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Q1 Faculty Information:

Last name:	Raghupathi
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Faculty Position:	Professor
Department:	Neurobiology and Anatomy
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Q2 Type of Research? **Basic Science Research**

Q3 Please describe your research interests:

Concussion, Traumatic brain injury, emotional and cognitive behaviors, sex differences, age differences

Medical Student Research Opportunities

Q4 Please provide a brief description of research opportunity/project(s):

1) Title of project(s):

Treatments for concussion-induced behavioral deficits

Brief Description:

We have observed that adolescent male and female rats exhibit cognitive deficits along with depression and anxiety. We have begun to identify cellular mechanisms underlying these deficits, and have honed in on neuropeptides such as CRF and dynorphin, and neurotransmitters such as dopamine as potential therapeutic targets. The project will evaluate treatment strategies to reverse or limit the extent of cognitive and/or emotional behavior deficits over the first 2-4 weeks after injury.

Duration:

Spring - Summer - Fall, or summer only

Time commitment:

20-40 hours per week (summer), 5-10 hours/week during school terms

Specific Requirements:

Some lab experience helpful but not needed

Funded or unfunded (yes or no):

No

2) Title of project(s):

Stress responses after TBI

Brief Description:

Our preliminary data suggest that rats that have sustained a TBI as a neonate exhibit reduced coping responses to stress during adolescence. We have identified the glucocorticoid signaling system as one potential mechanism underlying this inability to cope. The project will evaluate the effect of using glucocorticoid receptor agonists (Dexamethasone) as potential treatment to improve the coping strategy of brain-injured rats.

Duration:

Spring-Summer-Fall or summer only

Time commitment:

20-40 hours per week (summer), 5-10 hours/week during school terms

Specific Requirements:

Some lab experience helpful but not needed

Funded or unfunded (yes or no);

No

Q5 Please indicate the specific level of experience required, if applicable:

Open to all medical students
