BRENDAN CULLEN

I am a NSF Graduate Research Fellow in the Department of Psychology at the University of Oregon and a Data Science Educator at RStudio, PBC. My research takes a translational (neuro)science approach toward predictive modeling of health behaviors. I teach R and R Markdown to empower others to conduct rigorous and reproducible data science.

CONTACT

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🎓 EDUCATION

2019 | 2017

MS, Psychology
University of Oregon   📍 Eugene, OR

- Thesis: Comparing cognitive and affective predictors of craving
- My graduate research took a translational (neuro)science approach toward predictive modeling of self-regulation processes and health-risking behaviors.
- As part of my graduate training, I completed a 5-course Data Science Specialization in Educational Leadership taught entirely in R, focused on reproducible analysis, data visualization, functional programming, and machine learning within a tidyverse framework.

2015 | 2011

BA, Neuroscience
Middlebury College   📍 Middlebury, VT

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

✳ CERTIFICATION

2020

RStudio Certified Instructor
RStudio, PBC

- I am an RStudio Certified Instructor in the tidyverse (see certificate).

🏆 HONORS & AWARDS

2023 | 2018
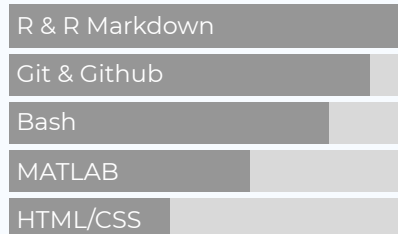
NSF Graduate Research Fellowship [more info]
National Science Foundation

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

PROGRAMMING SKILLS

- R & R Markdown
- Git & Github
- Bash
- MATLAB
- HTML/CSS

Created with pagedown.
Source code on GitHub.
Last updated on 2021-08-09.

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
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 | 2011	●	**Dean's Honor List (8 semesters)**
		Middlebury College
2015	●	**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

2021
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2018

● **National Science Foundation Graduate Research Fellow**
Social and Affective Neuroscience Lab   📍 University of Oregon

- Co-designed interventions for large-scale study comparing behavioral response and cognitive reappraisal interventions for devaluing unhealthy food.
- Created and maintained automated workflow for daily backup of fMRI data via a high performance computing cluster.

2017	**Research Assistant**	
2015	Clinical and Affective Neuroscience Lab	⦿ Brown University

- Led independent research projects exploring outcomes of a randomized controlled trial of Mindfulness-Based Cognitive Therapy 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

2021
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2020

Data Science Educator
RStudio, PBC ⦿ Remote

- Developed interactive educational materials related to using R for data science.

I believe that learning open-source data science tools can empower us to be better scientists and critical thinkers. I have served as a teaching assistant and lab instructor for both undergraduate and graduate-level statistics courses.

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)

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 ● **R Markdown: Lesser-known tips and tricks**
Portland R User Group ⚲ Remote

· A collection of "lesser known" tips and tricks in R Markdown, prepared for the Portland R User Group "aggregate" meetup.

2020 ● **Using R more "wisely": Column-wise & row-wise operations with dplyr**
R Ladies Algiers ⚲ Remote

· Workshop for R-Ladies Algiers on column-wise and row-wise operations with dplyr for more efficient data wrangling and summarizing.

2020 ● **UO Psych R Bootcamp**
Department of Psychology ⚲ University of Oregon

· 3-day introductory bootcamp covering basics of R, R Markdown and transforming and visualizing data with the tidyverse. ~45 attendees including current and incoming grad students, undergrads, research staff and tenure-track faculty.

2020 ● **Introduction to Git and Github**
Psychology First Year Research Seminar ⚲ University of Oregon

· Introductory workshop for ~20 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

📖 PEER-REVIEWED PUBLICATIONS

2021 ● The contributions of focused attention and open monitoring in
Mindfulness-Based Cognitive Therapy: a 3-armed randomized
dismantling trial
PloS One, 16(1), e0244838.

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

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).

✍ PRE-PRINTS & WORKS IN PROGRESS

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.

My peer-reviewed scientific
publications are varied in topic,
ranging from the
neuroendocrinology of spatial
memory to decomposing
neurocognitive mechanisms of
mindfulness practices. 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 to
support human health and
wellness.

2020   The teacher matters: Instructor related effects of a pilot mindfulness intervention RCT in a school setting
Under review

· Canby, N., Lipsky, J., **Cullen, B.**, Eichel, K., & Britton, W.B.

2019   Comparing cognitive and affective predictors of craving
Pre-print

· **Cullen, B.**, DeStasio, K., Cosme, D., & Berkman, E.T.

🖼 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   📍 Boston, MA
Science Annual Convention

· 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   📍 Turin, Italy
Nervous System

· 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., Percelay, 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 due to COVID-19) ⚲ 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 ● RStudio Instructor Training

RStudio, PBC — ◉ Remote

· Two-day intensive training on applying modern evidence-based teaching practices to teach data science using R and RStudio's products.

2020 ● Introduction to Machine Learning with the Tidyverse

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

· Two-day workshop on machine learning with the tidymodels meta-package. 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