# BOTANY

## What can I do with this major?

### AREAS

**PLANT BIOLOGY**
- Anatomy
- Biochemistry
- Biophysics
- Cytology
- Ecology
- Genetics
- Molecular Biology
- Morphology
- Paleobotany
- Physiology
- Systematics
- Systems Ecology
- Taxonomy

**APPLIED PLANT SCIENCE**
- Agronomy
- Biotechnology
- Breeding
- Economic Botany
- Food Science and Technology
- Forestry
- Horticulture
- Natural Resource Management
- Plant Pathology

### EMPLOYERS

**PLANT BIOLOGY**
- Research organizations
- Colleges and universities
- Museums
- Botanical gardens and arboretums
- U.S. Department of Agriculture branches
  - including Medical Plant Resources Laboratory, Germplasm Resources Laboratory, Animal and Plant Health Inspection Service, National Arboretum, U.S. Forest Service
- Federal agencies including Departments of Interior and State, U.S. Public Health Service, National Aeronautics and Space Administration, the Smithsonian Institution, and Environmental Protection Agency
- State agencies
- Environmental and biotechnical regulatory agencies
- Ecological consulting companies
- Industries including petrochemical, chemical, and lumber and paper
- Companies including pharmaceutical, food, seed, and nursery, fruit growers, biological supply houses, and biotechnology firms

**APPLIED PLANT SCIENCE**
- Colleges and universities
- Research organizations
- Agriculture industry including lumber and paper, seed and nursery, fruit and vegetable growers, fermentation, food industry, and biological supply houses
- Biotechnology firms

### STRATEGIES

**PLANT BIOLOGY**
- Obtain a Ph.D. for teaching and advanced research positions.
- Conduct undergraduate research with professors to gain experience.
- Apply for undergraduate research fellowships or other student research programs.
- Maintain a high grade point average and develop good references in preparation for graduate school.
- Develop excellent computer skills.
- Join related professional associations.
- Read scientific journals or articles to stay abreast of current research.
- Learn federal and state government job application process.

**APPLIED PLANT SCIENCE**
- Take courses or double major in your area of interest.
- Gain relevant experience through volunteer positions, part-time work, or internships.
- Obtain a Ph.D. for teaching, advanced research positions, and administration.
- Learn a foreign language for international work such as plant studies in the tropics.
<table>
<thead>
<tr>
<th>AREAS</th>
<th>EMPLOYERS</th>
<th>STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Plant Science, Continued</td>
<td>Industries including petrochemical, pharmaceutical, and chemical&lt;br&gt;Ecological consulting companies&lt;br&gt;Federal, state, and local government agencies&lt;br&gt;Environmental and biotechnical regulatory agencies&lt;br&gt;Learn federal, state and local government job application process.</td>
<td></td>
</tr>
</tbody>
</table>

| ORGANISMIC SPECIALTIES | Colleges and universities<br>Research organizations<br>Federal and state government laboratories including Agriculture, Health, etc.<br>Pharmaceutical companies<br>Food and beverage industries including brewing and fermentation<br>Hospitals<br>Related industries | Gain experience working with technology.<br>Become familiar with laboratory procedures and equipment.<br>Assist a professor with research or find a part-time job in a laboratory.<br>Obtain a graduate degree in area of interest. |
|------------------------|---------------------------------------------------------------|
| Bryology | | Gain certification or licensure for high school science teaching.<br>Obtain a Ph.D. for positions in college teaching and research.<br>Gain experience through tutoring. |
| Lichenology | | Learn to work well with different types of people. |
| Microbiology | | |
| Pteridology | | |
| Mycology | | |
| Phycology/Marine Botanists | | |

<table>
<thead>
<tr>
<th>EDUCATION</th>
<th>Public and private high schools&lt;br&gt;Colleges and universities&lt;br&gt;Museums, botanical gardens and herbaria</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td></td>
<td>Gain certification or licensure for high school science teaching.&lt;br&gt;Obtain a Ph.D. for positions in college teaching and research.&lt;br&gt;Gain experience through tutoring.</td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td>Learn to work well with different types of people.</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| COMMUNICATION | Publishing companies including newspapers, magazines, books, and textbooks<br>Professional associations<br>Scientific and educational software companies<br>Non-profit organizations | Take courses in technical writing, journalism, or illustration.<br>Develop word processing and desktop publishing skills or computer-aided design.<br>Find an internship with a magazine, newspaper, or publisher.<br>Obtain a master's degree in scientific journalism. |
|---------------|---------------------------------------------------------------|
| Writing | | |
| Editing | | |
| Botanical Illustration | | |
### AREAS

#### LAW
- Agricultural
- Environmental
- Biotechnological

#### BUSINESS
- Sales/Marketing
- Administration/Management

#### COMPUTER PROGRAMMING

### EMPLOYERS

#### LAW
- Law firms with environmental focus
- Government agencies and regulatory agencies
- Biotechnical regulatory firms or agencies

#### BUSINESS
- Pharmaceutical companies
- Seed companies
- Biotechnology firms
- Scientific publishers
- Biological supply houses

#### COMPUTER PROGRAMMING
- Scientific and educational software companies

### STRATEGIES

#### LAW
- Obtain law degree after completion of bachelor's degree.
- Gain relevant experience by working at a law firm.

#### BUSINESS
- Earn a minor in business.
- Hold leadership positions in campus organizations.
- Join related professional associations.
- Develop good communication skills; take a course in public speaking.
- Learn various software packages including spread sheets, databases, and word processing.

#### COMPUTER PROGRAMMING
- Double major or minor in computer programming.
- Gain related work experience through internships or part-time and summer jobs.

### GENERAL INFORMATION

- Bachelor's degree qualifies one for work as a laboratory technician or technical assistant in education, industry, government, museums, parks, and gardens.
- Master's degree opens some opportunities in research and administration.
- Ph.D. is required for advanced research and administrative positions or college teaching. Most plant scientists work in higher education.
- Build good relationships with science professors and secure strong recommendations. Maintain a high g.p.a. for graduate school admission.
- Obtain part-time, summer, co-op, volunteer, or internship experience with government agencies, college/university labs, agricultural experiment stations, freshwater and marine biological stations, or private companies.
- Complete an undergraduate research project to decide on a specific area of interest in botany.
- Enjoy outdoor activities if planning to conduct research in an outdoor environment.
- Join organizations concerned with the world food supply and other related areas. Read scientific journals related to botany.
- Develop an excellent background in mathematics and strong verbal and written communication skills.
- Select a broad range of courses in English, social sciences, arts, and humanities.
- Become proficient with computers.