Aidan Seidle

Speech, Language, and Hearing Sciences, Purdue University
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EDUCATION

University of California, Los Angeles, Los Angeles, CA 2021 - 2024
Bachelors of Science, Cognitive Science
Specialization in Computing
Music Industry Minor
GPA 3.84

RESEARCH & PROFESSIONAL EXPERIENCE

Purdue University West Lafayette, IN
Principal Investigator: Malinda McPherson-McNato, Ph.D. 2024 - Present
Research Associate/Lab Manager

- Preferences and perceptual differences across individuals
  - Recruit participants, prepare, and run experiments with both adults and children (ages 3-10), both online and in person
  - Analyze data in MATLAB to compare various psychoacoustic abilities and responses to a variety of sounds in preference and active vocal response studies
- Model-brain alignment of auditory neural networks
  - Collect online behavioral and neural network data to evaluate biological plausibility of auditory neural networks

University of California, Los Angeles Los Angeles, CA
Principal Investigator: Barbara Knowlton, Ph.D. 2023 - 2024
Research Assistant

- Drift diffusion modeling of perceptual learning in different loci
  - Prepared participants with consent, safety, and financial paperwork
  - Conducted fMRI scans to explore implicit learning of Bayesian priors and their effect on perceptual decision-making
  - Analyzed data using drift diffusion models in Python to derive predictions of brain activation

Duffl Los Angeles, CA
Manager and Data Analyst 2023 - 2024

- Built an NLP model to interpret customer feedback giving a comprehensive understanding of team successes and areas for improvement
- Managed large dynamic database and conducted statistical evaluation of key performance indicators for delivery driver workforce

- Navigated complex scheduling and supply chain needs to budget for 3,500 weekly orders with $40,000 of weekly revenue with a team of 50+ direct employees in a management position

PEER-REVIEWED CONFERENCE PROCEEDINGS

Seidle, A.J., Feather, J.*, McPherson-McNato, M.J.* (2025). Training on Ecologically Relevant Tasks Improves Alignment Between Artificial Neural Network and Human Similarity Judgements, *8th Annual Conference on Cognitive Computational Neuroscience*. *co-senior authors

UNDER REVIEW

M.J. McPherson-McNato, E. A. Undurraga, M. Poblete, S. Rojas, R. Zariquiey, **A.J. Seidle**, B. Medina, J.H. McDermott, Aversion to screechy sounds varies with exposure to industrialized environments. Under Review.

CONFERENCE POSTERS

Aidan J. Seidle, Feather, J., McPherson-McNato, M.J. (February 2026). Benchmarking artificial neural network models of human auditory processing with sound similarity judgements. *Association for Research in Otolaryngology, 49th Annual MidWinter Meeting,* San Juan, PR.

Aidan J. Seidle, Feather, J., McPherson-McNato, M.J. (August 2025). Training on ecologically relevant tasks improves alignment between artificial neural network and human similarity judgments. *Cognitive Computational Neuroscience, 2025*. Amsterdam, Netherlands.

Stephanie Wert (presenting author), **Seidle, A.J.**, Rissman, J., Knowlton, B. (August 2025). The temporal evolution of implicit bias in perceptual decision-making. *Cognitive Science Society, 47th Annual Meeting,* San Francisco, CA.

Aidan J. Seidle, McPherson, M.J., Undurraga, E., McDermott, J.H. (February 2025). Cross-culturally shared sensitivity to harmonic structure underlies aspects of pitch discrimination. *Association for Research in Otolaryngology, 48th Annual MidWinter Meeting,* Orlando, FL.

INVITED TALKS

Purdue University, Department of Speech, Language, and Hearing Sciences Weekly Seminar — Dec 2025
Translational Importance of Biological and Artificial Neural Network Alignment

Carnegie Mellon University, Feather Lab — Oct 2025
Expanding Methods for Brain-Behavior-Model Alignment Paradigms

Purdue University, Department of Speech, Language, and Hearing Sciences Hearing Seminar — May 2025
Using Psychophysics and Neural Networks to Explore Auditory Representations

TEACHING & ADVISING EXPERIENCE

Advising

Naomi White, McPherson Auditory Perception Lab, Purdue Audiology Student 2025
Megan Koellisch, McPherson Auditory Perception Lab, Purdue Undergraduate Student 2025

Teaching

Guest Lecturer, Purdue University, Department of Speech, Language, and Hearing Sciences
Hearing & Music Perception 2025

COMMUNITY ENGAGEMENT

Purdue SLHS Department Ambassador

- Recruit participants for SLHS department research and child hearing screenings
- Table at community events to grow awareness of audiological services and their benefits in underserved communities

Auditory Neuroscience Association at Purdue - Member

- Facilitate and contribute to meaningful discussions on interdepartmental presentations on auditory neuroscience topics
- Foster a safe and inclusive conversation space for undergraduate, graduate, faculty, and staff members to communicate on important scientific topics in our research community

RELEVANT COURSES

UCLA

PIC 10A - Introduction to Programming (*Focus on C++*)
PIC 10B - Intermediate Programming (*Focus on C++*)
PIC 16A - Python with Applications I
PIC 16B - Python with Applications II
PSYCH 100A - Psychological Statistics
PSYCH 100B - Research Methods in Psychology
PSYCH 119V - Brain and Art
PSYCH 120A - Cognitive Psychology (Perception Systems)
PSYCH 186A - Cognitive Science Laboratory: Introduction to Theory and Simulation
PSYCH 186B - Cognitive Science Laboratory: Neural Networks
PSYCH 186C - Psychophysical Theories and Methods (Signal Detection Theory)
PSYCH 196B - Research Apprenticeship in Cognitive Science
NEUROSC 17 - Science of Music
MUSIC INDUSTRY M103 - Music, Mind, and Brain
MUSIC INDUSTRY 155 - Music and Data Science
MUSIC INDUSTRY 107A - Engineering and Production Fundamentals

PURDUE

SLHS 30200 - Hearing Science (Audit)

SLHS 50400 - Auditory Periphery (Audit)
MA 26500 - Linear Algebra (Audit)
STAT 51100 - Statistical Methods (Audit)

SKILLS

Expert: Python (pandas, numpy, matplotlib), MATLAB, HTML/CSS, Jupyter/Jupyter Notebook, PsychoPy, Anaconda, Audio Hardware
Proficient: C++, JS, TensorFlow, PyTorch, PHP
Experience: R, Hardware Implementation (Arduino, soldering, 3D Printing)

REFERENCES

Dr. Malinda McPherson-McNato
mjmcp@purdue.edu
Dr. Barbara Knowlton
knowlton@psych.ucla.edu
Dr. Jenelle Feather
jfeather@cmu.edu