

# AMY MCDONNELL

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## EDUCATION

<b>Doctoral Candidate</b> in Cognition and Neural Sciences, University of Utah	Anticipated 2023
<b>Master of Science</b> in Psychology, University of Utah	2020
<b>Bachelor of Science</b> in Psychology with a Neuroscience Concentration, Boston College <b>Minor:</b> Faith, Peace, and Justice <b>Honors:</b> <i>cum laude</i> , 8-Semester Dean's List	2015

## RESEARCH INTERESTS

My research interests surround the neural correlates of attention and how they change in different environments. In one line of research, I utilize electroencephalography (EEG) to study the neural, cognitive, and behavioral effects of spending an extended amount of time in nature. In another line of research, I utilize EEG to explore sustained attention and visual engagement when operating both manual and autonomous vehicles. I am interested in the applications of this research to policy and the further development of automated technology.

## PUBLICATIONS

- Strayer, D.L., Cooper, J.M., Sanbonmatsu, D.M., Erickson, G.G., Simmons, T.G., **McDonnell, A.S.**, Carriero, A.E., Crabtree, K.W., & Lohani, M. (2020). Driver's arousal and workload under partial vehicle automation. *Washington, DC: AAA Foundation for Traffic Safety.*
- LoTempio, S.B., Scott, E.E., **McDonnell, A.S.**, Hopman, R.J., Castro, S., McNay, G.D., McKinney, T.L., Greenberg, K., Payne, B.R., & Strayer, D.L. (2020). Nature as a potential modulator of the error-related negativity. *International Journal of Psychophysiology*, 156, 49-59.  
<https://doi.org/10.1016/j.ijpsycho.2020.06.014>
- Lohani, M., Cooper J.M., Erickson, G.G., Simmons, T.G., **McDonnell, A.S.**, Carriero, A.E., Crabtree, K.W., & Strayer, D.L. (In Press). Driver arousal and workload under partial vehicle automation: A pilot study. *Proceedings of the Human Factors and Ergonomics Society 64<sup>th</sup> Annual Meeting*, xx, xxx-xxx.
- Scott, E.E., LoTempio, S.B. **McDonnell, A.S.**, McNay, G.D., Greenberg, K., McKinney, T.L., Uchino, B.N., Strayer, D.L. (Revise & Resubmit). The autonomic nervous system in its natural environment: Immersion in nature is associated with changes in heart rate and heart rate variability.
- McDonnell, A.S.**, LoTempio, S.B., Scott, E.E., Greenberg, K., McNay, G.D., Castro, S.C., & Strayer, D.L. (Under Review). Nature modulates neurophysiological correlates of reward.
- McDonnell, A.S.**, Simmons T.G., Erickson, G.G., Lohani, M., Cooper J.M., & Strayer, D.L. (Under Review). This is your brain on autopilot: Neural indices of driver workload and engagement under partial vehicle automation.
- Lohani, M., Cooper J.M., Erickson, G.G., Simmons, T.G., **McDonnell, A.S.**, Carriero, A.E., Crabtree, K.W., & Strayer, D.L. (Under Review). On the use of heart rate variability in the on-road assessment of partial vehicle automation.
- Scott, E.E., **McDonnell, A.S.**, LoTempio, S.B., McNay, G.D., Greenberg, K., Castro, S.C., & Strayer, D.L. (Under Review). Prolonged immersion in nature modulates neural correlates of working memory.

## BOOK CHAPTERS

Strayer, D.L., Castro, S.C., & McDonnell, A.S. (In press). The Multitasking Motorist. In A. Kiessel, L. Johannsen, H. Mueller, & I. Koch (Eds.), *Handbook of Human Multitasking*.

## HONORS AND AWARDS

<b>Professional Development Award</b> , University of Utah, Department of Psychology, \$500	2020
<b>Commendation for Research</b> , University of Utah, Department of Psychology	2020
<b>Commendation for Teaching</b> , University of Utah, Department of Psychology	2020
<b>Undergraduate Research Mentorship Certificate</b> , University of Utah	2020
<b>SHIFT Award—Applied Cognition Lab</b> , SHIFT Conference	2019
<b>Emerging Leader</b> , SHIFT Conference	2019

## RESEARCH EXPERIENCE

<b>University of Utah – Applied Cognition Lab</b> , Salt Lake City, UT <i>Graduate Research Assistant</i> <i>Advisor: David Strayer, Ph.D.</i>	2018-Present
<b>University of Utah – Applied Cognition Lab—AAA Grant</b> , Salt Lake City, UT <i>Graduate Research Assistant</i> <i>Advisor: Joel Cooper, Ph.D. and David Strayer, Ph.D.</i>	2018-Present
<b>Didi Hirsch Mental Health Services</b> , Los Angeles, CA <i>Research Assistant</i> <i>Supervisors: Lisa Davis, Ph.D. and Sae Lee, Ph.D.</i>	2015-2017
<b>Boston College – Department of Psychology</b> , Chestnut Hill, MA <i>Research Assistant</i> <i>Advisor: Ann Burgess, D.N.Sc., RNCS, FAAN</i> Project Title: "How Neuroscience Can Save the Crisis in America's Prisons: A New Approach to Preventing the Criminalization of the Mentally Ill"	2014-2015

## TEACHING EXPERIENCE

<b>PSY4130 Cognition in the Wild</b> , University of Utah, Salt Lake City, UT <i>Graduate Instructor</i>	Spring 2020
<b>PSY2100 Cognitive Psychology</b> , University of Utah, Salt Lake City, UT <i>Graduate Teaching Assistant</i>	Fall 2019
<b>PSY3711 Brain and Behavior</b> , University of Utah, Salt Lake City, UT <i>Graduate Teaching Assistant</i>	Summer 2019

## INVITED TALKS

<b>Southern Utah Wilderness Alliance</b> , Salt Lake City, UT Title: <i>Nature in the Time of COVID-19</i>	April 2020
<b>Emerging Leaders Program for the SHIFT Conference</b> , Jackson, WY Title: <i>Outdoor Recreation and Health</i>	October 2019
<b>University of Utah</b> , Salt Lake City, UT <i>Guest Lecturer</i> , PSY2100 Cognitive Psychology	September 2019
<b>University of Utah</b> , Salt Lake City, UT <i>Guest Lecturer</i> , PSY2010 Psychology as a Science and Profession	July 2019

## CONFERENCE PRESENTATIONS

### ORAL PRESENTATIONS

**McDonnell, A.S.**, Cooper, J.M., & Strayer, D.L. (Revise & Resubmit). Assessing visual engagement during partial automation. Oral presentation at the 7<sup>th</sup> International Conference on Driver Distraction and Inattention in Lyon, France.

### POSTER PRESENTATIONS

**McDonnell, A.S.**, LoTempio, S.B., Scott, E.E., McNay, D. Greenberg, K., Castro, C.C., & Strayer, D.L. (October 2020). Nature modulates neurophysiological correlates of reward. Virtual poster presentation at the 2020 Society of Psychophysiological Research 60<sup>th</sup> Annual Meeting.

Lohani, M. Cooper, J.M., Erickson, G.G., Simmons, T.G., **McDonnell, A.S.**, Carriero, A., Crabtree, K.W., & Strayer, D.L. (October 2020). Application of heart rate variability to assess arousal in semi-automated vehicles. Virtual poster presentation at the 2020 Society of Psychophysiological Research 60<sup>th</sup> Annual Meeting.

Lohani, M., Cooper J.M., Erickson, G.G., Simmons, T.G., **McDonnell, A.S.**, Carriero, A.E., Crabtree, K.W., & Strayer, D.L. (October 2020). Driver arousal and workload under partial vehicle automation: A pilot study. Virtual presentation at the Human Factors and Ergonomics Society 64<sup>th</sup> Annual Meeting.

**McDonnell, A.S.**, LoTempio, S.B., Scott, E.E., Castro, S.C., McNay, D. Greenberg, K., & Strayer, D.L. (October 2019). Reward Positivity as a Biomarker of Attention Restoration in Nature. Poster presentation at the 2019 SHIFT Conference in Jackson, Wyoming.

Scott, E.E., **McDonnell, A.S.**, LoTempio, S.B., Castro, S.C., McNay, D. Greenberg, K., & Strayer, D.L. (October 2019). Prolonged Exposure to Nature Modulates Neural Biomarkers of Attention. Poster presentation at the 2019 SHIFT Conference in Jackson, Wyoming.

LoTempio, S.B., Scott, E.E., **McDonnell, A.S.**, Hopman, R.J., McKinney, T.L., Payne, B.R., & Strayer, D.L. (October 2019). Nature as a potential modulator of the error-related negativity. Poster presentation at the 2019 SHIFT Conference in Jackson, Wyoming.

LoTempio, S.B., Scott, E.E., **McDonnell, A.S.**, Hopman, R.J., McKinney, T.L., Payne, B.R., & Strayer, D.L. (November 2019). Nature as a potential modulator of the error-related negativity. Poster presentation at the 2019 Psychonomic Society 60<sup>th</sup> Annual Meeting in Montréal, Québec, Canada.

Crabtree, K.W., Scott, E.E., Hopman, R.J., McKinney, T.L., **McDonnell, A.S.**, Strayer, D.L., & Uchino, B.N. (November 2019). Virtual environments' effects of working memory and mood: A pilot study. Poster presentation at the 2019 Psychonomic Society's 60<sup>th</sup> Annual Meeting in Montréal, Québec, Canada.

## UNDERGRADUATE RESEARCH SUPERVISED

Morse, R., (Fall 2020). The relationship between self-reported motivation and the error-related negativity. University of Utah. *Funded by the Undergraduate Research Opportunity Program (UROP).*

Morse, R. (Summer 2020). Measuring cognitive control and response to reward using electroencephalography. University of Utah. *Funded by the Summer Program for Undergraduate Research (SPUR).*

Weaver, V. (Fall 2019). Effect of cell phone use on driving behavior. University of Utah. Completed as part of the Human Factors Certificate Program.

### PROFESSIONAL MEMBERSHIPS

<b>Society for Psychophysiological Research</b>	2020-Present
<b>Association for Psychological Science</b>	2019-Present
<b>Open Science Framework</b>	2019-Present
<b>American Psychological Association</b>	2015-Present

### VOLUNTEER

<b>Girls in STEM, University of Utah, Salt Lake City, UT</b> <i>Graduate Volunteer</i>	February 2019
<b>SHAWCO Education, Nyanga, South Africa</b> <i>International Volunteer</i>	2013-2014
<b>Center for Developing Kids, Pasadena, CA</b> <i>Volunteer</i>	2006-2012

### SKILLS

*Proficient* in MATLAB, EEGLab, ERPLab, R, E-Prime 2.0, PsychoPy, and SPSS  
*Experience* using electroencephalography (EEG), electrocardiography (ECG), reaction time measures, subjective measures, BioPac Systems, BrainVision

### DEPARTMENTAL SERVICE

<b>PsychoPy Research Group—Co-Founder</b> University of Utah, Department of Psychology	2019-Present
<b>Diversity Committee</b> , University of Utah, Department of Psychology	2019-Present
<b>Outreach Committee</b> , University of Utah, Department of Psychology	2018-Present
<b>International Assistants Program</b> , Boston College	2014-2015
<b>Arrupe International Program</b> , Boston College	2013-2014
<b>Appalachian Volunteers</b> , Boston College	2011-2014