Pamela J. Osborn Popp, Ph.D.

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Google Scholar: scholar.google.com/citations?user=S7Jwtd8AAAAJ

EDUCATION

Ph.D. in Neuroscience, New York University, September 2023
Dissertation: "A cognitive analysis of learning, teaching, and collaborating."
Advisor: Dr. Todd Gureckis
Committee: Drs. Weiji Ma, Cristina Savin, Brenden Lake, and Tom Griffiths

B.S. in Neuroscience with high honors, New York University, May 2016
Minor: Mathematics and Computer Science
Senior Thesis: "Trial-and-error learning in reward-based decision-making."
Advisor: Dr. Nathaniel Daw

PROFESSIONAL APPOINTMENTS

2026 – Present **Senior Lecturer in Neuroscience**
College of Arts and Science, Vanderbilt University, Nashville, TN

2024 – 2026 **Postdoctoral Research Scholar**
Collaborative for STEM Education and Outreach
Peabody College, Vanderbilt University, Nashville, TN
Mentors: Menton Deweese, Ph.D., and Angela Eeds, Ph.D.

RESEARCH INTERESTS

Computational cognitive science, learning and decision-making, intuitive teaching, AI in education, educational technology, STEM education.

PUBLICATIONS

JOURNAL ARTICLES

Osborn Popp, P. J., Newell, B., Bartels, D., & Gureckis, T. M. (2025). Can cognitive discovery be incentivized with money? *Journal of Experimental Psychology: General, 154*(4), 1025–1037. https://doi.org/10.1037/xge0001682

Rankin, J., **Osborn Popp, P. J.**, & Rinzel, J. (2017). Stimulus Pauses and Perturbations Differentially Delay or Promote the Segregation of Auditory Objects: Psychoacoustics and Modeling. *Frontiers in Neuroscience, 11*, 198. https://doi.org/10.3389/fnins.2017.00198

Leal-Campanario, R., Alarcon-Martinez, L., Rieiro, H., Martinez-Conde, S., Alarcon-Martinez, T., Zhao, X., LaMee, J., **Osborn Popp, P. J.**, Calhoun, M., Arribas, J., Schlegel, A. A., Di Stasi, L. L., Rho, J. M., Inge, L., Otero-Millan, J., Treiman, D. M., & Macknik, S. L. (2017). Abnormal Capillary Vasodynamics Contribute to Ictal Neurodegeneration in Epilepsy. *Scientific Reports*, 7. https://doi.org/10.1038/srep43276

CONFERENCE PROCEEDINGS

Cohn, C., Guo, S., Rayala, S., Wang, H. D., Mohammed, N., Timalsina, U., Jain, S., Eeds, A., Deweese, M., **Osborn Popp, P. J.**, Stanton, R., Walker, S. L., Ma, M., & Biswas, G. (2026). Evidence-Decision-Feedback: Theory-Driven Adaptive Scaffolding for LLM Agents. *International Conference on Artificial Intelligence in Education, AIED 2026*. https://doi.org/10.1007/978-3-032-29744-0_1

Osborn Popp, P. J. & Gureckis, T. M. (2024). Moment-to-moment decisions of when and how to help another person. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 46.

Osborn Popp, P. J. & Gureckis, T. M. (2023). Helping and reciprocating in a sequential decision making task. *Proceedings of the Conference on Cognitive Computational Neuroscience*. DOI: 10.32470/CCN.2023.1677-0

Osborn Popp, P. J., Newell, B., Bartels, D., & Gureckis, T. M. (2022). Rule discovery performance unchanged by incentives. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44.

Osborn Popp, P. J. & Gureckis, T. M. (2020). Ask or Tell: Balancing questions and instructions in intuitive teaching. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 42.

Rich, A., **Osborn Popp, P. J.**, Halpern, D., Rothe, A., & Gureckis, T. (2018). Modeling Second Language Learning from a Psychological Perspective. *Proceedings of the Thirteenth Workshop on Innovative Use of NLP for Building Educational Applications*.

Halpern, D., Tubridy, S., Wang, H., Gasser, C., **Osborn Popp, P. J.**, Davachi, L. & Gureckis, T. (2018). Knowledge Tracing Using the Brain. *Educational Data Mining*.

GRANTS

2025 – 2027 *Students are Scientists: An inquiry-based curriculum on technology's impact on neurocognitive mechanisms of attention and memory*
$17,300 awarded by The Dana Foundation to Vanderbilt University
Role: Principal Investigator
https://dana.org/grant/vanderbilt-university/

HONORS AND AWARDS

2016 – 2023	Graduate School of Arts and Science MacCracken Fellowship, NYU
2016	Dean's Undergraduate Research Fund (DURF) Conference Travel Grant, NYU
2015 – 2016	New York University Dr. Aston McLaughlin Research Scholar
2015	DURF grant awarded for independent project in Daw Lab, NYU
2015	DURF grant awarded for independent project in Rinzel Lab, NYU
2012 – 2016	Dean's Scholar (full tuition merit-based scholarship), Presidential Honors Scholar, NYU

SELECTED COLLABORATIVE RESEARCH AND PROGRAM DEVELOPMENT

Dana Foundation: Students are Scientists (PI, 2025-present)
Ongoing development of an experiential learning program for high school students that explores how neurocognitive processes of attention, memory, and learning may be affected by smartphone use. Students are co-designers in behavioral and EEG experiments and combine their lived experience with scientific evidence to formulate opinions on school district technology policies.

NASA PolSIR Mission (Educational Outreach Lead, 2024-present)
Led educational outreach programs for NASA's Polarized Submillimeter Ice-cloud Radiometer (PolSIR) mission, including leading a workshop for Tennessee Career and Technical Education teachers, designing and implementing curricula on engineering, remote sensing/control, and microelectronics.

Vanderbilt Center for Sustainability, Energy, and Climate (Collaborator, 2026)
Mentored a team of four students designing a road surface temperature measurement device, as part of a grant exploring AI-driven road temperature monitoring and prediction for urban sustainability

Community-engaged research partnerships (2024-2026)
Collaborations with the Tennessee Department of Environment and Conservation, Nashville Zoo, Metropolitan Nashville Water Services, Wonderful People Microfarm, and Grow2Learn Cooperative.

TEACHING

2024 – 2026 **Instructor, The School for Science and Math at Vanderbilt**
Vanderbilt University, Nashville, TN
- Designed and taught interdisciplinary STEM curriculum for advanced Metro Nashville Public School students, including neuroscience, AI, engineering, statistics, robotics, and research methods
- Courses taught: Interdisciplinary Sciences I-III (9th-11th Grade), Advanced Research (12th Grade), Research I-III (Rising 10th-12th Grade)

2025 **Workshop Facilitator, American Board of Dental Examiners**
Dallas, TX
- Designed and directed two 90-minute workshop sessions titled "Making the most of AI in your work" highlighting how generative AI fits into secure, productive workflows

2018 – 2021 **Instructor, Introduction to Neuroscience, High School Summer Program**
Columbia University, New York, NY

2017, 2019 **Teaching Assistant, Introduction to Neural Science (NEURL-UA 100)**
New York University, New York, NY

STUDENT MENTORSHIP

Mentored over 30 students in small group and individual research projects. Student mentees have earned recognitions including:
- One Regeneron Science Talent Search Semifinalist
- Four Middle Tennessee Science and Engineering Fair winners in categories including Engineering Technology, Biomedical Engineering, and Physics & Astronomy
- Two Tennessee Junior Academy of Sciences runner-up teams
- Publications in Young Scientist research journal and other scholarly journals

INVITED TALKS AND WORKSHOPS

Osborn Popp, P. J. (2026, May). *Micro:bits in the classroom: An Invention Challenge to Engage Students in the Engineering Design Process*. Invited professional development at the Collaborative for STEM Education and Outreach, Vanderbilt University. Nashville, TN.

Osborn Popp, P. J. (2025, August). *Making the Most of AI in your Work*. Invited workshop at American Board for Dental Examiners company-wide staff retreat, Dallas, TX.

Osborn Popp, P. J., Newell, B., Bartels, D., & Gureckis, T. M. (2023, August). *Can cognitive discovery be incentivized by money?* Talk presented by Todd Gureckis at the 12th Triennial Invitational Choice Symposium. Fontainebleau, France.

Osborn Popp, P. J. & Gureckis, T. M. (2021, May). *The effect of economic incentives on the learning of novel categories*. Invited lecture at the Concepts and Categories Seminar, New York University, New York, NY.

Osborn Popp, P. J. (2019, November). *Language*. Invited lecture in Prof. Tony Movshon's "Introduction to Neural Science" undergraduate course. New York University, New York, NY.

Osborn Popp, P. J. & Gureckis, T. M. (2018, May). *Optimizing Learning by Optimizing Teaching*. Invited lecture at the Concepts and Categories Seminar, New York University, New York, NY.

Osborn Popp, P. J. (2017, December). *Memory systems*. Invited lecture in Prof. Tony Movshon's "Introduction to Neural Science" undergraduate course. New York University, New York, NY.

Osborn Popp, P. J., Rankin, J., & Rinzel,. J. (2017, March). *Examining the effects of perturbations on auditory streaming using Psychtoolbox*. Invited lecture in Professor John Rinzel's "Perceptual Dynamics" undergraduate course. New York University, New York, NY.

CONFERENCE PRESENTATIONS

Osborn Popp, P. J. & Gureckis, T. M. (2024, July). *Moment-to-moment decisions of when and how to help another person*. Talk presented by Todd Gureckis at the 46th Annual meeting of the Cognitive Science Society. Rotterdam, Netherlands.

Osborn Popp, P. J. & Gureckis, T. M. (2023, August). *Helping and reciprocating in a sequential decision making task*. Poster presented by Todd Gureckis at the Annual meeting of the Computational Cognitive Neuroscience Society. Oxford, U.K.

Osborn Popp, P. J., Newell, B., Bartels, D., & Gureckis, T. M. (2022, July). *Rule discovery performance unchanged by incentives*. Talk presented at the 44th Annual meeting of the Cognitive Science Society. Toronto, Canada.

Osborn Popp, P. J., Newell, B., Bartels, D., & Gureckis, T. M. (2021, July). *The effect of economic incentives on the learning of novel categories*. Recorded talk presented at the Society for Mathematical Psychology. Virtual meeting.

Osborn Popp, P. J., & Gureckis, T. M. (2020, July). *Ask or Tell: Balancing questions and instructions in intuitive teaching.* Poster presented at the 42nd Annual Meeting of the Cognitive Science Society. Virtual meeting.

Osborn Popp, P. J., & Gureckis, T. M. (2019, July). *Modeling Intuitive Teaching as Sequential Decision Making Under Uncertainty*. Poster presented at the 41st Annual Meeting of the Cognitive Science Society. Montreal, Canada.

Gureckis, T. M., & Osborn Popp, P. J. (2019, July). *Modeling Intuitive Teaching using POMDPs*. Talk presented by Todd Gureckis at Guided Playful Learning Workshop, Cognitive Science Society. Montreal, Canada.

Osborn Popp, P. J., & Gureckis, T. M. (2019, March). *Optimizing Learning using Machine Teaching*. Talk presented at the Society for Research in Child Development. Baltimore, MD.

Rich, A., Osborn Popp, P.J., Halpern, D., Rothe, A., & Gureckis, T. M. (2018, June). *Modeling Second Language Learning from a Psychological Perspective*. Poster presented at the North American Chapter of the Association for Computational Linguistics. New Orleans, LA.

Osborn Popp, P., Kurth-Nelson, Z., Daw, N., & Dayan, P. (2016, May). *Trial-and-Error Learning in Reward-Based Decision-Making*. Poster presented at the NYU Undergraduate Research Conference. New York, NY.

Rankin, J., Osborn Popp, P., & Rinzel, J. (2016, February). *Promotion of Stream Segregation by Deviants and Distractors*. Poster presented at the Annual Meeting of the Association for Research in Otolaryngology. San Diego, CA.

Osborn Popp, P., Rankin, J., & Rinzel, J. (2015, July). *Disturbances in the auditory scene: Auditory streaming response to perturbation*. Talk presented at the NYU Diversity Summer Student Conference. New York, NY.

Osborn Popp, P., Costela, F., Di Stasi, L., Posey, C., Rieiro, H., Martinez-Conde, S., & Macknik, S. (2014, August). *Arousal and Emotion in Film Cause Change Blindness*. Poster presented at Barrow Neurological Institute Summer Research Student Poster Presentation Day. Phoenix, AZ.

PEER REVIEWER

2025 – Present	Journal of Experimental Social Psychology
2023	Cognitive Computational Neuroscience Annual Meeting
2021 – Present	Cognitive Science Society Annual Meeting