

CHOP Research Institute Summer Scholars Program



Eric Marsh, M.D., Ph.D.

Neurology

Basic Research: Research most often conducted in a laboratory setting that is designed to enhance our scientific knowledge base (does not involve human subjects)

Impact of Early Brain Development on Seizure Disorders

There are a number of infant and early childhood onset epilepsy syndromes that have very poor outcomes. Very little is known about how/why the developing brain has seizures. Using mouse genetics, electrophysiology, anatomical, and developmental techniques we aim to elucidate the changes in the developing brain that lead to these severe epilepsies so that ultimately, we can target these changes therapeutically.

- **Potential summer research project:**
 - (1) Describing the anatomical and cellular changes in a mouse model of epilepsy using immunohistochemistry and microscopy;
 - (2) Performing behavioral and pharmacological studies to determine how the genetic manipulations, seizures, or treatments alter the mice behavior; and
 - (3) Recording and analyzing EEG and multi electrode array data to determine the physiological changes that occur in the mutant mouse brain.
- **Students will learn the following techniques:**
 - (1) Immunohistochemistry;
 - (2) Mouse behavior studies; and
 - (3) EEG recording and analysis.

Please click [here](#) to read more about Dr. Marsh