

BIOCHEMISTRY

What can I do with this major?

AREAS

EMPLOYERS

STRATEGIES

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

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

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.

AREAS	EMPLOYERS	STRATEGIES
<u>HEALTHCARE</u> Medicine Dentistry Optometry Podiatry Pharmacy Chiropractic Veterinary Medicine Occupational Therapy Physical Therapy Public Health	Hospitals Colleges or universities Medical centers and clinics Private and group practice Health networks Nursing homes Rehabilitation centers Correctional facilities Large corporations Armed services Government agencies State and local public health departments	Plan on attending medical school or other related graduate program. Maintain an outstanding grade point average, particularly in the sciences. Meet with a pre-health advisor periodically. Join related student organizations. Demonstrate leadership abilities. Volunteer to work in a hospital or healthcare setting. Find a summer job or internship in a hospital. Secure strong faculty recommendations. Research all of the various fields within medicine to determine a particular career goal. Develop a back up plan in case medical/graduate school admission is denied.

OTHER PROFESSIONAL OPPORTUNITIES

Sales/Marketing Technical Writing Scientific Journalism Scientific Illustration Regulatory Affairs Administration/Management Scientific/Technical Recruiting Intellectual Property/Patent Law Bioinformatics	Biotechnology industry Pharmaceutical and chemical companies Publishers: Textbook, magazine, newspaper, book Software firms Regulatory agencies Search firms Law firms Legal departments of corporations	Supplement biochemistry degree with coursework in chosen field. Gain sales experience through internships, part-time work, or summer jobs for sales positions. Take business and/or computer classes. Become familiar with desktop publishing and other software packages. Develop strong written and oral communication skills. Get experience writing for a school or local newspaper. Obtain an MBA or Ph.D. to reach high levels of administration. To pursue a J.D., participate in mock trial and pre-law associations, learn law school admissions process.
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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.