Louisa Schilling

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EDUCATION

Doctor of Philosophy (in progress), Neuroscience.
Weill Cornell Graduate School, New York, NY, USA 8/ 2021 – Current
Anticipated graduation: 1/2026

Master of Science, Neuroscience. GPA: 1.0 (of 1.0)
Humboldt-Universität zu Berlin, Berlin School of Mind & Brain. Berlin, DE 9/2017 – 9/2020

Bachelor of Science, Neuroscience & Cognitive Science. GPA: 3.65 (of 4.0)
University of Toronto, Toronto, Canada 9/2013 – 5/2017

EXPERIENCE

Graduate Thesis Student 5/ 2022 – present
Computational Connectomics Lab, Weill Cornell Medicine, New York, USA

- Extensive training in quantitative research and statistical modelling via multiple independent research projects focused on modeling the effects neuropsychiatric illness, sex/gender and hormones across the lifespan on human brain activity via network control theory.
- Characterized sex-specific alterations in brain state dynamics in children with a family history of substance use disorder (ABCD, HCP-Development, NCANDA datasets)
- Analyses incorporate multi-modal neuroimaging (fMRI/DTI/PET), genetic, demographic, psychological, environmental, and clinical data in large cohorts.

Graduate Rotational Researcher 10/2021 – 5/2022
Rajadhyaksha and Toth Labs, Weill Cornell Medicine, New York, USA

- Performed stereotaxic surgery and recorded cocaine-induced dopamine release in GRAB-DA-expressing neurons of the hippocampus in freely moving animals and developed an analysis pipeline in MATLAB.
- Piloted experiment to link maternally-derived cytokines to offspring brain programming, including breeding, cytokine delivery, perfusion, crytostat sectioning, and microscopy.

Master's Thesis Student 1/2020 – 12/2021
University of Oxford, Oxford, United Kingdom

- Developed, tested and utilized various analysis pipelines in MATLAB and Python to clean, align and analyze photometry-derived and behavioral features to determine the dopaminergic and behavioral markers of learning
- Trained mice on multiple behavioral experiments while recording multi-fiber photometry of GRAB-DA-expressing neurons in the striatum and concurrent body movements during a reward-based task

Research Assistant 1/2018 – 8/2018
Max Planck Institute of Human Development, Berlin, DE

- Performed pre-processing and preliminary analyses in R on human behavioral data during a task assessing the effect of group size on collective decision making in the context of diagnosis of skin lesions. Trained and supervised 42 groups of human subjects.

Research Intern 5/2016 – 9/2016
National Center on Addiction & Substance Abuse (CASA), New York, NY

- Researched and co-authored report on the sources of childhood exposure to illicit substances.
- Conducted interviews with experts in poison control and pediatric care.
- Provided literature reviews to interpret longitudinal statistical analyses of Medicaid claims data to evaluate health outcomes for patients living with HIV/AIDS.

Research Intern 5/2015 – 9/2015
University of Rochester School of Medicine, Rochester, NY

- Primary author on medical chapter reviewing the efficacy of corticosteroids in pain management.

PUBLICATIONS

- **Schilling, L.,** Singleton, S. P., Tozlu, C., Hédo, M., Zhao, Q., Pohl, K. M., ... & Kuceyeski, A. (2024). Sex-specific differences in brain activity dynamics of youth with a family history of substance use disorder. *bio*R*xiv*. (*under review).*
- Singleton, S. P., Velidi, P., **Schilling, L.**, Luppi, A. I., Jamison, K., Parkes, L., & Kuceyeski, A. (2024). Altered structural connectivity and functional brain dynamics in individuals with heavy alcohol use. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging.*
- Liebana Garcia, S., Laffere, A., Toschi, C., **Schilling, L.,** Podlaski, J., Fritsche, M., ... & Lak, A. (2023). Striatal dopamine reflects individual long-term learning trajectories. *bio*R*xiv*, 2023-12.
- **Schilling L**, Markman JD. Corticosteroids for Pain of Spinal Origin: Epidural and Intra-articular Administration. *Rheumatic Disease Clinics of North America* 42.1 (2016): 137- 155.

TEACHING & MENTORSHIP

Co-organizer – Machine Learning in Medicine Virtual Seminar Series 5/2024 –Present

- An inter-campus collaborative with the goal of bringing together researchers with common interests in machine learning applied to clinical questions/data
- Invite and host speakers from academia and industry for our regular virtual seminar series.

Co-organizer – Brain Awareness Day December 2024

- Leading outreach event teaching NYC public school 4th graders about brain health, involving coordinating with schools, designing curriculum and branding, recruiting a volunteer team, and facilitating activites.

Teaching Assistant – Addiction & Society, Weill Cornell Medicine 3/2024 –Present

- Helped organize and facilitate an 8-week graduate course for PhD neuroscience students that examines the connections between sociocultural, neurobiological, and genetic risk factors for substance use.

Mentor - iMentor NYC Program, Marble Hill High School, NY. 9/2023 – Present

- Closely mentor a 11th grade high school student to determine and pursue academic/career goals with weekly communication and monthly in-person mentoring sessions.

Project Supervisor - M.Sc. Student, Cornell University, Ithaca, NY. 1/2024 – Present

- Supervise M.Sc. student's research project exploring sex-specific effects of puberty on brain dynamics.

HONORS AND FUNDING

- 2024-Present: Ann S. Bowers Women's Brain Health Initiative Research Fellow
- 2023-2024 – T32 Training Grant from National Institute on Drug Abuse for "Genetic and environmental influences on addiction" (DA03980)
- 2020 – Top Contributing Author of Charité Neuroscience Newsletter - Fall Edition.
- 2018-2019 – DAAD Study Scholarship for Graduates of All Disciplines
- 2017 – Highest Distinction for Bachelor of Science, U of Toronto
- 2015-2017 – University College Dean's List, U of Toronto
- 2014 – University College Special In-Course Scholarship, U of Toronto
- 2013 – John Leyerle/Plum Foundation Scholarship, U of Toronto

ORAL PRESENTATIONS

- "Sex-specific differences in brain activity dynamics of youth with a family history of substance use disorder." T32 Retreat, Weill Cornell Medicine. 2024.

ABSTRACTS (PRESENTED)

- **Schilling, L.,** Singleton P., Hedo M., Tozlu C., Jamison, K., Kuceyeski, A. "Sex-specific differences in brain activity dynamics of youth with a family history of substance use disorder." Weill Cornell BMRI Retreat. 2024.
- **Schilling, L.,** Singleton P., Jamison, K., Kuceyeski, A. "Altered brain dynamics in youth with family history of substance use disorder vary by sex." Organization of Human Brain Mapping Annual Meeting. Seoul, South Korea. 2024.

- **Schilling, L.,** Singleton P., Jamison, K., Kuceyeski, A. "Altered brain dynamics in youth with family history of substance use disorder vary by sex." ABCD Insighs & Innovation Meeting. Washington D.C., USA. 2024.
- **Schilling, L.,** Singleton P., Jamison, K., Kuceyeski, A. "Sex-dependent brain activity dynamics in adolescents with family history of substance use disorder." Organization of Human Brain Mapping Annual Meeting. Montreal, QC. 2023.

ABSTRACTS (NOT PRESENTED)

- Tozlu, C., **Schilling, L.**, Singleton P., Jamison, K., Kuceyeski, A. "The brain's functional activation dynamics are associated with female hormone levels." Organization of Human Brain Mapping (OHBM), Seoul, South Korea. 2024.
- Tozlu, C., Singleton P., **Schilling, L.**, Liu, C., Gauthier, S., Jamison, K., Kuceyeski, A. "Functional connectivity upregulation in post-menopause in healthy females." Organization for Human Brain Mapping, Seoul, South Korea, 2024.
- Singleton, S. P., Velidi, P., **Schilling, L.**, Luppi, A. I., Jamison, K., Parkes, L., & Kuceyeski, A. "Altered structural connectivity and functional brain dynamics in individuals with heavy alcohol use elucidated via network control theory" Organization for Human Brain Mapping, Seoul, South Korea, 2024.
- Hedo, M., **Schilling, L.**, Singleton, P., Jamison, K., & Kuceyeski, A. "Brain activity dynamics in childhood psychopathology and in children with and without ADHD." Organization for Human Brain Mapping, Seoul, South Korea, 2024.
- Liebana Garcia, S., Laffere, A., Toschi, C., **Schilling, L.,** Podlaski, J., … Lak, A. "Striatal dopamine reflects individual long-term learning trajectories." Computational and Systems Neuroscience (CoSyNe) Annual Meeting. Lisbon, Portugal. 2024.
- Liebana Garcia, S., Laffere, A., Toschi, C., **Schilling, L.,** … Lak, A. "Striatal Dopamine Reflects Long-term Learning Trajectories." Conference on Cognitive Computational Neuroscience. 2023.
- Laffere, A., Toschi, C., Liebana Garcia, S., Zatka-Haas, P., **Schilling, L.**, … Lak, A. "Dopaminergic computations underlying learning of a perceptual task from naïve to expert." Federation of European Neuroscience Societies Annual Meeting. Paris, France. 2022.

ACADEMIC & PROFESSIONAL TRAINING

- Summer 2023 – NeuroMatch Academy – Computational Neuroscience Summer School. Virtual.
- Winter 2020 – Personal Animal Research License Training. University of Oxford. Oxford, UK.
- Winter 2018 – Winter School in Ethics & Neuroscience. Bernstein Center for Computational Neuroscience.
- Summer 2014 – Summer School in Global Health Challenges. University of København. Copenhagen, DK.

VOLUNTEER

- 2024 – Brain Awareness Day. PS183, New York, NY.
- 2023-Present – iMentor Volunteer. New York, NY.
- 2023, 2024 – Mentor for first-year PhD neuroscience students. Weill Cornell. New York, NY.
- 2022-2024 – Recruitment mentor for prospective PhD candidates. Weill Cornell. New York, NY.
- 2019-2020 – Contributing author and editor for Charité Neuroscience Newsletter.
- 2016 – Contributing author and editor for Inkblot: Journal of Undergraduate Psychology.
- 2016 – Women's Reproductive Health Clinic Escort. Queens, NY.
- 2015-2017 – Toronto International Film Festival Volunteer. Toronto, ON.
- 2015 – Research Volunteer at St. Michael's Suicide Studies Unit. Toronto, ON.
- 2015 – Orientation Communication Leader. University of Toronto, ON.
- 2014 – Museum Guide. Education Department. Rochester Museum & Science Center. Rochester, NY.

PROFESSIONAL MEMBERSHIPS

Organization of Human Brain Mapping, Out in STEM, New York Academy of Science.

CODING LANGUAGES

MATLAB, Python, and R