Biochemistry

The curriculum provides a broad background in chemistry and biological science and permits flexibility in meeting student interest. Courses in biochemistry and molecular biology provide students with sufficient background in the basic sciences of mathematics, physics, chemistry, and biology to meet the needs for graduate or professional program in most fields of medicine, dentistry and veterinary medicine.

Biochemistry majors develop the following skills:

Communication: Learn to communicate the results of your research and laboratory work in both written and oral form

Teamwork: Learn to work in groups for collaboration in the classroom and lab

Laboratory Skills: Learn to utilize modern instrumentation, technology and computers which are integrated into classrooms and laboratories

Research: Learn to work in advanced laboratories and complete independent research which will teach self-motivation and problem solving processes

Analytical Thinking: Learn to analyze and interpret research findings and other data related to your experiments and lab work

Job and Internship Websites

- American Society for Clinical Laboratories  http://www.ascls.org
- Bio Space  http://www.biospace.com/jobs/homepage/
- Jobs Abroad  http://www.jobsabroad.com
- Mayo Clinic  http://www.mayo.edu/mgs/surf.html
- NASA  http://nasajobs.nasa.gov
- National Institute of Environmental Health Sciences  http://www.niehs.nih.gov/careers/jobs/index.cfm
- National Science Foundation  http://www.nsf.gov/careers/openings/
- Office of Science  http://science.energy.gov/about/jobs
- Research Gate  http://researchgate.net/jobs/
- Science Jobs  http://www.newscientist.com
- Science Careers  http://www.sciencecareers.org
- Science Careers  http://www.sciencecareers.org
- Top USA jobs  http://biochemistry.jobs.topusajobs.com/

Delta Nu Alpha
Biochemistry and Molecular Biology Graduate Student Association
Pre- Health Professionals Club
Pre- Physician’s Assistant Club
Pre- Occupational Therapy Club
Pre- Veterinary Club
Pre- Optometry Student Association
Pre- Pharmacy Student Association

Get Involved

College of Arts & Sciences Career Services
213 Life Science East
Tel: 405 744 5658

For appointments and resources:
http://cascareers.okstate.edu
**Biochemistry Career Paths...**

**Potential Career Paths:** Biochemists study the chemical components and processes of living systems including plants, insects, viruses, microorganisms, and mammals to explain how and why chemical reactions occur. Biochemistry includes the sciences of molecular biology; immunochemistry; neurochemistry; and bioinorganic, bioorganic, and biophysical chemistry. The underlying principle of biochemistry understands the structure of living systems. By understanding the structure of something, a scientist has a vital start to understanding its function.

**Medicine and Health:** Diseases are prevented by vaccines developed and produced by biochemists. Expertise in protein chemistry is required for traditional vaccines and in nucleic acid chemistry for the new DNA-based vaccines. Many techniques for detecting diseases are also founded on biochemical, from enzyme assay to magnetic resonance imaging (MRI). Biochemists work to develop new diagnostic tools and improve existing systems.

**Government:** The federal government funds many biochemical research projects through the Food and Drug Administration, the Environmental Protection Agency and the National Institutes of Health.

**Navy:** Research Biochemists conduct and manage basic and applied research on biochemical problems of interest to the Navy, including harnessing solar and sea power, or developing a vaccine to battle a new disease. Forensic Toxicologists work in military forensic laboratories, Navy Research Laboratories or Environmental Preventive Medicine Units. Work with the Naval Criminal Investigative Service (NCIS), or serve as a member of a deployable Chemical, Biological, Radiological and Environmental (CBRE) Training Team, defending against biological, chemical and nuclear weapons.

**Drug Manufacture and Design:** Doctors prescribe them, pharmacists dispense them, but chemists and biochemists discover new drugs. In order to discover a new drug, a thorough understanding of the interaction between biological macromolecules and small molecules is needed. Biochemists are also involved in their production and quality assurance.

**Research:** Biochemists often have the opportunity to work in teams on research projects or they are assigned individual tasks in modern, well-equipped labs. There are plenty of job openings for biochemists interested in carrying out applied research for private companies in health and beauty care, chemical manufacturing, food and drink production, medical instruments and pharmaceutical development. Biochemistry’s application to other fields and its focus on improving the quality of our lives means that laboratory research is guided by strict guidelines.

**Forensic Science:** (Crime Lab Scene) Not only are biochemists and their expertise used in DNA fingerprinting, but the examination of other biological samples (blood, saliva, semen, flesh, etc.) are essential in many criminal investigations.

**Education:** Biochemists, who opt for the teaching science courses at the high school or university level, will instruct in the laboratory and lecture in a classroom setting.

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**Types of Employers**

- Dept. of Agriculture
- Dept. of Defense
- Dept. of the Interior
- National Institutes of Health
- Drug Enforcement Agencies
- Crime labs/Forensic Labs
- Dept. of Health and Human Services
- Occupational Safety and Health Admin.
- Federal Bureau of Investigation
- Food and Drug Administration
- Public Health Service
- Nuclear Regulatory Commission
- Environmental Protection Agency
- Biotechnology Firms
- Colleges and Universities
- Research Institutes
- Energy Firms
- Health Maintenance Organizations
- Chemical Manufacturing Firms
- Hospitals
- Public Health Laboratories or Offices
- Cancer Research Institutes
- Environmental Pollution Control Centers for Disease Control
- Research and Development Labs
- Pharmaceutical Companies
- Medical Instrument Companies

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**Job Titles**

- Research Assistant
- Clinical Research Associate
- Quality Control Technician
- Secondary School Teacher
- Pharmaceutical Researcher
- Research Assistant
- Laboratory Technician
- Product Developer
- Chemical Safety Engineer
- Independent Researcher
- Industrial Researcher
- Research Technician
- Chemical Safety Engineer
- Pharmaceutical Researcher
- Laboratory Supervisor
- Applied Researcher
- Dairy Technologist
- Biostatistician
- Biochemical Development Engineer
- Testing and Inspection Professional
- Analytical Chemist
- Technical Writer
- Biostatistician
- Clinical Technician
- Clinical Chemist
- Pharmacologist
- Toxicologist
- Clinical Chemist
- Associate Chemist
- Marine Biologist
- Cytologist
- Research Chemist
- College Professor
- Anesthesiologist
- Perfumer
- Biochemist
- Science Teacher