

2021_SSP Faculty Projects

Row 4

Research Group Larimore

Project Title **Characterization of sub cellular compartments in a mouse model of Epilepsy**

Research Question, Hypothesis, or Conjecture Seizure impact sub cellular trafficking compartments within brain regions of a mouse model of epilepsy

Project Description We will be working with Dr. Dutton's lab group to examine the molecular side of the mouse model with epilepsy that she developed during her post-doc at Emory. Much is known about the seizure paradigms for this mouse model, but little is known about the trafficking compartments. I have published many papers on trafficking compartments and alterations observed in neurodevelopment mouse models. We will use similar molecular approaches to combine my expertise with that of Dr. Duttons. Working together, we can characterize some unique features of the epilepsy mouse model.

Introductory References

Project Timeline (weekly), during June 1 - July 31 Week 1 - list search/write an abstract for the project, personal goal setting, learn immunofluorescence and immunoblotting Week 2 - learn immunofluorescence and immunoblotting Week 3 - data collection, analyze data Week 4 - Data collection, analyze data Week 5 - data collection, analyze data Week 6 - generate a results section Week 7 and 8 - wrap up experiments, generate a final product (paper or poster)

Expected Learning Outcomes 1. Critical thinking/Problem Solving – through weekly article analysis, students will be able to critically read and evaluate scientific literature. Through designing experiments and inquiry-driven laboratory experiences, students will sharpen their ability to think critically about neuroscience. 2. Oral Communication – through article presentations and lab poster presentations, students will demonstrate their abilities to present scientific findings to a broad audience. 3. Written Communication – through weekly assignments and the Grant pre-proposal, students will demonstrate their ability to write scientifically. 4. Teamwork/Collaboration – working with a lab team as well as a team for presentations will enable the students to practice real-world teamwork competencies that are taught as a part of SUMMIT. 5. Digital Technology – students will learn how to navigate various online resources to complete assignments and collaborate with peers. Students will actively use CITI, Canvas, PubMed, Google Drive and Power point. 6. Research Skills – as a result of this course, students can design an experiment, analyze the results, draw conclusions, and report on the research both with scientific writing and an oral presentation. The laboratory portion of this course is designed to enhance the learning in the lecture as well as progress the career of each student as a scientist. 7. Career Management – at the end of this course, there is a day to add the relevant skills gained from this course to a student's CV or resume. Additionally, there will be time to work on personal statements and discuss cover letters.

Research Team & Environment Dr. Dutton and myself share a physical lab space and we blend our students as well as research interests. There are only undergrads

from this program on our team. My schedule is loose - as long as the work is getting done, I don't watch the clock. This is about what you want out of science and where you want to take it.

Department	Neuroscience
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4 or 8 Week Project	8 weeks, beginning May 12: please contact Dr. Larimore to discuss timing.
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# of full-time student positions requested (1-3)	2-3
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Minimum Requirements (for research novices)	Molecular Biology and Foundations of Neuroscience 2 are preferential
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Requirements for Advanced students	NA
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Recommended Preparation (but not required)	Neuroscience majors;
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Modification for Remote Research (IF needed)	If needed, I plan to carry out the bench science, upload the data, and have students analyze the data.
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