What can I do with a degree in Biology

The mission of the Department of Biology is to:

• Provide students with a fundamental knowledge of Biology.
• Prepare students for and assist them in entering graduate and professional school, and the workforce.
• Strengthen students’ reading, writing and quantitative skills.
• Develop students’ analytical reasoning and creative thinking skills.
• Expose students to contemporary research techniques in Biology and enhance their understanding of the Scientific Method.
• Conduct meritorious research in the field of Biology.
• Acquaint students with the history of Biology, including the contributions of Black scientists.
• Engender an appreciation among students of the social and economic implications of discoveries in Biology.
• Build students’ awareness of ethical and moral issues related to basic tenets in Biology.

Job Types

RESEARCH & DEVELOPMENT
Basic
Applied
Quality Control
Administration
Grant Writing

Where to find them

Industry and laboratories:
Pharmaceutical
Healthcare
Agriculture production
Food processing and safety
Environmental
Private research institutions
Public health departments
State and federal government:
National Science Foundation
National Institutes of Health
Food and Drug Administration
Environmental Protection Agency
Department of Agriculture
Armed Services
Department of Homeland Security
State and local government laboratories/agencies
Colleges and universities

Ways to Prepare

• Learn to set up, operate, maintain laboratory instruments and equipment, and monitor experiments.
• Select courses with laboratory components.
• Seek research experience with professors.
• Gain related experience through part-time jobs, internships, or volunteering.
• Complete a certificate training program, usually one year, to learn specialized laboratory techniques.
• Take a course in grant writing.
• A Bachelor’s degree in biology qualifies one for laboratory technician or research assistant positions.
• Earn master’s degree for better positions, advancement opportunities, more responsibility and higher pay.
• Obtain Ph.D. to direct research projects and lead research teams.
• Maintain a high grade point average and secure strong faculty recommendations to gain admittance into graduate school.
### Job Types

<table>
<thead>
<tr>
<th>ORGANISMAL BIOLOGY</th>
<th>Where to Find Them</th>
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</thead>
<tbody>
<tr>
<td><strong>Some Areas of Specialization</strong></td>
<td>Colleges and universities, especially colleges of agriculture and veterinary medicine</td>
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<tr>
<td>Botany and Plant sciences</td>
<td>Veterinary hospitals</td>
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<td>Ecology and Wildlife</td>
<td>State and federal government:</td>
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<tr>
<td>Marine and Aquatic</td>
<td>Departments of Agriculture, Interior, and Health</td>
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<td>Systematic (Taxonomy)</td>
<td>Independent laboratories:</td>
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<tr>
<td>Zoology</td>
<td>Food production</td>
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<td>Entomology</td>
<td>Textiles</td>
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<td>Genetics</td>
<td>Chemical</td>
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<td>Microbiology</td>
<td>Pharmaceutical</td>
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<td>Bacteria, algae, fungi, molds, yeasts,</td>
<td>Forestry products</td>
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<td>viruses, protozoa</td>
<td>Zoos and aquariums</td>
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<td>Fish hatcheries</td>
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<td>Wildlife preserves and parks</td>
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<td>Conservation agencies</td>
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<td></td>
<td>Botanical gardens and arborets</td>
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<td>Museums</td>
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<td></td>
<td>Agricultural experiment stations</td>
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<td>Inspection agencies and control boards</td>
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<td>National and international environmental organizations</td>
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<td>Private recreation organizations</td>
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### Biomedical Sciences

**Some Areas of Specialization**
- Biophysics
- Biochemistry
- Cellular and Molecular Biology
- Cytology
- Genetics
- Immunology
- Pathology
- Pharmacology
- Physiology
- Virology

**Where to Find Them**
- Colleges and universities
- Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture
- Federal laboratories and regulatory agencies:
  - National Institutes of Health
  - Food and Drug Administration
- State and local public health departments
- Clinics and hospitals
- Independent laboratories
- Pharmaceutical companies

**Ways to Prepare**
- Gain laboratory experience through coursework and/or research projects with professors.
- Learn to set up, operate, maintain laboratory instruments and equipment, and monitor experiments.
- Seek internships, part-time employment and volunteer opportunities in the biomedical field.
- Join student chapters of professional organizations related to your area of interest.
- Take courses in area(s) of specialization and/or consider an advanced degree.
- Obtain a Ph.D. for teaching and advanced research and management positions.

### Healthcare

**Medical**
- Medicine
- Dentistry
- Optometry
- Podiatry
- Pharmacy
- Veterinary Medicine
- Allied Health
- Occupational Therapy
- Physical Therapy
- Medical Technology
- Nuclear Medicine

**Where to Find Them**
- Hospitals
- Medical centers and clinics
- Nursing homes
- Private practice
- Armed services
- Government agencies

**Ways to Prepare**
- Plan on attending 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, and demonstrate leadership abilities.
- Seek experiences in hospital or healthcare settings through volunteering, shadowing, part-time positions, or internships.
- Develop a back-up plan in case medical/graduate school admission is denied.
- Consider alternative but related careers such as physician assistants.
- Research all of the various fields within medicine to determine career goals.
### Bioinformatics

**Job Types**
- Algorithm and Statistics Development
- Data Analysis and Interpretation
- Information Management
- Organization and Retrieval

**Where to Find Them**
- Colleges and universities
- Private research foundations
- Independent laboratories:
  - Organic and agricultural chemicals
  - Drug and pharmaceutical
  - Medical device and equipment
  - Research, testing, medical
- Federal laboratories and regulatory agencies:
  - National Institutes of Health
  - Food and Drug Administration
  - Environmental Protection Agency
  - Department of Agriculture
  - National Biological Information Infrastructure

**Ways to Prepare**
- Develop multiple areas of specialization through coursework, minors, double-majors in molecular biology, mathematics, statistics, computer science, or machine learning.
- Develop strong programming and database management skills; fluency in several programming languages is helpful.
- Learn biological software systems.
- Complete an internship in area of interest.
- Seek master’s degree for increased advancement opportunities.

### Education

**Job Types**
- Teaching
  - Elementary
  - Secondary
  - Post-Secondary
- Non-classroom Education

**Where to Find Them**
- Universities and colleges
- Medical and other professional schools
- Public and private schools, K-12
- Museums
- Zoos
- Nature centers and parks

**Ways to Prepare**
- Gain experience working with students through tutoring, part-time employment, or volunteering.
- Learn to work well with all types of people.
- Develop excellent interpersonal and public speaking skills.
- Certification is required for K-12 school teachers and varies by state.
- Master’s degrees may be sufficient for teaching at community or two-year institutions.
- Ph.D. is needed for teaching opportunities at colleges and universities.
### Communication
**Job Types**
- Technical Writing
- Editing
- Illustrating
- Photography

**Where to Find Them**
- Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
- Newspapers
- Educational and scientific software companies
- Zoological and environmental societies
- Medical, dental and veterinary colleges
- Research centers
- Federal government agencies
- Related nonprofit organizations
- Museums

**Ways to Prepare**
- Acquire thorough knowledge of photographic procedures and technology.
- Take specific courses in biological, medical, and ophthalmic photography; courses in illustration and printing are also helpful.
- Develop strong writing skills and command of the English language.
- Take advanced courses in technical writing or journalism classes or consider a minor in either.
- Join professional associations like the National Association of Science Writers.
- Seek related volunteer or paid experiences with student/local publications to increase marketability.
- Obtain an advanced degree in scientific journalism.

### Legislation/Law
**Job Types**
- Lobbying
- Regulatory Affairs
- Science Policy
- Patent Law
- Environmental Law

**Where to Find Them**
- Federal and state government
- Law firms
- Large corporations

**Ways to Prepare**
- Develop excellent communication and interpersonal skills.
- Maintain current knowledge of industry-specific laws and policies.
- Acquire internships in federal or state government.
- Take courses in history, political science and/or legal studies.
- Acquire a Ph.D. for advanced positions.
- Earn a J.D. degree to practice law.

### Business/Industry
**Job Types**
- Technical and Pharmaceutical Sales
- Management
- Consulting
- Marketing

**Where to Find Them**
- Manufacturing companies including:
  - Pharmaceuticals
  - Animal pharmaceuticals
  - Laboratory equipment
  - Medical supplies and prostheses
  - Marketing firms
  - Consulting firms
BUSINESS/INDUSTRY (cont’d)

Ways to Prepare

- Develop excellent communication and interpersonal skills.
- Demonstrate a high energy level.
- Take courses in anatomy, pharmacology, and chemistry.
- Obtain sales experience and/or a business minor.
- Join related student associations and hold leadership positions.
- Consider an MBA or Professional Science Master’s for advanced management and consulting opportunities.

The field of biological science is constantly changing, and the information listed below does not exhaust possible career options. Be sure to speak with your department chair or academic advisor for further guidance on course selections, as well as career planning.