

## S. Alex Marshall, Ph.D

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### **Education:**

8/2008-08/2013 University of Kentucky, Ph.D. Pharmaceutical Sciences  
8/2009-12/2011 University of Kentucky, Graduate Certificate, College Teaching & Learning  
8/2004-05/2008 University of Florida, B.S. Zoology with a minor in Nonprofit Leadership

### **Research Experience:**

10/2016-present Assistant Professor of Basic Pharmaceutical Sciences, High Point University, studying the impacts of ethanol from a neurobiological, behavioral, and pharmacologic perspective with a particular focus on the effects of alcohol on the neuroimmune system.

11/2016-present Adjunct Assistant Professor of Psychology and Neuroscience, University of North Carolina-Chapel Hill

9/2013-10/2016 SPIRE Postdoctoral Fellow, University of North Carolina-Chapel Hill, Drs. Donald Lysle & Todd Thiele, Principle Investigators, studying the effects of ethanol on the neuroimmune system and the potential role of cytokines in behavioral processes that underlie alcohol addiction.

1/2009-08/2013 Graduate student, University of Kentucky, Dr. Kimberly Nixon, Principle Investigator, studying the effects of binge alcohol exposure in microglial responses and the role of alcohol-induced microglial responses on neurodegeneration and compensatory neurogenesis.

6/2007-06/2008 Undergraduate Research assistant, University of Florida, Dr. Adriaan Bruijnzeel, supervisor, studying the effects of CRF1/2 receptors antagonism on nicotine withdrawal in the nucleus accumbens shell using intracranial self-stimulation.

1/2005-03/2007 Undergraduate Research assistant, University of Florida, Dr. Joana Peris, supervisor, studying behavioral mechanisms to increase alcohol self-administration during microdialysis experiments.

### **Teaching Experience:**

1/2015-12/2015 North Carolina Central University, Visiting Assistant Professor  
BIOL 1201: Principles of Biology: Organisms and Diversity  
BIOL 2030: Neurobiology of Drug Abuse

5/2014-06/2014 Duke University, Instructor/Mentor in LEAP (Launch into Education About Pharmacology) Summer Program

8/2011-12/2011 Bluegrass Community and Technical College, Instructor  
BIO 150, Principles of Biology: Molecules and Cells  
BIO 151, Principles of Biology Laboratory I.

8/2008-05/2009 University of Kentucky, College of Pharmacy, Teaching Assistant  
PHR 813, Geriatric Pharmacy

## **Publications:**

- Marshall SA**, McKnight KH, Blose, AK, Lysle DT, and Thiele TE. *Modulation of binge-like ethanol consumption by IL-10 signaling in the basolateral amygdala*. Journal of Neuroimmune Pharmacology ([27640210](#))
- Marshall SA**, Geil CR, and Nixon K (2016). *Prior binge ethanol exposure potentiates the microglial response in a model of alcohol-induced neurodegeneration*. Brain Sciences. PMID: [27240410](#)
- Rinker JA, **Marshall SA**, Mazzone CM, Lowery-Gionta EG, Gulati V, Pleil KE, Kash TL, Navarro M, and Thiele TE (2016). *Extended Amygdala to Ventral Tegmental Area Corticotropin-Releasing Factor Circuit Controls Binge Ethanol Intake*. Biological Psychiatry. PMID: [27113502](#)
- Marshall SA**, Casachahua JD, Rinker JA, Blose AK, Lysle DT, Thiele TE (2016). *The role of IL-1 signaling within the amygdala on binge-like ethanol consumption*. Brain Behavior and Immunity. PMID: [26365025](#)
- Marshall SA**, Rinker JA, Harrison LK, Fletcher CA, Herfel TM, Thiele TE (2015). *Assessment of the effects of six standard rodent diets on binge-like and voluntary ethanol consumption in male C57BL/6J mice*. Alcoholism: Clinical and Experimental Research. PMID: [26110576](#)
- Tajuddin N, Moon KH, **Marshall SA**, Nixon K, Neafsey EJ, Kim HY, Collins MA (2014). *Neuroinflammation and neurodegeneration in adult brain from binge ethanol exposure: abrogation by docosahexaenoic acid*. PLoS One. PMID: [25029343](#)
- Geil CR, Hayes DM, McClain JA, Liput DJ, **Marshall SA**, Chen KY, Nixon K (2014). *Alcohol and adult hippocampal neurogenesis: promiscuous drug, wanton effects*. Addiction Biology. PMID: [24842804](#)
- McClain JA, Morris SA, **Marshall SA**, Nixon K (2014). *Ectopic hippocampal neurogenesis in adolescent male rats following alcohol dependence*. Addiction Biology. PMID: [23844726](#)
- Marshall SA**, McClain JA, Kelso ML, Hopkins DM, Pauly JR, and K Nixon (2013). *Microglial activation is not equivalent to neuroinflammation in alcohol-induced neurodegeneration: The importance of microglia phenotype*. Neurobiology of Disease. PMID: [23313316](#)
- McClain JA, Morris SA, Deeny MA, **Marshall SA**, Hayes DM, Kiser ZM, and Nixon K (2011). *Adolescent binge alcohol exposure induces long-lasting partial activation of microglia*. Brain Behavior and Immunity. PMID: [21262339](#)
- Morris SA, Kelso ML, Liput DJ, **Marshall SA**, and Nixon K (2010). *Similar withdrawal severity in adolescents and adults in a rat model of alcohol dependence*. Alcohol. PMID: [20113877](#)
- Marcinkiewz CA, Prado MM, Isaac SK, **Marshall A**, Rylkova D, and Bruijnzeel A (2009). *Corticotropin-releasing factor within the central nucleus of the amygdala and the nucleus accumbens shell mediates the negative Affective State of Nicotine Withdrawal in Rats*. Neuropsychopharmacology. PMID: [19145226](#)
- Submitted*
- Marshall SA**, McClain JA, Nixon K. *Evidence for microglia dysfunction after just two days of binge ethanol intoxication in rats*.
- In Preparation*
- Marshall SA**, Ebert SE, Thiele TE. *Inhibition of corticotropin-releasing factor neurons via DREADDS alters binge-like ethanol consumption*.
- Olney JJ, **Marshall SA**, Thiele TE. *Repeated cycles of binge-like ethanol drinking do not induce depression-like phenotypes in male C57BL/6J mice*.

**Abstracts:**

- Marshall SA**, Singley RA, Lysle DT, Thiele TE (2016). *Manipulation of astrocytes via DREADDs in the Basolateral but not central amygdala modulates ethanol consumption*. Research Society on Alcoholism.
- Singley RA, **Marshall SA**, Lysle DT, Thiele TE (2016). *Binge-like ethanol consumption has no effect on astrocyte activation in the amygdala of C57BL/6J mice*. Research Society on Alcoholism.
- Marshall SA**, DT Lysle, TE Thiele (2016). *Modulation of binge-like ethanol consumption by IL-10 administration in the basolateral amygdala*. National IRACDA Conference
- Marshall SA**, Thiele TE, Lysle DT (2015). *Basolateral amygdala astrocyte activation via DREADDs modulates ethanol consumption*. Society for Neuroscience.
- Marshall SA**, Ebert SE, Thiele TE (2015). *CRF neuronal inhibition with DREADDs reduces binge-like ethanol consumption in CRF-transgenic mice*. National IRACDA Conference
- Marshall SA**, Rinker JA, Harrison LK, Fletcher CA, Herfel TM, Thiele TE (2015). *Assessment of the effects of six standard rodent diets on binge-like and voluntary ethanol consumption in male C57BL/6J mice*. Research Society on Alcoholism.
- Marshall SA**, Rinker JA, Casachahua, Lysle DT, Thiele TE (2015). *IL-1 receptor antagonism in the basolateral amygdala but not central amygdala reduces binge-like ethanol intake of C57BL/6J mice*. Research Society on Alcoholism.
- Rinker JA, Gulati V, Lowery-Gionta EG, **Marshall SA**, Navarro M, Kash TL, Thiele TE (2015). *Intra-VTA CRF signaling modulates binge-like alcohol consumption: Examination of the role of the bed nucleus of stria terminalis and CRF-2 receptors*. Research Society on Alcoholism.
- Casachahua JD, **Marshall SA**, Lysle DT, Thiele TE (2015). *Binge-like ethanol consumption promotes site-specific increases in central interleukin-6 expression*. Research Society on Alcoholism.
- Ebert SE, **Marshall SA**, Thiele TE (2015). *Manipulation of CRF signaling using DREADDs reduces binge-like ethanol consumption of CRF-Cre transgenic mice*. Triangle Society for Neuroscience.
- Marshall SA**, Rinker JA, Casachahua JD, Lysle DT, Thiele TE (2014). *IL-1 receptor antagonism in the basolateral amygdala reduces binge-like ethanol intake of C57BL/6J mice*. Society for Neuroscience.
- Marshall SA**, Casachahua JD, Lysle DT, and Thiele TE (2014). *IL-1 $\beta$  immunoreactivity is increased in the amygdala and hippocampus of C57BL/6 mice with a history of binge-like ethanol intake*. Research Society on Alcoholism.
- Casachahua JD, **Marshall SA**, Rinker JA; Lebonville CL, Lysle DT, and Thiele TE (2014). *Binge-like ethanol consumption promotes site-specific increases in central interleukin-1 $\beta$  expression*. Research Society on Alcoholism.
- Marshall SA**, Thiele TE, Lysle DT (2014). *IL-10 immunoreactivity decreased in the amygdala and hippocampus of C57BL/6J mice with a history of binge-like ethanol intake*. National IRACDA Conference

- Harrison LK, **Marshall SA**, Blose AK, Rinker JA, Thiele TE (2014). *Diet does not influence the pharmacokinetics or alcohol-induced behaviors in a comparison of three food diets in a rodent model*. SPIRE Distinguished Seminar Series.
- Blose AK, **Marshall SA**, Thiele TE, and Lysle DT (2014). *IL-4 production shows no change in a binge-ethanol model of alcohol abuse*. SPIRE Distinguished Seminar Series.
- Marshall SA**, McClain JA, and Nixon K (2012) *Loss of microglia in hippocampus following binge ethanol exposure*. Society for Neuroscience.
- Marshall SA**, McClain JA, and Nixon K (2012) *Microglial changes persist twenty eight days following binge ethanol exposure in the hippocampus*. Research Society on Alcoholism.
- Marshall SA**, Hopkins DM, Pauly JR, and Nixon K (2011) *Microglial activation precedes an increase in microglia following binge ethanol exposure in the hippocampus*. Research Society on Alcoholism.
- Marshall SA**, Hopkins DM, Pauly JR, and Nixon K (2011) *Partial microglial activation in rat entorhinal cortex following binge ethanol*. Society for Neuroscience
- Marshall SA** and Nixon K (2010). *Selective changes in hippocampal cytokine production following binge ethanol exposure*. Bluegrass Society for Neuroscience
- Marshall SA** and Nixon K (2010). *Selective changes in hippocampal cytokine production suggest partial activation of microglia following binge ethanol exposure*. Research Society on Alcoholism
- Marshall SA**, Kelso ML, Eaves D, and K Nixon (2009). *Partial activation of microglia in a rodent model of an alcohol use disorder*. Society for Neuroscience
- Liput DL, Hammell DC, **Marshall SA**, Stinchcomb AL, and Nixon K (2009). *Attenuation of Alcohol-Induced Neurodegeneration via Transdermal Delivery of Cannabidiol*. Research Society on Alcoholism

#### **Oral Presentations:**

- 12/2014 *The Effects of Binge-Like Drinking on the Neuroimmune System: IL-1 Receptor Modulation of Binge-Like Ethanol Consumption*. UNC Alcohol Research Center Scientific Core Meeting.
- 11/2014 *The Effects of Binge-Like Drinking on the Neuroimmune System: Cytokines as Potential Modulators of Ethanol Consumption*. UNC Behavioral Neuroscience Seminar Series
- 10/2012 *Loss of microglia in hippocampus following binge ethanol exposure*. Society for Neuroscience
- 6/2012 *Alcohol effects on microglial phenotype: new roles in structural plasticity*. Research Society on Alcoholism
- 5/2012 *Hippocampal neuroinflammation in an alcohol binge model: Stereological estimates of microglia cell number*. University of Kentucky, NIDA Training Grant Symposium
- 2/2012 *Hippocampal neuroinflammation in an alcohol binge model*. University of Kentucky, Training Grant [T32]: Research Seminar
- 11/2011 *Microglia reactivity in an alcohol binge model*. University of Kentucky, Drug Discovery Seminar Series

- 6/2010 *Partial activation of microglia following binge ethanol exposure.* University of Kentucky, Drug Discovery Seminar Series
- 11/2009 *Partial activation of microglia in an alcohol binge model: A potential role in adult neurogenesis.* University of Kentucky, Psychology Brown Bag Series
- 10/2008 *Increasing rat alcohol self-administration.* University of Baltimore, McNair Scholar Conference
- 4/2008 *Effect of the CRF receptor antagonist d-Phe CRF administered into the nucleus accumbens shell on precipitated nicotine withdrawal in rats.* University of Florida, McNair Scholars Symposium
- 4/2007 *Maximizing Alcohol Consumption in Laboratory Rats.* University of Florida, McNair Scholars Symposium

### **Mentoring Experiences**

- 11/2013-5/2016 Allyson Blose, University of North Carolina-Chapel Hill, CHEM 395
- 11/2013-10/2016 Shay Daji, University of North Carolina-Chapel Hill, BIOL 395
- 5/2014-8/2015 Langston Harrison, North Carolina Central University, Summer SPIRE Intern
- 8/2014-5/2016 Suzahn Ebert, University of North Carolina-Chapel Hill, BIOL 395
- 8/2014-5/2015 Bolu Aluko, University of North Carolina-Chapel Hill, BIOL 295
- 5/2015-8/2015 Rachel Singley, North Carolina Central University, Summer SPIRE Intern
- 8/2015-5/2016 Kyle McKnight, University of North Carolina-Chapel Hill
- 8/2015-5/2016 Brianna Frame, University of North Carolina-Chapel Hill

### **Fellowships and Awards:**

- 2016 Lyman T Johnson Torch of Excellence Alumni Award, *University of Kentucky*
- 2015 Postdoctoral Award for Research Excellence, Honorable Mention, *UNC*
- 2015 Office of Postdoctoral Affairs Leadership & Service Award, *UNC*
- 2015 Neuroscience Scholars Program Associate, *Society for Neuroscience*
- 2014 Postdoctoral Scholar Award for Excellence in Mentoring Undergraduates, *UNC*
- 2013-2016 Seeding Postdoctoral Innovators in Research and Education Fellowship, *UNC*
- 2010, 2011-2013 NIDA Training Grant Award, *University of Kentucky*
- 2009-2012; 2014-2016 Research Society on Alcoholism Travel Award
- 2008- 2010 Lyman T Johnson Fellow, *University of Kentucky*
- 2008 Hall of Fame, *University of Florida*
- 2007 Florida-Georgia Louis Stokes Alliance Recipient, *University of Florida*
- 2006 & 2007 Ronald E McNair Scholar, *University of Florida*

### **Professional Societies:**

- 06/2014-present Triangle Society for Neuroscience  
Chapter Representative (2016-present)  
Program Committee Chair (2014-2016)
- 2/2010-Present Society for Neuroscience
- 01/2009- Present Research Society on Alcoholism
- 10/2008- 08/2013 Blue Grass Society for Neuroscience, Graduate Student Representative (2012-2013)
- 10/2008-08/2013 American Association of Pharmaceutical Scientists

### **Service and Community Organizations:**

- 08/2015-06/2016 Postdoctoral Association, Chair
- 06/2014-08/2015 Minority Postdoctoral Alliance, Co-Chair
- 08/2013-10/2016 National Postdoctoral Association
- 3/2011-Present Kappa Alpha Psi, Fraternity Incorporated  
Lexington Alumni Chapter Keeper of Records (2011-2012)

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|                 | University of Kentucky, Kappa Tau Chapter Advisor (2011-2013)            |
| 05/2009-08/2013 | BMW Academy, Volunteer Tutor/Mentor                                      |
| 08/2011-08/2013 | Graduate Student Congress  |
| 8/2010-5/2011   | University of Kentucky Graduate Council, Student Member                  |
| 10/2008-08/2013 | Black Graduate & Professional Student Association, President (2010-2013) |

**Other Training**

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|------|---|
| 2015 | Responsible Conduct for Research, Office of Postdoctoral Affairs        |
| 2012 | Grant Writers Workshop Seminar, Grant Writers' Seminars & Workshops LLC |