



Biotech Careers: Making Your Mark in Medicine and Beyond

Broadly defined, biotechnology is the science of using molecular biology to create new products. Jobs in biotechnology vary widely, although there are three general areas of biotech careers: medical research and development, agricultural research and development, and biotech production. Most careers in biotechnology fall into one of these three categories.

Medical Research and Development

Perhaps the best-known area of current biotechnology is its function in medical research and the development of pharmaceuticals and medical therapies. Biotechnology scientists and technicians working in medical investigation and development study the human body and the complex way in which it functions. Medical biotech jobs include geneticist, biomedical engineer, and clinical research coordinator and associate.

The geneticist works in medical or agricultural research and studies genes from plants, animals, and humans. Their research goal is to determine how genes interact with each other, evolve, and duplicate in a variety of variables and situations. With the knowledge they have gained so far, geneticists are making progress in finding ways to prevent a disease before it can even begin by custom tailoring medicine to a person's specific genetic background.

A doctoral degree is necessary for a career as a geneticist. Geneticists usually major in one of the physical sciences with a minor in biology. Doctoral degree programs in genetics are heavy in laboratory work, research projects, and genetics-related courses.

Biomedical engineers have the exciting opportunity of combining biology and medicine with engineering to make impressive and life-changing developments. Inventions such as artificial limbs and organs, edible sensors, and lasers used in corrective eye-surgery are all products of biomedical engineering.

A degree in biomedical engineering or a closely related subject, such as mechanical engineering is needed to begin a career path in biomedical engineering. Core engineering courses are taken first, followed by classes in a specialized field, such as medical imaging, biomechanics, or rehabilitation.

Clinical research coordinators and associates have the responsibility of testing new drugs and medical procedures to ensure their level of safety. If you have ever seen an ad in your local newspaper recruiting test patients for a new sleep aide or dietary drug, it is the clinical research coordinator who will be conducting these observations. The associates use equipment to evaluate the test results and ensure the test is conducted according to regulations.

A bachelor of science degree is needed for entry-level positions in either the coordinator or associate position. For some jobs, coordinators may be required to have a master's degree in science.

Agricultural Research and Development

Biotechnology has increasingly spread to the field of agriculture where it is used to alter and improve the characteristics of farm animals and crops. Plant breeders are agricultural scientists that work to transfer genes between plants in order to promote the desired characteristics to thrive, such as resistance to harsh weather or drought conditions, early harvest, or increased growth. This practice of cross breeding to develop hybrids has actually been done for centuries, but with today's capabilities, it can be done more precisely and efficiently.

Most plant breeders have a master's degree. Breeders who develop and use biotechnical methods for genetic manipulation usually have earned their Ph.D.

Animal research associates work mainly with animals used in experiments. The end goal might be to develop new preventative methods for illness in farm animals and herds, or to manipulate their genetic makeup to produce more desirable livestock. Education requirements for an animal research associate is a bachelor's degree in biology or a related subject with two to five years of experience working with animals in a veterinary or research setting.



Biotech Career Feature

Production Work

Another career choice in this industry is the biotech production worker. They are responsible to move new advances in the field of biotechnology into mainstream society by way of the marketplace. They help to develop safe, efficient mass production of drugs and other products. The biotechnology production technician works closely with the process development associate, who helps to make improvements in the manufacturing process. The goal may be to improve product yield, reduce costs, and develop more efficient production methods.

Process development associates and biotech production workers need to have a bachelor's degree in science or engineering with at least two years of manufacturing or production experience. Technicians working in these areas also benefit from courses in chemistry and chemical production.

The field of biotechnology is not completely made up of scientists. Because it is such a varied and diverse industry, there are many career choices. Writers and editors are needed for trade journals and other forms of media; public relations and marketing specialists, genetic counselors, as well as biotech sales representatives to present the manufactured products to the retail and medical markets.

The employment outlook for all careers relating to the field of biotechnology look extremely promising. Medical research and especially advances in surgical abilities and new drug research will enjoy continued growth. Those employed in the field of biotechnology have said that the benefits of this industry far outweigh any disadvantages it may have. Meaningful work that is making a difference in our own lives and of future generations is often cited as being one of the reasons for such a high percentage of job satisfaction. Whatever niche you choose in the field of biotechnology, you will have a promising and lifelong career.

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