

Shalini Iyer

Neuroscience PhD Student
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Education

PhD., Neuroscience, University of British Columbia

Sept 2022-present

- In the Cembrowski Lab, I investigate the development of a unique cell type in the cortex and how perturbations contribute to neurodevelopmental disorder using cutting-edge single-cell resolution techniques.

MSc., Neuroscience, York University

Sept 2022-June 2023

- Thesis: *The Role of Prostaglandin E2 in the Developing Hippocampus – link to autism spectrum disorder (ASD)*.
- Passed with no revisions and nominated for the Master's Thesis Prize.

BSc., Maj/Min. Biomedical Science & Psychology, York University

Sept 2015-Dec 2019

- Member of the Dean's List 2015-2019 and graduated first class with distinction.

Honours and Awards (2015-present I have been awarded over \$160,000 in scholarships/awards, listed are selected awards).

Postgraduate scholarship – Doctoral (NSERC), University of British Columbia

Sept 2023-Aug 2026

- Awarded \$63,000, provided to students of high-caliber and demonstrate exceptional research potential.

UBC 4-Year Doctoral Fellowship, University of British Columbia

Sept 2023-Aug 2027

- Award valued at \$18,200 per year. Accepted in title only.

York University's 30 Under 30 Alumni, York University

March 2023

- Awarded for demonstrating exceptional leadership skills and creating positive change.

PhD Excellence Initiative Award, University of British Columbia

Sept 2022-April 2024

- Awarded ~\$800-1500 each year to students demonstrating exceptional academic and research potential.

Faculty of Medicine Graduate Scholarship, University of British Columbia

Sept 2022-April 2024

- Awarded ~\$3000-4000 each year, based on academic and research potential.

Institutional Nominee for Vanier Canada Graduate Scholarship, University of British Columbia

November 2022

- Top ranked nominee at UBC for the National competition based on exceptional leadership and research skills

British Columbia Graduate Scholarship, University of British Columbia

Sept 2022-Aug 2023

- The sole recipient of \$15,000 in the Neuroscience program. Awarded as an entrance scholarship.

Master's Thesis Prize Nomination, York University

June 2022

- Unanimously voted by the supervisory committee for an exceptional master's thesis and defense. Nominations are only for those who pass with no revisions.

Academic Excellence Fund, York University

May 2021 & 2022

- Awarded to cover costs of attending a conference.

Ontario Graduate Scholarship, York University

Sept 2021-June 2022

- Awarded \$15,000 for demonstrating exceptional research capabilities and academic excellence.

Canada Graduate Scholarship (NSERC) – Master's, York University

Sept 2020-Aug 2021

- One of 13 graduate students to be awarded a merit-based scholarship of \$17,500 at York University.

David Colcleugh Leadership Award – Honourable Mention & Runner-up, Let's Talk Science

June 2020

- Selected as 1 of the 3 award finalists and runner-ups from over 100 site coordinators working across Canada for my STEM outreach work as a site coordinator from 2016-2020.

Award of Achievement, York University

Sept 2015-April 2019

- One of the 6 recipients of this 4-year renewable award of \$24,000. Renewed based on maintaining an A GPA. Awarded for obtaining a high-school average above 90% and demonstrating exceptional community service.

Research Experience

PhD Researcher, Cembrowski Lab

Sept 2022-present

- Designing molecular experiments to investigate the development of unique cortical cell type and how perturbations can contribute to neurodevelopment disorder.
- Technical skills: multiplexed fluorescent in situ hybridization (mFISH), immunohistochemistry, confocal microscopy, rodent surgery, single cell RNA seq analysis.

MSc Researcher, Crawford Lab

Sept 2020-June 2022

- Designed and executed experiments to investigate the effects of a lipid signaling molecule on hippocampal development *in vivo* and the link to autism.
- Technical skills: Golgi-cox staining, confocal microscopy, western blotting, immunohistochemistry, use of AI-based software (NIS-Elements).

Honours Thesis Student & Research Practicum, Crawford Lab

Jan-Dec 2019

- Investigated the effects of a lipid signalling molecule on nitric oxide production *in vitro* and the link to autism.
- Technical skills: cell culture, fluorescence microscopy, RT-qPCR.

Conference Presentations

Kapustina, M., **Iyer, S***, Tarik, A., Kraus, L., Sullivan, K.E., Cembrowski, M.S. (2023). Identifying neocortex L6b neuronal diversity and subpopulations in the mouse and human brain. Canadian Association for Neuroscience Meeting, Canada. National.

Abdul Rahiman, A., **Iyer, S***, Abbasi, I., Crawford, D.A. (2023) Maternal exposure to prostaglandin E2 affects hippocampal electrophysiology in mice offspring – a link to autism spectrum disorders. Canadian Association for Neuroscience Meeting, Canada. National.

Namchuk, A.B., Garcia de leon, R., Beauchesne, R.M.C., Kwok, C., Niki Shahraki, N., Ambrose, C.E., **Iyer, S***, Zhang, A.A., Hodges, T.E., Cembrowski, M.S., Galea, L.A.M (2023). Characterizing neural activity during cognitive bias in male and female offspring from a model of postpartum depression. Organization for the study of sex differences annual meeting, Canada. National.

Iyer, S*, Abbasi, I., Kisoondoyal, A., Crawford D.A. (2022). Maternal exposure to prostaglandin E2 affects dendritic morphology during hippocampal development – link to autism spectrum disorder (ASD). Canadian Neuroscience Meeting, Canada. National.

Iyer, S*, Kisoondoyal, A., Crawford, D.A. (2021). Maternal exposure to prostaglandin E2 affects hippocampal dendritic morphology in C57bl/6 mice offspring – link to autism spectrum disorder (ASD). Canadian Neuroscience Meeting, Canada. National.

Iyer, S*, Kisoondoyal, A., Crawford, D.A. (2020) The Role of Lipids in Neuronal Plasticity - Link to Autism Spectrum. York University's 8th Annual Multidisciplinary Research Fair, Canada. Institutional.

Teaching Experience

Laboratory Techniques for Neuroscience (NSCI 300), University of British Columbia

Sept-Dec 2023

- Responsible for facilitating neuroscience labs and grading assignments/exams.

Frontiers of Neuroscience (NRSC 1001), York University

Sept 2021-April 2022

- Facilitated molecular labs (virtual and in-person), marked weekly assignments.

Neuronal Development for Activity and Health (KINE 4230), York University

Jan-April 2022

- Designed exam questions, graded assignments and exams.

Molecular and Cellular Neuroscience (KINE 3670), York University

Sept-Dec 2021

- Designed exam questions, graded assignments and exams.

Research Methods and Analysis of Data in Kinesiology (KINE 2049 and 2050), York University.

Sept 2020-April 2021

- Facilitated online data analysis and statistic labs, marked lab reports.

Guest lectures & Invited Workshops *(selected)*

- Introduction to Neuroscience Lecture, Science 101 at University of British Columbia** July 2023
- Invited to give a guest lecture on molecular neuroscience, brain anatomy and neuroscience techniques for adults from low-income communities in Vancouver.
- The Day in the Life of a Scientist Workshop, Let's Talk Science in Toronto, ON** May 2022-2023
- Designed and conducted virtual career workshops for schools from marginalized communities in the Greater Toronto Area.
- Parkinson's and Alzheimer's Targeted Hope and Support Conference Judge, University of British Columbia** April 2023
- Invited to judge an undergrad research conference, consisting of presentations and posters.
- Techniques used in Molecular Neuroscience (NRSC 2200), York University** Jan-March 2022
- Guest lecture on molecular techniques used in neuroscience.

Advocacy & Policy

- Director of Outreach and Engagement, Executive Council for Support Our Science** June 2023-present
- Involved in implementing initiatives to advocate for increased research funding for graduate students and post-docs across Canada, such as advocacy week (Sept 25-29 2023).
- Support Our Science Walkout Leader, University of British Columbia** April-May 2023
- Helped organize a walkout at UBC to advocate for increased funding for graduate students and post-doctoral scholars. Interviewed by Global News.
- Equity, Diversity and Inclusion Committees, University of British Columbia** November 2022-present
- As the grad student rep for two departments (Cellular and Physiological Science and Neuroscience), advocate for the implementation of equitable and inclusive practices within the department, by organizing workshops and supporting labs upon request.
- Equity, Diversity and Inclusion Coalition, York University** January-June 2022
- Assisted in the development of policies and strategies to improve EDI for faculty hiring, student admissions, funding/scholarship opportunities for the Department of Health Science.

STEM outreach & Science Communication

- Brain Bee Coordinator, University of British Columbia** Sept 2022-April 2023
- Organized a Neuroscience competition for students in Vancouver. Tasks included designing exam questions, lab tours and recruiting speakers for the event.
- Program Assistant, National Office of Let's Talk Science** Sept 2019-May 2022
- Provided greater accessibility to science education for Black and at-risk youth in the Greater Toronto Area by facilitating weekly STEM workshops catered towards students learning styles.
- Summer Program Assistant, National Office of Let's Talk Science** May-Aug 2020
- Designed and executed STEM workshops to be facilitated online for communities across Canada. Piloted the Horizons project which involved designing STEM kits for Indigenous and rural communities across Canada.
- Site Coordinator, Let's Talk Science at the York University Site** May 2016-Aug 2020
- Managed STEM workshops in schools, established several large STEM community events, including symposiums, tournaments, science fairs for marginalized and low-income communities across Ontario.

Other Extracurriculars

- Co-president of the Neuroscience Trainee Association, University of British Columbia** May 2023-present
- Help organize social and academic events for students in the neuroscience department.
- MSc Representative for the Health Science Grad Student Association, York University** Sept 2020-June 2022
- Helped organize social and academic events for students, including organizing a department-wide conference.