DANA GOERZEN

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SUMMARY

Self-motivated, independent graduate student with an inquisitive mind, always seeking challenges that push the boundaries of scientific discovery. I am committed to a lifelong learning journey, aiming to continuously master new skills and gain insights from those around me. Driven by a passion for translational medicine, I am enthusiastic about applying my knowledge and experience to bridge the gap between research and clinical applications, transforming scientific insights into real-world solutions for patient care and public health.

EDUCATION

Weill Cornell Graduate School, Cornell University 2021 - present

PhD Candidate in Physiology, Biophysics, and Systems Biology *New York, New York*

- Thesis: Development of a Machine Learning-Based Nanosensor Platform for the Detection of Neurological Tumors and Biomarker Discovery, Supervisor: Dr. Daniel Heller, Memorial Sloan Kettering Cancer Center

McGill University 2016 - 2020

BSc (Hons) Neuroscience, Minor in Mathematics. GPA: 3.91 / 4.00 *Montreal, Canada*

- Honors Thesis: Probing the role of the protein translation initiation factor 2-alpha (eIF2-) in the onset of acute major depressive disorder, Supervisor: Dr. Jamie Near, Douglas Brain Imaging Centre, McGill University

EXPERIENCE

PhD Researcher 2021 – Present

Memorial Sloan Kettering Cancer Center *New York, New York*

- Designed a machine-learning based diagnostic platform to detect brain tumors from blood samples.
- Planned and executed analysis of high-dimensional spectroscopy dataset
- Conducted biomarker discovery via quantitative LC-MS/MS proteomics of nanosensor-bound proteins and ELISA screens.
- Mentored 4 graduate students and led 2 independent research projects.
- Performed extensive literature reviews and scientific writing for 3 peer-reviewed publications
- Served as a teaching assistant to first-year Ph.D. students on advanced topics such as multivariate statistical testing, linear regression, and model development.

Data Analyst 2020 – 2021

The Decision Lab *Montreal, Canada*

- Worked in a statistics and data science analyst contract role for The Decision Lab, a behavioral design think tank and consultancy based in Montreal, Canada, prior to my enrollment in graduate school.
- Planned and executed statistical analyses and visual presentation of multivariate data survey data collected in collaboration with the Bill and Melinda Gates Foundation.

Undergraduate Research Assistant 2017 – 2021

Magnetic Resonance Imaging Lab, McGill University *Montreal, Canada*

- Awarded an Undergraduate Summer Research Award by the National Science and Engineering Research Council to develop methods to quantify neuro-metabolite levels
- Developed a magnetic resonance neuroanatomical atlas of the Fischer 344 rat brain for use as a tool for preclinical brain researchers, gaining experience in quantitative research methods.
- Presented technical scientific research to a broad audience, showcasing ability to communicate clearly, as also exemplified by 4 other first- or second-author scholarly publications and 5 first-author international conference presentations

SELECTED PUBLICATIONS (OF 10)

- Kim M*, **Goerzen D***, Jena P, Zeng E, Pasquali M, Meidl RA, Heller D. *Human and environmental safety of carbon nanotubes across their life cycle.* Nature Reviews Materials (2023)
- **Goerzen D**, Kim M, Heller D. *Nanotechnology in Translation: Carbon Nanotubes Reach Substantial Industrial Adoption.* (Under review at ACS Nano)
- **Goerzen D**, Fowler C, Devenyi GA, Germann J, Madularu D, Chakravarty MM, Near J. *An MRI-Derived Neuroanatomical Atlas of the Fischer 344 Rat Brain.* Scientific Reports (2020)
- Bell TK, **Goerzen D**, Near J, Harris AD, *Examination of Methods to Separate Overlapping Metabolites at 7T*, Magnetic Resonance in Medicine (2024)
- Kim M*, Chen C*, Yaari ZA, Frederiksen R, Randall E, Cupo C, Wu X, Shah J, Worroll DW, Lagenbacher R, **Goerzen D**, Li Y, An H, Wang Y, Heller DA. *Nanosensor Monitors Autophagy-Associated Lysosomal Hyperacidification Dynamics In Vivo.* Nature Chemical Biology (2022)
- Fowler C*, **Goerzen D***, Madularu D, Devenyi GA, Chakravarty MM, Near J. *Longitudinal Characterization of Neuroanatomical Changes in the Fischer 344 Rat Brain During Normal Aging and Between Sexes.* Neurobiology of Aging (2021)
- Fowler C, **Goerzen D**, Devenyi GA, Madularu D, Cruickshank K, Pham A, Ellerbeck K, Drudik K, Chakravarty MM, Near J. *Neurochemical and Cognitive Changes Precede Structural Abnormalities in the TGF344-AD Rat Model.* Brain Communications (2022)

SKILLS

Languages & Aptitudes | *Python, R, Unix/linux shell, MATLAB, bioinformatics, statistics*

Skills & Expertise | *Machine learning, clinical data analysis, biomarker development, cell culture, proteomics, spectroscopic methods*

AWARDS

Doctoral Foreign Study Award | *Canadian Institutes of Health Research (2024-2026)*

- Awarded to support "high-caliber students pursuing doctoral degrees in health-related fields outside of Canada" **(top 2% of applicants)**.

Graduate Research Fellowship Award | General Atlantic *(2023-2025)*

- Awarded to "a promising graduate fellow to pursue their education and key research interests that integrate scientific priorities with important clinical needs".

McGill Faculty of Science Scholarship and the Emily Ross Crawford Scholarship | *McGill University (2017,2019)*

- Awarded on the basis of high academic achievement in the Faculty of Science **(top 5% of GPA)**.

EXTRACURRICULARS

Carbon Nanotube Policy Advocacy 2024 - present

Memorial Sloan Kettering Cancer Center *New York, New York*

- I published a policy brief for the Baker Institute of Public Policy based on an academic paper I co-authored, to distill our findings for a non-academic audience, particularly for regulators and policy-makers, entitled *Balancing Safety and Innovation: Shaping Responsible Carbon Nanotube Policy*.

CEO and Year Representative 2017 – 2020

Neuroscience Undergraduate Society of McGill *Montreal, Canada*

- Leader of a 20-person team of students running social and academic events directed for undergraduate students in the neuroscience program at McGill University.
- Organized social events including year-end formal for over 300 students, and academic workshops of relevance to students wishing to pursue careers in research.