Sloan Career Cornerstone Center

Biological Technician Overview

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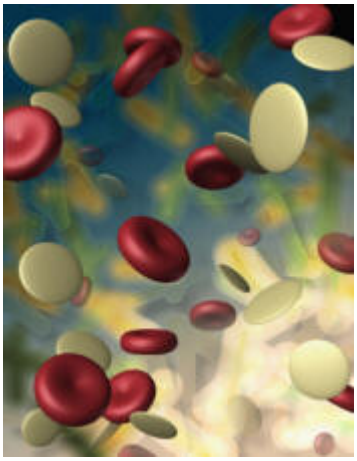
The Field

Biological technicians work with biologists studying living organisms. Many assist scientists who conduct medical research -- helping to find a cure for cancer or AIDS, for example. Those who work in pharmaceutical companies help develop and manufacture medicine.

Those working in the field of microbiology generally work as laboratory assistants, studying living organisms and infectious agents. Biological technicians also analyze organic substances, such as blood, food, and drugs. Biological technicians working in biotechnology apply knowledge and techniques gained from basic research, including gene splicing and recombinant DNA, and apply them to product development.

Preparation



Most science technicians need an associate degree or a certificate in applied science or science-related technology. Biological technicians usually need a bachelor's degree in biology or a closely related field. Most universities offer bachelor's degrees in Biology, and some offer specialized programs in Biological Technology.

Many technical and community colleges offer associate degrees in a specific technology or more general education in science and mathematics. A number of associate degree programs are designed to provide easy transfer to bachelor's degree programs at colleges or universities.

Graduates of bachelor's degree programs in science who have considerable experience in laboratory-based courses, have completed internships, or have held summer jobs in laboratories also are well qualified for science technician positions and are preferred by some employers.

Some schools offer cooperative-education or internship programs, allowing students the opportunity to work at a local company or some other workplace while attending classes during alternate terms. Participation in such programs can significantly enhance a student's employment prospects.

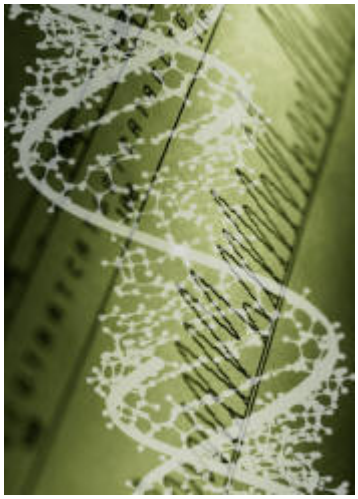
Precollege Prep

People interested in careers as science technicians should take as many high school science and math courses as possible. Science courses taken beyond high school, in an associate or bachelor's degree program, should be laboratory oriented, with an emphasis on bench skills. A solid background in applied chemistry, physics, and math is vital.

Other Skills

Communication skills are important because technicians are often required to report their findings both orally and in writing. In addition, technicians should be able to work well with others. Because computers often are used in research and development laboratories, technicians should also have strong computer skills, especially in computer modeling. Organizational ability, an eye for detail, and skill in interpreting scientific results are important as well, as are a high mechanical aptitude, attention to detail, and analytical thinking.

Day in the Life



Science technicians work under a wide variety of conditions. Most work indoors, usually in laboratories, and have regular hours. Biological technicians may have more opportunity to work outdoors at some point during the work week. Some occasionally work irregular hours to monitor experiments that cannot be completed during regular working hours.

Advances in automation and information technology require technicians to operate more sophisticated laboratory equipment. Science technicians make extensive use of computers, electronic measuring equipment, and traditional experimental apparatus.

Technicians usually begin work as trainees in routine positions under the direct supervision of a scientist or a more experienced technician. As they gain experience, technicians take on more responsibility and carry out assignments under only general supervision, and some eventually become supervisors.

Some science technicians may be exposed to hazards from equipment, chemicals, or toxic materials. Biological technicians sometimes work with disease-causing organisms or radioactive agents.

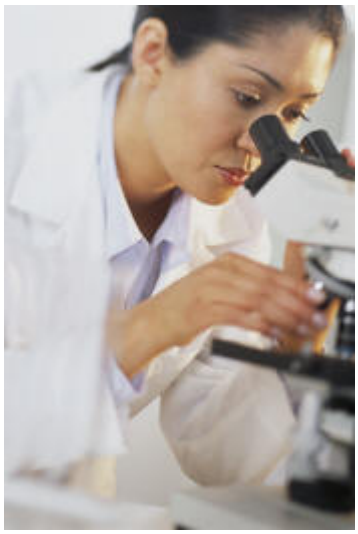
Earnings

According to the U.S. Bureau of Labor Statistics, the median hourly earnings of biological technicians is about $17.17 per hour. In 2007, the average annual salary in the Federal Government was $40,629 for biological science technicians.

Employment

Biological technicians hold about 79,000 jobs in the United States. This is the largest specialty area of all science technicians. About 30 percent of biological technicians work in professional, scientific, or technical services firms; most other biological technicians work in educational services, Federal, State, and local governments, or pharmaceutical and medicine manufacturing.

Career Path Forecast



Overall employment of science technicians is expected to grow 12 percent during the 2006-16 decade, about as fast as the average for all occupations. The continued growth of scientific and medical research -- particularly research related to biotechnology -- will be the primary driver of employment growth, but the development and production of technical products should also stimulate demand for science technicians in many industries.

Employment of biological technicians should increase faster than the average, as the growing number of agricultural and medicinal products developed with the use of biotechnology techniques boosts demand for these workers. Also, an aging population and stronger competition among pharmaceutical companies are expected to contribute to the need for innovative and improved drugs, further spurring demand. Most growth in employment will be in professional, scientific, and technical services and in educational services.

Professional Organizations

Professional societies provide an excellent means of keeping current and in touch with other professionals in the field. These groups can play a key role in your development and keep you abreast of what is happening in your field. Associations promote the interests of their members and provide a network of contacts that can help you find jobs and move your career forward. They can offer a variety of services including job referral services, continuing education courses, insurance, travel benefits, periodicals, and meeting and conference opportunities. The following is a partial list of professional associations serving biological technicians.

- **American Society for Biochemistry and Molecular Biology (www.asbmb.org)**
- **American Society for Cell Biology (www.ascb.org)**
- **American Society for Nutritional Sciences (www.asns.org)**
- **American Society for Microbiology (www.asm.org)**
- **American Society of Human Genetics (www.ashg.org)**