Opportunities Week of August 23rd, 2019

**Entering Research Workshop Fall 2019:** The application for Undergraduate Biology’s Entering Research Workshop is now open. The purpose of this workshop is to facilitate independent research opportunities for students in the life sciences. The workshop is comprised of three two-hour meetings on Wednesday evenings from 6:30-8:30 PM. The dates for the Fall 2019 semester are scheduled for Wednesdays, September 11th, October 2nd, and October 23rd.

**Application due by Tuesday, September 3rd, 2019.**
If you are interested in participating in the Fall 2019 Entering Research Workshop, please apply at https://stonybrookuniversity.co1.qualtrics.com/jfe/form/SV_e2S66xqruSHXBlj

**TEACHING ASSISTANT POSITION for Self-Management Workshops in Mindfulness:** A great resume builder with a letter of recommendation upon conclusion of the semester. Only 1 hour a week commitment. Undergrads and first-year students welcome.

**Info sessions are being held the first week of Fall 2019**
If interested, sign up for more info at: http://bit.ly/1S7Euoj

**Paid Student Openings for Allied Microbiota:** Allied Microbiota is looking for 3 students to assist with research projects. Applicants must be full-time Stony Brook students and willing and able to travel to the Advanced Energy Center, located in the Stony Brook R&D park off of Stony Brook road. There is a shuttle that leaves in front of the SAC on a regular basis. Projects are described in the attached file.

**Interested students should send their resumes to lisa.chichura@stonybrook.edu**

*Disclaimer: Undergraduate Biology does not endorse or take responsibility for any off-campus programs listed in Opportunities emails. While we do our best to vet any opportunity that is shared, please let us know immediately if you are suspicious of any employers/programs.*
1) A thermophilic Bacillus as a model system
A large amount of information has been developed on model bacterium such as *E. coli*. Such model systems provide powerful experimental capabilities to answer basic questions in microbiology and enable scientists to transform the characteristics of bacterial strains in various ways. The number of model systems does not begin to cover the broad taxonomic diversity of bacteria however, and this project will work towards establishing a novel, thermophilic bacterium as a new model organism. A previously described plasmid will be used to introduce new genetic elements to the thermophile. Previously derived genetic sequence data will provide a basis for the comparative genomics of the thermophile and context for the transformation work. Of particular interest are the genetic basis of the bacterium’s oxidative capabilities as well as its active membrane transport systems.

2) Surfactants and proteins from thermophilic bacterium
Bioproducts from bacteria and other microbes are being used to develop a bio-based economy that produces renewable feedstocks for food, pharmaceutical and chemical products. Bioproducts can replace industrial chemicals with less energy intensive and more sustainable alternatives and also provide more biologically compatible personal care products. This project will characterize the extracellular bioproducts associated with a thermophilic bacterium that releases large amounts of surfactants and proteins during growth. The products from incubations will be analyzed to determine the exact types of surfactants present. Protocols will be developed to separate these products from the protein fraction and also to better characterize the proteins generated during growth.

3) Biological breakdown of emerging environmental contaminants
Many organic industrial products persist in the environment for decades because the typical microbial communities lack the ability to break them down. This project focuses on screening selected microbial strains for their ability to degrade organic contaminants of concern in soil and sediment. The project will focus in particular on contaminants that have only recently emerged as problems in the environment. These include fluorinated compounds that have been used in fire suppression and groundwater contaminants such as 1,4-dioxane. Work will include microbial incubations and the analysis of chemical data characterizing incubation conditions and results.
Entering Research Workshop

In order to facilitate independent research opportunities for students in the life sciences the Undergraduate Biology Program offers an 'Entering Research Workshop' every semester.

Participants in this Workshop will:

- learn how research labs are organized;
- receive an overview of the research opportunities available to Stony Brook students;
- hear from a panel current of student researchers about their experiences;
- identify specific labs whose research is of interest to the participant;
- hear from a panel of faculty mentors about their expectations of undergraduate researchers;
- further explore the ongoing work in one lab in preparation for making an inquiry regarding research opportunities;
- complete training in lab safety and the responsible conduct of research that is required for doing research.
- earn a certificate documenting their participation.

There is limited availability for the 'Entering Research Workshop'. One of the criteria for selection is performance in BIO 204, Fundamentals of Scientific Inquiry in the Biological Sciences I. Students who have not earned credit for BIO 204 (either here at Stony Brook or as transfer credit) are strongly encouraged to complete this course before participating in the Entering Research Workshop. As one of the objectives is to help students identify a lab and participate in research for at least two semesters priority will be given to sophomore and junior-level students.

This Workshop comprises three approximately two-hour meetings on Wednesday evenings from 6:30 - 8:30 PM. The Workshop dates for the Fall 2019 semester are tentatively scheduled to be:

- Wednesday, September 11th
- Wednesday, October 2nd
- Wednesday, October 23rd

If you are interested in participating in the Fall 2019 Entering Research Workshop please complete the survey at the link below in order to apply.

https://stonybrookuniversity.co1.qualtrics.com/jfe/form/SV_e2S66xquSHXBij