

Undergraduate Biology

About the department

Undergraduate Biology provides support for all BIO course offerings at Stony Brook University. The department coordinates offerings from the Departments of Biochemistry and Cell Biology, Ecology and Evolution, and Neurobiology and Behavior in support of the Biology and Biochemistry majors, two of the strongest majors on campus serving a total of more than 2,500 students. Undergraduate Biology manages course scheduling, student registration, teaching assistant assignments, exam administration and oversees assessment of students, faculty and the curriculum for more than fifty courses involving nearly 12,000 student registrants annually. The department provides technical support for all BIO laboratory courses with full responsibility for the introductory laboratory courses that are taken by all Biology and Biochemistry majors as well as by other students who intend to pursue careers in the health science professions. The department coordinates interactions between the three life science Departments and other units, including the Registrar, the Graduate School, TL.T, Student Affairs, Human Resources, University Advancement, the Dean of the College of Arts and Sciences and the Provost. Student services offered by Undergraduate Biology include orientation, academic advising, transfer course evaluation, clearance for graduation, and organization of commencement.



Undergraduate Biology recently developed an innovative Introductory Biology Laboratory curriculum. Traditional content-based approaches limit the development of critical thinking skills due to the breadth of knowledge (and accompanying vocabulary) in biology. This new two-semester course sequence is designed to develop skills in observation, the use of tools and the collection and analysis of data from biological experiments. Physical as well as conceptual models kick-start inquiry-based exercises that have students actively involved in hypothesis testing. **Capstone experiences in the second semester require student-driven experimental design and science communication.** Modern educational technologies, including podcasts, web-based learning tools and Classroom Response Systems (clickers) are used to engage the students while also allowing for assessment of the impact of this new curriculum on student success.

Vision for the future

Undergraduate Biology intends to emerge as a nationally recognized leader in science education. The department will provide leadership in modernizing the life sciences curriculum.

Undergraduate Biology will conduct a comprehensive review of the overall curriculum to ensure that our students receive an education that mirrors the enormous excitement and pace of discovery in modern biology. The department will work with faculty to incorporate inquiry-based, cooperative learning approaches that have proven successful in the new introductory laboratory courses into other courses across the biology curriculum.

The increasingly interdisciplinary nature of knowledge in the life sciences requires interactions that extend beyond the core Departments of Biochemistry and Cell Biology, Ecology and Evolution, and Neurobiology and Behavior. Undergraduate Biology will **bring interdisciplinary excitement into the undergraduate curriculum** by reaching out and engaging faculty in Departments that represent the Health, Physical and Social Sciences at Stony Brook.

Undergraduate Biology will work to **promote and recognize excellence in teaching.** Faculty whose primary duties involve undergraduate instruction do some of the best and most innovative teaching at Stony Brook. The department will take a lead in enhancing the career development of these teachers and rewarding them for their success.

Long-term student success is enhanced by student-faculty interactions outside of the classroom. Undergraduate Biology will act as a catalyst to **broaden faculty participation in career development activities that enhance student success.**

Undergraduate Biology will work with University administration to **improve resources for educating large numbers of students.** Two pressing needs are learning spaces that are designed for cooperative learning approaches for large classes, and a Test Center of sufficient size to be useful for the University.

Undergraduate Biology will **develop new tools for monitoring and improving student success and satisfaction.** We will implement attitudinal surveys, including an exit survey for graduating students, and will assess the impact of different activities (e.g. research, teaching practica, readings, advising) on student outcomes.

Undergraduate Biology will **better equip transfer students to succeed in Biology** at Stony Brook by assessing their individual knowledge levels so as to better inform student advising and course sequencing. These efforts will be complemented by reaching out to schools from which students transfer to establish agreed on standards for student learning.

Distinguished alumni such as *Rear Admiral Steven Galson (former Surgeon General of the United States)*, *Dr. Margaret McGovern (soon to be Director of the Stony Brook Children's Hospital)* and *Dr. Michael Stebbins (Deputy Director of Biotechnology in the White House)* are valuable role models for our students. We will actively **reach out to our alumni to enrich the opportunities available to Stony Brook undergraduates.**

