

PAMELA D. RIVIÈRE RUIZ

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EDUCATION

RUTGERS UNIVERSITY - NEWARK

Postdoctoral Associate

Newark, NJ

January 2026 – Present

UNIVERSITY OF CALIFORNIA SAN DIEGO

UCSD Chancellor's Postdoctoral Fellow

San Diego, CA

July 2023 – June 2025

Ph.D. in Cognitive Science

Sep 2016 – June 2023

Dissertation Title: On the Dynamics of Hippocampal CA1 Interneurons During Associative Memory Processing

Keywords: Neural Circuits, Inhibitory Dynamics, Learning & Memory

Committee: Drs. Lara M. Rangel, Bradley Voytek, Andrea Chiba, Douglas Nitz, Eran Mukamel, & Mikio Aoi

BOSTON UNIVERSITY

B.A. in Neurosciences

Boston, MA

Sep 2011 – May 2015

Honors Thesis Committee: Drs. Howard Eichenbaum, Nancy Kopell, & Mark A. Kramer

AWARDS, FELLOWSHIPS, & GRANTS

INNOVATIVE RESEARCH GRANT

Kavli Institute for Brain and Mind University of California, San Diego
Meenakshi Khosla, Lily Weng, Sean Trott, **Pamela Rivière**, Shreya Saha

San Diego, CA

July 2025 – June 2026

CHANCELLOR'S POSTDOCTORAL FELLOWSHIP PROGRAM

University of California, San Diego

San Diego, CA

July 2023 – June 2025

RUTH L. KIRSCHSTEIN NATIONAL RESEARCH AWARD

National Institutes of Health, BRAIN Initiative

San Diego, CA

declined by fellow

INSTITUTIONAL RESEARCH AND ACADEMIC CAREER DEVELOPMENT AWARD

National Institutes of Health/National Institute of General Medical Science

San Diego, CA

July 2023 – June 2024

UC PRESIDENT'S DISSERTATION YEAR FELLOWSHIP

University of California, San Diego

San Diego, CA

Sep 2022 – June 2023

EDWARD A. BOUCHET GRADUATE HONOR SOCIETY

Honorable Mention

San Diego, CA

2022

GRADUATE RESEARCH FELLOWSHIP PROGRAM

National Science Foundation

San Diego, CA

July 2018 – June 2021

INNOVATIVE RESEARCH GRANT

Kavli Institute for Brain and Mind University of California, San Diego
Pamela Rivière, Gabriel Schamberg, Todd Coleman, Lara Rangel

San Diego, CA

July 2018 – June 2019

SAN DIEGO FELLOWSHIP AWARD

Temporal Dynamics of Learning Center
University of California, San Diego

San Diego, CA

July 2017 – June 2018

PEER-REVIEWED PUBLICATIONS

JOURNALS

Rivière & Trott (accepted, forthcoming) Start Making Sense(s): A Developmental Probe of Attention Specialization Using Lexical Ambiguity. *Transactions of the Association for Computational Linguistics*

Cazares, Patiño, Contreras, Gorman, Burgado, Ali, van Engen, Kosik, **Rivière**, Baltz, Agba, Preston, Nagarajan, Cressy, Paredes, Santiago, & White (2024) A Trainee-informed Model for Undergraduate Neuroscience Research Programs Serving Marginalized Students. *Nature Neuroscience* 27, 2047–2052

Rivière, Schamberg, Coleman, & Rangel (2022) Modeling Relationships Between Rhythmic Processes and Neuronal Spike Timing. *Journal of Neurophysiology*, 128(3), 593-610

Rangel*, **Rueckemann***, **Rivière***, Keefe, Porter, Heimbuch, Budlong, & Eichenbaum (2016) Rhythmic Coordination of Hippocampal Neurons During Associative Memory Processing. *eLife* e09849

McKenzie, Frank, Kinsky, Porter, **Rivière**, Eichenbaum (2014) Hippocampal Representation of Related and Opposing Memories Develop Within Distinct, Hierarchically Organized Neural Schemas. *Neuron*, 83(1), 202-215

CONFERENCE PROCEEDINGS – Main Track

Rivière, Beatty-Martínez, & Trott (2025) Evaluating Contextualized Representations of (Spanish) Ambiguous Words: A Lexical Resource and Empirical Analysis. In *Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics: Human Language Technologies*.

Rivière, Parkinson-Coombs, Jones, & Trott (2025) Does Language Stabilize Quantity Representations in Vision Transformers? In *Proceedings of the 47th Annual Conference of the Cognitive Science Society*

Rivière & Rangel (2018) Spike-field coherence and firing rate profiles of CA1 interneurons during an associative memory task. In: *Deines A., Ferrero D., Graham E., Im M., Manore C., Price C. (eds) Advances in Mathematical Sciences. AWMRS 2017. Association for Women in Mathematics Series, vol 15 Springer, Cham.*

CONFERENCE PROCEEDINGS – Workshops, Findings Track

Rivière*, Jones, & Trott (2026) Developmental Trajectories of Situation Modeling and Mentalizing in Transformer Language Models. In *Proceedings of the 1st Workshop on Computational Developmental Linguistics*

Arnett*, **Rivière***, Chang, & Trott (2024) Different Tokenization Schemes Lead to Comparable Performance in Spanish Number Agreement. In *Proceedings of the 21st SIGMORPHON Workshop on Computational Morphology, Phonology, and Phonetics*

Trott & **Rivière** (2024) Measuring and Modifying the Readability of English Texts with GPT-4. In *Proceedings of the 3rd Annual Workshop on Text Simplification, Accessibility and Readability*

BOOK CHAPTERS

Rivière (2017) Entorhinal Cortex. *Chapter in Encyclopedia of Animal Cognition and Behavior*. Springer

POSTERS & TALKS

Probing Language Model Representations Using Lexical Ambiguity
Rivière PD

Department of Psychology
Rutgers University-Newark 2025

Mechanisms of hippocampal olfactory information processing for successful goal-directed behavior. **Learning & Memory**
Rivière PD, Bladon J, Symanski C, Kullberg E, Jadhav S, Rangel LM 2023

Dentate gyrus representations of spatial and sensory cue conjunctive information. **Learning & Memory**
Heyman CR, Borzello M, **Rivière PD**, Rangel LM 2023

Recommendations for serving students from historically marginalized groups in neuroscience. **Cognitive Neuroscience Society**, 2023
Cazares C, **Rivière PD**, Gorman JC, Ali S, Preston MJ

Modeling neuronal engagement in rhythmic network activity Rivière PD, Schamberg G, Coleman TP, Rangel LM	Society for Neuroscience 2021
Model selection approach for identifying rhythmic entrainment profiles of CA1 interneurons. Rivière PD, Rangel LM	Cosyne 2020
Stimulation of the lateral entorhinal cortex reveals optimal frequencies for rhythmic entrainment of downstream hippocampal neurons. Rangel LM, Keefe KR, Rivière PD, Eichenbaum H	Society for Neuroscience 2015
Single cell and ensemble odor-place representations in the dentate 2014 gyrus and CA1 of the hippocampus Rangel LM, Keefe KR, Rivière PD, Budlong CH, Heimbuch IS, Porter BS, Eichenbaum H	Society for Neuroscience 2014

TEACHING & WORKSHOPS

Exploring and Developing Research Taste	2024
<ul style="list-style-type: none"> MADURA (Mentorship for Advancing Diversity in Undergraduate Research on Aging) invited talk to orient students from historically underrepresented groups to the graduate school application personal and research statements, with a particular emphasis on honing (and conveying) their personal “research taste” 	
How to Read Research Articles: Anatomy of an Article & Reading Strategies	2022, 2023
Summer Research Program (2022) & STARTneuro (2023)- Workshop Lead	
<ul style="list-style-type: none"> developed materials and led this workshop for undergraduate students participating across UCSD’s various summer research programs (audience: ~100 students); and for STARTneuro, a competitive summer research program designed to introduce transfer college students to research careers (small seminar setting) 	
Drafting & Developing Fellowship Funding Proposals: Strategies for Success	2022
Colors of the Brain-Kavli Institute for Brain and Mind (CoB-KIBM) - Workshop Lead	
<ul style="list-style-type: none"> developed materials and led this workshop for the summer research cohort; introduction to federal, intramural, and private fellowship funding opportunities, case studies from successful NSF GRFP applications, and time management strategies for completing each component 	
Introduction to Statistical Methods	2022
COGS 14B - Teaching Assistant, UCSD	
<ul style="list-style-type: none"> developed original discussion section worksheets covering sampling theory, null hypothesis-testing via t-tests, analysis of variance, regression analysis; developed assessments; led discussion section 	
Introduction to Research Methods	2021, 2022
COGS 14A - Teaching Assistant, UCSD	
<ul style="list-style-type: none"> developed discussion section worksheets covering construct, external, internal, and statistical validity; experimental design (within- and between-subjects; ethical frameworks and principles; types of empirical claims (frequency, associational, causal) 	
Introduction to Cognitive Science	2017, 2021
COGS 1 - Teaching Assistant, UCSD	
<ul style="list-style-type: none"> developed discussion section lecture materials surveying various research topics, including cognitive linguistics, neurophysiology, cognitive neuroscience, neural networks 	
Neuroanatomy & Neurophysiology	2017
COGS 107A - Teaching Assistant, UCSD	
<ul style="list-style-type: none"> developed original discussion section lecture materials reviewing neuronal membrane chemoelectric properties, dendrites, action potentials, synapses, neurotransmitters and neuromodulators, neuron and glial types 	

Cognitive Neuroscience

2017

COGS 107C - Teaching Assistant, UCSD

- developed original discussion section worksheet materials covering the hypothalamic-pituitary-adrenal axis, neuromodulatory systems (primary source region and targets); subcortical structures, their relationship to affective dimensions of behavior, and interactions with bodily organs; cortical architectures and relationships to sensory perception and executive function

ACADEMIC MENTORSHIP

Valeria González Pérez: Cognitive Science, UCSD	2023-present
Alexandra García: Colors of the Brain - Kavli Institute for Brain and Mind (CoB-KIBM) Scholar current position: University of California, San Diego Undergraduate (Voytek Lab)	2022
Eman Abdulkadir: Colors of the Brain - Kavli Institute for Brain and Mind (CoB-KIBM) Scholar	2021
Vani Taluja: Cognitive Science, UCSD, Neural Dynamics Laboratory current position: University of California, San Diego PhD Student (4rth year)	2019
Austin Gallagher: Cognitive Science, UCSD, Neural Dynamics Laboratory current position: University of California, San Francisco PhD Student (Sohal Lab)	2019-2020
Marisa Grams: Cognitive Science, UCSD, Neural Dynamics Laboratory current position: University of California, San Francisco PhD Student (Yackle Lab)	2019-2020
Theodoros Kapogianis: Cognitive Science, UCSD, Neural Dynamics Laboratory current position: University of California, Irvine PhD Student (Chrastil Lab)	2019

SERVICE & OUTREACH

Colors of the Brain (CoB) | Co-founder & Mentor

2016-2023

- Mentorship program for underrepresented minority students interested in Cognitive Science, Psychology, and Neuroscience. Through one-on-one mentorship as well as small workshop series, we aim to facilitate these students' transition into research.
- CoB-KIBM Summer Fellowship Program: We partnered with the Kavli Institute for Brain and Mind (KIBM) at UCSD to fund several (4 - year 1; 6 - year 2) undergraduate research scholars belonging to underrepresented minority groups. The first cohort of summer scholars began in 2021.

ADDITIONAL

Interests: Language Model Training Dynamics, Interpretability, AI Safety, AI Ethics & Society, Alignment

Technical Skills: Python/R programming, Statistical Modeling, Data Visualization

Research Skills: Scientific Communication, Literature Reviews & Synthesis, Identifying Promising Research Questions, Grant Writing, Collaboration, Project Management