

BIOLOGICAL SCIENCES

What can I do with this degree?

AREAS	EMPLOYERS	STRATEGIES
<p><u>BIOTECHNOLOGY</u> Research and Development Laboratory Testing Education</p>	<p>Colleges and universities Pharmaceutical companies Agricultural industry including fertilizer manufacturers and animal and plant breeding and production Federal and state government laboratories and agencies Industry, particularly biotechnology firms</p>	<p>Become proficient using laboratory equipment and computers. Acquire a Ph.D. for college and university teaching and advanced positions in research, development, and management. Take additional courses in chemistry, physics, mathematics. Complete an undergraduate laboratory research project with a professor.</p>
<p><u>GENETICS</u> Research and Development related to: Animals Plants Humans Genetic Counseling Education</p>	<p>Colleges and universities Pharmaceutical companies Large producers of seed, livestock, and poultry Government laboratories such as: Department of Agriculture Fish and Wildlife Service National Institutes of Health Biotechnology industry Hospitals and medical centers</p>	<p>Acquire a broad background in sciences, mathematics, and computer technology. Obtain a Ph.D. for teaching and advanced positions in research and management. Earn a master's degree from an accredited program for genetic counseling. Complete an undergraduate research project with a professor. Find a related internship with an organization in the area of your interest.</p>
<p><u>MICROBIOLOGY</u> Research and Development Education Quality Control</p>	<p>Colleges and universities Private research foundations Government research laboratories and service agencies Hospitals and public health facilities Agricultural experiment stations Food, chemical, pharmaceutical, and cosmetic companies Industry including wood products, paper, textiles, optical equipment, leather, and electrical equipment Environmental and pollution control agencies</p>	<p>Obtain a Ph.D. for teaching and advanced research and management positions. Develop additional competencies in chemistry, mathematics, and physics. Take courses related to your field of interest or consider an advanced degree to specialize. Find a related internship with an organization in the area of your interest. Complete an undergraduate research project with a professor. Develop strong skills using laboratory equipment and computers.</p>

AREAS	EMPLOYERS	STRATEGIES
<p><u>BOTANY</u> Education Research and Development Conservation Production Quality Control Administration</p>	<p>Colleges and universities Medical and private research laboratories Pharmaceutical industry Industries and laboratories involved in production of food, textiles, chemical, and forestry products State and federal government, especially the Departments of Agriculture, Interior, and Health Botanical gardens and arboretums National and international environmental organizations</p>	<p>Conduct undergraduate research with professors. Join related professional organizations. Take courses in this specialized area or consider an advanced degree for more opportunities. Take courses in organic chemistry, biochemistry, and physics. Obtain a Ph.D. for teaching and advanced positions in research and management. Complete a related internship with an organization in the area of your interest.</p>
<p><u>SYSTEMATIC BIOLOGY</u> Education Research and Development Taxonomy Conservation Consulting Administration</p>	<p>Colleges, universities, and agricultural colleges Federal agencies including Departments of Agriculture and Interior State and local agencies Private research foundations Museums Botanical gardens and arboretums Zoos and aquariums Public health laboratories Hospitals National and international environmental organizations</p>	<p>Earn a Ph.D. for college and university teaching and advanced research and management positions. Develop excellent laboratory and computer skills. Get involved with undergraduate research with professors. Join related professional organizations. Complete a related internship with an organization in the area of your interest.</p>
<p><u>ENTOMOLOGY</u> Education Research and Development Toxicology Conservation Quality Control</p>	<p>Colleges and universities, especially colleges of agriculture and veterinary medicine Industry including food producers and processors, chemicals for insect control, and lumber and pulp Chemical companies Pest control companies Federal and state government Health agencies Agricultural experiment stations Inspection agencies and control boards Conservation agencies</p>	<p>Acquire a Ph.D. for college and university teaching and advanced research and management positions. Conduct undergraduate research with professors. Join related professional organizations. Take courses in this specialized area or consider an advanced degree for more opportunities. Complete a related internship with an organization in the area of your interest.</p>

AREAS

EMPLOYERS

STRATEGIES

MARINE AND AQUATIC BIOLOGY

Research and Development
 Education
 Administration
 Production
 Quality Control
 Conservation

Federal, state, and local government
 Inspection organizations
 Private recreation organizations
 Research laboratories
 Colleges and universities
 Zoos and aquariums
 Fish hatcheries
 National and international environmental agencies

Develop a good foundation in mathematics, physics, computer science, statistics, and chemistry.
 Acquire a Ph.D. for college and university teaching and advanced research and management positions.
 Obtain experience related to fishing and boating.
 Complete a related internship with an organization in the area of your interest.
 Take specialized courses in this area or consider an advanced degree for more opportunities.

ZOOLOGY

Animal Care/Training
 Research and Development
 Conservation
 Administration
 Education

Wildlife preserves and parks
 Zoos, aquariums, and other collections of animals
 Museums
 Research organizations
 Pharmaceutical, chemical, and agricultural service industries
 Federal, state, and local government
 Colleges and universities
 Veterinary hospitals
 Clinics and hospitals

Obtain experience working with animals and various related laboratory equipment.
 Develop a broad background in biology and other related subjects such as chemistry, physics, mathematics, and statistics.
 Obtain a Ph.D. for teaching and advanced research and management positions.
 Complete a related internship with an organization in the area of your interest.
 A zoological background is good preparation for a career in veterinary science or medicine, but an advanced degree is also required to practice.

BIOMEDICAL

Physiology
 Biophysics
 Biochemistry
 Pharmacology
 Immunology
 Pathology
 Research and Development
 Education
 Quality Control

Colleges and universities
 Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture
 Clinics and hospitals
 Private research foundations
 Pharmaceutical companies
 Federal laboratories and regulatory agencies
 Independent testing laboratories
 Public health departments
 Agricultural experiment stations
 Industrial laboratories including chemical, petroleum, food processing, drug, and cosmetic manufacturers

Obtain a Ph.D. for college and university teaching and advanced research positions.
 Acquire a background in physics, organic and physical chemistry, mathematics, and anatomy.
 Take courses in area(s) of specialization and/or consider an advanced degrees; some may require an M.D.
 Complete a related internship with an organization in the area of your interest.

AREAS	EMPLOYERS	STRATEGIES
<p>BIOINFORMATICS Research and Development Education</p>	<p>Biotechnology industry Pharmaceutical companies Government research laboratories Universities and colleges</p>	<p>Double major or minor in computer science. Acquire experience working in teams. Develop in-depth programming and relational database skills. Learn molecular biology packages, web design, and programming skills. Complete an internship in your area of interest.</p>
<p>EDUCATION Teaching Non-classroom Education</p>	<p>Universities and colleges Medical and other professional schools Public and private schools, K-12 Museums Zoos Nature centers and parks</p>	<p>Certification is required for K-12 school teachers, and Ph.D. is needed in universities and colleges. Gain experience working with students through tutoring, interning, or volunteering. Learn to work well with all types of people. Develop excellent interpersonal and public speaking skills.</p>
<p>HEALTHCARE Medicine Dentistry Optometry Podiatry Pharmacy Veterinary Medicine Allied Health Occupational Therapy Physical Therapy</p>	<p>Hospitals Medical centers Nursing homes Private practice Government agencies Armed forces Home health organizations Universities and schools Nonprofit organizations</p>	<p>Plan to attend a medical school or other related graduate program. Maintain an outstanding grade point average, particularly in the sciences. Secure strong faculty recommendations. Meet with a pre-health advisor periodically. Join related student organizations. Demonstrate leadership abilities. Obtain a summer job, volunteer position, or an internship in a hospital. Develop a back up plan in case medical/graduate school admission is denied. Consider alternative but related careers such as physician assistant and nurse practitioner.</p>
<p>TECHNICAL AND PHARMACEUTICAL SALES</p>	<p>Manufacturing firms including: Pharmaceuticals Animal pharmaceuticals Laboratory equipment Medical supplies and prostheses</p>	<p>Develop excellent communication and interpersonal skills. Take courses in anatomy, pharmacology, and chemistry. Obtain sales experience and/or a business minor. Hold leadership positions in campus organizations. Join the student American Marketing Association.</p>

AREAS

EMPLOYERS

STRATEGIES

LEGISLATION/LAW

Lobbying
 Regulatory Affairs
 Science Policy
 Patent Law
 Environmental Law

Federal and state government
 Law firms
 Large corporations

Acquire internships in federal or state government.
 Develop excellent communication and interpersonal skills.
 Acquire a Ph.D for advanced positions.
 Take courses in history, political science and/or legal studies.
 Earn a J.D. degree to practice law.

BIOLOGICAL PHOTOGRAPHY

Major medical, dental, and veterinary schools
 Research centers
 Federal government
 Museums
 Zoological and environmental societies
 Publishing houses
 Free-lance

Acquire thorough knowledge of photographic procedures and technology.
 Become skilled with medical and scientific instruments including microscopes.
 Take specific courses in biological, medical, and ophthalmic photography; courses in illustration and printing are also helpful.

TECHNICAL WRITING

Writing
 Editing
 Illustration

Newspapers
 Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
 Medical and veterinary colleges

Take advanced courses in technical writing or journalism classes or consider a minor in either.
 Develop strong writing skills and command of the English language.
 Obtain an advanced degree in scientific journalism.

ILLUSTRATION

Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
 Educational and scientific software companies
 Medical and veterinary colleges

Double major or minor in graphic illustration.
 Acquire word processing and desktop publishing skills.
 Find a part-time, summer, co-op or internship position with a publisher or newspaper.

GENERAL INFORMATION

- A Bachelor's degree will qualify one for work as a laboratory assistant, technician, technologist, or research assistant in education, industry, government, museums, parks, and gardens.
- An undergraduate degree can also be used for nontechnical work in writing, illustration, sales, photography, and legislation.
- Master's degrees allow for more opportunities in research and administration. Some community colleges will hire Master's level teachers.
- Doctoral degrees are necessary for advanced research and administrative positions, university teaching, and independent research.
- An advanced degree provides the opportunity to specialize under the different areas of the biological sciences.
- The biological sciences are good preparation for a career in healthcare such as medicine, dentistry, and veterinary science, but professional degrees and licenses are also necessary to practice in these fields.
- Learn laboratory procedures and become familiar with equipment.
- Obtain summer, part-time, volunteer, co-op, or internship experience to test the fields of interest and gain valuable experience.
- Develop strong computer, mathematics, and verbal and written communications skills.
- Join professional associations and community organizations to stay abreast of current issues in the field and to develop networking contacts.
- Read scientific journals related to your area of interest.
- Maintain a high grade point average to improve chances of graduate and professional school admission.
- Become familiar with the specific entrance exam for graduate or professional schools in your area of interest.
- Secure strong relationships and personal recommendations from professors and/or employers.
- Consider completing a post doctoral experience after graduate school.
- Learn federal, state, and local government job application process. The federal government is the largest employer of biologists.
- Gain experience with grant writing and fundraising techniques. Often research must be funded in this manner.