John I. Broussard, Ph.D.

Lab Address
Department of Neurobiology and Anatomy
MSB, Room 7.011

Phone: 713-500-5545
E-mail: john.i.broussard@uth.tmc.edu

EDUCATION

2001-2007 Ohio State University, Columbus, OH

Ph.D., Psychology, Behavioral Neuroscience area
Mentor: Bennet S. Givens
Thesis: *Neurophysiological correlates of attention in the posterior parietal cortex of the rat: contributions of cortical cholinergic transmission.*

1996-2001 Louisiana State University, Baton Rouge, LA

POSITIONS AND RESEARCH EXPERIENCE

2016 – present UT Health Science Center of Houston, TX

Senior Research Scientist
Department of Neurobiology and Anatomy
Advisor: Pramod K Dash
Research focus: Studying the effects of Traumatic Brain Injury (TBI) on in vivo neurophysiology in rodents.

2014-2016 Baylor College of Medicine, Houston TX

Instructor
Department of Psychiatry
Research focus: *Effects of repeated mild TBI on learning and memory and inflammation*.

2007-2014 Baylor College of Medicine, Houston TX

Postdoctoral Fellow
Department of Neuroscience
Advisor: John A. Dani
Research Focus: *In Vivo measurements of hippocampal plasticity during learning*

AWARDS AND MEMBERSHIPS

2019-2021 Mission Connect Consortium
2013 Diana Helis Henry Medical Research Foundation
2009 Cain Foundation NINDS Postdoctoral Fellowship
2002 Graduate Incentive Committee in Learning and Memory Predoctoral fellowship
2002-Present Member, Society for Neuroscience
2015-Present Member, Mission Connect

CURRENT RESEARCH SUPPORT

TIRR Foundation 019-112 01/1/2020-12/30/2021 $60,000
The effects of mild TBI on hippocampal correlates of novel location recognition.
Role: PI

PEER REVIEWED PUBLICATIONS

1. **Broussard JI**, Redell JB, Zhao J, Maynard ME, Kobori N, Perez A, Hood KN, Zhang XO, Moore AN, & Dash PK (2020). Mild traumatic brain injury decreases spatial information content and reduces place field stability. Journal of Neurotrauma. 37 (2):227-235.

2. **Broussard JI**, Acion L, Cortes HDC, Yin T, Britt JK, Salas R, Costa-Mattioli M, Robertson CS, Pieper A, Arciniegas D, & Jorge R (2018). Repeated mild closed head injury produces anxiety-related phenotype in mice and impairs spatial memory. Brain Injury. 32(1):113-122.

3. Yang K†, **Broussard JI**†, Levine AT†, Jenson D, Arenkiel BA, & Dani JA (2017). Dopamine receptor activity participates in hippocampal synaptic plasticity associated with Novel Object Recognition. (†*authors contributed equally*). European Journal of Neuroscience. 45: 138–146, 2017.

4. **Broussard JI**, Yang K, Levine A, Tsetsenis T, Jenson D, Cao F, Garcia I, Arenkiel BA, Zhuo FM, De Biasi M, & Dani JA (2016). Dopamine regulates aversive contextual learning and associated in vivo synaptic plasticity in the hippocampus. Cell Reports. 14: 1-10.

5. Jenson D, Yang K, Acevedo-Rodriguez A, Levine A, **Broussard JI**, Tang J, & Dani JA (2015). Dopamine and Norepinephrine participate in methylphenidate enhancement of *in vivo* hippocampal synaptic plasticity. Neuropharmacology. 90:23-32.

6. Tang M, He T, Meng Q, **Broussard JI**, Liao Y, Sun X, Chen L, Diao Y, Sang X, Li Q, & Zhao S (2014). Immobility responses between mouse strains correlate with distinct hippocampal serotonin transporter protein expression and function. International Journal of Neuropsychopharmacology.17(11):1737-50.

7. **Broussard JI**, Jenson D, & Dani, JA (2012). Dopaminergic influence over hippocampal synaptic plasticity and function. Clinical and Experimental Pharmacology 2:3

8. **Broussard JI** (2012). Posterior parietal cortex dynamically ranks topographic signals via cholinergic influence. Frontiers in Integrative Neuroscience 6:32.

9. **Broussard JI** (2012). Co-transmission of dopamine and glutamate. Journal of General Physiology 139(1):93-96.

10. Dani JA, Jenson D, **Broussard JI**, & De Biasi M (2011). Neurophysiology of nicotine addiction. Journal of Addiction Research and Therapy. S1:001.

11. **Broussard JI***, & Givens B. (2010). Low frequency oscillations in rat posterior parietal cortex are differentially activated by cues and distractors. Neurobiology of Learning and Memory**.** 94(2): 191-8.

12. **Broussard JI***, Karelina K, Sarter M, & Givens B. (2009). Cholinergic optimization of signal-evoked parietal activity during challenged attentional performance. European Journal of Neuroscience 29 (8) 1711-1722. *(cover figure for this issue)*

13. **Broussard J**, Sarter M, & Givens B. (2006). Neuronal correlates of signal detection in the posterior parietal cortex of rats performing a sustained attention task. Neuroscience**.** 143(2): 407-417.

14. Hawkins MF, Uzelac SM, Baumeister AA, Hearn JK, **Broussard JI**, & Guillot TS (2002). Behavioral Responses to Stress Following Central and Peripheral Injection of the 5-HT2 Agonist DOI. Pharmacology, Biochemistry, & Behavior. 73(3): 537-544.

*Corresponding author

SCIENTIFIC COMMUNICATIONS

Place cell functions in diseases of the brain.
UT Health Sciences Center of Houston,
Department of Neurobiology and Anatomy Colloquium, September 2020

Mild traumatic brain injury decreases spatial information content and reduces place field stability
Mission Connect Seminar Series
Houston, Texas. February 2020

Neural correlates of novel place recognition in the prelimbic cortex.
UT Health Sciences Center of Houston,
Department of Neurobiology and Anatomy Colloquium, April 2018

Repeated mild traumatic brain injury produces an anxiety-related phenotype and spatial memory deficits in mice.
International Brain Injury Association,
The Hague, Netherlands. March 2016

Dissociating neuromodulatory influence on hippocampal plasticity underlying episodic and recognition memory
Society for Neuroscience meeting
New Orleans, LA. Nov. 2012

The effects of nicotine on frequency dependent plasticity in freely moving mice.
Society for Research on Nicotine and Tobacco
Houston, TX. March 2012

The role of dopamine in plasticity in the hippocampal schaffer collaterals-pyramidal CA1 pathway.
Rush and Helen Record Neuroscience Forum
Galveston, TX Feb. 2012

Testing the effects of nicotine on frequency dependent plasticity in freely moving rats.
Rush and Helen Record Neuroscience Forum
Galveston, TX Feb. 2011

Nicotine induced synaptic plasticity in the dentate gyrus: what is the contribution of principal and inhibitory cell types?
Rush and Helen Record Neuroscience Forum
The Woodlands, TX Feb. 2009

Parietal event-related P300 potentials correlate with signal detection and are modulated by variation in signal duration in rats performing a sustained attention task.
Society for Neuroscience meeting,
San Diego, CA Nov. 2007

Cholinergic modulation of posterior parietal neuronal activity associated with the detection of signals in attentional task-performing rats.
Society for Neuroscience meeting,
Atlanta, GA Oct. 2006

Neuronal correlates of signal detection in rat posterior parietal cortex.
Society for Neuroscience meeting
San Diego, CA Oct. 2004
Neuronal correlates of attention.
Society for Neuroscience meeting
New Orleans, LA Nov. 2003

TEACHING AND SERVICE

2005-2007 -Introduction to Neuroscience (Substitute Lectures) – Ohio State University
2006 Laboratory Teaching Assistant, *Drugs and Behavior*.
2005 Teaching Assistant, *Stress and Neuroendocrinology*
2002 Laboratory Teaching Assistant, *Introduction to Experimental Methods in Psychology*

Ad-hoc reviewer for Neuroscience, Neurobiology of Learning and Memory, Frontiers in Neuroscience, Brain awareness week demonstrations, 2004-2006, Center of Science and Industry Columbus, OH