Career Paths for the Biological Sciences Major
**areas of specialization**
basic research, applied research, quality control (of food, drugs, cosmetics), administration, grant writing

**action steps**
Select courses with laboratory components, and seek research experience with professors.
Take a course in grant writing, as research is often grant-funded.
A bachelor’s degree in biology qualifies one for laboratory technician or research assistant positions.

**employers**
pharmaceutical labs
centers for disease control
food and drug administration
environmental protection agency
national science foundation
national institutes of health
colleges and universities
armed services
areas of specialization
medicine, dentistry, optometry, podiatry, pharmacy, veterinary medicine, occupational therapy, physical therapy, medical technology, nuclear medicine

action steps
Meet with a pre-health advisor periodically to discuss curricular decisions.
Seek experience in healthcare settings through volunteering, shadowing, part-time jobs, or internships.
Secure strong faculty recommendations.

employers
hospitals
nursing homes
mental health institutions
colleges and universities
rehabilitation centers
correctional facilities
pediatric clinics
armed services
**areas of specialization**
biophysics, biochemistry, cellular and molecular biology, genetics, immunology, infectious disease, pathology, pharmacology, physiology, virology

**action steps**
Gain laboratory experience through coursework and faculty-led research projects.
Utilize the career center for assistance securing government internships.
Take courses in area(s) of specialization, such as genetics or pharmacology.

**employers**
colleges and universities
private research foundations
food and drug administration
national institutes of health
centers for disease control
independent laboratories
clinics and hospitals
professional schools
areas of specialization
botany, evolutionary ecology, population biology, conservation biology, entomology, marine biology, genetics, microbiology, taxonomy, zoology

action steps
Conduct or assist research including data analysis or the collection of samples of water, soil, plants, animals, etc.
Seek additional coursework in an area of specialty (e.g., botany, ecology, genetics).
Plan to gain related part-time jobs, internships, or volunteer experiences.

employers
colleges and universities
environmental organizations
agricultural experiment stations
botanic gardens and arboretums
food and drug administration
conservation agencies
zoos and aquariums
museums
**areas of specialization**

medicine, agriculture, food science, biological engineering, bioremediation, environmental protection / regulation

**action steps**

Seek current knowledge of medical, agricultural, pharmaceutical, or environmental issues, trends, regulations.

Join horticultural, agronomy, biotechnology clubs or other professional associations to network and cultivate related interests.

**employers**

agricultural chemicals pharmaceutical companies medical devices and equipment plant propagation and production department of agriculture research and testing food safety
areas of specialization
algorithm and statistical techniques, data analysis and interpretation, information management, data organization and retrieval

action steps
Develop multiple areas of specialization through coursework, minors, double-majors in molecular biology, mathematics, statistics, or computer science.
Develop strong programming and database management skills; fluency in several programming languages.

employers
colleges and universities
private research foundations
food and drug administration
software development firms
national institutes of health
department of agriculture
biotechnology companies

BIOINFORMATICS
areas of specialization
- teaching elementary, secondary, or postsecondary

action steps
- Gain experience working with students through tutoring, part-time employment, or volunteering.
- Complete a teacher preparation program for K-12 positions, which varies by state.
- Seek Ph.D. for teaching opportunities at colleges and universities.

employers
- colleges and universities
- public / private K-12 schools
- two-year community colleges
- nature centers and parks
- professional schools
- museums
- zoos
areas of specialization
technical writing, editing, illustrating, photography, public relations

action steps
Seek volunteer or paid experiences with student/local publications to increase marketability.
Take courses in photography, illustration, printing, technical writing or journalism.
Consider earning an advanced degree in a communications field.

employers
newspapers
scientific magazines
publishing companies
medical, dental, veterinary colleges
educational software companies
professional journals
research centers
museums

COMMUNICATION
areas of specialization
lobbying, regulatory efforts, science policy, patent law, environmental law, nonprofit or public interest, mediation

action steps
Enhance public speaking skills through courses, debate team.
Maintain knowledge of industry trends, laws and policies specific to area of interest (e.g., environment, food safety, regulatory programs).
Acquire internships in federal or state government.

employers
department of energy
advocacy organizations
state and federal government
environmental protection agency
compliance service companies
regulatory commissions
corporations
law firms
areas of specialization
technical and pharmaceutical sales, management, consulting, marketing

action steps
Take courses in anatomy, pharmacology, and chemistry and/or consider a business minor.
Consider an MBA or Professional Science Master’s to advance into higher levels of business management, consulting, research, and brand management.

employers
agricultural chemicals
food/feed manufacturing
medical device and equipment
pharmaceutical companies
consumer products
consulting firms
marketing firms
general information for majors in biology

- 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.

- A master's degree allows for greater specialization in a field and more opportunities in research and administration. Some community colleges will hire masters level teachers.

- Doctoral degrees are necessary for advanced research and administrative positions, university teaching, and independent research.

- The biological sciences are good preparation for a career in healthcare that generally require a professional degree and license such as medicine, dentistry, and veterinary science.

- Obtain summer, part-time, volunteer, co-op, or internship experience to test the fields of interest and gain valuable experience. Take independent research classes if possible.

- Participate in summer research institutes. Submit research to local poster competitions or research symposiums.

- 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.

- 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 processes.

- Gain experience with grant writing and fundraising techniques, research is often grant-funded.