

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

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|-------------------|--|--|
| 2022

2017 | <ul style="list-style-type: none">● PhD Student, Psychology
University of Oregon<ul style="list-style-type: none">• 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. |  Eugene, OR |
| 2019

2017 | <ul style="list-style-type: none">● MS, Psychology
University of Oregon<ul style="list-style-type: none">• Thesis: Comparing cognitive and affective predictors of craving |  Eugene, OR |
| 2015

2011 | <ul style="list-style-type: none">● BA, Neuroscience
Middlebury College<ul style="list-style-type: none">• Thesis: Neurophysiological correlates of self-referential activity in meditators and non-meditators |  Middlebury, VT |

HONORS & AWARDS

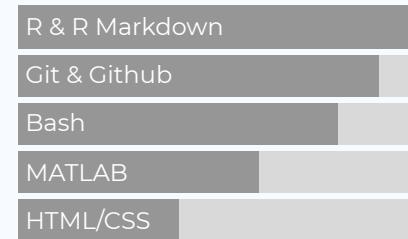
- | | |
|-------------------|---|
| 2023

2018 | <ul style="list-style-type: none">● NSF Graduate Research Fellowship [more info]
National Science Foundation |
| 2020 | <ul style="list-style-type: none">● Gregores Research Award [more info]
Department of Psychology, University of Oregon |
| 2020 | <ul style="list-style-type: none">● General University Scholarship [more info]
University of Oregon |
| 2020 | <ul style="list-style-type: none">● Pilot & Training Core Travel Award [more info]
Center on Parenting and Opioids, University of Oregon |
| 2020 | <ul style="list-style-type: none">● Graduate School “Special Opps” Travel & Research Award [more info]
University of Oregon |
| 2019 | <ul style="list-style-type: none">● Graduate Education Committee Travel Award
Department of Psychology, University of Oregon |

CONTACT

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PROGRAMMING SKILLS



- 2017 ● **Graduate School Recruitment Award** [\[more info\]](#)
University of Oregon
- 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
- 2015 ● **Elected to Phi Beta Kappa** [\[more info\]](#)
Middlebury College
- 2015 ● **Dean's Honor List (8 semesters)**
Middlebury College
- 2015 | 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
- 2014 ● **Academic Conference Travel Fund Award**
Middlebury College
- 2014 ● **Senior Research Project Supplement**
Middlebury College
- 2014 ● **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 | 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

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**
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

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 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](#).

I believe that learning open-source data science tools can empower us to be better scientists. During my third year of graduate school, I served as a teaching assistant and lab instructor for a graduate-level advanced data analysis sequence and have spent a significant amount of time creating educational resources about working with data in R. I have relished the opportunity to help equip my fellow graduate students learn R and increase the efficiency and reproducibility of their own re-

- 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](#).

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 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](#).

📄 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.
 - **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.
 - **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.
 - **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.
 - **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 and Education Science of Compassion Conference

📍 San Francisco, CA

· 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