

PEDIATRICS, DIVISION OF NEUROLOGY
COLLEGE OF MEDICINE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: 03/01/2020

PROJECT TITLE: MicroRNA-mediated control of neuronal excitability

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Project Description

Epilepsy affects about 2.5 million people in the USA alone, and for roughly 30% of these individuals, currently available medication does not work. They have to live with uncontrolled seizures, which severely affects their quality of life and their ability to live independent lives. The Gross lab uses mouse and cellular models of epilepsy to identify novel therapeutic targets that could be developed into therapeutic strategies in the future. This project will use mouse models of genetic and acquired epilepsy to assess if manipulation of certain microRNAs alters seizure susceptibility, brain activity, neuronal morphology and neuroinflammation in the brain. MicroRNAs are small noncoding RNAs that regulate a network of target mRNAs. They can be easily manipulated by small antisense oligo inhibitors (antagomirs) and are thus an attractive therapeutic target. The prospective student will work with a Research Associate, Dr. Durgesh Tiwari in the lab and will be involved in EEG analysis, immunohistological analyses as well as western blotting and genotyping.