

Matthew Andres

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Education

The University of Scranton

Scranton, PA

Bachelor of Science in Neuroscience, Second Major: Philosophy

Graduated May 2017

Special Jesuit Liberal Arts Honors Program

Professional Experience

Monell Chemical Senses Center, Philadelphia, PA

September 2020 - Present

Senior Research Technician, Mainland Lab

- 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

September 2019 - September 2020

Research Assistant, Psychology of Eating and Consumer Health Lab

- 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

January 2018 - May 2019

Research Assistant, Department of Neurobiology and Anatomy

- 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

October 2015 - May 2017

Undergraduate Researcher, Biology Department

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

June 2015 - August 2015

Bat Lab Field Assistant

- 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