Biochemistry

Biochemistry as a discipline serves a pivotal role in advancing research in the Life Sciences. Through a combination of coursework, seminars, and original research, you will complete a Graduate degree and acquire the skills needed to become an independent research scientist. Our major research training areas emphasize:

- Structural and Analytical Biochemistry
- Molecular and Systems Biology
- Metabolism and Disease

Degrees earned will be distributed as: "Master of Biochemistry", "Master of Science", and "Doctor of Philosophy" without focus area specifications.

Brief Overview of Programs

- The accelerated Bachelor's / Master's Degree (ABM) is a 5-year dual degree program intended for undergraduate majors who wish to continue beyond the BS degree and receive additional training at the graduate level. Interested students who meet the minimum University GPA requirement are typically accepted into the program at the end of their junior year of undergraduate study. The Master's degree obtained after 5 years may be a Master's of Biochemistry (non-thesis) or a Master's of Science (thesis research) depending upon the selection made by the student.
- The Master's of Biochemistry is a non-thesis alternative to the Master's of Science degree in Biochemistry for students wishing to emphasize course work rather than thesis research. The Master's of Biochemistry is a terminal graduate degree and is not appropriate for students intending to pursue a Ph.D. program.
- The Master's of Science is a research degree that prepares students in Biochemistry for Ph.D. studies or provides training for technical employment.
- The objective of the Ph.D. program is to prepare students for careers as researchers primarily in academic, industrial, or government research environments.

More Information

Biochemistry Program Website (https://cals.ncsu.edu/molecular-and-structural-biochemistry/graduate/)

Admission Requirements

Students entering the graduate program in biochemistry should have a bachelor's degree in biochemistry, chemistry or a related physical or biological science, including undergraduate courses in organic chemistry, calculus, physics and physical chemistry, as well as biochemistry/ molecular biology. Applicants with a strong record of undergraduate research activity or with practical experience in a professional scientific setting are particularly encouraged to apply. Reporting of GRE scores is strongly encouraged.

ABM Specific Admission Requirements

- A minimum of seventy-five credit hours in their undergraduate programs, including credits earned from advanced placement, but prior to the completion of their bachelor's.
- A minimum overall undergraduate grade point average (GPA) of 3.500 at NC State at the time of admission into the ABM program.
    - This GPA must be maintained throughout their undergraduate program to remain in the ABM program.
- Receive a grade of B or better in the double counted graduate-level courses (500 or 700 level) while maintaining a 3.50 GPA.
    - Courses with a grade of B- or below cannot be double counted between the two degrees.
- Maintain a 3.50 or better Biochemistry Major GPA.
- Be positioned to complete the BS Biochemistry degree requirements by the end of their fourth year, and formally apply for admission to the Graduate School.
- One letter of recommendation from the proposed faculty mentor, indicating the qualifications of the student and willingness to serve as the Master's advisor.

Applicant Information

- **Delivery Method:** On-Campus
- **Entrance Exam:** GRE (optional)
- **Interview Required:** Yes

Application Deadlines

- **Fall:** December 1

Degrees

- Biochemistry (MR) (https://catalog.ncsu.edu/graduate/agriculture-life-sciences/biochemistry/biochemistry-mr/)
- Biochemistry (MS) (https://catalog.ncsu.edu/graduate/agriculture-life-sciences/biochemistry/biochemistry-ms/)
- Biochemistry (PhD) (https://catalog.ncsu.edu/graduate/agriculture-life-sciences/biochemistry/biochemistry-phd/)
- Biochemistry (Minor) (https://catalog.ncsu.edu/graduate/agriculture-life-sciences/biochemistry/biochemistry-minor/)

Faculty

Joe Barycki

Dennis Brown

Colleen Jennifer Doherty

Nathan M. Ennist

Abdulkerim Eroglu

Michael B. Goshe

Raquel Hernandez

Linda Kay Hanley-Bowdoin

Arion Kennedy

Xiaojing Liu

Thomas Makris

Flora Meilleur

Eric S. Miller

William Laubach Miller

David G. Presutti

Robert B. Rose

Ruben Rellan Alvarez

Ryan Charles Sartor

Melanie Simpson

Joshua J. Strable

Jose Trinidad Ascencio-Ibanez

Ning Sui

Paul Douglas Swartz

Peter Thompson

Guozhou Xu

Adjunct Faculty

Jason Locasale

Michael Luther

Michael Milburn

James Otvos

Emeritus Faculty

Cynthia L. Hemenway

Horace R. Horton

Joseph Stephan Kahn

James Knopp

James W. Moyer

Ron Ross Sederoff

Harold E. Swaisgood

Elizabeth C. Theil

Paul L. Wollenzien