

LESTER RODRIGUEZ SANTOS

PhD Candidate, Interdepartmental Neuroscience Program

Department of Psychiatry | Yale University

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EDUCATION

Doctor of Philosophy (Ph.D.), Neuroscience

Expected May 2027

Yale Graduate School of Arts and Sciences – New Haven, CT

Advisors – Kelly P. Cosgrove, Ph.D. and Sarah W. Yip, Ph.D.

Master of Philosophy (M.Phil.), Neuroscience

Jan 2026

Yale Graduate School of Arts and Sciences – New Haven, CT

Certificate of College Teaching Preparation (CCTP)

In Progress

Yale Poorvu Center for Teaching and Learning

Bachelor of Science (B.S.), Molecular and Cellular Biology

May 2020

University of Puerto Rico, Rio Piedras Campus – San Juan, PR

TEACHING INTEREST

Introduction to Neuroscience; Computational Neuroscience; Foundations of Neuroimaging; Network Neuroscience; Clinical Neuroscience; Neuropharmacology; Neuromodulation

TEACHING EXPERIENCE

Teaching Fellow, Laboratory for Neurobiology - NSCI 3210L

Fall 2026 (Ongoing)

Neuroscience (NSCI), Yale College

Supervisor – Haig Keshishian, Ph.D.

- Assisting in teaching a laboratory section with ~20 undergraduate students.
- Guiding students through hands-on neuroscience laboratory sessions and projects.
- Reviewing laboratory notebooks and written lab reports, providing detailed feedback.

Teaching Fellow, Neurobiology - NSCI 3200

Fall 2025 (1 semester)

Neuroscience (NSCI), Yale College

Supervisor – Haig Keshishian, Ph.D.

- Assisted in teaching a course of ~50 undergraduate students.
- Led weekly discussion sections using active learning strategies and retrieval practice.
- Developed study guides, mock assessments, and implemented transparent grading rubrics for exams.

Instructor, Yale Pathways to Science Summer Scholars

Summer 2025 & 2026 (2 sessions each)

Office of New Haven Affairs, Yale University

Supervisor – Maria Parente, Ph.D.

- Designed and taught 60-minute neuroscience seminars for groups of ~45 high school students.
- Incorporated inquiry-based activities, including a coding exercise analyzing neuroimaging data.

Teaching Fellow, Principles of Neuroscience - INP701

Fall 2024 (1 semester)

Interdepartmental Neuroscience Program, Yale Graduate School of Arts and Sciences

Supervisor – William Cafferty, Ph.D.

- Assisted in teaching a seminar course for ~20 graduate students.
- Led weekly article discussions spanning molecular, cellular, systems, and behavioral levels of analysis.
- Reviewed and provided feedback on weekly essays critiquing primary neuroscience research articles.

Instructor, Innovations in Science and Technology Track **Summer 2023 & 2024 (6 weeks each)**
Yale Young Global Scholars (YYGS), Yale University

Supervisors – María Eugenia Panero, Ph.D. and Durel Crosby, B.A.

- Taught inquiry-based neuroscience seminars to diverse international cohorts of high school students.
- Designed hands-on activities using open-access neuroimaging datasets and programming.
- Mentored capstone projects in neuroscience, providing feedback on research proposals and presentations.

Undergraduate Biology Tutor, Cell Biology **Spring 2020 (1 semester)**

Biology Department, University of Puerto Rico, Rio Piedras Campus

Supervisor – Rosaura Ramirez, Ph.D.

- Assisted in teaching a course of ~50 undergraduate students.
- Led exam review sessions and proctored exams.

Undergraduate Biology Tutor, Neuropharmacology & Drugs **Fall 2019 (1 semester)**

Biology Department, University of Puerto Rico, Rio Piedras Campus

Supervisor – Carmen Maldonado-Vlaar, Ph.D.

- Assisted in teaching a course of ~50 undergraduate students.
- Provided a guest lecture on research approaches, led exam review sessions, and mentored poster projects.

TEACHING & MENTORING TRAINING

Center for the Integration of Research, Teaching, and Learning (CIRTL)

The College Classroom (10 sessions)

Sept 2026 (Ongoing)

New England Faculty Development Consortium (NEFDC)

Designing Experiential Learning in Academic Courses

Apr 2026

Cognition, Agency, and AI: Designing Courses for Learning

Feb 2026

Poorvu Center for Teaching and Learning, Yale University

Intermediate Teaching Workshop: Teaching Quantitative Reasoning

Apr 2025

Intermediate Teaching Workshop: AI in the Classroom

Feb 2025

Learning Community: Entering Mentoring in STEM

Apr 2024

Intermediate Teaching Workshop: Play in the Classroom

Mar 2024

Intermediate Teaching Workshop: Mental Health in the Classroom

Nov 2023

Fundamentals of Teaching in the Sciences (4 sessions)

Oct 2023

RESEARCH INTEREST

Human neuroscience; multimodal neuroimaging; computational neuroscience; network neuroscience; brain dynamics; neuropharmacology; psychiatric illness and behavior

RESEARCH EXPERIENCE

Graduate Researcher

Aug 2022 – Present

Department of Psychiatry, Yale School of Medicine

Advisors – Kelly P. Cosgrove, Ph.D. and Sarah W. Yip, Ph.D.

Projects:

- Applying connectome-based predictive modeling (CPM) to resting-state fMRI data to predict individual differences in subjective response to methamphetamine in healthy adults.
- Using [¹¹C]-(+)-PHNO PET to evaluate amphetamine-induced dopamine release across D2- and D3-receptor binding networks in a sample of nicotine smokers and nonsmokers.
- Examining the effects of methamphetamine on thalamocortical co-activation dynamics and their relationships with reward task performance.
- Developing a novel graph-based approach to quantify triadic connectivity across cortico-striato-thalamo-cortical circuits and applying it to study individuals with cocaine use disorder.

Responsibilities:

- Process, analyze, and visualize human neuroimaging data using computational and statistical methods.
- Collaborate with a multidisciplinary team of researchers on study design, data analysis, manuscript preparation, and scientific presentations.
- Mentor laboratory trainees and provide guidance on postgraduate associate and master's thesis projects.

NIH Postbaccalaureate IRTA Fellow
National Institute on Drug Abuse (NIDA)
Advisor – Elliot A. Stein, Ph.D.

Jul 2020 – Jul 2022

Project: Examined changes in brain network dynamics during acute nicotine abstinence in a clinical study evaluating novel smoking-cessation interventions using functional MRI.

Responsibilities:

- Conducted participant research visits in accordance with clinical research protocols.
- Coordinated MRI data acquisition with MRI technologists and guided task administration.

Undergraduate Research Assistant
Biology Department, University of Puerto Rico, Rio Piedras Campus
Advisor – Carmen Maldonado-Vlaar, Ph.D.

Aug 2018 – May 2020

Project: Investigated the neurobiological mechanisms underlying cannabinoid effects on anxiety-like behavior using rodent models and behavioral paradigms.

Responsibilities: Designed and conducted behavioral experiments, analyzed data, and communicated findings through presentations at national scientific conferences.

Summer Research Intern
Center for Studies of Addiction, University of Pennsylvania
Advisor – Anna Rose Childress, Ph.D.

Jun 2019 – Jul 2019

Project: Modeled the neural responses to aversive cues in individuals with cocaine use disorder using functional MRI and examined associations between subsequent relapse events.

Responsibilities: Participated in didactics and workshops on psychiatry, addiction and neuroimaging research and developed proficiency in computational approaches to human neuroimaging.

ADDITIONAL RESEARCH TRAINING

PET Pharmacokinetics Course, Montreal Neurological Institute
Neurohackademy, University of Washington eScience Institute
fMRI Image Acquisition and Analysis Course, TReNDS Center

May 2024
Aug 2023
Jun 2021

PROFESSIONAL EXPERIENCE

Outreach and Education Fellow
Office of New Haven Affairs, Yale University
Supervisors - Maria Parente, Ph.D. & Rick Crouse, Ph.D.

Aug 2023 – May 2025

- Provided support to scientific outreach programs at Yale for K-12 students in New Haven.
- Researched and developed new programming initiatives within STEM education.
- Analyzed program data to uncover gaps in recruitment and evaluate student outcomes.

Diversity, Equity and Inclusion Fellow
Program to Advance Training in Health & Sciences, Yale University
Supervisor - Giovanna Guerrero-Medina, Ph.D.

Jan 2023 – May 2023

- Provided support for an undergraduate mentorship program for underserved communities.
- Organized professional and academic development programming in STEM.
- Developed a proposal for a group-based peer-mentoring initiative with program alumni.

FELLOWSHIPS & AWARDS

Graduate Research Fellowship (GRFP) The National Science Foundation	Sept 2024 – Present
Public Service Award for Disciplinary Outreach Yale Graduate School of Arts and Sciences	Apr 2026
Outreach Award Yale BBS Development and Involvement Community	Jun 2025
Graduate Fellowship The Wu Tsai Institute at Yale University	Aug 2022 – May 2025
Award for Undergraduate Research in Biology University of Puerto Rico, Rio Piedras	May 2020
Research and Creativity Award University of Puerto Rico, Rio Piedras	May 2020

PUBLICATIONS

Peer-Reviewed Publications:

- [1] Lichenstein, S. D., Weng, Y., Robinson, H., **Rodriguez, L.**, Babaeianjelodar, M., Maynard, J., Metayer, M., Suneja, S., Horien, C., Greene, A. S., Constable, R. T., Moore, T. M., Barzilay, R., Yip, S. W., & Keller, A. (2026) Multivariate environmental exposures are reflected in whole-brain functional connectivity and cognition in youth. *Developmental Cognitive Neuroscience*. <https://doi.org/10.1016/j.dcn.2026.101788>
- [2] **Rodriguez Santos, L. G.**, Molla, H., Babaeianjelodar, M., de Wit, H., & Yip, S. W. (2025). Connectome-based encoding of subjective drug responses to acute oral methamphetamine. *Neuropsychopharmacology*. <https://doi.org/10.1038/s41386-025-02215-y>

Manuscripts Under Review:

- [1] Jelen, M. B., Cheng, A., Kohler, R. J., Riley, S. J., **Rodriguez Santos, L. G.**, Babaeianjelodar, M., Sofuoglu, M., Phan, K. L., Gorka, S. M., de Wit, H., Camenga, D. R., Lichenstein, S. D., & Yip, S. W. Replication and extension of the effects of acute oxycodone on functional connectivity. *Neuropsychopharmacology*.
- [2] Wang, Y.-W., Lichenstein, S. D., **Rodriguez, L.**, Babaeianjelodar, M., Corriveau, A., Molla, H., de Wit, H., Rosenberg, M. D., Constable, R. T., Holmes, A. J., Bzdok, D., & Yip, S. W. A generalizable neuromarker of sleep duration sensitive to within-person state change and stimulant challenge. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.
- [3] Lichenstein, S. D., Taylor, O., Albilleh, N., **Rodriguez, L.**, Babaeianjelodar, M., Pearlson, G., Yip, S. W., & Filbey, F. External replication and clinical relevance of the problem cannabis risk brain network. *Addiction*.
- [4] Wong-Si-Kwie, S., Kohler, R., Riley, S., **Rodriguez, L.**, Babaeianjelodar, M., Cheng, A., Horien, C., Greene, A. S., Constable, R. T., Yip, S. W., & Lichenstein, S. D. Connectome-based substrates of emotional N-back performance in the Adolescent Brain Cognitive Development Study. *Developmental Cognitive Neuroscience*.

Manuscripts in Preparation:

- [1] **Rodriguez Santos, L.**, Wang, C., Corriveau, A., Molla, H., Rosenberg, M. D., de Wit, H., & Yip, S. W. Thalamocortical co-activation dynamics linked to faster task performance under methamphetamine.
- [2] **Rodriguez Santos, L.**, Sepulcre, J., Ricard, J. A., Riley, S., Weng, Y., Chopra, S., Holmes, A. J., & Yip, S. W. Triadic Connectivity: A Voxelwise Graph-Based Approach for Characterizing Cortico-Striato-Thalamo-Cortical (CSTC) Circuits.
- [3] **Rodriguez-Santos, L.**, Raval, N., Calakos, K. C., Zakiniaiz, Y., Hillmer, A. T., & Cosgrove, K. P. Independent Component Analysis of [11C]-(+)-PHNO PET During an Amphetamine Challenge in Smokers and Nonsmokers.

CONFERENCE PRESENTATIONS

Upcoming:

- [1] **Rodriguez Santos, L. G.**, Wang, C., Corriveau, A., Molla, H., Rosenberg, M. D., de Wit, H., & Yip, S. W. Brain-state dependent effects of acute methamphetamine on thalamocortical dynamics in healthy adults. *SACNAS 2026 National Diversity in STEM Conference*, Long Beach, CA. (Oral presentation)

Completed:

- [1] **Rodriguez-Santos, L.**, Sepulcre, J., Ricard, J. A., Riley, S., Weng, Y., Chopra, S., Holmes, A. J., Yip, S. W. (2026) Triadic Connectivity: A Voxelwise Graph-Based Approach for Characterizing Cortico-Striato-Thalamo-Cortical (CSTC) Circuits. *Biomedical Imaging Technology & Translational Science Conference*, New Haven, CT. (Poster presentation)

- [2] **Rodriguez Santos, L.**, Wang, C., Corriveau, A., Molla, H., Rosenberg, M., de Wit, H., Yip, S. (2026). Brain State-Dependent Effects of Acute Methamphetamine on Thalamocortical Co-Activation Patterns in Healthy Adults. *Computational Psychiatry Conference*, New Haven, CT. (Poster presentation)
- [3] **Rodriguez Santos, L.**, Molla, H., Babaeianjelodar, M., Cosgrove, K., de Wit H., Yip S. (2024). Connectome-Based Encoding of Subjective but Not Physiological Effects of Methamphetamine. *63rd Annual Meeting of the American College of Neuropsychopharmacology*, Phoenix, AZ. (Poster presentation)
- [4] **Rodriguez, L.G.**, Hillmer, A.T., Calakos, K.C., Yip, S.W., & Cosgrove, K.P. (2024). Data-driven independent component analysis to isolate dopamine receptor subtype-specific binding sources of [11C]-(+)-PHNO during an amphetamine challenge study of tobacco smokers and nonsmokers. *NeuroReceptor Mapping*, Montreal, QC, Canada. (Poster presentation)
- [5] **Rodriguez, L.G.**, Fedota, J.R., Ross, T.J., Salmeron, B.J., Deshpande, H.U., & Stein, E.A. (2022). Relationship between affective and behavioral composite factors and dynamic resting-state functional connectivity in sated and acutely abstinent smokers. *Society for Neuroscience*, San Diego, CA. (Poster presentation)
- [6] **Rodriguez, L.**, Childress, A.R., Regier, P., Suh, J.J., Jagannathan, K., Young, K., Darnley, S., & Taylor, M. (2019). Brain response of cocaine patients to aversive cues in fMRI correlates with drug use outcomes. *27th Annual Puerto Rico Neuroscience Conference*, Bayamón, PR. (Poster presentation)
- [7] **Rodriguez, L.**, Muñoz, P., Ramos, A., Encarnación, V., Olmedo, E., González, F., Norzé, W., & Maldonado-Vlaar, C.S. (2019). Effects of chronic and acute inhibition of cannabinoid CB2 receptor on anxiety levels and oxytocin activity. *Society for Neuroscience*, Chicago, IL. (Poster presentation)

LEADERSHIP, OUTREACH, MENTORSHIP & SERVICE

Graduate President , Yale SACNAS Chapter	Aug 2026 – Present
Director , Open Labs at Yale	Jan 2025 – Present
Member , Neuroscience Outreach Program	Aug 2023 – Present
Outreach Chair , Wu Tsai Student, Postbacc, and Postdoc Collective	Aug 2024 – Aug 2026
Mentor , Program to Advance Training in Health & Sciences	Oct 2025 – May 2026
Board Member , Open Labs at Yale	Jan 2022 – Dec 2024
Mentor , Program to Advance Training in Health & Sciences	Aug 2023 – Dec 2023
Mentor , Cientifico Latino Graduate Student Mentorship Initiative	Aug 2023 – Dec 2023
Mentor , YBDIC Next-Generation Excellence Initiative Mentoring Program	Jan 2023 – May 2023
Seminar Series Subcommittee Chair , NIH Postbac Committee	Jun 2021 – Jun 2022
Outreach Coordinator , National Neuroscience Student Association	Aug 2019 – May 2020

INVITED TALKS & SCIENCE COMMUNICATION

Upcoming:

Panelist , Academic Experiences and Research Journeys NeuroBridges	September 2026
Organizer , An Interdisciplinary Future for Mental Health Research SACNAS Conference	October 2026

Completed:

Speaker , Demystifying the Journey to Graduate School National Institute on Drug Abuse	July 2026
Speaker , Evaluating Stimulant-Induced Alterations of Brain Function University of Puerto Rico	March 2026
Speaker , Coming Together to Explore the Mind SACNAS Conference	Oct 2025
Speaker , Neuroscience Seminar Series Yale Magnetic Resonance Research Center	Oct 2025
Speaker , Leaders of the Future 2025 Symposium Neurosciences PhD Program, Stanford University	Jun 2025
Panelist , Postbaccalaureate Alumni Panel National Institute on Drug Abuse	May 2025
Panelist , Graduate Experiences and Research Journeys NeuroBridges	Apr 2025
Panelist , Science Communication and Outreach for Busy Scientists SACNAS New England Gathering	Apr 2025
Speaker , Behavioral Neuroscience Program Quinnipiac University	Apr 2023
Panelist , Summer Research Internship Career Q&A National Institute on Drug Abuse	Aug 2021
Panelist , What You Need To Know About Postbacc Programs? University of Puerto Rico	Aug 2021