

ELLYN BUTLER

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EDUCATION

Oberlin College & Conservatory, Oberlin, OH GPA: 3.96 August 2013 - May 2018
Bachelor of Arts in Psychology — Bachelor of Music in Flute Performance
Concentration in Statistical Modeling — Minor in Law & Society

WORK EXPERIENCE

University of Pennsylvania, Philadelphia, PA June 2018 - present
Data Analyst — Brain Behavior Laboratory

- Principal Investigator: Ruben Gur, Ph.D.
- Mission ⇒ The lab aims to characterize clinical, cognitive and neurobiological trajectories of youth on the psychosis spectrum, and to uncover the biological bases of behavior more broadly in part through improving the measurement of pertinent domains.
- Statistics, Visualization and Communication ⇒ Translate research questions into testable hypotheses, utilize machine learning and Bayesian methods for prediction, communicate results to investigators using informative graphics, and write methods and results sections for manuscripts.
- Neuroimaging ⇒ Pre-process T1-weighted, diffusion, and functional images using a variety of software packages, and build a series of Docker images to process longitudinal structural data.
- Psychometrics ⇒ Utilize factor analysis and item response theory to explore psychometric properties and score cognitive and clinical assessments, and assess the validity of various administration strategies for the Penn Computerized Neurocognitive Battery.
- Management ⇒ Organize weekly meetings to discuss data and teach junior staff about data analysis.
- Manuscript Preparation ⇒ Write manuscripts on the social, biological and psychopathological sequelae of childhood physical and sexual abuse, and measurement and statistics.

Momentum@Work, Austin, TX December 2019 - January 2020
Consulting Statistician

- Collaborator: Allison Brenner, M.A.
- Responsibilities: Performed psychometric analyses and wrote summary of results to help determine efficacy of evaluation for potential Foreign Service members.

TECHNICAL SKILLS

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| Programming Languages | R, Python, Bash, L ^A T _E X |
| Version Control | Github, Docker, Singularity, Flywheel |
| Neuroimaging Software | fMRIPrep, XCPEngine, NiLearn, ANTs, FSL, AFNI, Freesurfer |

RELEVANT COURSEWORK

Mathematics, Statistics & Computer Science

Multivariable Calculus, Discrete Mathematics, Linear Algebra, Statistical Modeling, Probability, Mathematical Statistics, Introduction to Bayesian Data Analysis, Introduction to Computer Science

Neuroscience

Introduction to Neuroscience, Cognitive Neuroscience, Advanced Methods in Human Psychophysiology

Psychology

Clinical and Counseling, Child Psychopathology and Treatment, Abnormal, Developmental, Social, Cultural, Seminar in Social Conflict, Advanced Methods in Psychometrics

MANUSCRIPTS: PEER REVIEWED

1. Moore, T.M.*, Calkins, M.E.*, Rosen, A.F.G., **Butler, E.R.**, Ruparel, K., Fusar-Poli, P., Koutsouleris, N., McGuire, P., Cannon, T.D., Gur, R.C., & Gur, R.E. (2021). Development of a probability calculator for psychosis risk in children, adolescents, and young adults. *Psychological medicine*, 1-9. <http://bit.ly/38PHepB>
2. Moore, T.M., **Butler, E.R.**, Scott, J.C., Port, A.M., Ruparel, K., Njokweni, L.J., Gur, R.E., & Gur, R.C. (2020). When CAT is not an option: Complementary methods of test abbreviation for neurocognitive batteries. *Cognitive neuropsychiatry*, 1-20. <https://bit.ly/3nAtVOZ>
3. Gur, R.C., **Butler, E.R.**, Moore, T.M., Rosen, A.F.G., Ruparel, K., Satterthwaite, T.D., Roalf, D.R., Gennatas, E.D., Bilker, W.B., Shinohara, R.T., Port, A., Elliott, M.A., Verma, R., Davatzikos, C., Wolf, D.H., Detre, J.A., & Gur, R.E. (2020). Structural and functional brain parameters related to cognitive performance across development: Replication and extension of the frontoparietal integration theory in a single sample. *Cerebral cortex*. <https://bit.ly/3aEgN7Z>
4. Morean, M.E. & **Butler, E.R.** (2019). The Medical Cannabis Expectancy Questionnaire: Adult medical marijuana users' expectancies associated with combustible, vaporized, and edible cannabis use for medical purposes. *Cannabis*, 2, 1-18. <https://bit.ly/2NTGLYX>
5. Morean, M.E., L'Insalata, A., **Butler, E.R.**, McKee, A., & Krishnan-Sarin, S. (2018). Age at drinking onset, age at first intoxication, and delay to first intoxication: Assessing the concurrent validity of measures of drinking initiation with alcohol use and related problems. *Addictive behaviors*, 79, 195-200. <https://bit.ly/30wIhoE>
6. Morean, M. E., **Butler, E. R.**, Bold, K. W., Kong, G., Camenga, D. R., Cavallo, D. A., ... & Krishnan-Sarin, S. (2018). Preferring more e-cigarette flavors is associated with e-cigarette use frequency among adolescents but not adults. *PloS one*, 13(1), e0189015. <https://bit.ly/2NyJBST>

MANUSCRIPTS: UNDER REVIEW

1. **Butler, E.R.**, Chen, A., Ramadan, R., Le, T.T., Ruparel, K., Moore, T.M., Satterthwaite, T.D., Zhang, F., Shou, H., Gur, R.C., Nichols, T.E.*, & Shinohara, R.T.* (re-submitting). Statistical pitfalls in brain age analyses. <https://www.biorxiv.org/content/10.1101/2020.06.21.163741v1>
2. **Butler, E.R.**, Moore, T.M., Calkins, M.E., Ruparel, K., Gur, R.C., & Gur, R.E. (re-submitting). Do we understand our daughters' depression and anxiety? A bifactor modeling approach. <https://psyarxiv.com/57hrv/>
3. Scott, J.C., Moore, T.M., Roalf, D.R., Satterthwaite, T.D., Wolf, D.H., Port, A.M., **Butler, E.R.**, Ruparel, K., Nievergelt, C.M., Risbrough, V.B., Baker, D.G., & Gur, R.C. (under review). Development and application of novel performance validity metrics for computerized neurocognitive batteries.

GRANTS: UNDER REVIEW

1. **Butler, E.R.** (submitted October 2020). Delineating neuroimmune mechanisms of emotion dysregulation in maltreated youth. *NSF Graduate Research Fellowship*.

CONFERENCE POSTER PRESENTATIONS

1. **Butler, E.R.**, Chen, A., Ramadan, R., Ruparel, K., Moore, T.M., Zhang, F., Shou, H., Gur, R.C., Nichols, T.E.*, & Shinohara, R.T.* (June 2020). Statistical pitfalls in brain age analyses. Poster presented at the annual meeting of the Organization for Human Brain Mapping.
2. Morean, M.E., **Butler, E.R.**, Bold, K., Kong, G., Camenga, D., Cavallo, D., Simon, P. & Krishnan-Sarin, S. (March 2017). Preference for more e-cigarette flavors is associated with e-cigarette use frequency among youths but not adults. Poster presented at the annual meeting of the Society for Research on Nicotine and Tobacco.

* Denotes equal contribution

PROFESSIONAL SERVICE

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| 1. Ad hoc reviewer for <i>Substance Use and Misuse</i> | November 2017 |
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HONORS AND AWARDS

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| 1. Nominated member of Phi Beta Kappa | April 2018 |
| 2. Nominated member of Sigma Xi, The Scientific Research Society | March 2018 |
| 3. Nominated member of PI Kappa Lambda, The National Music Honor Society | February 2018 |

UNDERGRADUATE RESEARCH EXPERIENCE

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| Temple University, Philadelphia, PA <i>Research Assistant — Ellman Lab</i> | June 2017 - August 2017 |
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- Principal Investigator: Lauren Ellman, Ph.D.
- Responsibilities: Worked on a project to document associations between childhood trauma, social support and psychosis symptoms.

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| Children's Hospital of Philadelphia, Philadelphia, PA <i>REU Intern — Center for Injury Research and Prevention</i> | June 2016 - August 2016 |
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- Principal Investigator: Joel Fein, M.D., M.P.H.
- Responsibilities: Conducted research with Dr. Nancy Kassam-Adams on parent-child PTSD symptom agreement and severity. Shadowed Violence Intervention Program case managers and reviewed surveillance data to identify incidents of assaults on school property. Wrote a blog post on the mental health needs of children with incarcerated parents: <https://bit.ly/3bkgU5V>.

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| Oberlin College, Oberlin, OH <i>Research Assistant — Substance Use in Adolescence</i> | October 2015 - May 2018 |
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- Principal Investigator: Meghan Morean, Ph.D.
- Responsibilities: Designed surveys for experience with and expectations of substance use; performed psychometric and statistical analyses for publication; and assisted in manuscript preparation.

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| University of Denver, Denver, CO <i>Research Assistant — The Relationship Lab</i> | May 2015 - July 2015 |
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- Principal Investigator: Wyndol Furman, Ph.D.
- Responsibilities: Conducted background research, ran analyses, and edited articles for publication on adolescent romantic relationships.

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| University of Chicago, Chicago, IL <i>Research Assistant — Child Neurosuite</i> | May 2014 - August 2014 |
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- Principal Investigator: Jean Decety, Ph.D.
- Responsibilities: Recruited and applied electroencephalographic caps to infants, and maintained their focus during tasks evaluating pro-social behavior.

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| Oberlin College, Oberlin, OH <i>Research Assistant — Continuity of Close Relationships Project</i> | January 2014 - December 2014 |
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- Principal Investigator: Nancy Darling, Ph.D.
- Responsibilities: Micro- and macro-coded videos of adolescent and adult couples engaging in conflict resolution and social support tasks. This included marking and coding specific utterances, and evaluating couples on dimensions such as anxiety, affection and cohesion.

UNDERGRADUATE TEACHING EXPERIENCE

Oberlin College, Oberlin, OH

August 2017 - December 2017

Grader — Introduction to Biostatistics, Mathematics Department

- Supervisor: Jeffrey Witmer, Ph.D.
- Responsibilities: Graded and provided feedback on biostatistics homework.

Oberlin College, Oberlin, OH

August 2017 - December 2017

Drop-In Tutor — Mathematics Department

- Responsibilities: Assisted students with comprehension of calculus and statistics.

Oberlin College, Oberlin, OH

February 2016 - May 2016

Teaching Assistant — Research Methods II, Psychology Department

- Supervisor: Travis Wilson, Ph.D.
- Responsibilities: Held office hours, graded daily quizzes, and assisted students during lab.

Oberlin College, Oberlin, OH

October 2015 - December 2017

Tutor — Student Academic Services

- Courses: Introduction to Neuroscience, Statistical Modeling, Calculus I-III, Research Methods I-II, Aural Skills 1-IV, Music Theory I-IV

CLINICALLY RELEVANT EXPERIENCE

Oberlin College, Oberlin, OH

August 2017 - December 2017

Peer Advising Leader — Office of the Dean of Students

- Supervisor: Dana Hamdan, M.Ed., Executive Director, Career Development Center
- Responsibilities: Advised freshmen on course selection, study habits, and career opportunities.

Oberlin College, Oberlin, OH

November 2014 - May 2018

Peer Listener and Board Member — Peer Support Center

- Supervisor: Matthew Hayden, M.A., Associate Dean of Students
- Responsibilities: Listened to and supported peers during periods of stress, and troubleshoot logistics of launching a peer-to-peer support center.

COMMUNITY SERVICE

Collective Success Network, Philadelphia, PA

October 2020 - present

Mentor

- Supervisor: Alice Ginsberg
- Responsibilities: Help a low-income, first-generation college student achieve their academic and career aspirations through providing advice and resources on preparing for graduate school.

Mighty Writers, Philadelphia, PA

October 2018 - present

Mentor

- Supervisor: Christina Rissell
- Responsibilities: Help a student from 7th through 9th grade develop writing and studying skills, and thrive through the transition to high school by helping with applications, time management, and new social situations.

Oberlin Community Services, Oberlin, OH

February 2014 - May 2018

Tutor — America Counts

- Responsibilities: Tutored a student from 4th through 8th grade in mathematics, and provided mentorship for the student through difficult peer and familial circumstances.