PSYCHOLOGY, BIOLOGY AND ENGINEERING
ARTS AND SCIENCES, COLLEGE OF ENGINEERING

APPLICATION DEADLINE: 03/01/2019

PROJECT TITLE: Robots and Biology: a summer program aimed at underrepresented high school students

Dieter Vanderelst
University of Cincinnati
Edwards 1, office 4150K
vanderdt@ucmail.uc.edu
http://www.bitsofbats.net/

Project Description

Over the summer of 2019, we will be running a three-week summer course for rising 12th-grade high school students. This program aims at familiarizing underrepresented students with STEM disciplines and encouraging them to enroll in STEM-based college majors. The program organizers include faculty from across biology, psychology, educational sciences, and engineering.

The course will teach students about sensory perception in animals (vision, smell, hearing, and proprioception). The students will use this knowledge to build robotic models of the animal systems. For example, students might learn about navigation in ants and build a robot that mimics this behavior. Therefore, among other topics, the course will teach students the fundamentals of programming, animal sensory systems, the physics of sensory perception, sensors, and electronics.

As a WISE student, you will assist faculty in running this program. Besides, you will assist in gathering and analyzing the data which will be used in to assess the project's impact and success.

1) Before the program, you will aid with preparations for the course. This might include preparing robotic activities, biological experiments or engineering demos.

2) During the course, you will aid in teaching the high school students, running activities and data collection.

3) After the course, you might help in data processing, identifying areas of improvement and preparing activities for the 2020 course.

This project would suit students interested in education and social research.
Also, while not required, it would be advantageous you have an interest in robotics or biology.