

Posting Date: October 3rd, 2025

Department of Molecular Genetics, University of Toronto
JOB POSTING- POSTDOCTORAL FELLOW

Area of Research: Synthetic and Molecular Biology

Description of duties:

Join the Laboratory for RNA-Based Lifeforms (<https://RNAlab.ca>) at the University of Toronto. We're recruiting a postdoctoral fellow with strong expertise in **molecular biology, synthetic biology, development of high-throughput molecular assays, robotics,** and **microbial genetics** (model systems). This position will require a comprehensive understanding of **molecular biology** and capacity to communicate this with **computational biology/AI** scientists to co-develop state-of-the-art methods for enzyme discovery, and molecular evolution.

Humans have produced 10 billion tonnes of plastic, most of which becomes waste that breaks down into toxic microplastics accumulating in ecosystems and human tissues. These particles leach harmful chemicals linked to health and fertility risks. To address this, we are combining large-scale computing, AI, and high-throughput molecular biology to discover and test the evolutionary landscape of novel PET-degrading enzymes. By building predictive models, validating enzyme activity, and ensuring safety of degradation byproducts, our open-source project aims to create efficient technologies to mitigate global microplastic toxicity and protect human health.

Building upon the *Serratus* project where we increased the number of known RNA virus species by nearly an order of magnitude ([Edgar et al., 2022. Nature](#)) our group is now pushing the boundary for ultra-massive scale sequence analysis with *Logan* ([preprint](#)). With that, we're enabling planetary-scale discovery of enzymes and novel genetic elements. Building on this, we are integrating **massive sequence mining, high-throughput robotics, and functional genomics** to address global challenges such as **plastic pollution** and **microplastic toxicity**.

Your qualifications should be an ambitious molecular biologist with a PhD in Molecular Biology, Biochemistry, Genetics, Synthetic Biology or related field. Have a strong publication record with evidence of expertise in yeast, E. Coli or other model molecular systems. A demonstration of capacity to lead scientific projects to completion (e.g. publication) and capacity to communicate the work effectively. You must have a demonstrated strong

expertise in yeast or bacterial genetics, molecular biology/biochemistry, and synthetic biology.

We're seeking an applicant who is creative with a drive for high-risk, high-reward project. Responsibilities will include the development of molecular capacity in the lab, high-throughput assay design, enzyme characterization and/or metabolic engineering. This includes skills in experimental design, data interpretation, and establishing molecular workflows.

Application instructions

All individuals interested in this position must submit (1) scientific curriculum vitae, (2) a critical evaluation of the computational and molecular aspects of the Logan enzyme-discovery project (see: [preprint](#)), (3) contact information for three references, and (4) a brief research vision statement to rna.lab@utoronto.ca with subject header "RNAlab SynBio app - <name>" as early as possible, and by the closing date.

Closing date: November 28th, 2025

Expected start date: Immediate to January 1 2026.

Supervisor: Artem Babaian (<https://RNAlab.ca>)

Term: 1 year

Salary: \$65,000 - \$80,000

FTE: 1.0 FTE. 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 professional development 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

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.