BIOLOGICAL SCIENCES

What can I do with this degree?

AREAS	EMPLOYERS	STRATEGIES
BIOTECHNOLOGY Research and Development Laboratory Testing Teaching	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	Develop excellent laboratory skills. Acquire a Ph.D. for college and university teaching and advanced positions in research, development, and management. Take additional courses in science and mathematics. Learn to problem solve. Develop work habits that are systematic, precise, and patient.
GENETICS Research and Development related to: Animals Plants Humans Genetic Counseling	Colleges and universities Pharmaceutical companies Large producers of seed, livestock, and poultry Large fur breeding farms Government laboratories Department of Agriculture Fish and Wildlife Service National Institutes of Health Biotechnology industry Hospitals and medical centers	Acquire a broad background in sciences, mathematics, and computer technology. Obtain a Ph.D. for advanced positions in research and management. Earn a master's degree from an accredited program for genetic counseling.
MICROBIOLOGY Research Teaching Production Quality Control	Colleges and universities Professional schools of medicine, dentistry, public health, nursing, pharmacy, veterinary medicine, and agriculture 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	Obtain a Ph.D. for teaching and advanced research and management positions. Take additional courses in chemistry, biology, mathematics, and physics. Take courses related to your field of interest such as botany, plant pathology, etc. Obtain specialized certification for some medical areas. Develop necessary eye-hand coordination. Learn to work well with others.

AREAS	EMPLOYERS	STRATEGIES
MYCOLOGY Teaching Research	Colleges and universities Professional schools of medicine, forestry, and agriculture Medical research laboratories Private research institutes Pharmaceutical industry Public Health Service Industries and laboratories involved in production of food, leather, textiles, and forestry products Chemical manufacturers State and federal government laboratories	Acquire knowledge and skills in specialized areas; knowledge of industrial chemistry is especially helpful. Take courses in organic chemistry, biochemistry, and physics. Acquire a graduate degree for more opportunities. Obtain a Ph.D. for teaching and advanced positions in research and management.
SYSTEMATIC BIOLOGY Teaching Research Field and Laboratory Taxonomy Toxicology Consulting Medicine	Private and public schools Colleges, universities, and agricultural colleges Federal agencies including Departments of Agriculture and Interior Private research foundations Museums Botanical gardens and arboretums Zoos and aquariums State and local agencies Public health laboratories Hospitals Oil companies Organizations involved in ecological studies National and international environmental research programs	Become certified/licensed for public school teaching. Earn a Ph.D. for college and university teaching and advanced research and management positions. Develop excellent laboratory skills. Develop foreign language abilities for international opportunities.
ENTOMOLOGY Teaching Research Biological Control Toxicology Biological Survey Extension Inspection	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 Museums	Acquire a Ph.D. for college and university teaching and advanced research and management positions. Specialize in a particular area.

AREAS	EMPLOYERS	STRATEGIES
MARINE AND AQUATIC BIOLOGY Food Research Inspection Teaching	Federal, state, and local agencies International agencies Inspection organizations Private recreation organizations Research laboratories Colleges and universities Zoos Armed services Shipping industry Manufacturing Fish hatcheries and organizations raising fish	Develop a good foundation in mathematics, computer science, statistics, and humanities. Acquire a Ph.D. for college and university teaching and advanced research and management positions. Obtain experience related to fishing and boating. Specialize in fisheries science.
ZOOLOGY Animal Care/Training Animal Behavior Research Curator Teaching	Wildlife preserves and parks Zoos, aquariums, and other collections of animals Museums Research organizations Pharmaceutical, chemical, and agricultural service industries Federal and state agencies Colleges and universities	Acquire excellent communication skills. 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. Acquire a graduate degree for advancement and specialized positions. Obtain a Ph.D. for teaching and advanced research and management positions. Complete a related internship at a zoo or aquarium.
BIOMEDICAL Physiology Biophysics Biochemistry Pharmacology Nutrition Immunology Pathology Research Teaching Quality Control Engineering	Colleges and universities Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture Clinics and hospitals Private research foundations Drug 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 Armed services	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. Acquire advanced degrees in areas of specialization; some may require an M.D. Obtain a degree in biomedical engineering or engineering technology.

AREAS	EMPLOYERS	STRATEGIES
BIOINFORMATICS	Biotechnology industry Pharmaceutical companies Government research laboratories Universities	Double major or minor in computer science. Learn to work well in teams and acquire the ability to interface with scientists. Develop in-depth programming and relational database skills. Learn molecular biology packages, web design, and programming skills.
EDUCATION Teaching Non-classroom education	Public and private schools, K-12 Museums Zoos Nature centers Parks	Certification is required for public school teaching positions. Gain experience working with students through tutoring or volunteering. Learn to work well with all types of people. Develop excellent interpersonal and public speaking skills.
TECHNICAL WRITING Editing Writing	Newspapers Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers	Take technical writing classes or minor in it. Develop strong writing skills and command of the English language. Minor in journalism. Acquire word processing and desktop publishing skills.
ILLUSTRATION	Publishing companies of textbooks and scientific magazines or books Medical and veterinary colleges	Double major or minor in graphic illustration. Find a part-time, summer, co-op or internship position with a publisher.
TECHNICAL AND PHARMACEUTICAL SALES	Manufacturing firms including pharmaceuticals, animal pharmaceuticals, laboratory equipment, medical supplies and prostheses	Develop excellent communication and interpersonal skills. Take courses in anatomy, pharmacology, and chemistry. Obtain retail or sales experience. Acquire a minor in business. Hold leadership positions in campus organizations. Join the student American Marketing Association.

AREAS	EMPLOYERS	STRATEGIES
BIOLOGICAL PHOTOGRAPHY	Major medical, dental and veterinary schools Research centers Federal government Museums Zoological 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.
LEGISLATION/LAW		
Lobbying Regulatory Affairs Science Policy Congressional Fellows	Federal and state government	Acquire internships in federal or state government. Develop excellent communication and interpersonal skills. Acquire a Ph.D for more opportunities.
Patent Law Environmental Law	Law firms Large corporations	Earn a law degree.

GENERAL INFORMATION

- A bachelor's degree will qualify one for work as a laboratory assistant, technician, technologist, or research assistant. These individuals work as part of a team performing practical operations, e.g., operating laboratory equipment, designing and constructing new equipment, making drawings, building models and assisting in the interpretation of results.
- The biological sciences are good preparation for a career in healthcare including medicine, dentistry, nursing, etc.
- An undergraduate degree can be used for nontechnical work in writing, illustration, sales, photography, and legislation.
- Graduate degrees allow for more responsibility and advancement.
- Some work environments, particularly medical, require special certification.
- Learn laboratory procedures and become familiar with equipment.
- Obtain summer, part-time, volunteer, co-op, or internship experience.
- Complete various training courses working with laboratory equipment and procedures to enhance job skills and abilities.
- Join professional associations and community organizations to enhance knowledge, abilities and contacts in the field. Read scientific journals.
- Maintain a high grade point average to improve chances of graduate school admission.
- Complete an undergraduate research project.
- Secure strong personal recommendations from professors or employers.
- Plan on 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.

Prepared by the Career Planning staff of Career Services at The University of Tennessee, Knoxville. (1995, Revised 2000)