

FACULTY MENTOR

Ramanathan, Dhakshin

PROJECT TITLE

Development/optimization of automatic rodent behavioral box

PROJECT DESCRIPTION

We have a prototype of a chamber in which animals can be placed and trained to perform various behaviors. The chamber itself is controlled using a Raspberry PI using Simulink software. We use this box, in conjunction with electrophysiology, to understand neural circuits underlying these various behaviors. One major problem is that the boxes require a lot of user intervention. It would be great to have an apparatus that can be placed directly in an animals' cage, and thus animals could "self-train" themselves with. As we have the prototype, all CAD files, etc. already, this project would primarily involve putting together modifications to our existing behavioral box in order to accomodate putting it in the animals' chamber.

INTERNS NEEDED

Two, either BS or MS.

PREREQUISITES

Likely some degree of experience with micro-controllers (RasPI, etc.), CAD design/3-D printing, laser-cutting. Ability to integrate mechanical, software and hardware pieces.

FACULTY MENTOR

Ettenhofer, Mark L

PROJECT TITLE

Eye Tracking and Virtual Reality for Assessment of Traumatic Brain Injury

PROJECT DESCRIPTION

Perform software development for eye tracking and virtual reality technology used to assess cognitive and functional capabilities of military service members with brain injuries.

INTERNS NEEDED

1 BS or MS student

PREREQUISITES

Experience with Unity, Python, and/or C# is preferred. Work will take place at Naval Medical Center San Diego.