

RESEARCH INTERESTS

Consciousness science, philosophy of mind, integrated information theory, EEG complexity, artificial consciousness.

EDUCATION

PhD, Cognitive and Information Sciences <i>University of California, Merced, School of Social Sciences, Humanities, and Arts</i> Dissertation (advised by Jeff Yoshimi): Consciousness, complexity, and silent neurons: Experimental and philosophical investigations for integrated information theory (IIT)	2026
MS, Cognitive and Information Sciences <i>University of California, Merced, School of Social Sciences, Humanities, and Arts</i>	2025
MS, Information <i>University of Michigan, School of Information</i> Specializations: Human-Computer Interaction; Information Analysis and Retrieval	2019
Non-degree-seeking coursework in mathematics & computer science <i>Washtenaw Community College</i>	2005, 2015
BS, Environment <i>University of Michigan, College of Literature, Science, and the Arts</i> Specialization: Urban and Environmental Planning	2008

TRAININGS & WORKSHOPS

MESEC Winter School 2024 <i>Mediterranean Society for Consciousness Science</i>	March 19–23, 2024
Special Advanced Course: Integrated Information Theory of Consciousness <i>Neuroscience School of Advanced Studies</i>	September 8–17, 2023
9 th Science Factory: TMS–EEG Summer School and Workshop <i>Aalto University School of Science, Department of Neuroscience & Biomedical Engineering</i>	May 27–June 2, 2023

PUBLICATIONS

- Ponce de Leon, S.**, Backer, K. C., Monti, M. M., & Yoshimi, J. (in preparation). *Measuring conscious contents using EEG complexity: Visual vs. auditory stimulus encoding.*
- Ponce de Leon, S.**, Backer, K. C., Monti, M. M., & Yoshimi, J. (in preparation). *Measuring conscious contents using EEG complexity: Differences in phenomenology and behavior.*
- Ponce de Leon, S.**, & Yoshimi, J. (in preparation). *Does Husserlian phenomenology support the axiomatic framework of integrated information theory (IIT).*
- Ponce de Leon, S.**, & Yoshimi, J. (2026). Integrated information theory (IIT) and the testability of the silent neuron predictions. *Neuroscience of Consciousness*, 2026(1), niag037. <https://doi.org/10.1093/nc/niag037>
- Ponce de Leon, S.**, Backer, K. C., Monti, M. M., & Yoshimi, J. (2026). Measuring conscious contents using EEG complexity. *In principle acceptance of Version 6 by Peer Community in Registered Reports*. <https://osf.io/msnzp>

RESEARCH FUNDING

Funding Consciousness Research with Registered Reports (#0593) Jan. 2023–Dec. 2026
Templeton World Charity Foundation / Center for Open Science / ASSC
Project: Measuring conscious contents using EEG complexity (Stage 1 IPA)
Awarded: \$31,936 USD

AWARDS

ASSC Student Travel Award May 2026
Association for the Scientific Study of Consciousness

CIS Summer 2026 Professional Development Award May 2026
University of California, Merced

BrainStorm Neuroscience Pitch Competition **Semi-finalist** June 2025
Mind Science
Project: Does brain activity cause consciousness? A TMS experiment

MacKenzie Scott Graduate Student Supplemental Travel Award May 2023
University of California, Merced

Student Poster Competition (**2nd place**) June 25, 2023
Association for the Scientific Study of Consciousness 26
Poster: Detecting differences in conscious contents using EEG complexity measures

PUBLIC TALKS

Measuring conscious contents using EEG complexity, *The Association for Mathematical Consciousness Science (AMCS) Models of Consciousness 2026*, Copenhagen, Denmark (October 12th - 16th, 2026).

Consciousness science: progress and problems, *Society for Brain Mapping and Therapeutics 21st Annual World Congress*, Los Angeles, CA (March 15, 2024) (**invited**).

Detecting differences in conscious contents using EEG complexity measures, *University of California, Los Angeles Department of Psychology MontiLab*, Zoom (December 11, 2023) (**invited**).

Integrated information theory and the testability of the silent neuron predictions, *Monash University School of Psychological Sciences MoNoC/Tsuchiya Lab*, Zoom (May 16, 2023) (**invited**).

Does brain activity cause consciousness? A TMS experiment, *University of California, Merced Department of Cognitive and Information Sciences Weekly Brownbag*, Merced, CA (April 10, 2023).

Simulating the perturbational complexity index at the edge of chaos, *University of California, Merced Department of Cognitive and Information Sciences Annual Project Mini-Conference*, Merced, CA (May 9, 2022).

Philosophical and scientific foundations of integrated information theory, *University of California, Merced Cognitive and Information Sciences Weekly Brownbag*, Merced, CA (April 25, 2022).

CONFERENCE POSTERS

Ponce de Leon, S., Backer, K. C., Monti, M. M., & Yoshimi, J. Measuring conscious contents using EEG complexity, *CogSci 26*, Rio de Janeiro, Brazil (July 22–25, 2026).

Ponce de Leon, S., Backer, K. C., Monti, M. M., & Yoshimi, J. Measuring conscious contents using EEG complexity, *Association for the Scientific Study of Consciousness 29*, Santiago, Chile (June 30–July 3, 2026).

Ponce de Leon, S., & Yoshimi, J. Does Husserlian phenomenology support the axiomatic framework of integrated information theory (IIT), *Association for the Scientific Study of Consciousness 28*, Heraklion, Crete (July 6–9, 2025).

Ponce de Leon, S., & Yoshimi, J. Integrated information theory (IIT) and the testability of the silent neuron predictions, *Association for the Scientific Study of Consciousness 27*, Tokyo, Japan (July 2–5, 2024).

Ponce de Leon, S., Backer, K. C., & Yoshimi, J. Detecting differences in conscious contents using EEG complexity measures, *Association for the Scientific Study of Consciousness 26*, New York, NY (June 23–25, 2023).

Ponce de Leon, S., Backer, K. C., & Yoshimi, J. Detecting differences in conscious contents using EEG complexity measures, *Aalto University School of Science, Department of Neuroscience & Biomedical Engineering 9th Science Factory: TMS–EEG Summer School and Workshop*, Espoo, Finland (May 27 – June 2, 2023).

GRADUATE STUDENT RESEARCHER APPOINTMENTS

University of California, Merced
 Measuring conscious contents using EEG complexity 08/2025–12/2025

TEACHING ASSISTANT APPOINTMENTS

University of California, Merced

Philosophy of Cognitive Science – COGS 110/PHIL 110 (~53 students)	01/2026–05/2026
Philosophy of Cognitive Science – COGS 110/PHIL 110 (~45 students)	01/2025–05/2025
Introduction to Neural Networks in Cognitive Science – COGS 103 (~45 students)	08/2024–12/2024
Introduction to Phenomenology – PHIL 150 (~24 students)	01/2024–05/2024
Consciousness in Philosophy & Cognitive Science – COGS 177/PHIL 173 (55 students)	08/2023–12/2023
Philosophy of Cognitive Science – COGS 110/PHIL 110 (62 students)	01/2023–05/2023
Introduction to Neural Networks in Cognitive Science – COGS 103 (~30 students)	08/2022–12/2022
Computational Cognitive Neuroscience – COGS 123/CSE 173 (39 students)	01/2022–05/2022
Introduction to Philosophy – PHIL 001 (42 students)	08/2021–12/2021

UNIVERSITY SERVICE

University of California, Merced

Lab Manager, Cognitive and Information Sciences Weekly Philosophy Lab Meetings	09/2023–05/2025
Professional Development Officer, CIS Graduate Student Group	08/2023–07/2024
Advisory Mentor, Mentorship for Undergraduates Program	02/2024–05/2024
Organizer, Cognitive and Information Sciences Weekly Brownbag Meetings	01/2023–05/2023

INDUSTRY EXPERIENCE

PMA Consultants, LLC

Senior Director, Applied AI	2026–Present
Senior Advisor, Innovation Strategy (Part-Time)	2021–2026
Senior Director, Product Management	2019–2021
Director, Product Design & Development	2016–2019
Senior Associate, UX Research & Design	2014–2016
Associate, UI Design & Customer Support	2013–2014
Senior Specialist, UI Design & Digital Marketing	2011–2013
Specialist, Technical Writing & UI Design	2009–2011

SKILLS & LANGUAGES

Programming: Python, R, Git, JavaScript, HTML, CSS, MATLAB, SQL, PHP, C++
Data Analysis: Bayesian Data Analysis, Generalized Linear Models, EEGLAB/ERPLAB, Information Visualization

Machine Learning: Artificial Neural Networks, Natural Language Processing, Reinforcement Learning
Languages: English (Native), Spanish (Basic)