HALLEE SHEARER

SHEARER.H@NORTHEASTERN.EDU

BOSTON, MA

EDUCATION

NORTHEASTERN UNIVERSITY **Boston, MA**
Doctor of Philosophy, Psychology **2025-Present**
- Supervisor: Dr. Stephanie Noble

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Master of Science, Neuroscience **2021-2023**
GPA: 89%; Thesis grade: 95%
- Supervisor: Dr. Tamara Vanderwal
- Thesis: Movie-fMRI as an acquisition state for functional connectivity-based precision psychiatry

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Bachelor of Science, Behavioural Neuroscience (Co-operative Education Program) **2016-2021**
GPA: 83%

FUNDING & AWARDS

Canadian Graduate Scholarship - Doctoral - Canadian Institute of Health Research ($120,000) - *Declined* **2025**
Faculty of Medicine Graduate Award - UBC ($300) **2023**
Best Lightning Talk Award – UBC Psychiatry Research Day ($500) **2023**
Canadian Graduate Scholarship – Master's - Canadian Institute of Health Research ($17,500) **2022**
UBC Graduate Student Travel Award ($500) **2022**
UBC Graduate Program in Neuroscience Travel Award ($500) **2022**
Faculty of Medicine Graduate Award - UBC ($4,500) **2021**
Faculty of Medicine Summer Student Research Award - UBC ($2,800) **2021**
Virtual Knowledge Exchange Grant - BC Children's Hospital Research Institute ($250) **2021**
BioTalent Canada's Student Work Placement Program ($7,000) **2020**
Dean's Honour List - UBC **2016-2021**

PUBLICATIONS

PEER-REVIEWED PUBLISHED MANUSCRIPTS

1. **Shearer, H.,** Eilbott, J., Vila-Rodriguez, F., Noble, S., Xu, T., & Vanderwal, T. (2025) Comparing reliability-based measures of functional connectivity between movie and rest: An ROI-based approach. Imaging Neuroscience, 3, imag_a_00411.
2. Frew, S, Samara, A, **Shearer, H**, Eilbott, J, & Vanderwal, T (2022) Getting the nod: Pediatric head motion in a transdiagnostic sample during movie-and resting-state fMRI. PloS one, 17(4), e0265112.

MANUSCRIPTS SUBMITTED AND UNDER REVIEW

1. **Shearer, H**, Vila-Rodriguez, F, Vanderwal, T (2023) Movie fMRI as an acquisition state for the identification of personalized rTMS targets.
2. **Shearer, H**, Rosenblatt, M, Ye, J, Jiang, R, Tejavibulya, L, Liang, Q, Dadashkarimi, J, Westwater, M, Cheng, I, Fischbach, A, Humphries, A, Kumar, A, Rolison, M, Peterson, H, Atkinson, B, Mehta, S, Camp, C, Nichols, T, Curtiss, J, Scheinost, D, Noble, S. (2024) BrainEffeX: A Web App for Exploring fMRI Effect Sizes. https://doi.org/10.31219/osf.io/kryn4 [preprint].

3. Ge, R, Gregory, L, Samara, A, **Shearer, H**, Humaira, A, MacMillan, E, Barlow, E, Frangou, S, Vanderwal, T, Vila-Rodriguez, F. Acute network-based functional connectivity perturbations induced during 1Hz TMS for Treatment Refractory Depression

MANUSCRIPTS IN PREPARATION

1. **Shearer, H** & Noble, S. Approaches for statistical comparison of test-retest reliability measures.
2. Noble, S, **Shearer, H**, Rosenblatt, M, Ye, J, Jiang, R, Tejavibulya, L, Liang, Q, Dadashkarimi, J, Westwater, M, Cheng, I, Fischbach, A, Humphries, A, Rolison, M, Peterson, H, Atkinson, B, Mehta, S, Camp, C, Calhoun, V, Constable, T, Nichols, T, Curtiss, J, Scheinost, D. What effect sizes can I expect when conducting an fMRI study? Meta-analytic guidelines from large, publicly available datasets.
3. Fischbach, A, **Shearer, H**, Satpute, A, Quigley, K, Theriault, J, Barrett, L, Noble, S. Unmasking reliability: the impact of subject-specific masks on intra-subject reliability of subcortical connectivity in resting-state.

RESEARCH EXPERIENCE

NORTHEASTERN UNIVERSITY **Boston, MA**
Center for Cognitive and Brain Health, **2023-2025**
Neuroscience Precision Research & Idiographic Statistical Methods (NeuroPRISM) Laboratory

- Research Technician
- Supervisor: Dr. Stephanie Noble
- Leveraging large existing fMRI datasets to define typical study effects and developing an interactive web app (R Shiny) to explore the results
- Leading a project to develop recommendations for the statistical comparison of test-retest reliability estimates

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Department of Psychiatry, Naturalistic Neuroimaging Lab **2021-2023**

- Master's Student
- Supervisor: Dr. Tamara Vanderwal
- Compared test-retest reliability estimates of functional connectivity across movie-watching and resting-state for psychiatric applications

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Department of Psychiatry, Naturalistic Neuroimaging Lab **2020-2021**

- Research Assistant, Co-operative education position
- Supervisor: Dr. Tamara Vanderwal
- Investigated graph theory metrics of functional connectivity in childhood-onset OCD

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Department of Psychiatry, Non-Invasive Neurostimulation Therapies Lab **2019-2020**

- Research Assistant, Co-operative education position
- Supervisor: Dr. Fidel Vila-Rodriguez
- Administered Transcranial Magnetic Stimulation treatments in the context of clinical trials

UNIVERSITY OF BRITISH COLUMBIA **Vancouver, BC**
Department of Psychology, Evolutionary Social Cognition Lab **2018-2019**

- Research Assistant
- Supervisor: Dr. Mark Schaller
- Investigated the evolutionary basis of political conservatism

INVITED TALKS

University of Melbourne (virtual) - *Systems Lab* **2024**
Movie-fMRI as an acquisition state for FC-based precision psychiatry

Northeastern University - *Social Development and Wellbeing Lab* **2024**
Introduction to movie-fMRI

CONFERENCE PRESENTATIONS

Shearer H (2025) BrainEffeX: a web app for exploring fMRI effect sizes. *OHBM 2025.*

Shearer H (2025) Movie fMRI: Reliability & data quantity. *OHBM 2025 (Education Course).*

Shearer H (2025) BrainEffeX: a web app for exploring fMRI effect sizes. *Cognitive Neuroscience Society 2025.*

Shearer H (2023) Movie-fMRI as an alternative to rest for FC-based precision psychiatric research. *UBC Psychiatry Research Day 2023.*

TEACHING EXPERIENCE

NORTHEASTERN UNIVERSITY **Boston, MA**
Department of Psychology **2024**
- PSYC7250: A data science toolkit for human neuroscience research

MENTORSHIP EXPERIENCE

Research Assistants:
Catherine Cahill, B.Eng student, *NeuroPRISM Co-op Student*
Will Clarke, B.Sc., *Naturalistic Neuroimaging Lab Undergraduate Research Assistant, UBC* **2022-2023**
Meghan Smith, B.Sc., *Naturalistic Neuroimaging Lab Undergraduate Research Assistant, UBC* **2022-2023**

High-school Students:
Samuel Joseph, *NeuroPRISM Summer Intern* **Summer 2024**
Ariadne Weber-Madison, *Naturalistic Neuroimaging Lab Summer Intern* **Summer 2023**

WORKSHOPS & SUMMER SCHOOLS

Advanced statistical methods in neuroimaging and genetics (University of Utah) **2025**
An advanced two-week course on the application of Bayesian methods, general linear mixed models, longitudinal data analysis, network science, statistical genetics, predictive modeling, and multi-modal data fusion for neuroimaging.

Neurohackademy (University of Washington) **2024**
A two-week summer school focused on neuroimaging, machine learning, reproducible data science, computer programming, and open science.

Brainhack Boston: NEU **2024**
Organized and attended a full-day hackathon centered around developing a center-wide preprocessing pipeline.

Beyond Blobology: advances in statistical inference for neuroimaging **2023**
A one-day course at OHBM in Montreal focusing on current topics in neuroimaging statistics.

UBC fMRI Bootcamp **2022**
A one-week full-time introduction to fMRI preprocessing and analysis.

Neuromatch Academy **2021**
A three-week full-time computational neuroscience course.

AD-HOC REVIEW

Review profile: https://www.webofscience.com/wos/author/record/KFS-0665-2024

- Neuron, Human Brain Mapping, Developmental Cognitive Neuroscience, Scientific Reports

CONFERENCE POSTERS

Shearer H, Rosenblatt M, Ye J, Jiang R, Tejavibulya L, Liang Q , Dadashkarimi J, Foster M, Westwater M, Cheng I, Fischbach A, Humphries A, Baskaran AK, Rolison M, Peterson H, Adkinson B, Mehta S, Camp C, Nichols T, Curtiss J, Scheinost D, Noble S. (2025) BrainEffeX: A web app for exploring typical fMRI effect sizes. *OHBM 2025*.

Shearer H, Eilbott J, Vila-Rodriguez F, Vanderwal T. (2025) What if rest is not best? Considering brain state for individualized FC-based rTMS. *OHBM 2025*.

Fischbach A, **Shearer H**, Quigley K, Theriault J, Feldman Barrett L, Satpute A, Noble S. (2025) Deconfounding subcortical signals in fMRI by modeling region-specific cerebrospinal fluid noise. *OHBM 2025*.

Shearer H, Rosenblatt M, Ye J, Jiang R, Tejavibulya L, Liang Q , Dadashkarimi J, Foster M, Westwater M, Cheng I, Fischbach A, Humphries A, Baskaran AK, Rolison M, Peterson H, Adkinson B, Mehta S, Camp C, Nichols T, Curtiss J, Scheinost D, Noble S. (2025) BrainEffeX: A web app for exploring typical fMRI effect sizes. *Cognitive Neuroscience Society 2025*.

Smith M, Samara A, Eilbott J, **Shearer H**, Vanderwal T, Bernhardt B. (2024) Hierarchical organization of intersubject correlations parallels functional gradients during naturalistic viewing. *OHBM 2024.*

Shearer H, Rosenblatt M, Ye J, Jiang R, Tejavibulya L, Liang Q , Dadashkarimi J, Westwater M, Cheng I, Rolison M, Peterson H, Adkinson B, Mehta S, Camp C, Curtiss J, Scheinost D, Noble S. (2024) BrainEffeX: A Shiny app to explore typical effect sizes in functional neuroimaging research. *Cognitive Neuroscience Society 2024*.

Fischbach A, **Shearer H**, Satpute A, Quigley K, Theriault J, Barrett L, Noble S. (2024) Assessing the impact of subject-specific masks on reliability of subcortical connectivity. *Cognitive Neuroscience Society 2024*.

Shearer H, Vila-Rodriguez F, Vanderwal T. (2023) Movie-fMRI as an alternative to rest for FC-based precision psychiatric research. *OHBM 2023*.

Samara A, Ge R, Gregory E, **Shearer H**, Vila-Rodriguez F, Vanderwal T. (2023) Acute FC changes during concurrent rTMS-fMRI for depression: a network-based approach. *OHBM 2023*.

Shearer H, Samara A, Eilbott J, Vila-Rodriguez F, Vanderwal T. (2022) On Location: Testing the use of movie-fMRI for individualized target localization for TMS. *OHBM 2022*.

Samara A, Eilbott J, **Shearer H**, Xu T, Vanderwal T. (2022) Gradients go to the movies: Macroscale cortical organization during naturalistic viewing. *OHBM 2022*.

Shearer H, Eilbott J, Steward SE, Vanderwal T. (2021) Graph theory analyses in childhood-onset OCD yield negative results. *OHBM 2021*.

Frew S, Samara A, **Shearer H**, Eilbott J, Vanderwal T. (2021) Getting the Nod: Characterizing pediatric head motion in movie- and resting-state fMRI. *OHBM 2021*.

Shearer H, Eilbott J, Stewart SE, Vanderwal T. (2021) Graph theory analysis of fMRI data in pediatric OCD. *UBC Multidisciplinary Undergraduate Research Conference 2021*.

PROFESSIONAL MEMBERSHIPS

Cognitive Neuroscience Society Member **2024 - Present**
Organization for Human Brain Mapping **2020 - Present**

SKILLS

Programming*:* R (*lme4, tidyverse, plotly, shiny*), Python (*Nilearn, Nipype*), MATLAB, Bash
Data analysis*:* Jupyter Notebooks, Git/GitHub, High-performance computing (*PBS, SLURM, parallel processing*)
Data processing*:* fMRIPrep, FSL, FreeSurfer, Docker, Singularity
Research management*:* RedCap, RAVE
Data Visualization: MatplotLib, ggplot2, Graphpad Prism, Biorender, Tableau
Systems*:* Linux, MAC OS, Windows
Software*:* RStudio, Visual Studio Code, Quarto, FSLEyes, Connectome Workbench, Psychopy