

Emily A. Barton

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Education

Ph.D. December 2017	University of Houston , Houston, TX Developmental, Cognitive, and Behavioral Neuroscience Dissertation: How the Alcohol-damaged Brain Responds to Exercise
M.A. August 2014	University of Houston , Houston, TX Developmental, Cognitive, and Behavioral Neuroscience Thesis: Computational Image Analysis of Glial Morphology Following Binge-induced Damage and Exercise-driven Recovery
B.A., <i>Summa Cum Laude</i> May 2011	Saint Edward's University , Austin, TX Psychology

Professional Positions

Associate Professor of Behavioral Neuroscience St. Edward's University	August 2023 – Present
Assistant Professor of Behavioral Neuroscience St. Edward's University	August 2018 – August 2023
Postdoctoral Fellow MD Anderson Cancer Center	October 2017 – July 2018

Honors, Awards, and Grants

Emma Lou Lin Research Grant	2023
Presidential Excellence Grant	2021
Emma Lou Lin Research Grant	2020
Behavioral and Social Sciences Faculty Research Award	2020
American Psychological Association Dissertation Research Award	2016
Biology of Behavior Institute Summer Fellowship	2016
Biology of Behavior Institute poster award	2014

Teaching Experience

St. Edward's University

PSYC 2301 General Psychology
PSYC 2321 Biopsychology
PSYC 3438 Research Methods
PSYC/NEUR 3352 Animal Behavior
PSYC/NEUR 4343 Learning and Cognition
PSYC 4359 Research and Field Experience
PSYC/NEUR 4442 Behavioral Neuroscience

University of Houston

PSYC 2301 Research Methods Lab
PSYC 3341 Physiological Psychology

Publications

Barton, E.A., Cital, M., Shortle, L., & Goldey, K.L. (2023). Coping with a Year of Online Education in Lock-Down: Impact of Prolonged COVID-19 Stressors on Problematic Drinking in College Students. *International Journal on Social and Education Sciences*, 5(2), 417-434. <https://doi.org/10.46328/ijonses.518>

Goldey, K.L., Cital, M.N., Rodriguez, S.C., Espinosa, A., **Barton, E.A.** (2022). Desire on lockdown? Sexual desire and COVID-19 stress among LGBTQ+ and cisgender, heterosexual college Students. *Psychology of Sexual Orientation and Gender Diversity*. <https://doi.org/10.1037/sgd0000596>

Barton, E.A. Understanding the brain: Grief and substance abuse. In Furr, S., & Hunsucker, K. *Grief work in addictions counseling*. Routledge.

Sabbagh, A., Beccaria, K., Ling, X., Marisetty, A., Caruso, H., **Barton, E.A.**, Ott, M., Kong, L., Fang, D., Zhang, D., Wei, J., DeGroot, J., Rao, G., Desseaux, C., Bouchoux, G., Canney, M., Carpentier, A., & Heimberger, A.B. (2021). Low intensity pulsed ultrasound induced blood-brain barrier opening improves response to immunotherapy for glioblastoma in preclinical models. *Clinical Cancer Research*, 27(15), 4325-4337. <https://doi.org/10.1158/1078-0432.CCR-20-3760>

West, R.K., Wooden, J.I., **Barton, E.A.**, & Leasure, J.L. (2019). Recurrent Binge Ethanol is Associated with Significant Loss of Dentate Gyrus Granule Neurons in Female Rats Despite Concomitant Increase in Neurogenesis. *Neurobiology of Disease*, 148, 272-283. <https://doi.org/10.1016/j.neuropharm.2019.01.016>

Barton, E.A., Baker, C., & Leasure, J.L. (2017). Investigation of sex differences in the microglial response to binge ethanol and exercise. *Brain Sciences*, 7(10), 139. <https://doi.org/10.3390/brainsci7100139>

Maynard, M.E., **Barton, E.A.**, Robinson, C., Wooden, J., & Leasure, J.L. (2017). Sex differences in hippocampal damage, cognitive impairment and trophic factor expression in an animal model of an Alcohol Use Disorder. *Brain Structure and Function*, 223(1), 195-210. <https://doi.org/10.1007/s00429-017-1482-3>

Barton, E.A., Lu, Y., Megjhani, M., Maynard, M.E., Kulkarni, P., Roysam, B., & Leasure, J.L. (2017). Binge alcohol alters exercise-driven neuroplasticity. *Neuroscience*, 343, 165–173. <https://doi.org/10.1016/j.neuroscience.2016.11.041>

Maynard, M. E., Chung, C., Comer, A., Nelson, K., Tran, J., Werries, N., **Barton, E. A.**, Spinetta, M., & Leasure, J. L. (2016) Ambient temperature influences the neural benefits of exercise. *Behavioral Brain Research*, 299, 27 – 31. <https://doi.org/10.1016/j.bbr.2015.11.017>

Kulkarni, P. M., **Barton, E.A.**, Savelonas, M., Padmanabhan, R., Lu, Y., Trett, K., Shain, W., Leasure, J.L., Roysam, B. (2015). Quantitative 3-D analysis of GFAP labeled astrocytes from fluorescence confocal images. *J Neuroscience Methods*, 246, 38-51. <https://doi.org/10.1016/j.jneumeth.2015.02.014>

Wagner, J.L, **Barton, E.A.**, Geil, C.R., Leasure, J.L., & Nixon, K. (2015). Roles of neural stem cells in alcohol use disorders. In A. K. Shetty (Ed.), *Neural Stem Cells in Health and Disease*. Singapore: World Scientific Publishing Company.

Conference Presentations

Barton, E.A., Cital, M., Shortle, L., & Goldey, K. (2022). Coping with a year of online education in lockdown: Impact of prolonged COVID-19 stressors on problematic drinking in college students. Talk presented at the annual International Conference on Social and Education Sciences in Austin, TX.

Cital, M., Shortle, L., Goldey, K., & **Barton, E.A.** (2021). The impact of pandemic-related stress on alcohol use among college students. Talk presented at the annual meeting for the Southwest Psychological Association in San Antonio, TX.

Rodriguez, S., Espinosa, A., Patcha, J., Cital, M., **Barton, E.A.**, & Goldey, K. (2021). Intimacy in the time of COVID: Pandemic-related stress and sexual desire. Poster presented at the annual meeting for the Southwest Psychological Association in San Antonio, TX.

Redman, V., Mendoza, J., Altimont, C., Gordon, A., & **Barton, E.A.** (2020). Effect of alcohol drinking and exercise behaviors on working memory performance in college students. Poster presented at the annual meeting for the Texas Research Society on Alcoholism, Bryan, TX.

Altimont, C., Redman, V., Mendoza, J., Gordon, A., & **Barton, E.A.** (2020). Motivations for college drinking across self-identified drinking behaviors and gender. Poster presented at the annual meeting for the Texas Research Society on Alcoholism, Bryan, TX.

Sabbagh, A., Marisetty, A., Ott, M., Ling, X., **Barton, E.A.**, Caruso, H., Kong, L., Rao, G., & Heimberger, A.B. (2019). Ultrasound Enhances Blood-Brain Barrier Opening Thus Improving Response to Immunotherapy for Glioblastoma. Presented at the SNO-SCIDOT Joint Conference on Therapeutic Delivery to the CNS, Phoenix, AZ.

Barton, E.A., Lu, Y., Megjhani, M., Maynard, M.E., Roysam, B., & Leasure, J.L. (2016). Microglia Morphology in the Medial Prefrontal Cortex Following Binge Alcohol Consumption and Exercise. Poster presented at the annual meeting for the Society for Neuroscience, San Diego, CA.

Barton, E.A., Lu, Y., Megjhani, M., Maynard, M.E., Roysam, B., & Leasure, J.L. (2016). Morphological Analysis of Microglia in the Medial Prefrontal Cortex following Binge Alcohol Consumption and Exercise. Poster presented at the Cold Spring Harbor Laboratory meeting on Glia in Health and Disease, Cold Spring Harbor, NY.

Barton, E.A., Kulkarni, P., Maynard, M.E., Roysam, B., & Leasure, J.L. (2014). Computational Image Analysis of Glial Morphology Following Binge-induced Damage and Exercise-driven Recovery. Poster presented at the Biology of Behavior Institute Annual Retreat, Houston, TX; and the annual meeting for the Research Society on Alcoholism, Bellevue, WA.

Leasure, J.L., Maynard, M.E., **Barton, E.A.**, Kulkarni, P., & Roysam, B. (2014). Computational Analysis of Exercise-Driven Recovery After Alcohol-Induced Brain Damage. Poster presented at the Gordon Conference on alcohol and the central nervous system, Galveston, TX.

Barton, E.A., Kulkarni, P., Maynard, M.E., Rea, M.A., Roysam, B., & Leasure, J.L. (2013). Enduring Effects of Binge Alcohol Exposure on the Frontal Cortex. Poster presented at the annual meeting for the Society for Neuroscience, San Diego, CA.

Barton, E.A., Simic, Z., & Paskos, D.K. (2011). Exploring the Effects of Impulsivity and Video Game Playing on Executive Function Tasks. Poster presented at the annual Southwestern Psychological Association conference, San Antonio, TX.

Barton, E.A., Scott, B.M., Larery, A., Stouter, J., Duncan, G., Carlson, H., Nance, M., York, M.K., & Strutt, A.M. (2010). Clinical Utility of Three Visuospatial Construction Measures in the Assessment of Alzheimer's Disease. Poster presented at the Bazelides Research Symposium, Houston, TX.

Invited Talks

Coping With a Year of Online Education in Lockdown: Impact of Prolonged COVID-19 Stressors on Problematic Drinking in College Students. St. Edward's University, Austin, TX, October 7, 2021

How the Alcohol-Damaged Brain Responds to Exercise:

University of Houston, Houston, TX, September 29, 2017

Methodist Hospital, Houston, TX, February 6, 2017

Baylor College of Medicine, Houston, TX, March 8, 2017

Princeton University, Princeton, NJ, June 15, 2017

Louisiana Health and Science Center, New Orleans, LA, July 19, 2017

St. Edward's University, Austin, TX, March 8, 2019

Alterations in Neuronal Activation Following Binge Alcohol and Exercise. Keynote talk: Biology of Behavior Student Symposium. Houston, TX, January 27, 2017.

Effect of Binge Alcohol Consumption on the Gliovascular Complex in the Medial Prefrontal Cortex. Biology of Behavior Institute Annual Retreat, Houston, TX, June 1, 2013.

Research

Principle Investigator

August 2018 – Present

Behavioral Neuroscience Lab, St. Edward's University

- Mentoring research projects focusing on alcohol drinking in college students and the impacts of the COVID-19 pandemic.

Postdoctoral Fellow

October 2017-July

Brain Tumor Immunology and Immunotherapy Lab, MD Anderson Cancer Center

2018

- Developed genetically engineered human T cells to express chimeric antigen receptors (CARs) against tumor associated antigens for targeted immunotherapy against glioblastoma.

Graduate Research Assistant

August 2012-October

Leasure Laboratory, University of Houston

2017

- Utilized fluorescent confocal imaging to develop 3D cell modeling of microglia, astrocytes, neurons, and vasculature in rat neural tissue.
- Investigated binge alcohol and exercise effects on spatial memory and neural efficiency.
- Performed histological analysis of sex differences in the microglial response to binge alcohol and exercise.

Laboratory Assistant

October 2011-April

Johnston Laboratory, University of Texas at Austin

2012

- Assessed depressive-like behavior in rats using the forced swim paradigm.
- Performed histological processing of mouse and rat neural tissue.

Research Assistant

August 2010- May

Saint Edward's University

2011

- Investigated the potential use of video game play as a means of self-medication in young adults with ADHD and high impulsivity.

Neuropsychology Intern

June 2010- August

Baylor College of Medicine

2010

- Investigated the sensitivity of neuropsychology tests in discerning Alzheimer's disease from other forms of cognitive impairment.
- Observed neuropsychological test batteries and STN-DBS procedures.

Service

Academic Integrity Committee

St. Edward's University

January 2021 – May 2021

BSS Symposium Committee

St. Edward's University

September 2020 – May 2021

BSS Research Award Committee

St. Edward's University

August 2020 - Present

Review Editor

Frontiers in Neuroscience

April 2020 - Present

SOURCE Committee

St. Edward's University

August 2019 - Present

IACUC Chair

St. Edward's University

August 2019 – May 2023

Advisor of Psi Chi

St. Edward's University

September 2018 - Present

Graduate Education Committee

University of Houston

January 2017 –August 2017