

DEREK TEA

Department of Molecular Genetics, University of Toronto, ON

EDUCATION

- 2024- PhD Candidate**, Department of Molecular Genetics, University of Toronto, ON
Faculty Supervisor: Dr. Tatsuya Tsukahara
Thesis: The regulation of social behaviour through vasopressin expressed by olfactory sensory neurons
- 2024 Honours Bachelor of Science (HBSc)**, *High Distinction*, University of Toronto, ON
Faculty Supervisor (Honours Thesis): Dr. Yun Li
Thesis: Investigating the role of microglia-derived IGF1 and OPN in human fetal brain development

AWARDS

Research Scholarships

- CGS-M, *Canadian Institutes of Health Research* - \$27,000 (2025)
UROP (Molecular Genetics), *University of Toronto* - \$6,000 (2023)
UROP (Biochemistry), *University of Toronto* - \$5,000 (2022)

Academic Recognitions

Dean's List Scholar, *University of Toronto* (2021, 2022, 2023, 2024)

Professional Awards

- Molecular Genetics Poster Award, *Department of Molecular Genetics, University of Toronto* - \$175 (2025)
BioTalent Student Work Placement Program, *BioTalent Canada* - \$5,000 (2023)

POSTERS AND PRESENTATIONS

- Tea D**, Ogunade E, Idel K, Juba J, Tsukahara T. *The regulation of social behaviour through vasopressin expressed by olfactory sensory neurons*. Temerty Research Day 2026, Faculty of Medicine, University of Toronto. July 2026.
- Tea D**, Juba J, Mittal K, Tsukahara T. *Characterizing a novel population of olfactory sensory neurons that express vasopressin*. Annual Molecular Genetics Retreat, Village Conference Centre, Blue Mountains, ON. September 2025.
- Tea D**, Bhattacharya A, Li Y. *Investigating the Role of Microglia and Proteins IGF1 and OPN in Human Fetal Brain Development*. Annual SSuRe Symposium, SickKids Research Training Centre, Toronto, ON. August 2023.
- Tea D**, Bhattacharya A, Li Y. *Investigating the Role of Microglia and Proteins IGF1 and OPN in Human Fetal Brain Development*. Annual Biochemistry and Molecular Genetics Summer Research Symposium, University of Toronto. July 2023.
- Tea D**, Chin Sang C, Lee HK. *Deciphering the Molecular Mechanisms of RNF168 Condensate Formation*. Annual Biochemistry and Molecular Genetics Summer Research Symposium, University of Toronto. July 2022.

RESEARCH EXPERIENCES

Graduate Student (2024-), Tsukahara Lab, Lunenfeld-Tanenbaum Research Institute, Toronto, ON

- Conducting research to elucidate the role of vasopressin in olfactory sensory neurons (OSNs) and the importance of these OSNs to physiological functions in mice
- Performing research techniques such as PCR, qPCR, fluorescence in situ hybridization, cryosectioning, immunostaining, scRNA-seq, and behavioural assays
- Mentoring and teaching undergraduate research students in the lab; mentored 8 students as of July 2026

Research Student (2023-24), Li Lab, Peter Gilgan Centre for Research and Learning, Toronto, ON

- Conducted research on the intersectionality between neural precursors and microglia during fetal brain development using 2D and 3D neural cultures
- Performed tasks related to tissue culture, maintaining organoids, cryosectioning, and immunostaining
- Recipient of the UROP Molecular Genetics Award and presented findings at two undergraduate symposiums

Research Student (2022-23), Agarwal Lab, Centre for Addiction and Mental Health, Toronto, ON

- Investigated the effects of olanzapine on central insulin signaling in relation to glucose metabolism and cognition
- Assisted with literature search and review for a meta-analysis on the relationship between obesity, brain volume, and schizophrenia
- Verified and inputted patient/experimental data into RedCad, and shadowed MRI and cognitive test administration

Research Student (2021-22), Lee Lab, MaRS Discovery District, Toronto, ON

- Conducted research to determine the roles of RNF168 protein domains on liquid-liquid phase separation and its application to protein recruitment in DNA repair
- Utilized wet-lab (i.e. Western blot, immunofluorescence, PCR, FRAP) and dry-lab (i.e. ImageJ, Cell Profiler) techniques
- Recipient of the UROP Biochemistry Award and presented findings at an undergraduate symposium

Volunteer Research Assistant (2021-22), Injury Prevention Office, St. Michael's Hospital, Toronto, ON

- Worked with other volunteers in the CHIRPP division to analyze patient records for head-related injuries to draw conclusions on the most common injuries experienced by Toronto residents
- Managed patient data between hospital and federal platforms and participated in weekly meetings to evaluate data, accident reports, and notable case studies

Research Assistant (2021), Dr. Scott Schieman, Department of Sociology, University of Toronto, ON

- Examined the impacts of work stress on overall health and wellbeing by conducting literature search and review on the topic of the "stress of higher status" hypothesis, a phenomenon proposed by Dr. Schieman
- Transcribed research participant interviews for indicators of life stress

PROFESSIONAL EXPERIENCES

Teaching Assistant (2025), Department of Biochemistry, University of Toronto, ON

- Teaching assistant for BCH210 (Biochemistry 1: Proteins, Lipids and Metabolism)
- Responsible for grading quizzes, assignments, and invigilating in-person exams

Market Research and Marketing Intern (2023-24), Beagle Scientific Inc., Toronto, ON

- Worked directly with Dr. Huen (founder) to expand Beagle's reach and position in the biotech market
- Performed market research on Canadian biotech start-ups to expand company database on prospective clients and published articles relating to the biotech industry for Beagle Scientific's media platforms

EXTRACURRICULAR EXPERIENCES

Collaborative Program in Neuroscience Executive Mentorship Team (2024-), University of Toronto, ON

- An executive member of the CPIN mentorship program, a program dedicated to providing mentorship for undergraduates interested in grad school and/or research
- Assisting with organizing mentorship events, marketing initiatives, and budgeting

Research Application Support Initiative (2024-), University of Toronto, ON

- Assisted 4 mentees with CV-writing and research opportunity applications
- Providing a safe and encouraging environment for mentees to discuss their research/career goals