

Postdoctoral Research Associate – Behavior and 2-photon neural circuit imaging – Zakharenko lab

A postdoctoral position is available for a highly motivated individual interested in the neural circuit mechanisms of schizophrenia. Our laboratory conducts behavioral and 2-photon laser-scanning microscopy imaging of neuronal activity in mutant mice, with a focus on mouse models of 22q11 and 3q29 deletion syndromes, high-risk genetic risks for developing psychiatric disorders, especially schizophrenia.

Our laboratory conducts 2-photon laser-scanning microscopy imaging of neuronal activity in the auditory cortex of awake mice, with a focus on mouse models of genetic risks for developing schizophrenia. Preference will be given to applicants who have received their Ph.D. degrees in behavioral neuroscience or related fields within the last 3 years and have experience in computational neuroscience and data mining using machine learning methods.

The successful candidate will lead an independent research project dedicated to identifying abnormal behavior and neuronal activities in circuits of murine models of 22q11.2 and 3q29 deletion syndromes, two rare conditions that confer the highest genetic risks of schizophrenia.

Qualifications:

- PhD in neuroscience, or related fields
- DeepLabCut or similar methods
- Demonstrated hands-on experience with 2-photon imaging techniques
- Experience analyzing time-series data, preferably from neuroimaging or behavioral studies
- Excellent communication skills and ability to work in a collaborative environment

The laboratory is equipped with Mini-2p (Thorlabs) for imaging neuronal activity in behaving animals, two 2-photon mesoscopes (Thorlabs) for imaging large cortical and subcortical areas in awake head-fixed animals, two 2-photon microscopes for single-cell electrophysiological experiments in brain slices (Chun et al, *Science* 2014; Blundon et. al. *Science* 2017; Davenport et al., *Cell* 2022; Bayazitov et al., *Cell Reports* 2024, Patton et al., *Cell Reports* 2024; Eom, et al, *Nature Communications* 2024).

The successful candidate will join a diverse team of researchers whose efforts are directed toward understanding behavior at the levels of neural circuits, individual neurons, synapses, and molecules. The laboratory is part of the Department of Developmental Neurobiology, which houses specialized departmental shared resources, including an integrated support structure for rodent behavior testing, brain organoids, in vivo and ex vivo cellular imaging, bioinformatics, production of genetically engineered animal models, single-cell profiling, and advanced image processing and analysis. In addition, numerous institutional shared resources and core facilities support the laboratory by providing expertise and state-of-the-art technologies.

St. Jude Children's Research Hospital offers an excellent salary and benefits package and is an equal opportunity employer. Interested applicants should send their CVs and the names and addresses of 3 references to:

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