

Biology Program Fund for Excellence

Thank you for your interest in supporting Undergraduate Biology at Stony Brook. Your help is instrumental in advancing our mission to provide a rigorous and engaging Biology curriculum that develops an interdisciplinary understanding of the living world while linking learning to the excitement of discovery. Current efforts focus on advancing evidence-based, student-centered learning approaches that are complemented by an inclusive range of activities to engage students outside of the classroom.

Transforming STEM Education



Promoting Science Outside the Classroom



Transforming STEM Education. The last thirty years have witnessed widespread efforts at many levels to improve education in science, technology, engineering and mathematics – moving away from traditional instructional approaches and towards the adoption of evidence-based, student-centered teaching practices. Undergraduate Biology strives to stay at the forefront of these exciting changes by continuing to engage faculty and students in developing and delivering a world-class curriculum.

- Undergraduate Biology has worked to promote faculty development and the adoption of evidence-based, student-centered pedagogy through active participation in the Summer Institutes on Scientific Teaching since their inception in 2004. More than 1/3rd of the life sciences faculty have participated in these week long workshops and a variety of different active learning approaches are now employed in many undergraduate Biology courses. Stony Brook is proud to serve as host for the [2019 Northeast Summer Institute on Scientific Teaching](#).
- In 2014 Stony Brook was one of eight institutions selected nationally to participate in the [PULSE \(Partnership for Undergraduate Life Sciences Education\) recognition program](#) funded jointly by the Howard Hughes Medical Institute, the National Science Foundation and the National Institutes of Health. This review scored Stony Brook at PULSE Pilot Progression Level 2, indicating clear progress towards implementing the principles of Vision and Change with strengths in the areas of Faculty Practice and Infrastructure. A recent follow-up survey demonstrates progress in all areas.
- Continuing efforts to improve student learning include Stony Brook's participation in the 2019 [STEMwrite Institute](#) at the University of Minnesota. A team of five faculty will attend a multi-day workshop to develop materials that will be used in high enrollment biology courses in a way that positively impacts conceptual learning.

Promoting Science Outside the Classroom. Research and internship experiences have a demonstrable positive impact on student development. The Undergraduate Biology Program is committed to broadening the range of such opportunities available to our students and providing them with support that maximizes their success. Ongoing efforts include:

- In collaboration with the Career Center, the Biology Program provides [internship](#) opportunities with a number of local off-campus partners in a variety of life science-related areas. Although more than 20 students are registered for internships for the spring semester of 2019, we aim to increase the availability of these opportunities with assistance from alumni and friends of Biology at Stony Brook University.
- [URECA Biology Alumni Research Awards](#) have provided funding to support immersive research opportunities in the life sciences. Recent Biology Alumni Research Award recipients have gone on to further studies at institutions including Berkeley, Cornell, UCSF and Vanderbilt. Contributions to the Biology program were used to directly support six of the thirty-one students that received URECA awards to do research in the life sciences in the summer of 2018. Although impressive, this total is less than half of the sixty-eight students who submitted faculty-endorsed URECA applications for last summer.
- The Biology program is committed to ensuring that the out-of-the classroom research experiences that are available at Stony Brook are accessible to all students, irrespective of their background and financial need. One challenge is raising awareness of such opportunities amongst students from disadvantaged backgrounds, especially during the earlier stages of their academic careers. We have partnered with the Career Center and URECA Office to offer the [Explorations in STEM](#) program - a summer-long, faculty-mentored research experience for lower division students that includes a series of weekly professional development workshops. This effort has been complemented by development of the INSPIRE (Include New Students through Peer Introduction to Research Experience) program in which 2nd semester freshmen from disadvantaged backgrounds are paired with a 2nd semester senior peer mentor that is actively involved in research. With assistance from our alumni we are proud to be able to support the participation of three of this spring's fifteen INSPIRE Fellows in the 2019 Explorations in STEM Program.
- Since 2014 the Biology Program has directed [IMSD-MERGE](#) (Initiative for Maximizing Student Development – Maximizing Excellence in Research and Graduate Education), an NIH-funded program that has the goal of broadening participation of students from under-represented and disadvantaged backgrounds in biomedical research careers. To date this program has provided support for 26 current and former undergraduates with alumni currently pursuing advanced degrees at institutions including Carnegie Mellon, Georgia Tech, Northeastern, Stony Brook and Yale. This fall three IMSD-MERGE affiliated graduates will be starting doctoral programs at Johns Hopkins, Rockefeller University and the University of California at San Francisco and a fourth student will be joining the MD/PhD program at the Drexel University College of Medicine.
- Stony Brook's participation in the iGEM (International Genetically Engineered Machines) competition since 2014 has benefitted enormously from alumni donations and philanthropic support. The [2018 Stony Brook iGEM](#) team was one of seven American collegiate gold medal winners in a competition involving more than 300 teams. Former iGEM team members have won numerous awards, including Fulbright and Goldwater Scholarships and our iGEM alumni are currently pursuing advanced degrees at institutions including Columbia, Cornell, Einstein, Johns Hopkins, MIT, Rockefeller, Stanford, Stony Brook, Texas and Yale. Participating in iGEM involves a full-time commitment over the summer; a commitment that presents a significant financial challenge for some of the most interested students. We seek your support in making this opportunity a real possibility for all well-qualified students.