

FACULTY MENTOR

Lerman, Imanuel

PROJECT TITLE

Novel Sensing and Stimulation of Human Nerves that Encode Infection

PROJECT DESCRIPTION

Our lab is developing sensor technology that senses infectious neural signals that may be used in a closed loop system for neural stimulation, aimed to treat infection related inflammation.

This project is in-person

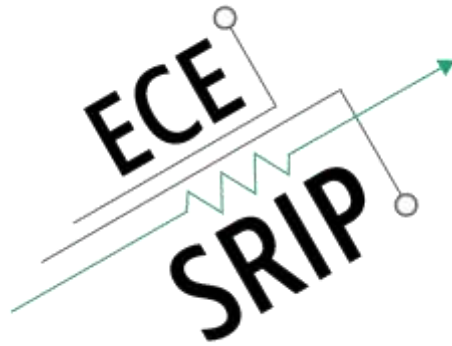
INTERNS NEEDED

3

PREREQUISITES

Preferred Qualifications:

1. System and device fabrication/production for research and commercial purposes.
2. MATLAB programing, including data acquisition, analysis and system control.
3. LabVIEW programing for some of the system control.
4. Machine Learning for Image Recognition (medical ultrasound).
5. Circuit building for accessories (trigger generator, bandpass filter, modulation generator).
6. Testing troubleshooting and System operation.



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PROJECT TITLE

Vagus Nerve Stimulation Effects on Sleep and Learning

PROJECT DESCRIPTION

We are testing the effects of neuromodulation (vagus nerve stimulation on sleep). The subjects will undergo interaction with artificial intelligence that will require a level of trust, before and after sleep deprivation. The AI agent will identify potential military targets and the subject will confirm the target. The project will determine if neuromodulation can improve learning in and trust accuracy (trust of artificial intelligent agent) in sleep deprived stated

This project can accommodate both remote and in-person students

INTERNS NEEDED

2

PREREQUISITES

Preferred Qualifications:

1. System and device fabrication/production for research and commercial purposes.
2. MATLAB programing, including data acquisition, analysis and system control.
3. LabVIEW programing for some of the system control.
4. Machine Learning for Image Recognition (medical ultrasound).
5. Circuit building for accessories (trigger generator, bandpass filter, modulation generator).
6. Testing troubleshooting and System operation.
7. Involvement in human trials (safety parameter assessment)