



BRIAN JONES

Oregon Health & Science University, School of Medicine, Neuroscience

Degrees:

B.A. Neuroscience, Oberlin College

M.S. Neuroscience, University of Pennsylvania

Advisor:

Gary L. Westbrook, M.D.

Scholar Award Donors:

Muffy and Bill Beeler

Susan and Bill Smith

About the Scholar:

Progress in any stem cell-based therapy is contingent on determining how cells introduced into a target brain region integrate into and participate in the established neural network. Brian is studying the mechanisms by which the adult brain generates new neurons by using electrophysiological and optogenetic techniques to modulate afferent pathways innervating the hippocampal neurogenic niche. Adult-born granule cells accomplish this feat daily, making the hippocampal neurogenic niche an ideal system to examine to determine how to create therapies that can mimic this natural process.

Benefits to Society:

Understanding the process of adult neurogenesis will inform our efforts to create stem cell based therapies aimed at treating neurodegenerative diseases and neural injury. Progress in any stem cell based therapy is contingent on determining how cells introduced into a target brain region integrate into and participate in the established neural network. Adult-born granule cells accomplish this feat daily, making the hippocampal neurogenic niche an ideal system to examine to determine how to create therapies that can mimic this natural process.

Awards and Honors:

Oberlin College, High Honors Diploma, Neuroscience

Phi Beta Kappa Society

Sigma Xi Honors Society

Nancy Robel Neuroscience Prize

National Health Service Corps Scholarship

Publications and Posters:

Buttini M., Yu GQ., Shockley K., Huang Y., **Jones B.**, Masliah E., Mallory M., Yeo T., Longo FM., Mucke L. (2002). Modulation of Alzheimer-like synaptic and cholinergic deficits in transgenic mice by human apolipoprotein E depends on isoform, aging, and overexpression of amyloid beta peptides but not plaque formation. *J. Neurosci.* 22(24): 10539-48.

Palop JJ., **Jones B.**, Ketonius L., Chin J., Yu GQ., Raber J., Masliah E., Mucke L., (2003) Neuronal depletion of calcium-dependent proteins in the dentate gyrus is tightly linked to Alzheimer's disease-related cognitive decline. *PNAS*, 100(16):9572-7.

Jha SK., **Jones BE.**, Coleman T., Steinmetz N., Law CT., Griffin G., Hawk J., Dabbish N., L+Kalatsky VA., Frank MG. (2005). Sleep-dependent plasticity requires cortical activity. *J. Neurosci.* 25(40):9266-74.

McCaffrey KA., **Jones B.**, Mabrey N., Weiss B., Swan SH., Patisaul HB. (2013). Sex specific impact of perinatal bisphenol A (BPA) exposure over a range of orally administered doses on rat hypothalamic sexual differentiation. *Neurotoxicology.* 36:55-62.