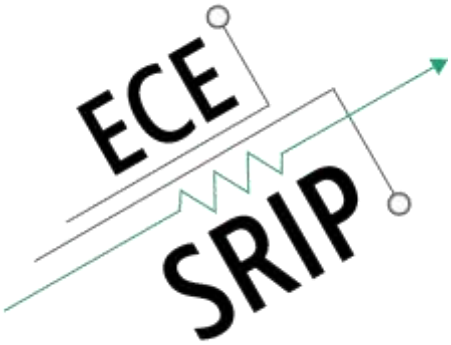

FACULTY MENTOR
Der-Avakian, Andre

PROJECT TITLE
Developing a wireless EEG recording system for rodents

PROJECT DESCRIPTION
EEG recording systems are often used in rodents (e.g., rats) to measure brain electrophysiological activity in awake animals performing cognitive and other behavioral tasks, providing researchers with several layers of neural activity data that correspond to cognitive processes and other behaviors. Recording systems typically include a small circuit board that is attached to electrodes on the animal's head and amplifies and digitizes analog EEG signals recorded from the brain. Digital EEG signals are then sent to a computer via a cable that is connected to the circuit board on one end and a computer interface on the other end. Connecting the animal to a cable is problematic because it restricts movement during behavioral testing and can easily be chewed and destroyed by the animal. This project would involve converting an existing tethered EEG recording system into a wireless system, where digital EEG signals can be transmitted without wires to the computer interface. Students would have access to the entire EEG recording system, including the computer interface, circuit board, and cables, and designs of all recording equipment are available from the manufacturer. Once completed, students will be able to test the new wireless system on a live animal performing a behavioral task.

This project can accommodate both remote and in-person students

INTERNS NEEDED
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PREREQUISITES
Strong familiarity with and interest in wireless technologies.