PAMELA D. RIVIÈRE RUIZ

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EDUCATION

UNIVERSITY OF CALIFORNIA SAN DIEGO — San Diego, CA
UCSD Chancellor's Postdoctoral Fellow — 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 — Boston, MA
B.A. in Neurosciences — Sep 2011 – May 2015
Honors Thesis Committee: Drs. Howard Eichenbaum, Nancy Kopell, & Mark A. Kramer

AWARDS, FELLOWSHIPS, & GRANTS

INNOVATIVE RESEARCH GRANT — San Diego, CA
Kavli Institute for Brain and Mind University of California, San Diego — July 2025 – June 2026
Meenakshi Khosla, Lily Weng, Sean Trott, **Pamela Rivière**, Shreya Saha

CHANCELLOR'S POSTDOCTORAL FELLOWSHIP PROGRAM — San Diego, CA
University of California, San Diego — July 2023 – June 2025

RUTH L. KIRSCHSTEIN NATIONAL RESEARCH AWARD — San Diego, CA
National Institutes of Health, BRAIN Initiative — declined by fellow

INSTITUTIONAL RESEARCH AND ACADEMIC CAREER DEVELOPMENT AWARD — San Diego, CA
National Institutes of Health/National Institute of General Medical Science — July 2023 – June 2024

UC PRESIDENT'S DISSERTATION YEAR FELLOWSHIP — San Diego, CA
University of California, San Diego — Sep 2022 – June 2023

EDWARD A. BOUCHET GRADUATE HONOR SOCIETY — San Diego, CA
Honorable Mention — 2022

GRADUATE RESEARCH FELLOWSHIP PROGRAM — San Diego, CA
National Science Foundation — July 2018 – June 2021

INNOVATIVE RESEARCH GRANT — San Diego, CA
Kavli Institute for Brain and Mind University of California, San Diego — July 2018 – June 2019
Pamela Rivière, Gabriel Schamberg, Todd Coleman, Lara Rangel

SAN DIEGO FELLOWSHIP AWARD — San Diego, CA
Temporal Dynamics of Learning Center — July 2017 – June 2018
University of California, San Diego

PEER-REVIEWED PUBLICATIONS

JOURNALS

Rivière & Trott (under review) Start Making Sense(s): A Developmental Probe of Attention Specialization Using Lexical Ambiguity.

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

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 & PRESENTATIONS

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 **Society for Neuroscience**
Rivière PD, Schamberg G, Coleman TP, Rangel LM 2021

Model selection approach for identifying rhythmic entrainment profiles of CA1 interneurons. **Cosyne**
Rivière PD, Rangel LM 2020

Stimulation of the lateral entorhinal cortex reveals optimal frequencies for rhythmic entrainment of downstream hippocampal neurons. **Society for Neuroscience** 2015
Rangel LM, Keefe KR, **Rivière PD**, Eichenbaum H

Single cell and ensemble odor-place representations in the dentate gyrus and CA1 of the hippocampus — **Society for Neuroscience** 2014
Rangel LM, Keefe KR, **Rivière PD,** Budlong CH, Heimbuch IS, Porter BS, Eichenbaum H

TEACHING & WORKSHOPS

Exploring and Developing Research Taste — 2024

- 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

- 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

- 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

- 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

- 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

- 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

- 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 2022
current position: University of California, San Diego Undergraduate (Voytek Lab)

Eman Abdulkadir: Colors of the Brain - Kavli Institute for Brain and Mind (CoB-KIBM) Scholar 2021

Vani Taluja: Cognitive Science, UCSD, Neural Dynamics Laboratory 2019
current position: University of California, San Diego PhD Student (4rth year)

Austin Gallagher: Cognitive Science, UCSD, Neural Dynamics Laboratory 2019-2020
current position: University of California, San Francisco PhD Student (Sohal Lab)

Marisa Grams: Cognitive Science, UCSD, Neural Dynamics Laboratory 2019-2020
current position: University of California, San Francisco PhD Student (Yackle Lab)

Theodoros Kapogianis: Cognitive Science, UCSD, Neural Dynamics Laboratory 2019
current position: University of California, Irvine PhD Student (Chrastil Lab)

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: AI Safety, Alignment, Interpretability, Capabilities Characterization & Forecasting
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