

HALLEE SHEARER

SHEARER.H@NORTHEASTERN.EDU

BOSTON, MA

EDUCATION

NORTHEASTERN UNIVERSITY

Doctor of Philosophy, Psychology

Boston, MA

2025-Present

- Supervisor: Dr. Stephanie Noble

UNIVERSITY OF BRITISH COLUMBIA

Master of Science, Neuroscience

Vancouver, BC

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

Bachelor of Science, Behavioural Neuroscience (Co-operative Education Program)

Vancouver, BC

2016-2021

GPA: 83%

FUNDING & AWARDS

Canadian Graduate Scholarship - Doctoral - Canadian Institute of Health Research (\$120,000) - <i>Declined</i>	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, Vanderwal, T. (2026) Considering brain state for individualized functional connectivity-based rTMS. *Imaging Neuroscience*, 4, imag_a_1096.
2. **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, Nichols, T, Curtiss, J, Scheinost, D, Noble, S. (2025) BrainEffeX: A Web App for Exploring fMRI Effect Sizes. *Aperture Neuro*.
3. **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.
4. 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. 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

PREPRINTS

1. Cravo, F, Fischbach, A, **Shearer, H**, Rosenblatt, M, Schienost, D, Noble, S. (2026) PRISME: A MATLAB toolbox for large data-driven multimodal power benchmarking. bioRxiv.
2. Smith, M, Samara, M, Cabalo DG, Ngo, A, **Shearer, H**, Vanderwal, T, Bernhardt, B. (2025) bioRxiv.

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
- Leveraged large existing fMRI datasets to define typical study effects and developing an interactive web app (R Shiny) to explore the results
- Lead 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, Stewart 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