María Alejandra Martínez-Ortiz

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EDUCATION

2025 – 2030 **Ph.D. in Psychology**, Stanford University, Stanford, CA (Starting in September)
<u>Concentration:</u> Developmental Cognitive Neuroscience
Advisor: Cameron T. Ellis, Ph.D.

2018 – 2023 **BS in Psychology with honors**, National University of Colombia, Bogotá DC
GPA: 4.6/5.0 (Class Rank: 2nd out of 43)
<u>Concentration</u>: Behavioral Neuroscience
Advisor: Marisol Lamprea Rodríguez, Ph.D.

RESEARCH EXPERIENCE

August 2023 – Present **Lab Manager**, Hartley Lab
New York University, New York, NY
Advisor: Catherine A. Hartley, Ph.D.

Research questions: How do early life environments shape learning and decision-making strategies?
How do learning and decision-making strategies confer vulnerability to psychopathology across development?

- Coded online experimental tasks using jsPsych and Pavlovia.
- Collecting and analyzing behavioral, fMRI, DWI, Neuromelanin-MRI data.
- Fitting Mixed-Effects models and Reinforcement Learning (RL) models to participant choice data using R and Python.
- Developing questionnaire to measure multiple dimensions of Early Life Adversity (ELA) and implemented it on Qualtrics.
- Managing lab administrative tasks, including overseeing IRB protocols, participant recruitment, financial responsibilities, and training lab members.

August 2022 – February 2023 **Visiting Research Scholar**, MR Spectroscopy Lab
Purdue University, West Lafayette, IN
Advisor: Ulrike Dydak, Ph.D.

Research questions: How does manganese accumulation in the cerebellum of welders affect cognitive performance, mood, and motor functioning?
Are there sex differences in the accumulation of manganese in the cerebellum, and how do these differences relate to variations in cognitive and motor outcomes?

- Collected and analyzed structural MRI data using MicroDicom and SPM.
- Collected and processed in-vivo spectroscopy (MRS) data using Osprey on MATLAB to quantify GABA and GSH in human brain.
- Administered neuropsychological testing to assess cognitive performance, fine motor skills, and mood in participants.
- Implemented statistical models using R.

March 2021 – June 2023 **Undergraduate Research Intern**, Neurosciences Lab
National University of Colombia, Bogotá DC
Advisor: Marisol Lamprea Rodríguez, Ph.D.

Research questions: How does adolescent social isolation shape vulnerability to nicotine addiction and its underlying neurobiological mechanisms?
How does early social isolation impact locomotor activity, habituation, and exploratory behavior in rodents in a Conditioned Place Preference (CPP) paradigm?

- Collaborated in the design and implementation of behavioral assessment protocols to measure exploration, memory and motivation in animal models (Open Field and Conditioned Place Preference).
- Analyzed neurophysiological samples by performing immunohistochemistry protocols for the quantification of proteins in the rodent brain.
- Handled all intellectual duties related to the final manuscript of my thesis, which included performing literature reviews, analyzing data (200+ animal subjects) through coding, generating charts and illustrations, and producing the final written output.

POSTER PRESENTATIONS AND TALKS

Martínez-Ortiz, M., Leonard, B., Yassa, M., Bornstein, A., & Hartley, CA. (2024). Exploring the relationship between Early Life Adversity (ELA) dimensions and the development of decision-making strategies under motivational conflict. 12th Flux Society Congress, Baltimore, MD.

Harhen, N., Goldway, M., **Martínez-Ortiz, M**., Ma, Y., Hartley, CA. (2024). Do early-life environments shape clinically relevant learning computations? 2nd Computational Psychiatry Conference, University of Minnesota, USA.

Martin-Neira, V., & **Martínez-Ortiz, M** (2023). Changes in social interaction and brain dopamine activity associated with social isolation during adolescence. XIII National Congress | XIV International Seminar on Neurosciences COLNE - IBRO, Cali, Colombia.

Martínez-Ortiz, M. (2023). Magnetic Resonance Imaging (MRI) and Spectroscopy (MRS) for the study of metal deposition in the human cerebellum. Talk presented at the UREP-C Final Symposium at Purdue University, West Lafayette, IN.

Martínez-Ortiz, M., G. Nossa, H. Monsivais, S. Snyder, S. E. Zauber, and U. Dydak. (2023). What does Neuroimaging of the Cerebellum in Welders Exposed to Manganese tell us about Motor Function? 62nd Annual Meeting of the Society of Toxicology, Nashville, TN.

Martínez-Ortiz, M., Monsivais, H., Nossa, G., and Dydak, U. (2022) Sex differences and hemispheric laterality in iron deposition in deep cerebellar nuclei. Women's Health Research Symposium, Purdue University, West Lafayette, IN.

PUBLICATIONS AND CONFERENCE PROCEEDINGS

Han, HW., Dhar, R., Yang, Q., Hoseini-Behbahani, M., **Martínez-Ortiz, M**., Oladele, T., Tahmasebi, F., Dima, D., Søgaard, A., Mohsenzadeh, Y. (Presenting on December 14th, 2024). Investigating the role of modality and training objective on representational alignment between transformers and the brain. UniReps Workshop: Unifying Representations in Neural Models, NeurIPS, Vancouver, Canada.

TEACHING EXPERIENCE

February 2023 –
June 2023
Art Appreciation and History
Role: Undergraduate Teaching Assistant
Department of Fine Arts, National University of Colombia

- Provided academic support and feedback to 160+ students from different programs taking the Art Appreciation and History elective course.
- Attended weekly meetings with the professor to coordinate assignments and evaluate exams and class assignments.
- Mentored the students in the final project of the class by guiding them during the choice and analysis of a work of art.

September 2021 – July 2022	**Biological Basis of Behavior** Role: Undergraduate Teaching Assistant Department of Psychology, National University of Colombia

- Provided academic support to 90+ first year students taking the Biological Basis of Behavior course.
- Designed study materials and scheduled tutoring sessions to solve doubts and clarify concepts about neurobiology and neuropsychology.
- Guided students in developing study strategies, time management and techniques for effective reading of scientific literature.

February 2021 – August 2021	**Fundamentals of Psychology** Role: Undergraduate Teaching Assistant Department of Psychology, National University of Colombia

- Developed interactive and multimedia content to use as a support in the Fundamentals of Psychology online class for 90+ first year students.
- Constructed and graded assignments and exams that covered the main concepts of the class.
- Held office hours to mentor first semester students on academic requirements and undergraduate opportunities in psychology.

HONORS AND AWARDS

2025 – 2028   Stanford Graduate Fellowship in Science and Engineering (SGF), *Stanford University*.
        University-wide fellowship that provides additional funding for the first three years of a graduate program to selected students.

2025 – 2027   EDGE Doctoral Fellowship Program, *Stanford University*.
        University-wide fellowship that supports selected Ph.D. students through financial assistance, mentorship, and professional development opportunities.

2024   Graduate Student Mentorship Initiative (GSMI) scholar, *Científico Latino*.
        Selected as 1 of the 100 GSMI 2024 scholars (out of 400+ applicants) to participate in a mentorship program that provides one-on-one mentorship and graduate school application preparation.

2023   Best Saber Pro Graduate National Exam, Psychology, *Ministry of National Education (Colombia)*.
        Awarded to nation-wide top scores on the Colombian ICFES-Saber Pro exam for university graduates.

2018 – 2023   Excellence Distinction, *National University of Colombia*.
        Full tuition scholarship for being part of the top 15 GPA's of the psychology program in Fall 2018, Spring 2023.

2022   Undergraduate Research Experience Purdue – Colombia (UREP-C), *National University of Colombia & Purdue University*.
        Full scholarship to participate in a 6-months internship at Purdue University.

2021   Scholar selected for the "+Women, +Science, +Equity" program, *Ministry of Science, Technology and Innovation (Colombia) & Organization of Ibero-American States (OEI)*.
        Scholarship to participate in a training and mentoring program for women scientists.

COMPLEMENTARY TRAINING

2024   Computational Neuroscience Summer School, *Neuromatch Academy*.

2022   Certificate in STEAM skills and Project Formulation, *Ministry of Science, Technology and Innovation (Colombia) &*
                    Organization of Ibero-American States (OEI).

OUTREACH AND VOLUNTEERING

2021- 2022   "Un Techo Para Mi País" Foundation
                    Role: Volunteer for the Transitional Housing and Social Inclusion program

- Worked with an interdisciplinary team of volunteers to conduct need and risk assessment of informal settlements in underserved communities of Bogotá.
- Mediated the decision-making process regarding the equitable allocation of resources to the most underprivileged families.
- Cooperated in the construction of emergency housing and the placement of the beneficiaries in their new homes.

SKILLS

Software: Microsoft Office, Google Suite, SPSS, JASP, GraphPad Prism, AnyMaze, ImageJ, PsychoPy, RedCap, Qualtrics, Illustrator, Photoshop, Lightroom.
Programming languages: R Studio, Python, MATLAB, JavaScript (jsPsych), Bash.
Neuroimaging: SPM, FSL, MRIcron, FreeSurfer, MicroGL.
Languages: Spanish (native), English (fluent).

MEMBERSHIPS

2024 –   Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS)
2024 –   Flux Society
2023 –   Científico Latino (Latino Scientist Initiative)
2023 –   Project SHORT
2022 –   Colombian Student Association at Purdue University
2021 –   Colombian College of Neurosciences (COLNE)