

## **BIO 3201: Anatomy and Physiology Laboratory – Dr. Jeffery Morrissette**

Anatomy and Physiology Laboratory is typically taken in the sophomore or junior year by students majoring in Biomedical Engineering, Molecular and Cell Biology, and Chemical Biology. The 15-week course contains traditional A&P laboratories with a CURE module weaved throughout the semester. Anatomy and Physiology Laboratory has course objectives centered around the practice of scientific research and is used for programmatic assessment of our students' ability to design and conduct experiments and analyze and interpret data. As such the course is a natural fit for a CURE module.

I use a “tool-based” approach in this CURE module that starts during week 2 with a group discussion of the many sensors (tools) that are now available for acquiring personal physiological data, from the wearable technology now flooding the market to more traditional physiological recording devices present in the lab such as blood pressure recorders and EKG monitors. After some time for brainstorming students in groups of 4-6 formulate a question or hypothesis that can be addressed or tested using one or more of the “tools.” The group then submits their detailed experimental design in week 5. Throughout this process students are making their own decisions and learning from each other on how to develop a well-controlled scientific experiment. In the weeks following, students conduct their experiments, collect and analyze their data and draw their conclusions. Together we then discuss the many ways in which scientific research is disseminated. A topic that most know little about but is crucial to their understanding of how science progresses. The deliverable for this CURE module is a research poster that the group will design and present to the class at the final meeting. Through the engagement of students in discovery-based scientific research this CURE module enhances their understanding of the true research process.