



Careers in Biotechnology

The biotechnology industry in the United States has grown rapidly, nearly quadrupling in revenues from 1992 to 2003, according to the Biotechnology Industry Organization (BIO). In addition, the BIO predicts continued industry growth as the number of companies, their sizes, and the number of jobs available increases. In 2003, approximately 198,300 people were employed in the US biotechnology industry, according to the BIO.

WHAT IS BIOTECHNOLOGY?

The BIO defines biotechnology as the use of cellular and molecular processes to solve problems or make products, such as vaccines, diagnostic tests, disease resistant crops, and so forth. Since the anthrax attacks of 2001, which made the general public aware of the threat of bioterrorism, the biotech field has gained attention. Biotech workers, after all, are the ones who work on developing ways of detecting the presence of infectious diseases as well as developing the antidotes to save us. Of course, not every biotech worker walks around in a contamination suit passing out vaccines. Areas of the industry include: research and development, clinical research, manufacturing, and quality control.

HOW DO I BECOME A BIOTECHNOLOGY WORKER?

Since many specialties exist in biotechnology, there are many ways to train for the field. For example, scientists working in research and development may have a PhD in a science field, an MD, or both. Others who work in research and development may include laboratory assistants, research assistants, and plant breeders. These workers do not need advanced degrees such as a PhD. In fact, many may have diplomas or associate degrees in biotechnology. Workers in clinical research, also known as testing or validation, usually have science degrees or nursing degrees. Those in administrative positions may have more advanced degrees. Engineers in manufacturing and quality control need at least a bachelor's degree in their specialty; technicians need associate degrees.

HOW MUCH CAN I EARN AS A BIOTECHNOLOGY WORKER?

Earnings vary widely depending on the position a worker has, the education and experience, and the size and location of the company. In general, however, this is a field that pays fairly well. Technicians and assistants can expect to have pay lower than others with advanced degrees.

WHAT IS THE EMPLOYMENT OUTLOOK FOR BIOTECHNOLOGY WORKERS?

The outlook for this field is bright. The number of biotechnology companies increased by 12 percent from 1997 to 2004. Options will be best for workers with advanced training and experience.

WHAT CAN I DO NOW TO PREPARE FOR A BIOTECHNOLOGY CAREER?

Take as many health, biology, anatomy and physiology, mathematics, biology, chemistry, physics, English, and speech classes in high school as you can. You can also read books and visit websites about biotechnology or talk with your counselor or teacher about setting up a presentation by a biotechnology worker.

FOR MORE INFORMATION

- ✓ **Biotechnology Industry Organization**
www.bio.org
- ✓ **Biotechnology Resources**
www.ncbi.nlm.nih.gov/biotech101/links.cfm
- ✓ **BioWorld Online**
www.bioworld.com
- ✓ **Council for Biotechnology Information**
www.whybiotech.com
- ✓ **GradSchools.com: Biotechnology**
www.gradschools.com/listings/menus/biotechnology_menu.html
- ✓ **National Center for Biotechnology Information**
www.ncbi.nlm.nih.gov