# PSY 390 Research Opportunity – Spring 2019

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<th>Faculty member or graduate student</th>
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<td>Susan Sangha, PhD, Assistant Professor, Neuroscience</td>
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## Description of research area

Learning to fear and avoid life-threatening stimuli is a critical survival skill but maladaptive when it persists in the absence of a direct threat. This maladaptive fear hinders survival success and can lead to a wide-range of clinical problems, such as depression and addiction. Accurately classifying stimuli as dangerous or safe is important in initiating the proper emotional response. Safety signals alert the organism to when the environment is safe thus promoting behaviors leading to natural rewards, such as feeding and mating, whereas danger signals inhibit these behaviors. By combining analyses at the behavioral, electrophysiological and molecular levels we can track biological changes in the brain as a rat is learning about fear, safety and reward signals. Findings from our studies can be applied to developing better behavioral and biological treatments for patients suffering from Post-Traumatic Stress Disorder and addictions, both growing problems in our society.

## Description of undergraduate participation

Undergraduate researchers will assist in:

- Handling and weighing rats
- Scoring behavioral data from videos
- Collecting behavioral data during fear, safety and reward learning
- Processing brain tissue to correlate learning or effects of stress with biochemical changes in the brain

## Research setting

All research will be performed in Dr. Sangha’s laboratory in the Psychological Sciences building.

## Number of assistants needed

1-2

## Contact information

sangha@purdue.edu

## To apply

Please email to set up an appointment. Only those who can commit to 2 or 3 credits (6 or 9 hours per week, respectively) will be considered. Individuals potentially interested in being in the lab for multiple semesters and considering completing an undergraduate research thesis are especially encouraged to apply.