BRENDAN CULLEN

I am a PhD student and National Science Foundation Graduate Research Fellow in the Department of Psychology at the University of Oregon. As an aspiring data scientist, my long-term goal is to contribute to open-source software and to apply my computational skills as a researcher within an industry setting focused on enhancing health across the lifespan.

EDUCATION

2022 | 2017

PhD Student, Psychology

University of Oregon — Eugene, OR

- My research takes a translational (neuro)science approach toward predictive modeling of self-regulation processes and health-risking behaviors within a precision medicine framework.
- I am currently pursuing a 5-course Data Science Specialization taught entirely in R, focused on data visualization, functional programming, and machine learning.

2019 | 2017

MS, Psychology

University of Oregon — Eugene, OR

- Thesis: Comparing cognitive and affective predictors of craving

2015 | 2011

BA, Neuroscience

Middlebury College — Middlebury, VT

- Thesis: Neurophysiological correlates of self-referential activity in meditators and non-meditators

SELECTED POSITIONS

2020

Lab Instructor

PSY 612: Data Analysis II — University of Oregon

- Designed and taught lab sections on Correlations, Univariate Regression and the General Linear Model, Regression with Categorical Predictors, Interactions, and Factorial ANOVA.

2019

Lab Instructor

PSY 611: Data Analysis I — University of Oregon

- Designed and taught lab sections on R Basics and Descriptive Statistics, Matrix Algebra, Data Transformation with dyplr, Pre-registration, and Paired samples t-tests.

2018 | 2017

Graduate Employee

Social and Affective Neuroscience Lab — University of Oregon

- Selected self-report measures and co-designed interventions for NCI-funded RCT comparing behavioral response and cognitive reappraisal interventions for devaluing unhealthy food
- Created automated workflow for daily backup of fMRI data via a high performance computing cluster

2017 | 2015

Research Assistant

Clinical and Affective Neuroscience Lab — Brown University

- Cleaned and scored self-report data (20+ measures) from an NIH-funded 3-armed RCT comparing focused awareness meditation, open-monitoring meditation, and Mindfulness-Based Cognitive Therapy on clinical efficacy for depression
- Led a project investigating the effects of meditation training on EEG and behavioral measures of self-referential processing

CONTACT

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MORE INFO

See full CV at bcullen.rbind.io/cv for more complete list of positions and publications.

PROGRAMMING SKILLS

- R
- Git/Github
- Bash
- MATLAB
- Python
- Javascript

I believe that learning open-source data science tools can empower us to be better scientists. I have relished the opportunity to create educational resources about working with data in R for my fellow graduate students.

Skills gained from research positions:

-Data analysis with R
-Functional programming
-Shell scripting
-Git/Github
-HPC
-Python
-Project management
-Research design
-Neuroimaging analysis
-Experimental software development (MATLAB)

Created with pagedown.
Source code on GitHub.
Last updated on 2020-03-06.

2017 | 2015

Research Assistant

Embodied Neuroscience Lab — Brown University

- Collected EEG data for pilot RCT testing a neuromuscular-immune model of chronic fatigue in female cancer survivors
- Designed custom software in MATLAB to implement novel EEG/EMG paradigm for measuring neural correlates of tactile acuity and precision grip strength

SELECTED PUBLICATIONS

2018

Dismantling Mindfulness-Based Cognitive Therapy: Creation and validation of 8-week Focused Attention and Open Monitoring interventions within a 3-armed randomized controlled trial

Behaviour and Research Therapy, 101, 92-107.

- Britton, W.B., Davis, J., Loucks, E.B., Peterson, B., **Cullen, B.**, Reuter, L., Rando, A., Rahrig, H., Lipsky, J. & Lindahl, J. (2018).

2018

Comparing embodiment experiences in expert meditators and non-meditators

Consciousness and Cognition, 65, 325-333.

- Xu, A., **Cullen, B.**, Penner, C., Zimmerman, C., Kerr, C.E., & Schmalzl, L. (2018)

2018

Dose-dependent effects of testosterone on spatial memory in adult male rats

Psychoneuroendocrinology, 89, 120-130.

- Wagner, B., Braddick, V. Batson, C., **Cullen, B.**, Miller, E. & Spritzer, M. (2018).

My peer-reviewed scientific publications are varied in topic, ranging from the neuroendocrinology of spatial memory to decomposing neurocognitive mechanisms of mindfulness practices with respect to clinical depression outcomes. In general, I am interested in studying how the plasticity of the brain can be leveraged to better understand and guide adpative changes in behavior.

WORKSHOPS TAUGHT

2020

Introduction to Git and Github

Psychology First Year Research Seminar — University of Oregon

- Introductory workshop for first-year psychology PhD and Master's students on basics of using Git and Github for version control

2019

Intermediate Git and Github

UO Data Science Club — University of Oregon

- Intermediate Git/Github workshop for University of Oregon's Data Science Club, including discussion of merge conflicts, branching, pull requests, and best practices for collaborative Github projects

I have extensive experience with git and Github and have taught several workshops on using Github for version control and collaborative projects. You can view a record of my Github pull requests here.

ADDITIONAL TRAINING

2020

Introduction to Machine Learning with the Tidyverse

rstudio::conf(2020) — San Francisco, CA

- Two-day workshop on machine learning with tidymodels taught by Alison Hill

Topics covered included prediction, classification, sampling & resampling, ensembling, workflows, recipes, cross-validation and model tuning.

SELECTED SERVICE

2020

Co-organizer

Cascadia R Conf 2020 — Eugene, OR

- Updated website for 2020 conference, designed new hex sticker, secured additional sponsors

2018

Co-organizer

Eugene Brainhack — Eugene, OR

- Co-organized a two-day Brainhack event hosted at the University of Oregon that involved collaborative software development projects related to computational neuroscience and psychology

I am passionate about contributing to open-source communities that are friendly, inclusive, and supportive. During my time in graduate school, I have had the privilege of helping to organize several workshops and conferences focused on sharing open-source data science tools within such communities.