

# Matthew Andres

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## Education

**University of Tennessee**, Knoxville, TN  
Ecology and Evolutionary Biology Department  
PhD Student  
Advisor: Dr. Sebastian Stockmaier

August 2024 - present

**The University of Scranton**, Scranton, PA  
Bachelor of Science in Neuroscience, Second Major: Philosophy  
Special Jesuit Liberal Arts Honors Program

August 2013 - May 2017

## Professional Experience

**Monell Chemical Senses Center**, Philadelphia, PA  
*Senior Research Technician, Mainland Lab*

September 2020 - July 2024

- Presented work at conferences as oral and poster presentations
- Developed novel odor delivery system for human olfactory testing, resulting in two conference presentations
- Developing techniques to measure odor samples (Photoionization detector, Gas chromatography)
- Managing and scheduling human participants
- Ordering equipment and supplies for the lab
- Olfactometer maintenance (replacing parts and calibrating)
- Experimenting with the latest in electronic nose technology

**University of Pennsylvania**, Philadelphia, PA  
*Research Assistant, Psychology of Eating and Consumer Health Lab*

September 2019 - September 2020

- Collected data by directly interacting with participants
- Participated in regular discussions of experimental design within the lab
- Read and discussed journal articles related to projects in the lab

**Drexel University College of Medicine**, Philadelphia, PA  
*Research Assistant, Department of Neurobiology and Anatomy*

January 2018 - May 2019

- Created figures for peer reviewed publications
- Histological staining and analysis
- Ran behavioral experiments in a mouse model
- Sectioned brain tissue in vibratome and cryostat

**The University of Scranton**, Scranton, PA  
*Undergraduate Researcher, Biology Department*

October 2015 - May 2017

Studied ant brains through dissection and staining with immunohistochemistry. Collected ant queens and colonies in the field in Gainesville, FL.

- Gained experience with lab techniques, data analysis, and scientific writing
- Obtained experience in the field while learning search techniques
- Worked closely with a team of students and faculty

**Smithsonian Tropical Research Institute**, Barro Colorado Island, Panama  
*Bat Lab Field Assistant*

June 2015 - August 2015

- Gained experience handling and taking measurements of live bats in the field
- Worked in the field navigating difficult terrain for long hours in remote areas
- Recorded and transcribed data
- Completed tasks under direction of lead researchers
- Gained knowledge of tropical forest ecology

### **Publications**

Lee BK, Mayhew EJ, Sanchez-Lengeling B, Wei JN, Qian W, Little K, **Andres M**, Nguyen BB, Moloy T, Parker J, Gerkin RC, Mainland JD, Wiltschko A. 2023. A Principal Odor Map Unifies Diverse Tasks in Olfactory Perception. *Science*. 381(6661): 999-1006  
DOI: 10.1126/science.ade4401

### **Presentations and Posters**

**Andres M**, Pellegrino P, Ocampos F, Mainland JD. Validation of novel odor delivery presentation for human olfactory testing. Presented at Monell Chemical Senses Center Corporate Partners Meeting, Philadelphia, PA, October 18, 2022

**Andres M**, Pellegrino R, Ocampos F, Mainland JD. (September 2022). Validation of novel odor delivery method for human olfactory testing. Presented at the European Chemoreception Research Organization Conference, Berlin, Germany. [Poster presentation].

Mayhew EJ, Little KA, **Andres M**, Nguyen BB, Gerkin RC, Mainland JD. Chemical Structure-Based Model Outperforms A Human Panelist On Odor Description Task, Association for Chemoreception Sciences, Bonita Springs, FL, April 20, 2022

Pellegrino R, Nsubuga J, **Andres M**, Singh V, Mainland JD. Predicting Intensity Interactions In Odor Mixtures, Association for Chemoreception Sciences, Bonita Springs, FL, April 20, 2022

Mayhew EJ, Pellegrino R, Nguyen BB, Margolis JE, **Andres M**, Gerkin RC, Mainland JD. Quantity Has A Quality All Its Own: Mapping Odor Character Changes Across Intensities, Association for Chemoreception Sciences, Bonita Springs, FL, April 20, 2022

### **Skills**

General laboratory skills (pipetting, dilutions, working in fume hoods, etc.), gas chromatography, photoionization detector R statistical software, REDCap database management, RedJade subject interface and data collection software, working with human subjects, handling mice in a laboratory setting, mouse brain extraction and sectioning, vibratome, cryostat, ant brain dissection, behavioral assays/behavioral scoring, histological staining, immunohistochemistry, microscopy, Neurolucida brain structure and neuron reconstruction, navigating field sites competently (temperate and tropical forests), mist netting (including net repair), handling wild bats to measure and take samples