

JACK W SILCOX

CURRICULUM VITAE

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EDUCATION

2023 (expected) PhD Cognitive & Neural Sciences, University of Utah, Salt Lake City, UT

2018 M.S. Applied Statistics, Loyola University Chicago, Chicago, IL

2016 B.S. Neuroscience, Brigham Young University, Provo, UT

GRANTS AND AWARDS

2015-2016 *Assessing Diagnostic Capacity of Event Related Potentials In Mild Alzheimer's Disease*
PI: Jack W Silcox
Office of Research and Creative Activities Research Grant
Brigham Young University
Fund: \$1,500

2013-2014 *Assessing Gender Differences in Cognitive Processes Using Event Related Potentials*
PI: Jack W Silcox
Office of Research and Creative Activities Research Grant
Brigham Young University
Fund: \$1,500

PEER-REVIEWED PUBLICATIONS

Brown, B.L., Hendrix, S.B., Cecchi, M., Scott, J.M., Silcox, J.W., Brighton, K.D., and Hedges, D. (2015): A Novel Eigenvector-Based Method to Detect Mild Alzheimer's Disease Using Event-Related Potentials. *The Journal of Prevention of Alzheimer's Disease (JPAD)*. <http://dx.doi.org/10.14283/jpad.2015.79>

RESEARCH PRESENTATIONS

Payne, B.R., Silcox, J., Lash, A., Ferguson, S.H., & Lohani, M. (2018). *Text captioning reduces the effects of perceptual effort on speech memory*. Annual Meeting of Psychonomic Society. 3.

Payne, B.R., Silcox, J., Lash, A., Ferguson, S.H., & Lohani, M. (2018). *Assistive text captioning offsets the effects of background noise on speech memory and pupillometry*. Academy of Rehabilitative Audiology Institute. 2018.

Brown, B.L., Hedges, D. and Silcox, J.W. 2016. *Whole-Wave EEG Analysis in the Identification of Neuropsychiatric Illness*. Presented at the Forty-First Annual Interdisciplinary Conference. Breckenridge, CO

Brown, Hendrix, Wolf, Silcox, Lloyd, Mickelson, and Hedges. 2014. *An Eigenvector-Based EEG Analysis Method for Diagnosing Neurodegenerative and Neuropsychiatric Diseases and for Monitoring and Assessing Treatment Response*. Presented at the BioUtah Summit. Salt Lake City, UT

RESEARCH EXPERIENCE

2018 - Present **Graduate Research Assistant for Dr. Brennan Payne**, University of Utah, Salt Lake City, UT

I am currently working in Dr. Payne's Language and Memory Aging (LaMA) lab. I am currently working on three different projects that use one or all of the following to study language and memory: pupillometry, electroencephalography, transcranial magnetic stimulation.

2017 - 2018 **Graduate Assistant for Dr. Timothy E. O'Brien**, Loyola University Chicago, Chicago, IL

Assisted Prof. O'Brien in assessing current nonlinear dose response modeling literature with the goal of developing a statistical package in R that could reliably create nonlinear dose response curves.

2017 - 2018 **Graduate Assistant for Dr. Gregory Matthews**, Loyola University Chicago, Chicago, IL

Prof. Matthews acted as a mentor for a project that I have developed to look at publicly available structural and functional MRI data for Schizophrenia patients. We used unsupervised learning techniques, such as *k*-means clustering and hierarchical clustering, along with principal component analysis, to find structural subgroups of Schizophrenia patients using their structural MRI scans.

2013 - 2016 **Research Assistant for Dr. Bruce Brown**, Brigham Young University, Provo, UT

Assisted Prof. Brown on his quantitative EEG project. In 2015, became project manager for Prof. Brown. Responsibilities included: training new and current research assistants, assigning and managing tasks of research assistants and programmers. Analysis included factor analysis, regression and multivariate analysis of variance with the goal of differentiating between cognitive groups while performing various cognitive tasks. Statistical analysis was done using Excel, SAS, Stata, and R.

CONSULTING EXPERIENCE

2017 - 2018 **Statistical Consultant for Phillip Whittington (Masters Thesis)**, Loyola University Chicago, Chicago, IL

Performed statistical analysis for Mr. Whittington's Thesis project in the Criminal Justice and Criminology Department at Loyola. Statistical analysis included hierarchical linear modeling to better understand variability of punishments for violations at various correctional facilities throughout Illinois. Consultation was done in collaboration with three other students in the Applied Statistics MS program at Loyola. Analysis was done in R.

2017 **Statistical Consultant for Kendra Frome (Masters Thesis)**, Northwestern University, Evanston, IL

Assisted Mrs. Frome in identifying, performing and interpreting appropriate statistical analyses for her Thesis project in the Genetic Counseling program at Northwestern University. Analyses included Chi-Square tests for independence, Wilcoxon Rank Sum tests, logistic regression, and baseline category logit regression with the goal of better understanding cancer survivors' preferences for fertility preservation services. Analysis was done in SPSS.

TEACHING EXPERIENCE

2013 - 2015 **Teaching Assistant**, Brigham Young University, Provo, UT

Courses: Psych 111: General Psychology; Psych 210: History of Psychology;
 Psych 308: Psychological Statistics;

Assisted with grading essays and homework assignments, providing students with feedback. Provided students with exam reviews and proctored midterms to students with special needs. Lectured a total of 21 hours between 2013 and 2015.

Assumed complete responsibility in Psych 308: Psychological Statistics for a three week period while the professor was on parental leave.

HONORS

- April 2015 Dean's List, College of Life Sciences; Brigham Young University
- July 2011 Director of the Month; Y-Serve Program; Brigham Young University

COMPETITIONS

- April 2017 **American Statistical Association Datafest** hosted by Loyola University
Chicago, Chicago, IL

Statistical analysis competition featuring data provided by Expedia.com. Statistical analysis included logistic regression and data visualization of travel patterns throughout the United States. Analysis was completed in R

- November 2016 **House Prices: Advanced Regression Techniques** hosted by
Kaggle.com

Predicting sales prices and practice feature engineering, RFs, and gradient boosting. Analysis included linear regression modeling and data visualizations. Analysis was completed in R.

COMMUNITY SERVICE EXPERIENCE

- 2011 - 2012 **Y-Serve Program Director** for House of Hope; Brigham Young University

SKILLS

Statistics: Regression modeling (linear, generalized linear, multivariate, time series, nonlinear), Analysis of variance (univariate, multivariate, ANCOVA), Missing data techniques (EM algorithm, multiple imputation, data augmentation), Data visualization in R.

Computer: Proficient with R, Latex language, Minitab, and Microsoft Office Suite. Experience with SAS, SPSS, Stata, Freesurfer MRI Data Analysis Software, and MATLAB.

Math: Basics (algebra, geometry, etc.), calculus, and linear algebra.

