

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

TRAINING & WORKSHOPS

CIFAR Neuroscience of Consciousness Winter School <i>The Canadian Institute for Advanced Research</i>	December 2–5, 2026
Shin-Socrates 2026 <i>Qualia Structure Project Meeting</i>	Sep. 29–Oct. 3, 2026
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 and auditory stimulus processing.*
- 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) <i>Templeton World Charity Foundation / Center for Open Science / ASSC</i> Project: Measuring conscious contents using EEG complexity (Stage 1 IPA) Awarded: \$31,936 USD	Jan. 2023–Dec. 2026
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AWARDS

ASSC Student Travel Award <i>Association for the Scientific Study of Consciousness</i>	May 2026
CIS Summer 2026 Professional Development Award <i>University of California, Merced</i>	May 2026
BrainStorm Neuroscience Pitch Competition Semi-finalist <i>Mind Science</i> Project: Does brain activity cause consciousness? A TMS experiment	June 2025
MacKenzie Scott Graduate Student Supplemental Travel Award <i>University of California, Merced</i>	May 2023
Student Poster Competition (2nd place) <i>Association for the Scientific Study of Consciousness 26</i> Poster: Detecting differences in conscious contents using EEG complexity measures	June 25, 2023

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 & WORKSHOP POSTERS

Ponce de Leon, S., Backer, K. C., Monti, M. M., & Yoshimi, J. Measuring conscious contents using EEG complexity, *Shin-Socrates*, Lake Toya, Japan (September 29–October 3, 2026)

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
Senior Specialist, UI Design & Digital Marketing
Specialist, Technical Writing & UI Design

2013–2014
2011–2013
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)