

# Earvin S. Tio, PhD

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## EDUCATION

**Doctor of Philosophy** Sept. 2020 - Sept. 2025

University of Toronto | Toronto, Canada – Institute of Medical Science

- Collaborative Program in Neuroscience
- Thesis titled [“Understanding Suicidal Behaviours in the Context of Depression through a Biopsychosocial, Whole Person Modelling, Machine Learning Framework”](#)
- Degree awarded October 28, 2025

### Awards (\$59,955 CAD)

- Faculty of Medicine Graduate Student Wellness Grant Sept. 2020 - Aug. 2025
- School of Graduate Studies (SGS) Conference Grant 2024
- Institute of Medical Science Open Fellowship Jan. 2024 - Aug. 2024
- Ontario Graduate Scholarship – Doctoral Sept. 2023 - Aug. 2024
- Alan Wu Poster Competition 2023
- School of Graduate Studies (SGS) Conference Grant 2022
- Ontario Graduate Scholarship – Master’s Sept. 2021 - Aug. 2022
- Institute of Medical Science Entrance Scholarship Sept. 2020 - Aug. 2021

**Bachelor of Applied Science** Sept. 2015 - Aug. 2020

University of Waterloo | Waterloo, Canada – Systems Design Engineering

- Option in Artificial Intelligence
- Graduated with Distinction and Dean’s Honours
- Cumulative GPA of 88%

### Awards (\$5,500 CAD)

- GM Canada Innovation Award 2020
- First in Class Engineering Scholarship 2019
- J.R. Coutts International Experience Award 2019
- University of Waterloo President's Scholarship 2015

**École Polytechnique Fédérale de Lausanne** Feb. 2019 - July 2019

School of Computer and Communication Sciences

- Academic semester abroad in Lausanne, Switzerland
- 29 ECTS credits with a GPA of 5.2 / 6

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## SELECT PUBLICATIONS

- **Tio ES**, Misztal MC, Felsky D. Evidence for the biopsychosocial model of suicide: a review of whole person modeling studies with machine learning. *Front Psychiatry*. 2024;14:1294666. Published 2024 Jan 11. doi:[10.3389/fpsy.2023.1294666](https://doi.org/10.3389/fpsy.2023.1294666)
- **Tio ES**, Hohman TJ, et al. Testing a Polygenic Risk Score for Morphological Microglial Activation in Alzheimer's Disease and Aging. *J Alzheimers Dis*. 2023;94(4):1549-1561. doi:[10.3233/JAD-230434](https://doi.org/10.3233/JAD-230434)
- **Tio ES**, Felsky D. The interaction of polygenic risk for depression and age on white blood cell count. *medRxiv*. 2022. doi:[10.1101/2022.11.20.22282570](https://doi.org/10.1101/2022.11.20.22282570)

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## PUBLICATIONS

- Bercovitch R, **Tio ES**, et al. Genetic predisposition to hand grip strength predicts cognitive decline. *Neurobiol Aging*. Published online March 2026. doi:[10.1016/j.neurobiolaging.2026.02.008](https://doi.org/10.1016/j.neurobiolaging.2026.02.008)
- Henechowicz TL, Coleman PL, et al. Polygenic associations between motor behavior, neuromotor traits, and active music engagement in four cohorts. *Ann NY Acad Sci*. 2026;1556(1):e70191. doi:[10.1111/nyas.70191](https://doi.org/10.1111/nyas.70191)
- Lee H, Pearse RV, et al. Contributions of genetic variation in astrocytes to cell and molecular mechanisms of risk and resilience to late onset Alzheimer's disease. *Glia*. 2025;73(6):1166-1187. doi:[10.1002/glia.24677](https://doi.org/10.1002/glia.24677)
- Zhukovsky P, **Tio ES**, et al. Genetic influences on brain and cognitive health and their interactions with cardiovascular conditions and depression. *Nat Commun*. 2024;15(1):5207. Published 2024 Jun 18. doi:[10.1038/s41467-024-49430-7](https://doi.org/10.1038/s41467-024-49430-7)
- Kharaghani A, **Tio ES**, et al. Association of Whole-Person EigenPolygenic Risk Scores with Alzheimer's Disease. *Hum Mol Genet*. 2024;33(15):1315-1327. doi:[10.1093/hmg/ddae067](https://doi.org/10.1093/hmg/ddae067)
- Hsieh YC, Augur ZM, et al. Person-specific differences in ubiquitin-proteasome mediated proteostasis in human neurons. *Alzheimers Dement*. 2024;20(4):2952-2967. doi:[10.1002/alz.13680](https://doi.org/10.1002/alz.13680)
- Rybnicek J, Chen Y, et al. CHRNA5 links chandelier cells to severity of amyloid pathology in aging and Alzheimer's disease. *Transl Psychiatry*. 2024;14(1):83. Published 2024 Feb 8. doi:[10.1038/s41398-024-02785-3](https://doi.org/10.1038/s41398-024-02785-3)
- Misztal MC, **Tio ES**, et al. Interactions between genetic risk for 21 neurodevelopmental and psychiatric disorders and sport activity on youth mental health. *Psychiatry Res*. 2023;330:115550. doi:[10.1016/j.psychres.2023.115550](https://doi.org/10.1016/j.psychres.2023.115550)

- Higginbotham L, Carter EK, et al. Unbiased classification of the elderly human brain proteome resolves distinct clinical and pathophysiological subtypes of cognitive impairment. *Neurobiol Dis.* 2023;186:106286. doi:[10.1016/j.nbd.2023.106286](https://doi.org/10.1016/j.nbd.2023.106286)
  - Comitani F, Nash JO, Cohen-Gogo S, et al. Diagnostic classification of childhood cancer using multiscale transcriptomics. *Nat Med.* 2023;29(3):656-666. doi:[10.1038/s41591-023-02221-x](https://doi.org/10.1038/s41591-023-02221-x)
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## **SCIENTIFIC MEETINGS – ORAL PRESENTATIONS**

### **Canadian Neuroscience Seminars – Post-Doc Series (CNS-PDS)**

Feb. 5, 2026; Virtual.

### **Krembil Centre for Neuroinformatics (KCNI) Research Rounds**

Jan 28, 2026; Toronto, ON, Canada.

Sep. 4, 2025; Toronto, ON, Canada.

Feb. 6, 2025; Toronto, ON, Canada.

### **Collaborative Program in Neuroscience (CPIN) Research Day**

June 24, 2025; Toronto, ON, Canada.

June 30, 2021; Virtual.

### **Centre for Addiction and Mental Health (CAMH) Trainee Seminar Series**

Feb. 6, 2025; Toronto, ON, Canada.

Jan. 16, 2024; Toronto, ON, Canada.

### **Institute of Medical Science (IMS) Research Rounds**

Nov. 28, 2024; Toronto, ON, Canada.

### **20th European Symposium on Suicide and Suicidal Behaviour (ESSSB20)**

Aug. 28-31, 2024; Rome, Italy.

### **Temerty Faculty of Medicine (TFoM) Research Showcase**

July 7, 2023; Toronto, ON, Canada. Access abstract [here](#).

### **Krembil Centre for Neuroinformatics (KCNI) Open House**

June 24, 2022; Toronto, ON, Canada.

June 21, 2021; Virtual.

### **Institute of Medical Science (IMS) Scientific Day**

May 17, 2022; Toronto, ON, Canada. [*Panelist; Artificial Intelligence in Medicine*]

### **Department of Psychiatry Research Day (DPRD)**

June 17, 2021; Virtual.

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## SCIENTIFIC MEETINGS – POSTER PRESENTATIONS

### Society of Biological Psychiatry (SOBP) Annual Meeting

Apr. 24-26, 2025; Toronto, ON, Canada.

Apr. 27-29, 2023; San Diego, CA, United States. Access abstract [here](#).

Apr. 28-30, 2022; New Orleans, LA, United States. Access abstract [here](#).

### Institute of Medical Science (IMS) Scientific Day

Apr. 24-25, 2023; Toronto, ON, Canada. [*Alan Wu Poster Competition Hon. Mention*]

May 26, 2021; Virtual. Access abstract [here](#).

### Cold Spring Harbor Laboratory (CSHL) Biological Data Science Meeting

Nov. 9-12, 2022; Cold Spring Harbor, NY, United States.

### American Society of Human Genetics (ASHG) Annual Meeting

Oct. 18-22, 2021; Virtual. Access abstract [here](#).

### Alzheimer's Association International Conference (AAIC)

July 26-30, 2021; Virtual. Access abstract [here](#).

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## RESEARCH EXPERIENCE

### Postdoctoral Fellow

Oct. 2025 - May 2026

University of Toronto | Whole Person & Population Modelling Lab

- Supervised by Dr. Daniel Felsky, PhD

### Graduate Researcher

Sept. 2020 - Sept. 2025

University of Toronto | Whole Person & Population Modelling Lab

- Supervised by Dr. Daniel Felsky, PhD

### Undergraduate Research Assistant

Sept. 2019 - Apr. 2020

University of Waterloo | Vision and Image Processing (VIP) Research Group

- Supervised by Dr. Alexander Wong, PhD

### Research Student

Sept. 2018 - Dec. 2018

The Hospital for Sick Children | Genetics and Genome Biology

- Supervised by Dr. Adam Shlien, PhD

### Bioengineering Research Assistant

Jan. 2018 - Apr. 2018

Sunnybrook Research Institute | Orthopaedic Biomechanics Laboratory

- Supervised by Dr. Cari Whyne, PhD

### Undergraduate Research Assistant

Sept. 2017 - Dec. 2017

University of Waterloo | Waterloo Engineering Bionics Lab

- Supervised by Dr. Ning Jiang, PhD

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## LECTURESHIP

### **FSC430H5 – Seminar in Forensic Science (Undergraduate)**

University of Toronto

- Developed and delivered the lecture “*An Overview of Machine Learning and Practical Applications in Psychiatry*” for a fourth-year undergraduate capstone course
- Dates: March 3, 2026; August 5, 2025

### **NeuroSci101 – High School Neuroscience Course (High School)**

University of Toronto

- Developed and delivered “*Neural Networks and Artificial Brains*” for NeuroSci101, a lecture series aimed at high school students interested in neuroscience
- Dates: February 25, 2026; March 17, 2025; March 4, 2024; March 20, 2023

### **IMS Methodology Seminar Series (Undergraduate)**

University of Toronto | Institute of Medical Science

- Developed and delivered the lecture “*Genetic Methods for Computational Biology*” aimed at upper-year biology undergraduate students
- Dates: February 5, 2026

### **MSC1090 – Introduction to Computational Biostatistics with R (Graduate)**

University of Toronto | Institute of Medical Science

- Served as a Teaching Assistant for the graduate level course MSC1090
- Semesters: Fall 2024; Fall 2023; Fall 2022

### **Krembil Centre for Neuroinformatics (KCNI) Summer Academy**

Centre for Addiction and Mental Health

- KCNI Summer Academy 2021-2023 Teaching Assistant

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## MENTORSHIP

### **Neurodegenerative Disease Student Association**

Sept. 2023 - Aug. 2024

University of Toronto

- Mentored 3 undergraduate students interested in graduate studies in neurodegeneration

### **GradMinds – Graduate Student Mental Health Committee**

Sept. 2020 - Aug. 2022

University of Toronto

- Founding member of the GradMinds Peer Support Initiative
- Mentored 8 graduate students in the capacity of a trained a peer supporter

### **Collaborative Program in Neuroscience**

Sept. 2020 - Aug. 2021

University of Toronto

- Mentored 3 undergraduate students interested in graduate studies in neuroscience

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## COMMUNITY OUTREACH

### Let's Talk Grad Wellness (LTGW)

Aug. 2021 - Dec. 2024

- Executive member of a student-ran, Graduate & Life Sciences Education (GLSE)-funded initiative focusing on graduate student wellness and student-supervisor relationships
- Spoke as a panelist on the "ELEFANT Student-Supervisor Agreement" for the Pharmacology Graduate Students Association (PGSA) Town Hall; Feb. 24, 2022; Virtual.

### Filipino Students' Association of Toronto (FSAT)

Oct. 24, 2024

- Invited to act as a mentor during FSAT's Networking Night for undergraduate students from multiple universities interested in a career in research and academia

### GradMinds – Graduate Student Mental Health Committee

Sept. 2020 - Aug. 2024

- Contributing journalist for the GradMinds mental health magazine: *Elemental Magazine*
  - Tio, E. (2024) Shkaabe Makwa, bringing First Nations, Inuit, and Metis mental health to the forefront—an interview with Louis Busch. *Elemental Magazine: Fostering Hope & Resilience*, 11, 48-50. Access [here](#).
  - Tio, E. (2022) Sleep, psychiatric diagnoses, and beyond—an interview with Dr. Michael Wainberg. *Elemental Magazine: Physical Health*, 9, 30-31. Access [here](#).
  - Tio, E. (2021) The evolving understanding of substance use during the pandemic—an interview with Dr. Tara Elton-Marshall. *Elemental Magazine: COVID-19*, 7, 30-31. Access [here](#).

### Centre for Addiction and Mental Health (CAMH)

Sept. 2021 - Aug. 2023

- CAMH Trainee Seminar 2021-2023 Organizing Committee
- CAMH Research Day 2022 Organizing Committee

### Institute of Medical Science Student Association (IMSSA)

Sept. 2020 - Aug. 2021

- Assisted the Wellness & Wellbeing and Social Affairs committees