

Postdoctoral Position in Systems Neuroscience / Neuroengineering (Zebrafish)

The Lin Lab at the University of Toronto (<https://lin.csb.utoronto.ca/>) is recruiting postdoctoral fellows. Two positions are available: 1) systems neuroscience, and 2) neuroengineering.

Research focus

The long-term goal of the lab is to understand how the brain produces adaptive and flexible behavior. We take a systems-level, quantitative approach to study neural mechanisms underlying cognition and behavior, combining large-scale neural recordings, behavioral paradigms, computational modeling, and perturbation methods.

Our research emphasizes whole-brain measurements in behaving animals and data-driven modeling frameworks (e.g., machine learning, control theory, and dynamical systems) to explain and predict behavior from neural activity. Zebrafish serve as a key model system due to their optical accessibility and suitability for large-scale neural recordings at single-cell resolution.

Research environment and technical platform

The lab has access to advanced optical neurotechnology and custom experimental infrastructure, including a Thorlabs Multiphoton Mesoscope (the first one in Canada). We actively develop and integrate behavioral paradigms, virtual reality environments, and custom imaging and optogenetic tools for large-scale neural recordings in zebrafish. These platforms enable projects spanning behavior, neural dynamics, and causal circuit perturbations.

Neuroscience research environment in Toronto

The University of Toronto hosts one of the largest and most diverse neuroscience communities in North America, with strong strengths in systems neuroscience, computational neuroscience, neuroengineering, and brain imaging. The lab is situated within a highly collaborative ecosystem, with close proximity to multiple departments, research institutes, and major research hospitals in Toronto (e.g., The Hospital for Sick Children, Krembil Brain Institute, and University Health Network). This environment provides broad exposure to complementary expertise, seminars, and potential collaborative opportunities.

Candidate profile

We welcome applicants from diverse quantitative and interdisciplinary backgrounds, including:

- Systems or computational neuroscience
- Electrical/mechanical engineering, applied physics, or optics
- Quantitative biology, data science, or related fields

Strong programming skills (e.g., Python, MATLAB) and a strong interest in interdisciplinary neuroscience research are highly valued. Experience with large-scale data analysis, optical instrumentation, and dynamical systems is a plus. Experience with molecular and genetic tools in zebrafish is also a plus.

Training and career development

Postdoctoral fellows will have substantial intellectual ownership of their projects, and the lab is committed to supporting postdoctoral fellows in developing independent research directions aligned with their long-term career goals.

The positions are funded on an annual appointment basis, with the intention of supporting postdoctoral fellows for a longer-term period contingent on mutual interest and progress. Postdoctoral fellows will also be actively supported in applying for external fellowships and career development awards.

How to apply

Interested candidates should contact **Qian Lin** (neuroqian.lin@utoronto.ca) with:

- A CV
- A brief statement of research interests
- Contact information for references