

Lauren L. Williamson

Williams College
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Education

- Ph.D.** **Duke University**, Durham, NC *August 2009-May 2014*
Department of Psychology & Neuroscience
Degree awarded May 2014
- B.A.** **Williams College**, Williamstown, MA *June 2007*
Psychology (Concentration in Neuroscience) and Spanish

Academic Appointments

2014-present Visiting Assistant Professor, Department of Psychology, Williams College

Research Interests and Positions

Hippocampal-dependent memory, neuroimmune interactions, role of microglia in normal brain function, prenatal/perinatal programming

Research Associate, Duke University, Psychology & Neuroscience *2007-2009*
Principal Investigators: Profs. Warren Meck and Christina Williams

Funding and Awards

Groff Foundation Funding for Undergraduate Research *2014-present*
National Science Foundation Graduate Research Fellowship *2010-2013*
James B. Duke Fellowship *2009-2013*
Claire Hamilton Graduate Student Conference Travel Award *2011*

Professional Affiliations

Society for Neuroscience *2008-present*
Psychoneuroimmunology Research Society *2010-present*
Society for Behavioral Neuroendocrinology *2012-present*
Faculty for Undergraduate Neuroscience *2014-present*

Publications

Williamson, L.L., Belliveau, C., & Bilbo, S.D. (submitted). Environmental enrichment alters the neurogenic niche: altered microglial reactivity requires interactions with other neural cell types.

Claypoole, L.D.* , Zimmerberg, B., & **Williamson, L.L.** (in press). Neonatal lipopolysaccharide treatment alters hippocampal neuroinflammation, microglia morphology and anxiety-like behavior in rats selectively bred for an infantile trait. *Brain, Behavior & Immunity*.

Williamson, L.L., McKenney, E., Holznecht Z.E., Belliveau, C., Rawls, J.F., Parker, W., & Bilbo, S.D. (2016). Got worms? Perinatal exposure to helminths prevents immune sensitization and cognitive dysfunction induced by early-life infection. *Brain, Behavior & Immunity*, 51, 14-28.

McKenney, E., **Williamson, L.L.**, Yoder, A.D., Rawls, J.F., Bilbo, S.D., Parker, W. (2015). Alteration of the rat cecal microbiome during colonization with the helminth *Hymenolepis diminuta*. *Gut Microbes*, 6(3), 182-93.

Williamson, L.L. & Bilbo, S.D. (2014). Neonatal infection modulates behavioral flexibility and hippocampal activation on a Morris Water Maze task. *Physiology & Behavior*, 129, 152-159.

Williamson, L.L. & Bilbo, S.D. (2013). Chemokines and the hippocampus: A new perspective on hippocampal plasticity and vulnerability. *Brain, Behavior & Immunity*, 30, 186-194.

Williamson, L. L., Chao, A.* , & Bilbo, S. D. (2012). Environmental enrichment alters glial antigen expression and neuroimmune function in the adult rat hippocampus. *Brain, Behavior & Immunity*, 26(3),500-10. [*undergraduate mentee]

Williamson, L. L., Sholar, P. W., Mistry, R. S., Smith, S. H., & Bilbo, S. D. (2011). Microglia and memory: modulation by early-life infection. *J Neurosci*, 31(43), 15511-15521.

Williamson L.L., Cheng, R.K., Etchegaray M.* & Meck W.H. (2008) "Speed" warps time: Methamphetamine's interactive roles in drug abuse, habit formation, and the biological clocks of circadian and interval timing. *Curr Drug Abuse Rev.* 1: 203-212.

*denotes undergraduate co-author

Conference Presentations

Williamson LL, McKenney E, Parker W, & Bilbo SD. (2014 May) Biome reconstitution as a novel mechanism of preventing neonatal infection-induced cognitive dysfunction. Poster presented at the meeting for Psychoneuroimmunology Research Society, Philadelphia, PA.

Williamson LL, Ngan E*, & Bilbo SD. (2013 June) Cytokine and chemokine expression in the nucleus accumbens modulates morphine reinstatement in mice. Poster presented at the meeting for Society for Behavioral Neuroendocrinology, Atlanta, GA.

Williamson LL & Bilbo SD. (2012 Oct) Neonatal infection alters water maze learning and impairs flexibility: Correlation with neuronal activation in the dentate gyrus. Poster presented at the meeting for Society for Neuroscience, New Orleans, LA.

Williamson LL, Chao, A*, & Bilbo SD. (2011 Nov) Environmental enrichment alters glial antigen expression and neuroimmune function in the adult rat hippocampus. Poster presented at the meeting for Society for Neuroscience, Washington, D.C.

Mistry RS, **Williamson LL**, & Bilbo SD. (2010 Nov) Combined influence of neonatal and adult immune challenges on adult neuronal survival and activation in the dentate gyrus. Poster presented at the meeting for Society for Neuroscience, San Diego, CA.

Williamson LL & Bilbo SD. (2010 Nov) Microglia and memory: modulation by early-life infection. Poster presented at the meeting for Society for Neuroscience, San Diego, CA.

Williamson LL, Penner MR, Glenn MJ & Williams CL. (2009 Oct) Age-related changes in hippocampal ensemble activity are attenuated by prenatal choline supplementation in rats. Poster presented at the annual meeting for Society for Neuroscience, Chicago, IL.

Cordes S, **Williamson LL**, Alves K, Bhave SR, Rodriguez RM, Wetsel WC & Meck WH. (2008 Nov) The role of the norepinephrine transporter in interval timing. Poster presented at the annual meeting for Society for Neuroscience, Washington D.C.

Colloquia & Invited Talks

Environmental enrichment is a potent modulator of neuroimmune communication.
Kenyon College Neuroscience Speakers Series. April 2, 2015

Community Outreach

Organizer, Brain Awareness Week at Williams College (2nd annual)

- Undergraduate outreach event in collaboration with All-Campus Entertainment and Williams Mindfulness Group
- Public talk by Dr. Christina Williams (Duke University) for a layperson audience
- Outreach event at Williamstown Elementary School in all 6th grade classrooms

Organizer, Inaugural Brain Awareness Week at Williams College with undergraduate volunteers

- Undergraduate outreach event in collaboration with All-Campus Entertainment and Williams Mindfulness Group
- Public talk by Dr. Heather Williams at the Purple Pub for a layperson audience
- Outreach event at Williamstown Elementary School in all 6th grade classrooms

Visiting community member at Pine Cobble Pre-K classroom for “Body” unit on brains

Professional Development

“Teaching in the Diverse Classroom” Weekly Seminar, Fall 2014

Davis Center of the Office of Institutional Diversity and Equity

Research Roundtable, Spring 2015

Semester-long collaboration with 3 junior faculty; translating our own scholarship to the classroom

“Teaching Millennials” Weekly Seminar, Fall 2015

Davis Center of the Office of Institutional Diversity and Equity

Creative Endeavors/Writing Roundtable, Fall 2015

Semester-long collaboration with 3 junior faculty; continuing our own scholarship while maintaining our teaching load

Teaching and Mentorship Experience

Williams College courses taught 2014-2016

Introduction to Psychology (PSYC 101) – Course Coordinator

Introduction to Neuroscience (PSYC 212/NSCI 201)

The Brain, Behavior and the Immune System (PSYC 312/NSCI 312)

Neuroscience Senior Seminar (NSCI 401)

Williams College Mentoring 2014-16

Honors thesis advisor

Amelia Hidalgo ‘17

Title: The effect of hypertension and anxiety of hippocampal-dependent learning

Terrance Mensah ‘17

Title: The effect of inflammation and traumatic brain injury on context-object discrimination in the mouse

Lauren Claypoole '16

Title: The effect of neonatal inflammation on neural inflammation and anxiety behavior in selectively-bred rats

Kathryn McNaughton '16

Title: Effects of sex and pro-inflammatory cytokines on context discrimination memory

Independent Study (NSCI 398): Moneesha Mukherjee '15

Title: Effects of experimental autoimmune encephalomyelitis on synaptic stability in the hippocampus

Independent Study (PSYC 398): Jesse Rodriguez '16

Title: Metabolism and the Immune System: a bidirectional relationship

Independent Study (NSCI 397): Syed Hussain Ul Fareed Bukhari '18

Title: Interaction of gestational diabetes and neonatal inflammation on pup anxiety-like behavior

Duke University, Teaching Assistantships 2010-2012

Fundamentals of Neuroscience (Neurosci 114) Instructor: Dr. Warren Meck

Biological Bases of Behavior (Neurosci 101) Instructor: Dr. Christina Williams

Introduction to Psychology (Psychology 101) Instructor: Dr. Christina Grimes

Duke University Mentoring 2010-2014

Graduation with Distinction Advisor

Geoffrey Houtz '14

Title: The effects of neonatal handling on opiate self-administration and subsequent glial activation

Emily Ngan '13

Title: The role of microglia in addiction in a mouse model

Agnes Chao '11, Undergraduate Graduation with Distinction Thesis Project

Title: Effects of environmental enrichment on neurogenesis, gliogenesis and the CNS immune response to inflammatory challenge

Howard Hughes Vertical Integration Program (Summer)

Geoffrey Houtz '14

Emily Ngan '13

Hanna Kemeny '13

Akhil Sharma '15

Arin Pamukcu '13