Undergraduate Biology

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, TLT, Student Affairs, HumanResources, University Advancement, the Dean of the College of Arts and Sciences and the Provost. Student services offered byUndergraduate Biology include orientation, academic advising, transfer course evaluation, clearance for graduation, and organization of commencement.

Undergraduate Biology recently launched a new integrated Introductory Biology Laboratory curriculum. These two sequential, inquiry-based courses differ from traditional content-based approaches that present obstacles to the development of critical thinking skillsdue to the breadth of knowledge (and accompanying vocabulary) in the biological sciences. Thelaboratory exercises are designed to develop skills in observation, the use of tools and thecollection and analysis of data from biological experiments. Physical as well as conceptualmodels are used to kick-start inquiry-based exercises that have students actively involved in hypothesis testing. Capstone experiences in the second semester involve student-driven experimental design and science communication. Modern educational technologies, including Podcasts, web-based learning tools and Classroom Response Systems (Clickers) areused to engage the students while also allowing us to assess the impact of this new curriculumon 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. Assessment of the new introductory laboratory courses indicates inquiry-based, cooperative learning approaches positively impact on student learning outcomes. We will work with facultyto incorporate similar strategies in their courses while also conducting a comprehensive review of the overall curriculum to insure that our students receive an education that mirrors the enormous excitement and pace of discovery in modern biology.

The increasingly interdisciplinary nature of knowledge in the life sciences requires interactions that extend beyond the coreDepartments of Biochemistry and Cell Biology, Ecology and Evolution, and Neurobiology and Behavior. Undergraduate Biology will bring interdisciplinary excitement into our undergraduate curriculum by reaching out to faculty in Anthropology, Biomedical Engineering, Chemistry, Marine Sciences, Microbiology, Pathology, Pharmacology, and Psychology.

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

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.

The department will develop new tools for monitoring and improving student success and satisfaction. We will implement attitudinal surveys at multiple points, 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 work to promote the recognition of excellence in teaching. Faculty whose primary duties involve undergraduate instruction do some of the best and most innovative teaching at Stony Brook. We will take a lead inenhancing the career development of these teachers and rewarding them for their success.

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.