



CAREER CONNECTION



Biotechnology Careers

[By Tony Jacowski]

Biotechnology refers to technological applications that employ living organisms and biological systems extensively in the fields of medicine, food science, and agriculture. Biotechnology is successfully applied to produce organic products as well as biological weapons. Applications of biotechnology include recycling and waste treatment. The use of biotechnology can effectively clean areas that are contaminated owing to continuous industrial activities. Red biotechnology is a branch of biotechnology that is utilized in a variety of medicinal processes to produce different antibiotics. White biotechnology is applied to industrial processes, while green biotechnology is incorporated in agricultural processes. Blue biotechnology has been applied in marine and aquatic processes; however, this form of biotechnology is not very common. Statistics reveal a growth rate of 24% in the sales figures of biotechnology products, with maximum growth being witnessed in Latin America. Of the estimated 4,000 biotechnology firms around the world, about 30% of them are located in the United States. Due to the widespread application of biotechnology, this field has also become a vital career option for many people.

Career Options

Individuals interested in biotechnology can find an array of career choices, as this field is rapidly expanding. It is important, however, for such individuals to be aware of the various disciplines of biotechnology before deciding on their field of specialization. Typically, biotechnology students can specialize in any of the six major fields of biotechnology.

1. Biological Scientists — Biological scientists conduct detailed studies on living organisms by effectively employing advanced technology. This field comprises the study of animals, plants, and microscopic organisms. Individuals can have a promising career in this field as food and agricultural scientists, pharmacists, veterinarians, biomedical engineers, conservation and forensic scientists, and general practitioners.

2. Biomedical Engineers — Biomedical engineers have the knowledge and expertise to make artificial body parts, commonly known as prostheses. Individuals specialized in this field can pursue careers as physical therapists, computer hardware engineers, mechanical engineers, and surgeons.

3. Clinical Laboratory Technologists—

Individuals can obtain the expertise necessary to detect body fluids and tissues, and to check for symptoms of any disease after conducting various tests. Such individuals can pursue careers as pathologists, biological scientists, chemists, or material scientists.

4. Forensic Scientists — Forensic scientists, or crime laboratory analysts, are instrumental in providing vital scientific information that can be crucial for criminal proceedings. Career options for such individuals include careers as detectives, archaeologists, and anthropologists.

5. Medical Scientists — Medical scientists conduct intensive research on bacteria and various viruses that are the root causes of various diseases, and utilize their research to create a variety of medicines and vaccines to treat or eradicate these diseases. There are plenty of career options for medical scientists, including work as statisticians, internists, chemists, and material scientists.

6. Pharmacists — Pharmacists are responsible for distributing medicines and also for guiding patients in terms of correct

medication and appropriate dosage. Career options are unlimited and include work as advanced practice nurses, anesthesiologists, psychiatrists, and pharmacy technicians.

Biotechnology schools are found everywhere, and they impart knowledge to students about various aspects of this field. Some of the best known universities in America that offer courses in biotechnology include Northeastern University, Yale University, American University, Pennsylvania State University, the University of Florida, Iowa State University, and the University of Minnesota.

About the Author

Tony Jacowski is a quality analyst for *The MBA Journal*. Aveta Solution's Six Sigma Online (www.sixsigmaonline.org) offers online six sigma training and certification classes for six sigma black belts, green belts, and yellow belts.

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