Metabolic Biology

The Metabolic Biology Graduate Program offers Ph.D. and M.S. degrees, providing a comprehensive pathway for students passionate about advancing their knowledge in this dynamic field. The unique inter-campus program combines the expertise of faculty from UCB (University of California, Berkeley) and UCSF (University of California, San Francisco), offering interdisciplinary training in metabolic regulation, nutrient functions, and metabolic disorders.

- Research Focus: The program allows students to explore a diverse range of research topics, including nutritional and hormonal regulation of metabolic homeostasis, lipid droplet physiology, gastrointestinal physiology, neuronal control of feeding behaviors, cancer metabolism, and more. The faculty engages in translational research, driving drug discovery and the development of therapeutic and diagnostic approaches against metabolic diseases.
- Program Tracks:
  - MS Track (https://nst.berkeley.edu/prospective-students/graduate/ms-track/): Ideal for students seeking a deeper understanding of metabolic biology through focused coursework and research projects.
  - PhD Track (https://nst.berkeley.edu/prospective-students/graduate/mb-track/): Designed for those aspiring to become leaders in metabolic biology research, with opportunities for advanced training and interdisciplinary collaboration.
- Interdisciplinary Environment: The program fosters close interaction between students and faculty from various graduate groups, such as Molecular Toxicology, Endocrinology, Comparative Biochemistry, and Chemistry. It encourages collaboration and exploration across diverse fields within metabolic biology.
- Career Opportunities: Graduates of the Metabolic Biology program are well-equipped for careers in academia, government, and industry, with the skills and knowledge to address pressing challenges in metabolic health. The goal is to provide a strong, interdisciplinary research program that mentors the next generation of leading scientists, producing significant advances in knowledge.

Admission to the University

Applying for Graduate Admission

Thank you for considering UC Berkeley for graduate study! UC Berkeley offers more than 120 graduate programs representing the breadth and depth of interdisciplinary scholarship. The Graduate Division hosts a complete list (https://grad.berkeley.edu/admissions/choosing-your-program/list/) of graduate academic programs, departments, degrees offered, and application deadlines can be found on the Graduate Division website.

Prospective students must submit an online application to be considered for admission, in addition to any supplemental materials specific to the program for which they are applying. The online application and steps to take to apply can be found on the Graduate Division website (https://grad.berkeley.edu/admissions/steps-to-apply/).

Admission Requirements

The minimum graduate admission requirements are:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A satisfactory scholastic average, usually a minimum grade-point average (GPA) of 3.0 (B) on a 4.0 scale; and
3. Enough undergraduate training to do graduate work in your chosen field.

For a list of requirements to complete your graduate application, please see the Graduate Division's Admissions Requirements page (https://grad.berkeley.edu/admissions/steps-to-apply/requirements/). It is also important to check with the program or department of interest, as they may have additional requirements specific to their program of study and degree. Department contact information can be found here (https://guide.berkeley.edu/graduate/degree-programs/).

Where to apply?

Visit the Berkeley Graduate Division application page (http://grad.berkeley.edu/admissions/apply/).

Admission to the Program

Admission to the Metabolic Biology (formally Molecular and Biochemical Nutrition) program is based on a variety of factors, including academic achievement and relevant experience. We practice holistic admissions—each part of the application is important and thoroughly reviewed.

Applicants with a background in the biological sciences and lab experience are best suited for the Metabolic Biology program. While there are **no set prerequisites**, we look for the coursework in areas such as calculus, general and organic chemistry, biology, and biochemistry. Because this program is designed to develop research scientists, it is also important that applicants are familiar with an experimental lab setting.

Curriculum

Courses Required

First Year		
NUSCTX 103	Nutrient Function and Metabolism	4
MCELLBI 110	Molecular Biology: Macromolecular Synthesis and Cellular Function	4
NUSCTX 211A	Introduction to Research in Nutritional Sciences (Rotations & reports)	4-8
NUSCTX 211B	Introduction to Research in Nutritional Sciences (Rotations & reports)	4-8
NUSCTX 250	Advanced Topics in Metabolic Biology	3
NUSCTX 260	Metabolic Bases of Human Health and Diseases Graduate Level	4
NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics offered by NST Dept. or any biological/chemical science department; 3 required taken once a year)	2
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 293	Research Seminar (Faculty Research Presentations)	1
NUSCTX 299	Nutritional Sciences and Toxicology Research *taken instead of NUSCTX 211B upon joining a lab after first or second rotation	1-12

NUSCTX 302	Professional Preparation: Supervised Teaching Experience in Nutrition	2
NUSCTX 375	Professional Preparation: Teaching in Nutritional Sciences	2
Second—Fifth Years		
NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics offered by NST Dept. or in any biological/chemical science department; 3 required taken once a year)	2
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 299	Nutritional Sciences and Toxicology Research (Every semester)	1-12

Curriculum

Courses Required

First Year		
NUSCTX 103	Nutrient Function and Metabolism	4
MCELLBI 110	Molecular Biology: Macromolecular Synthesis and Cellular Function	4
NUSCTX 211A	Introduction to Research in Nutritional Sciences (Rotations & reports)	4-8
NUSCTX 211B	Introduction to Research in Nutritional Sciences (Rotations & reports)	4-8
NUSCTX 250	Advanced Topics in Metabolic Biology	3
NUSCTX 260	Metabolic Bases of Human Health and Diseases Graduate Level	4
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 293	Research Seminar (Faculty Research Presentations)	1
NUSCTX 299	Nutritional Sciences and Toxicology Research *taken instead of NUSCTX 211B upon joining a lab after first rotation	1-12
NUSCTX 302	Professional Preparation: Supervised Teaching Experience in Nutrition *if teaching	2
NUSCTX 375	Professional Preparation: Teaching in Nutritional Sciences	2
Second Year		
NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics offered by NST Dept. or in any biological/chemical science department)	2
NUSCTX 292	Graduate Research Colloquium	1
NUSCTX 299	Nutritional Sciences and Toxicology Research	1-12