

Posting Date: January 29, 2024

**Department of Ecology & Evolutionary Biology and
Department of Cell & Systems Biology**
Faculty of Arts & Science
University of Toronto

JOB POSTING – POSTDOCTORAL FELLOW

The Departments of Ecology & Evolutionary Biology and Cell & Systems Biology at the St. George campus of the University of Toronto invites applications for a Postdoctoral Fellowship in the Chang lab.

Area of Research: Protein Evolution/Deep Mutational Scanning

Description of duties: The University of Toronto invites applications for a postdoctoral research position in Professor Belinda Chang's lab, funded by an exciting new collaborative Human Frontier Research Program grant. The Chang lab is seeking to hire a postdoctoral researcher to investigate the origins and evolution of protein multifunctionality in opsins and other visual pigments. This will be accomplished using high-throughput approaches that take advantage of cell-based assays of rhodopsin activation.

Salary: \$55,000 – 65,000 (based on skills and experience)

Please note that should the minimum rates stipulated in the collective agreement be higher than rates stated in this posting, the minimum rates stated in the collective agreement shall prevail.

Project: Multifunctional proteins are subject to unusual constraints in their evolution, especially if different functions overlap in the polypeptide sequence. While proteins can often have multiple functions, little is understood of the process by which this may evolve. This project seeks to better understand how vastly different functions affect the evolution of proteins known as opsins. These are photopigments used in primary visual transduction, which recently have been found in *Drosophila* to also act as taste receptors, organize mechanosensory cells, as well as scramblases regulating the distribution of membrane lipids. We will be investigating the origin and evolution of this fascinating system using cell-based high-throughput approaches of rhodopsin light activation that have been developed in our lab. To investigate across other modalities, this project is an interdisciplinary collaboration with labs with expertise in fly genetics and electrophysiology (Goepfert, U Gottingen), biochemistry (Menon, Cornell U), and evolutionary genetics (Feuda, U Leister).

Required qualifications: The candidate must have (or is about to receive) a PhD in molecular biology, microbiology, biochemistry, or a related field. Experience with standard microbiology and molecular biology techniques, including molecular cloning, recombinant strain construction, and cell-based (yeast/mammalian) reporter assays, is strongly desired. Additional experience

with synthetic biology/experimental evolution, FACS, or protein biochemistry techniques is advantageous, but not required. The successful candidate should demonstrate an ability to undertake the practical and theoretical aspects of the project, be able to work both independently and in collaboration with a multi-disciplinary team, and have a high proficiency in both written and oral communication.

Application instructions

All individuals interested in this position must submit a cover letter highlighting why you are well suited for this position and your career goals, a CV, up to 3 relevant publications, and contact information for 3 references. Please send this to belinda.chang@utoronto.ca.

Closing date: extended to April 30, 2024

This position will remain open until filled, however we will begin to review complete applications after April 30, 2024.

Supervisor: Professor Belinda Chang

Expected start date: As soon as possible, but some flexibility for the right candidate.

Term: 2 years, extendable for 1 year subject to performance/research progress

FTE: 100% Full time

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement.

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The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ2S+ persons, and others who may contribute to the further diversification of ideas.