

BIOLOGY: ALLIED HEALTH, BIOLOGY: CELL & MOLECULAR CYTOTECHNOLOGY, MEDICAL TECHNOLOGY

What can I do with this degree?

AREAS	EMPLOYERS	PREPARATION
ALLIED HEALTH <ul style="list-style-type: none"> • Pre-Dentistry • Pre-Optometry • Pre-Physical Therapy • Pre-Physician Assistant • Pre-Podiatry 	PRE-PROFESSIONAL SEQUENCES: <ul style="list-style-type: none"> • These programs are preparatory for a degree at another college or university. 	<ul style="list-style-type: none"> ❖ With few exceptions, schools for these degrees require completion of a bachelor's degree or its equivalent before admission. Students follow the pre-medical curriculum described under the Biology: Allied Health program.
CYTOTECHNOLOGY Screening and Diagnosis <ul style="list-style-type: none"> • Cancer • Pre-cancerous abnormalities • Benign tumors or growths • Infectious organisms and inflammatory conditions Evaluation of Tissue <ul style="list-style-type: none"> • Bladder • Bone and soft tissue • Breast, Female reproductive tract • Liver, Lung • Lymph nodes • Pancreas, Thyroid Technological Equipment Operation <ul style="list-style-type: none"> • Light microscopes • Biomedical instrumentation • Laboratory information systems 	<ul style="list-style-type: none"> • Hospital and private laboratories • Federal and state government laboratories • Clinics and university medical centers • Public health facilities • Research and biotechnology industry • Healthcare administrative departments • Educational institutions 	<ul style="list-style-type: none"> ❖ Supplement curriculum with courses in biology that emphasize body structure, development, tissue organization, and function. Recommended courses include histology, cellular biology, and genetics. Additional recommended coursework may include other biological sciences such as zoology or ecology. ❖ Become familiar with applied learning techniques. ❖ Most programs utilize a combination of training activities such as microscopic evaluation, laboratory skills development, case presentations, research, community health projects, and supervised clinical laboratory site experiences. ❖ Earn a Bachelor of Science Degree in Cytotechnology from a program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). ❖ Prepare for and pass the certification examination given by the Board of Registry of the American Society of Clinical Pathologists. ❖ Develop problem solving as well as effective written and verbal communication skills. ❖ Display personal characteristics such as accuracy, responsibility, and motivation.
MEDICAL TECHNOLOGY <ul style="list-style-type: none"> • Blood Banking • Microbiology • Hematology • Chemistry • Immunology • Urinalysis • Molecular Biology 	<ul style="list-style-type: none"> • Hospital and private laboratories • Biotechnology industry • Research and forensic laboratories • Public health laboratories • Lab industry sales and product development • Universities and colleges • Pharmaceutical companies • Armed forces 	<ul style="list-style-type: none"> ❖ Earn a bachelor's degree in medical technology. ❖ Be prepared to participate in supervised clinical experiences. ❖ Many states require a license to practice. Obtain licensure by passing a certification exam given the NCA or ASCP. ❖ Attain good grades in pre-medical technology course work, including biology, anatomy, physiology, and general and organic chemistry. ❖ Develop manual dexterity, fine motor skills, and an attention to detail. ❖ Visit a clinical laboratory. Talk with practitioners to gain critical knowledge.

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BIOTECHNOLOGY <ul style="list-style-type: none"> • Research and Development • Laboratory Testing • Teaching 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> ❖ 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: <ul style="list-style-type: none"> • Animals • Plants • Humans Genetic Counseling	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> ❖ 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 <ul style="list-style-type: none"> • Research • Teaching • Production • Quality Control 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> ❖ 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.

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STRATEGIES

- A bachelor's degree will qualify you for work as a laboratory assistant, technician, technologist, or research assistant..
- The biological sciences are good preparation for a career in healthcare including medicine, dentistry, nursing, etc.
- Graduate degrees allow for more responsibility and advancement. Plan on completing a post doctoral experience after graduate school.
- 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.
- Learn federal, state, and local government job application process. The federal government is the largest employer of biologists.

LINKS

[A Lifetime with Science from The American Institute of Biological Sciences](#)

[American Society for Clinical Laboratory Science - Careers](#)

[American Society for Cytotechnology](#)

[Careers in Allied Health](#)

[Dolphin Research Center](#)

[Science Technicians from the Occupational Outlook Handbook](#)

[Biological and Medical Scientists from the Occupational Outlook Handbook](#)

[Clinical Laboratory Technologists and Technicians from the Occupational Outlook Handbook](#)

[Healthcare Career Resource Center](#)

[Science Careers](#)

[Science Jobs](#)

[Careers in Marine Science](#)