BIOCHEMISTRY
What can I do with this major?

AREAS

RESEARCH
Basic Research
Applied Research
Grant Writing
Administration

Some areas of specialization:
Healthcare: virology, immunology, enzymology
Pharmacology: drug properties, interactions, application and development
Environmental: testing, air/water/waste management, regulation
Agricultural: crop production, herbicide/pesticide development and application
Food science: preservation, nutrition
Cosmeceutical: development and application
Forensic: toxicology, DNA analysis, scientific instrumentation

EMPLOYERS
University laboratories
Federal government laboratories/agencies:
  National Science Foundation
  National Institutes of Health
  Food and Drug Administration
  Environmental Protection Agency
  Department of Agriculture
  Department of Energy
  Armed Services
State and local government laboratories/agencies
Public health departments
Hospital laboratories
Commercial medical laboratories
Private testing laboratories including forensics
Independent research foundations
Industries:
  Pharmaceutical
  Biotechnology
  Food processing
  Cosmetic
  Chemical
  Petroleum
  Agricultural

STRATEGIES
Bachelor's degree in biochemistry, biology, or chemistry qualifies one for laboratory technician or research assistant positions.
Choose courses with laboratory components to build experimental and instrumentation skills.
Gain experience in area of interest through internships, research with professors and/or complete a senior research project.
Complete a certificate training program, usually one year, to learn specialized laboratory techniques.
Take a course in grant writing.
Earn master's degree in biochemistry for advanced positions, greater responsibility, and higher pay.
Obtain Ph.D. to direct research projects and lead research teams.

TEACHING
Elementary
Secondary
Post-secondary
Non-classroom settings

Public and private schools, K-12
Two-year community colleges/technical institutes
Four-year institutions
Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture
Museums
Zoos
Nature centers and parks

Develop excellent communication skills.
Volunteer with and/or tutor target age group.
Complete an accredited education program for certification/licensure in biology and/or chemistry.
Earn a master's degree for teaching at some two-year institutions.
Prepare to attend graduate school by maintaining a high grade point average and securing strong faculty recommendations.
Complete Ph.D. for college or university teaching.
<table>
<thead>
<tr>
<th>AREAS</th>
<th>EMPLOYERS</th>
<th>STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEALTHCARE</strong></td>
<td>Hospitals</td>
<td>Plan on attending medical school or other related graduate program.</td>
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<tr>
<td>Medicine</td>
<td>Colleges or universities</td>
<td>Maintain an outstanding grade point average, particularly in the sciences.</td>
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<td>Dentistry</td>
<td>Medical centers and clinics</td>
<td>Meet with a pre-health advisor periodically.</td>
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<td>Optometry</td>
<td>Private and group practice</td>
<td>Join related student organizations. Demonstrate leadership abilities.</td>
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<td>Podiatry</td>
<td>Health networks</td>
<td>Volunteer to work in a hospital or healthcare setting.</td>
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<td>Pharmacy</td>
<td>Nursing homes</td>
<td>Find a summer job or internship in a hospital.</td>
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<td>Chiropractic</td>
<td>Rehabilitation centers</td>
<td>Secure strong faculty recommendations.</td>
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<td>Veterinary Medicine</td>
<td>Correctional facilities</td>
<td>Research all of the various fields within medicine to determine a particular career goal.</td>
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<td>Occupational Therapy</td>
<td>Large corporations</td>
<td>Develop a back up plan in case medical/graduate school admission is denied.</td>
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<td>Physical Therapy</td>
<td>Armed services</td>
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<tr>
<td>Public Health</td>
<td>Government agencies</td>
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<td></td>
<td>State and local public health departments</td>
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<thead>
<tr>
<th>OTHER PROFESSIONAL OPPORTUNITIES</th>
<th>Biotechnology industry</th>
<th>Supplement biochemistry degree with coursework in chosen field.</th>
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<tbody>
<tr>
<td>Sales/Marketing</td>
<td>Pharmaceutical industry</td>
<td>Gain sales experience through internships, part-time work, or summer jobs for sales positions.</td>
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<tr>
<td>Technical Writing</td>
<td>Pharmaceutical and chemical companies</td>
<td>Take business and/or computer classes.</td>
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<td>Scientific Journalism</td>
<td>Publishers:</td>
<td>Become familiar with desktop publishing and other software packages.</td>
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<td>Scientific Illustration</td>
<td>Textbook, magazine, newspaper, book</td>
<td>Develop strong written and oral communication skills.</td>
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<td>Regulatory Affairs</td>
<td>Software firms</td>
<td>Get experience writing for a school or local newspaper.</td>
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<tr>
<td>Administration/Management</td>
<td>Regulatory agencies</td>
<td>Obtain an MBA or Ph.D. to reach high levels of administration.</td>
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<tr>
<td>Scientific/Technical Recruiting</td>
<td>Search firms</td>
<td>To pursue a J.D., participate in mock trial and pre-law associations, learn law school admissions process.</td>
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<tr>
<td>Intellectual Property/Patent Law</td>
<td>Law firms</td>
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GENERAL INFORMATION

- Biochemists are typically curious and creative with strong observational skills and the ability to persevere.
- Biochemists often interact with scientists from other disciplines. Learn to work independently and as part of a team.
- Develop the ability to communicate clearly to compile and share results in oral and written forms.
- Gain competencies in computers and mathematics.
- Read scientific journals to stay current on relevant issues in the field, and join related professional organizations to network and build contacts.
- As an undergraduate, seek laboratory experiences such as research projects, volunteering with professors, summer jobs, or internships.
- Visit government laboratories or research centers to learn more about opportunities in biochemistry. Schedule informational interviews to learn about the profession and specific career paths.
- Participate in research programs sponsored by organizations like the National Science Foundation and the National Institutes of Health.
- Consider a certificate program or specialized master's program to qualify for research technician positions.
- Become familiar with the specific entrance exam for graduate or professional schools in your area of interest.
- Maintain a high grade point average, and secure strong faculty recommendations.
- Earn master's degree for greater variety and autonomy on the job.
- Earn Ph.D. to work on high-level research projects, to direct research programs, to enter high levels of administration, and to teach at four-year post-secondary institutions. Postdoctoral fellowships may also be required.
- Combine an undergraduate degree in biochemistry with a degree in law, computer programming, business, education, information science, or other discipline to expand career opportunities.
- Learn the job application process for government positions.