

# Lindsay Collins, PhD

Postdoctoral Researcher  
University of Oregon, Institute of Neuroscience

lcollins@uoregon.edu  
336-262-7631  
[www.collinsneuro.com](http://www.collinsneuro.com)

## EDUCATION

### University of Virginia

PhD, Psychology *May 2018*

M.A., Psychology *January 2015*

### Wake Forest University

B.A., Psychology *May 2012*

*Minors: Neuroscience, Biology, and Dance*

## RESEARCH INTERESTS AND EXPERIENCE

I am most interested in understanding how the brain processes sensory information in an ever-changing external environment and under fluctuating internal cognitive and behavioral states. My undergraduate research focused on the psychophysics of human auditory and visual perception. In graduate school I explored basic mechanisms of olfactory system circuit development in mice. My postdoctoral work brought my experience in these two worlds together by examining the ways in which the behavioral state of an animal modulates sensory processing using systems neuroscience techniques.

### University of Oregon      *October 2017 - present*

*Relationship between neuromodulatory systems and arousal state fluctuations; effect of vagus nerve stimulation on cortical activation*

Supervisor: Dr. David McCormick

### University of Virginia      *July 2012 - September 2017*

Research: *Myelination and Synaptogenesis in Olfactory System White Matter Tracts; Postnatal Development of GABAergic Interneurons within the Mouse Anterior Olfactory Nucleus*

Advisor: Dr. Peter Brunjes

### Wake Forest University      *August 2008 - May 2012*

Research: *Effects of Attention to Endogenous and Exogenous Cues on Auditory Localization*

Advisor: Dr. James Schirillo

## PEER-REVIEWED PUBLICATIONS

**Collins, L.,** Boddington, L., Steffan, P.J., & McCormick, D. (2021). Vagus nerve stimulation induces widespread behavioral and cortical activation. *Current Biology*.

**Collins, L.** & Brunjes, P. (2020). Experimental demyelination of olfactory white matter tracts. *Neuroscience*.

**Collins, L.** & Brunjes, P. (2019). The mouse olfactory peduncle 4. Development of synapses, perineuronal nets, and capillaries. *Journal of Comparative Neurology*.

**Collins, L.,** Hill, D., & Brunjes, P. (2018) Myelination of the developing lateral olfactory tract and anterior commissure. *Journal of Comparative Neurology*, 526(11): 1843-1858.

Brunjes, P., **Collins, L.,** Osterberg, S., & Phillips, A.\* (2014). The mouse olfactory peduncle. 3. Development of neurons, glia, and centrifugal afferents. *Frontiers in Neuroanatomy*, 8, 44.

**Collins, L.** & Schirillo, J. (2013). Attention to endogenous and exogenous cues affects auditory localization. *Experimental Brain Research*, 231(1):13-18.

## PUBLICATIONS IN PREPARATION:

**Collins, L.,** Francis, J.\*, Emanuel, B., & McCormick, D. State-dependent heterogeneity of cortical cholinergic and noradrenergic signaling.

**Collins, L.,** Boddington, L., & McCormick, D. Surgical implantation of a cuff electrode for electrical stimulation of the vagus nerve in mice.

\*undergraduate contribution

## INVITED TALKS

Talk title: Vagus Nerve Stimulation Induces Widespread Behavioral and Cortical Activation. *NeuroMatch Conference*. October 2020.

Talk title: Effects of Vagus Nerve Stimulation on Arousal State and Cortical Excitation. *WorldWide NeuRise Seminar Series*. June 2021.

### **Planned talks:**

North American Neuromodulation Society Journal Club. December 2021.

## CONFERENCE POSTER PRESENTATIONS

**Collins, L.,** Vickers, E., & McCormick, D. (October 2019). What Degree of Synchrony Exists in Cholinergic and Noradrenergic Axons Across Mouse Cortex? *Society for Neuroscience*. Chicago, IL.

Boddington, L., **Collins, L.**, Steffan, P., Froemke, R., McGinley, M., & McCormick, D. (October 2019). Behavioral and Neural Correlates of Changes in Arousal State Evoked by Vagal Nerve Stimulation in Mice. *Society for Neuroscience*. Chicago, IL.

**Collins, L.**, Boddington, L., Steffan, P., Nestvogel, D., Jo, S., Vickers, E., Froemke, R., McGinley, M., & McCormick, D. (November 2018). Vagal Nerve Stimulation Strongly Activates Cortical Networks, Centered Around Sensorimotor Cortex. *Society for Neuroscience*. San Diego, CA.

**Collins, L.**, Vogt, E., & Brunjes, P. (November 2017). Experimental Demyelination and Synaptic Development in the Olfactory Peduncle. *Society for Neuroscience*. Washington, D.C.

**Collins, L.**, & Brunjes, P. (November 2016). Developmental Myelination of the Anterior Commissure and Lateral Olfactory Tract. *Society for Neuroscience*. San Diego, CA.

**Collins, L.**, & Brunjes, P. (April 2016). Myelination of the Developing Anterior Commissure. *Association for Chemoreception Sciences*. Bonita Springs, FL.

Brunjes, P., **Collins, L.**, & Phillips, A. (April 2014). The Postnatal Development of the Mouse Olfactory Peduncle. *Association for Chemoreception Sciences*. Bonita Springs, FL.

Brunjes, P., **Collins, L.**, & Phillips, A. (November 2013). Postnatal Development of the Mouse Olfactory Peduncle. *Society for Neuroscience*. San Diego, CA.

## TEACHING AND MENTORSHIP EXPERIENCE

### Instructor of Record:

BI 407 Seminar on Career Readiness, *University of Oregon Fall 2021*

**Women in Science and Math Academic Residential Community, University of Oregon**  
**Program Coordinator** *August 2021 - present*

### Undergraduate Mentees:

John Francis, *Clark Honors College, University of Oregon*  
Minh Nguyen, *Clark Honors College, University of Oregon*  
Emily Vogt, *Distinguished Majors Program, University of Virginia*  
Dr. Adriana Phillips, *Distinguished Majors Program, University of Virginia*  
Amanda Briegel, *University of Virginia*  
Dr. Andrew Alberter, *University of Virginia*

### Graduate Mentees:

Brett Emanuel, *Institute of Neuroscience rotation student, University of Oregon*  
Kayla Ladd, *Institute of Neuroscience rotation student, University of Oregon*

### Teaching Assistantships (University of Virginia):

PSYC 2200 Neural Basis of Behavior (lead TA)  
PSYC 2210 Animal Minds  
PSYC 3005 Research Methods and Data Analysis  
PSYC 4200 Neural Mechanisms of Behavior (lead TA)

**Professional Development Workshops Attended:**

Teaching Toward Inclusion and Belonging, *U.O. Teaching Engagement Program*

Active Learning and Student Metacognition, *U.O. Teaching Engagement Program*

**SERVICE****UO Institute of Neuroscience Committee on Diversity, Equity, and Inclusion**

*Outreach subcommittee member June 2020 - present*

**UO Women in Math and Science Academic Residential Community**

*Stakeholder team member 2020 - 2021 academic year*

**UO Postdoctoral Association**

*Recruitment chair March 2021 - present*

**Funding acquired for service activities:**

Undergraduate Course on Career Readiness; *UO Biology DEI*; \$2675

Introductory Modules for the Institute of Neuroscience; *UO Biology DEI*; \$2700

Institute of Neuroscience Quarterly Roundtables; *UO Biology DEI*; \$864