EMILY OLAFSON

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ABOUT ME

- Highly motivated computational neuroscientist with experience developing quantification methods for MRI and PET biomarkers for clinical trials
- Collaborative, independent learner, and highly motivated scientist with a passion for combining analytical and programming expertise for the evaluation of neurological disease

TECHNICAL SKILLS

Biomedical image processing and analysis (anatomical MRI, fMRI, PET), programming (MATLAB, R, Bash, python), statistical analysis (hypothesis testing, data visualization), machine learning (deep learning, classification, regression)

EDUCATION

PhD Cornell University, Neuroscience Sept. 2019 – Exp. May 2023
Weill Cornell Graduate School
Thesis lab: Computational Connectomics Lab (PI: Amy Kuceyeski)

BS McGill University, Honors Neuroscience Sept. 2015 – May 2019
Thesis lab: Computational Brain Anatomy Lab (PI: Mallar Chakravarty)
Graduated with Distinction & First Class Honors in Neuroscience

EXPERIENCE

Late Discovery Imaging Intern, Biogen, Cambridge, MA Summer 2022
- Performed *in vivo* characterization and optimized image analysis parameters for an exploratory tau PET tracer of progressive supranuclear palsy
- Developed parallelized PET preprocessing pipeline, including quantitative quality control measures
- Planned and executed analysis of natural history clinical dataset and presented work to internal stakeholders at multiple levels of drug development to inform biomarker strategy

Dissertation, Weil Cornell Graduate School of Medical Sciences, New York, NY 2019 - present
- Independently led multiple high-impact projects investigating novel imaging biomarkers of stroke outcome, leading to 2 first-author publications in 3 years
- Developed novel image analytical methods to maximize the value of acute clinical MRI data for predicting stroke recovery
- Mentored 2 undergraduate students and 1 high school student, providing advisory and research assistance and taught a Cornell-rostered neuroscience course in New York state prisons

Honors Research Student, McGill University, Quebec, Canada 2018 to 2019
- Developed image processing pipeline to measure a novel MRI biomarker in autism spectrum disorder
- Performed statistical analysis on multi-site imaging data to investigate autism-control differences in MRI data
- Independently led and collaborated on several projects leading to 1 first-author paper and 3 co-authored papers in 1 year

RELEVANT PUBLICATIONS

- **Emily Olafson**, Georgia Russello, Keith Jamison, Dandong Wang, Hesheng Liu, Joel E Bruss, Aaron D Boes, Amy Kuceyeski, *Increased prevalence of a frontoparietal brain state at rest is associated with better motor recovery in individuals with pontine stroke affecting dominant-hand corticospinal tract*, Communications Biology (2022)
- **Emily Olafson**, Keith Jamison, Elizabeth Sweeney, Danhong Wang, Hesheng Liu, Joel E Bruss, Aaron D Boes, Amy Kuceyeski, *Functional connectome reorganization relates to post-stroke motor recovery and structural and functional disconnection,* Neuroimage (2021)
- **Emily Olafson**, Saashi A Bedford, Gabriel A Devenyi, Raihaan Patel, Stephanie Tullo, Min Tae M Park, Olivier Parent, Evdokia Anagnostou, Simon Baron-Cohen, Edward T Bullmore, Lindsay R Chura, Michael C Craig, Christine Ecker, Dorothea L Floris, Rosemary J Holt, Rhoshel Lenroot, Jason P Lerch, Michael V Lombardo, Declan G M Murphy, Armin Raznahan, Amber N V Ruigrok, Michael D Spencer, John Suckling, Margot J Taylor, MRC AIMS Consortium, Meng-Chuan Lai, M Mallar Chakravarty, *Examining the boundary sharpness coefficient as an index of cortical microstructure in autism spectrum disorder*, Cerebral Cortex (2021)

HONORS AND AWARDS

Merit Abstract Award - Organization for Human Brain Mapping (OHBM) 2021
- Awarded to the top ranked abstracts (top 3% out of 1,200) submitted to the annual OHBM conference

Best Diagnostic Application ($1,000) - Artificial Intelligence Health Hackathon 2020
- Prototyped diagnostic software to detect and classify white blood cells from blood smear images, implemented and annotated database for pathology data using AWS S3