

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

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

Honors and Awards

American Psychological Association Dissertation Research Award	2016
Biology of Behavior Institute Summer Fellowship	2016
Biology of Behavior Institute poster award	2014
Presidential Scholarship	2012
Behavioral and Social Sciences Student Research Award	2011
Outstanding Student of the Year in Psychology	2011

Professional Memberships

Society for Neuroscience
Research Society on Alcoholism
American Psychological Association

Teaching Experience

St. Edward's University	
PSYC 4359 Research and Field Experience	Fall 2019
PSYC 4343 Learning and Cognition	Spring 2019 – Fall 2019
PSYC 3438 Research Methods	Spring 2019
PSYC 2301 General Psychology	Fall 2018
PSYC 3352 Animal Behavior	Fall 2018
PSYC 4442 Behavioral Neuroscience	Fall 2018 – Fall 2019
University of Houston	
PSYC 2301 Research Methods Lab	Fall 2014 – Fall 2015; Spring 2017
PSYC 3341 Physiological Psychology	Spring 2016 – Fall 2016; Summer 2017

Publications

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*.

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.

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*.

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.

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.

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.

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

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

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

- Correlating pattern of drinking and cognitive functioning to hormone levels in college-aged women

Postdoctoral Fellow

October 2017-July

Brain Tumor Immunology and Immunotherapy Lab, MD Anderson Cancer Center

2018

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

Graduate Research Assistant

August 2012-October

Leasure Laboratory, University of Houston

2017

- Fluorescent confocal imaging and development of 3D cell modeling of microglia, astrocytes, neurons, and vasculature in rat neural tissue.
- Investigation of binge alcohol and exercise effects on spatial memory and neural efficiency.

- Histological analysis of sex differences in the microglial response to binge alcohol and exercise.

October 2011-April
2012

Laboratory Assistant

Johnston Laboratory, University of Texas at Austin

- Assessment of depressive-like behavior in rats
- Histological processing of mouse and rat neural tissue.

August 2010- May
2011

Research Assistant

Saint Edward's University

- Investigation of video game play as a means of self-medication in young adults with ADHD and high impulsivity.

Neuropsychology Intern

Baylor College of Medicine

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

June 2010- August
2010

University Service

IACUC Member

St. Edward's University

August 2019 - Present

Advisor of Psi Chi

St. Edward's University

September 2018 - Present

Graduate Education Committee

University of Houston

January 2017 –August 2017