation.

Nationally, the median wage for biochemists and biophysicists is \$27.45 per hour. Microbiologists earn slightly less. Median wage for medical scientists is \$26.90 per hour.

In Illinois, salaries for biological scientists range from \$20.98 to \$31.70 per hour. Medical scientists earn \$27.10 per hour.

■ Related Careers

The common background of a biological scientist is a minimum of college algebra, trigonometry, calculus and statistics, general and organic chemistry, and physics, plus a major in the biological sciences which will also satisfy entry requirements to medical, dental, veterinary or other health profession schools.

■ **Advanced Training**

Most colleges and universities in Illinois will prepare a bachelor's degree candidate for a position as a biological scientist. Most public universities and many larger private universities offer a master's degree in the biological sciences. Only the large public and private universities offer the doctorate in the biological sciences.

■ **Related Educational Programs**

The programs of study listed below are the recommended areas of study to pursue for this occupation. Clicking on these will lead to files that show in-state and national schools that offer these programs.

The following link(s) will take you to CIS for more information. CIS requires an ID and password that can be obtained at <http://cis.ilworkinfo.com/loginhelp/login.asp>

[Biology and Biological Sciences](#)

[Biomedical Sciences](#)

[Biotechnology](#)

[Human and Medical Genetics](#)

[Medical Microbiology and Bacteriology](#)

[Pharmaceutical Sciences](#)

■ **Resources**

American Institute of Biological Sciences

1444 I Street, NW, Suite 200

Washington, DC 20005

Phone: 202.628.1500

E-mail: admin@aibs.org

<http://www.aibs.org>

Select "Education" then "Careers in Biology."

Society for Integrative and Comparative Biology

1313 Dolley Madison Blvd., Suite 402

McLean, VA 22101

Phone: 800.955.1236

E-mail: SICB@BURKInc.com

<http://www.sicb.org>

Select "About" then "Careers." Choose items from the menu.

American Physiological Society

9650 Rockville Pike

Bethesda, MD 20814-3991

Phone: 301.634.7164

E-mail: educatio@the-aps.org

<http://www.the-aps.org>

Click on "Careers."

American Society for Biochemistry and
Molecular Biology

9650 Rockville Pike

Bethesda, MD 20814-3996

Phone: 301.634.7145

E-mail: asbmb@asbmb.faseb.org

<http://www.asbmb.org>

Click on "Education." Select "Career Brochure."

Botanical Society of America

4474 Castleman Avenue

P.O. Box 299

St. Louis, MO 63166-0299

Phone: 314.577.9566

E-mail: bsa-manager@botany.org

<http://www.botany.org>

Click on "Career Opportunities."

American Society for Microbiology

1752 N Street, NW

Washington, DC 20036-2904

Phone: 202.942.9283

<http://www.asm.org>

Click on "Education" then select "Students."