

# BRENDAN CULLEN

I am a PhD student and [NSF Graduate Research Fellow](#) in the Department of Psychology at the University of Oregon. As an aspiring data scientist, my goal is to implement my skills as a researcher in an applied industry setting to develop open-source analytical tools that support health and wellness 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.
- 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

## 🏆 HONORS & AWARDS

- 2023 | 2018 **NSF Graduate Research Fellowship** [\[more info\]](#)  
National Science Foundation
- 2020 **Gregores Research Award** [\[more info\]](#)  
Department of Psychology, University of Oregon
- 2020 **Graduate Education Committee Research Award**  
Department of Psychology, University of Oregon
- 2020 **General University Scholarship** [\[more info\]](#)  
University of Oregon
- 2020 **Pilot & Training Core Travel Award** [\[more info\]](#)  
Center on Parenting and Opioids, University of Oregon
- 2020 **Graduate School “Special Opps” Travel & Research Award** [\[more info\]](#)  
University of Oregon
- 2019 **Graduate Education Committee Travel Award**  
Department of Psychology, University of Oregon
- 2017 **Graduate School Recruitment Award** [\[more info\]](#)  
University of Oregon

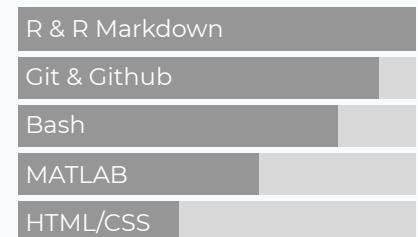
## CONTACT

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## DATA SCIENCE SPECIALIZATION

As part of my doctoral training, I am currently pursuing a 5-course [Data Science Specialization](#) taught entirely in R, focused on reproducible analysis, data visualization, functional programming, and machine learning within a tidyverse framework.

## PROGRAMMING SKILLS



- 2017
- **Mind and Life Summer Research Institute Fellow** [\[more info\]](#)  
Mind and Life Institute
- 2016
- **International Symposium for Contemplative Studies Scholarship** [\[more info\]](#)  
Mind and Life Institute
- 2015
- **BA in Neuroscience with Highest Honors, Summa Cum Laude**  
Middlebury College
  - **Elected to Phi Beta Kappa** [\[more info\]](#)  
Middlebury College
  - **Dean's Honor List (8 semesters)**  
Middlebury College
- 2015  
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2011
- **Rosalin Lieberman-Reiss Memorial Award**  
Department of Psychology, Middlebury College
- 2015
- **Mind and Life Summer Research Institute Fellow** [\[more info\]](#)  
Mind and Life Institute
- 2014
- **International Symposium for Contemplative Studies Scholarship** [\[more info\]](#)  
Mind and Life Institute
  - **Academic Conference Travel Fund Award**  
Middlebury College
  - **Senior Research Project Supplement**  
Middlebury College
  - **Bicentennial Fund for Research Partnerships in the Sciences Fellowship**  
Middlebury College
- 2013
- **Fred M. Roddy Research Fellowship in Biomedical Science**  
Middlebury College

## PROFESSIONAL RESEARCH EXPERIENCE

- 2018  
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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  
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2015
- **Research Assistant**  
Clinical and Affective Neuroscience Lab 📍 Brown University
    - Cleaned and scored 20+ self-report measures from a 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

Skills gained from research positions:

- Data analysis with R
- Functional programming
- Machine learning
- Shell scripting
- Git/Github
- Research design
- Neuroimaging analysis
- High performance computing
- Project management
- Agile/Scrum workflow
- Student mentoring

2017  
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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

2016

- **Recruitment Specialist**  
Women's Medicine Collaborative,  
Miriam Hospital 📍 Providence, RI
  - Developed strategies to recruit specialized patient populations for randomized controlled trials, including female cancer survivors and patients with asthma

2015  
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2014

- **Research Assistant**  
Social Psychology of Meditation Lab 📍 Middlebury College
  - Led a study on relationship between mindfulness, hormones, empathy, and prosocial behavior
  - Recruited and interviewed participants, administered surveys and cognitive tests, and analyzed salivary cortisol and testosterone assays

2014  
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2013

- **Research Assistant**  
Behavioral Neuroendocrinology Lab 📍 Middlebury College
  - Collected animal behavior data on the dose-dependent effects of testosterone replacement on spatial memory
  - Performed behavioral testing, prepared brain samples, collected microscopy data and assisted with manuscript preparation



## TEACHING EXPERIENCE

2020

- **Lab Instructor**  
PSY 302: Statistical Methods in Psychology 📍 University of Oregon
  - Taught online lab sections for introductory undergraduate statistics course (~200 students total) using the open-source statistical software [jamovi](#). (Spring 2020)

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](#). (Winter 2020)

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 dplyr](#), [Pre-registration](#), and [Paired samples t-tests](#). (Fall 2019)

I believe that learning open-source data science tools can empower us to be better scientists and critical thinkers. During my third year of graduate school, I served as a teaching assistant and lab instructor for both undergraduate and graduate-level statistics courses, for which I spent a significant amount of time creating educational resources about analyzing data in R and [jamovi](#).

2015

- **Teaching Assistant**

[PSYC 301: Physiological Psychology](#)

 Middlebury College

- Assisted with lab and discussion sections, held exam review sessions, prepared experimental equipment, and conducted animal testing for student projects

## 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 regularly use [Github](#) to more easily track and share my work, and I have enjoyed the opportunity to help my fellow grad students get started with learning the "why" and "how" of using version control.

## PEER-REVIEWED 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 adaptive changes in behavior.

## WORKS IN PROGRESS

2020

- **The contributions of focused attention and open monitoring in Mindfulness-Based Cognitive Therapy: a 3-armed randomized dismantling trial**

In prep

- **Cullen, B.**, Eichel, K., Lindahl, J., Rahrig, H., Kini, N., Flahive, J. & Britton, W.B.

- 2020
- Neural correlates of emotion reactivity and emotion regulation in women with borderline personality disorder: A replication of the literature with novel extensions  
In prep
    - Lewis, J., Cullen, B., Giuliani, N., & Zalewski, M.
- 2020
- Comparing cognitive and affective predictors of craving  
In prep
    - Cullen, B., DeStasio, K., Cosme, D., & Berkman, E.T.
- 2020
- The teacher matters: Instructor related effects of a pilot mindfulness intervention RCT in a school setting  
In prep
    - Canby, N., Lipsky, J., Cullen, B., Eichel, K., & Britton, W.B.

## SELECTED POSTER PRESENTATIONS

- 2019
- Cognitive versus affective predictors of craving  
Society for Personality and Social Psychology  Portland, OR
    - Cullen, B., DeStasio, K., Cosme, D., & Berkman, E.T. (2019)
- 2019
- Personalized stop-signal training to improve inhibitory control among adults who experienced early adversity  
Society for Personality and Social Psychology  Portland, OR
    - DeStasio, K., Cullen, B., Shaffer, K., & Berkman, E.T. (2019)
- 2018
- A pilot randomized control trial investigating brain-body mechanisms of Qigong meditative movement practice for cancer-related fatigue  
Society for Neuroscience Annual Meeting  San Diego, CA
    - Zimmerman, C., Penner, C., Temereanca, S., Daniels, D., Cullen, B., Jones, S., & Kerr, C.
- 2017
- Teacher effects in a school-based mindfulness intervention  
Mind and Life Summer Research Institute  Garrison, NY
    - Cullen, B., Canby, N., & Britton, W. B.
- 2017
- Sustained Attention in Focused Attention versus Open Monitoring Meditation: Behavioral and Neurophysiological Changes  
29th Association for Psychological Science Annual Convention  Boston, MA
    - Eichel, K., Essien, G., Cullen, B., Rogers, A. & Britton, W.B.
- 2017
- Dose-dependent effects of testosterone on spatial memory in young and adult male rats  
International Meeting for Steroids and the Nervous System  Turin, Italy
    - Spritzer, M.D., Batson, C.G., Braddick, V.C., Chyr, C.U., Cullen, B., Goins, E.C., Jaeger, E.C.B., Miller, L.E., Super, C., & Wagner, B.A.

- 2016
- **An open-source system for EEG neurofeedback and transcranial current stimulation control: Applications for meditation research**  
International Symposium for Contemplative Studies, San Diego, CA  
Society for Neuroscience Annual Meeting  
· Cullen, B., Santoyo, J., Black, C., McFarlane-Blake, C. & Kerr, C.
- 2016
- **A Neurofeedback Informed Meditation Technique (NIMT) for modulating posterior cingulate cortex activity: Proof-of concept for a novel mental-training paradigm with clinical applications**  
International Symposium for Contemplative Studies, San Diego, CA  
Society for Neuroscience Annual Meeting  
· Santoyo, J., Cullen, B., & Kerr, C.
- 2016
- **The role of social relationships in contemplative development**  
Mind and Life Summer Research Institute Garrison, NY  
· Canby, N., Margolis, C., Cullen, B., Rahrig, H., Alejandra-Lara, A., Noorani, M., Lindahl, J. & Britton, W.
- 2016
- **The impact of social relationship factors on clinical outcomes in Mindfulness-Based Interventions**  
Brown University Mind Brain Research Day Providence, RI  
Brown University Public Health Research Day  
· Cullen, B., Rahrig, H., Dumais, T., Canby, N., Lindahl, J., & Britton, W.
- 2015
- **Neurophysiological correlates of self-referential activity in meditators and non-meditators**  
Mind and Life Summer Research Institute Garrison, NY  
· Cullen, B., Bruns, M., Paritsky, A., McGuirk, E., Ogle, T., Kimble, M., & Cronise, K.
- 2015
- **Neurophysiological correlates of self-referential activity in meditators and non-meditators**  
Advances in Meditation Research New York, NY  
· Cullen, B., Bruns, M., Paritsky, A., McGuirk, E., Ogle, T., Kimble, M., & Cronise, K.
- 2014
- **Do expert meditators differ from novice and non-meditators in emotion identification, physiological competitive reactions, or prosocial responses?**  
Center for Compassion and Altruism Research San Francisco, CA  
and Education Science of Compassion Conference  
· Cullen, B., Stallworthy, I., Lesenskyj, A., Boles, L., Weinert-Stein, M., Perce-  
lay, R., Kahn, H.; McGuirk, E., Sellers, J., & Cronise, K.
- 2014
- **Effects of testosterone dose on spatial memory in adult male rats**  
Society for Neuroscience Annual Meeting Washington, D.C.  
· Cullen, B., Spritzer, M., Batson, C., Spillane, S., & Wagner, B.

## TALKS

- 2020 ● **Predicting diabetes status from personality using machine learning**  
useR! 2020 (canceled)  St. Louis, MO  
· Cullen, B., Weston, S., & Condon, D.
- 2018 ● **Effects of focused attention and open monitoring meditation on error-related processing: Behavioral and neurophysiological changes**  
International Conference of the European Society for Cognitive and Affective Neuroscience  Leiden, Netherlands  
· Eichel, K., Cullen, B., & Britton, W.
- 2017 ● **Dismantling effects of focused attention and open monitoring techniques in Mindfulness-Based Cognitive Therapy for affective disturbances**  
Annual Meeting and Expo of the American Public Health Association  Atlanta, GA  
· Chang, B., Cullen, B., Kini, N., Rahrig, H., & Britton, W.
- 2016 ● **Movement, embodiment and interoception in the context of contemplative practices (Panel)**  
International Symposium for Contemplative Studies  San Diego, CA  
· Schmalzl, L., Powers, C., Yetz, N., Groessl, EJ., Saron, C., Kerr, C., Zimmerman, C., Cullen, B., Clark, D., Mostofsky, SH., Feinstein, J., Khalsa, S., Simmons, K., & Paulus, M.
- 2016 ● **Effects of focused attention and open monitoring meditation on sustained attention**  
International Symposium for Contemplative Studies  San Diego, CA  
· Eichel, K., Cullen, B., & Britton, W.

## 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.

## SERVICE & LEADERSHIP

- 2020 ● **Co-organizer**  
Cascadia R Conf 2020  Eugene, OR  
· Updated website, 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 for collaborative software development projects related to computational neuroscience and psychology
- 2018
- **Science communication ambassador**  
*The People's Science*  Eugene, OR
    - Trained to be a coach to assist people with communicating their scientific work to the general public
- 2018
- **Lab Tour Guide**  
*Intel Science Fair*  Eugene, OR
    - Gave a presentation for middle- and high-school students as part of a science outreach event during the regional Intel Science Fair in Eugene
    - Gave students a tour of the Social and Affective Neuroscience Lab and hosted a Q&A session about scientific careers
- 2016
- **Co-organizer**  
*Mindfulness, Healing and Empathy in Healthcare Speaker Series, Warren Alpert Medical School at Brown University*  Providence, RI
    - Coordinated with guest speakers for a 6-part lecture series for Brown University medical students and community members
    - Created a website to advertise the public talks and to provide community members with information about mindfulness resources