Matas Vitkauskas

matas.vitkauskas@mail.mcgill.ca / matas.vitkauskas.com

Education

McGill University, Montreal, Canada — Aug 2025 – Present
PhD in Human Genetics
Thesis topic: Single-cell neurogenomics of early life adversity.

Yale-NUS College, Singapore — Aug 2018 – May 2022
Major: Life Sciences; Minor: Physical Sciences (Chemistry)
CAP: 4.47/5.00; Major CAP: 4.79/5.00

Publications

Vitkauskas, Matas, and Ajay S. Mathuru. 2020. "Total Recall: Lateral Habenula and Psychedelics in the Study of Depression and Comorbid Brain Disorders." *International Journal of Molecular Sciences* 21(18): 6525.
`https://doi.org/10.3390/ijms21186525`

Awards and Honors

- McGill Graduate Excellence Award (7,790 CAD).
- Yale-NUS Summer Research Program scholar 2019 (grant award 3,500 SGD).
- NUS Outstanding Undergraduate Researcher Prize 2020 (cash award 2,000 SGD).
- Harvard Summer Honors Undergraduate Research Program (SHURP) scholar (grant award 3,000 USD).
- 2nd place in 10x Genomics Spatial Transcriptomics Hackathon 2024 (prize award 200 SGD).

Research Experience

McGill University, PhD Student, Canada — Jul 2025 – Present

- PhD program in Human Genetics. Supervisor: Dr. Gustavo Turecki.
- Analyzing RNAseq and EMseq data of pyramidal neurons from prefrontal cortex of depressed suiciders with history of childhood abuse.
- Studying paraventricular thalamus using snRNAseq in the context of childhood abuse.

Genome Institute of Singapore (GIS), Research Officer, Singapore — Jul 2022 – Jul 2025

- Supervisor: Dr. Jinyue Liu.
- Preparing a first-author paper on temporal and spatial characterization of a human midbrain-like organoid model of cellular vulnerability in Parkinson's disease.

- Analyzed in-house and publicly available scRNAseq and MERFISH spatial transcriptomics data.
- Studied glioblastoma multiforme tumor biopsies and ligand–receptor interactions between invasive tumor subtypes and their immediate cellular neighbourhoods using CosMx spatial transcriptomics.
- Characterized cell-type-specific differential expression effects caused by *Smchd1* mutation in embryonic gonads of mice in collaboration with Dr. Xue Shifeng's lab at NUS.

Yale-NUS College, Undergraduate Researcher, Singapore Aug 2021 – May 2022

- Supervisor: Dr. Jan Gruber.
- Wrote bachelor's thesis titled *Cosmetic neurology at scale: developing a high-throughput phenotypic screening for novel nootropics in D. melanogaster.*
- Created custom Arduino behavioural set-up for vibrational conditioning, CAFÉ feeding assay using capillaries, and a hypoxia recovery assay.

Brigham and Women's Hospital, Summer Research Intern, Online May 2021 – Sept 2021

- Supervisor: Dr. William Renthal.
- Studied cell-type-specific enhancers in dorsal root ganglion.
- Performed analysis of scRNAseq and complementary scATACseq datasets in mice.

Institute of Molecular and Cell Biology (IMCB), Intern, Singapore May 2020 – May 2021

- Supervisor: Dr. Ajay Mathuru.
- Ran behavioural tests investigating the role of oxytocin receptors in scotophobic and thigmotaxic behaviour using OpenCV-based analysis.

Yale-NUS College, Lab Assistant, Singapore Sept 2019 – Dec 2019

- Supervisor: Dr. Philip Johns.
- Extracted over 100 RNA samples for a study investigating aggressive behaviour in *t. discus* flies.

Duke-NUS Centre for Computational Biology, Intern, Singapore May 2019 – Jul 2019

- Supervisor: Dr. Steven Rozen.
- Evaluated the performance of software used in mutational signature analysis (e.g. SigProfiler, SignatureAnalyzer, signeR, deconstructSigs).
- Formatted variant calling files (VCFs) for downstream analysis.

Volunteering Experience

Academic Buddy LT, Student Mentor (online) Aug 2018 – Present

Singapore Society for Neuroscience (SfN.SG), Newsletter Editor and Web Master, Singapore Mar 2023 – Jul 2025

Integrative Neuroscience Association, Staff Writer, Lithuania Dec 2020 – Mar 2023

Computer Skills and Languages

Languages: Lithuanian (Native), English (Fluent), French (Intermediate, B1), Chinese (Elementary).

Technical skills: RStudio (Advanced), Python (Intermediate), OCaml (Elementary), C++ (Elementary).

Interests: DJing, classical guitar, basketball, snowboarding.