JOSIAH LOPEZ-WILD

DEPARTMENT OF LOGIC AND PHILOSOPHY OF SCIENCE

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AREAS OF SPECIALIZATION

Bayesian Epistemology, Decision Theory, Theory of Computation, Mathematical Logic

AREAS OF COMPETENCE

Philosophy of Statistics, Philosophy of Mathematics, Philosophy of Artificial Intelligence, Philosophy of Science

EDUCATION

2020–2026 Ph.D. in Logic and Philosophy of Science
University of California, Irvine

Dissertation: Foundations for Computable Bayesian Epistemology
Committee: Simon Huttegger (chair), Brian Skyrms, Toby Meadows, Jeffrey Barrett

Abstract: Bayesianism aims to provide a unified normative theory of belief and rational decision. However, there has been a concern among Bayesians that the theory makes implausibly strong assumptions about agents' cognitive power. How can Bayesianism be normative for agents like us, if we have no hope of satisfying its basic assumptions? In my dissertation I defend a new program I call *computable Bayesianism*. The program is a reformulation of classical Bayesianism via techniques from computable analysis, a rapidly growing branch of mathematics. I argue that it successfully incorporates more realistic limitations while also retaining sufficient generality to be philosophically fruitful. I prove computable versions of two major representation theorems from decision theory: the von Neumann-Morgenstern representation theorem for utility, and a qualitative probability representation theorem. I also define a prior-selection method that leverages algorithmic randomness, and study the Blackwell-Dubins "merging of opinions" theorem from the perspective of arithmetically definable sets.

2018-2020 M.A. in Philosophy
University of Wisconsin, Milwaukee

2014-2018 B.A. (Honors) in Philosophy
Northwestern University

PUBLICATIONS

1. Lopez-Wild, J. (2025) "A Computable von Neumann-Morgenstern Representation Theorem", *Synthese* 205 (182).

WORKING PAPERS (DRAFTS AVAILABLE)

1. JLW. "Computable Qualitative Probability", (under review).
2. JLW. "Computable Bayesian Epistemology", (under review).
3. JLW. "Testing for Priors".
4. Jeffrey Barrret, Eddy Keming Chen, and JLW. "Algorithmic Bohmian Mechanics".
5. JLW and Elijah Spiegel. "Verification, Falsification, and Merging".
6. Antoine Mercier, Josiah Lopez-Wild, and Elijah Spiegel. "Non-Computability of Some Inductive Logics".

REFEREED TALKS

2024 Qualitative Randomness
PSA Symposium on Algorithmic Randomness (organizer)

With Jeffrey Barrett, Simon Huttegger, Chris Porter, Francesca Zaffora-Blando

2024 Computable Bayesian Epistemology
Philosophy of Science: Past, Present, and Future, University of Minnesota

2020 A Can of Precisificational Worms
APA Eastern, Philadelphia

2019 A New Reading of Hume's Conceivability Principle
Graduate Philosophy Conference, University of Illinois at Urbana-Champaign

Prize for Best Essay

INVITED TALKS

2025 Generalized Dimensions and Effective Ergodic Measures
ICICL 2025, Drake University

2023 A Computable von Neumann-Morgenstern Representation Theorem
PFEW, Carnegie Mellon University

HONORS AND AWARDS

2025 Summer School Participant
Complex Systems Summer School
Santa Fe Institute

2024 Justine Lambert Prize
"A Computable von Neumann-Morgenstern Representation Theorem"

University of California, Irvine

Awarded by UCI LPS every two to four years for the best graduate paper dealing with foundational issues in the formal, natural, or social sciences.

2022 Summer Research Fellow
Patterns of Intelligent Behavior in Biological and Social Systems (PIBBSS)

2020 Peltz Memorial Award
University of Wisconsin, Milwaukee

Awarded annually by UWM philosophy for the best essay by a UWM philosophy graduate student.

TEACHING EXPERIENCE (AS LEAD INSTRUCTOR)

Making Modern Science
Summer 2024, Summer 2025
University of California, Irvine

Elementary Logic
2019–2020
University of Wisconsin, Milwaukee

TEACHING EXPERIENCE (AS TEACHING ASSISTANT)

Probability and Statistics in Social Sciences
Winter 2024, Spring 2024, Spring 2023

Introduction to Inductive Logic
Fall 2023, Winter 2023

Computer-Based Research in the Social Sciences
Spring 2022

Introduction to Symbolic Logic
Winter 2021, Fall 2020

Introduction to Psychology
Fall 2021

Introduction to Sociology
Winter 2026

SERVICE

2022–2025 TH!NK teaching program
Teaching elementary school children (approximately 10–11 years old) basic philosophical concepts, for two hours each week

2024–2025 Graduate Representative
Department of Logic and Philosophy of Science
Acts as a liaison between the graduate student community and LPS faculty, sits in on faculty meetings, organizes visit weekend, conducts surveys on graduate student satisfaction

2024 Member, Climate Committee
Department of Logic and Philosophy of Science
University of California, Irvine

Member of the LPS Climate Committee, which is responsible for organizing visit weekend, workshops to increase awareness of diversity and inclusion, social events, etc.

2022–2026 Organizer, UCI Formal Epistemology Reading Group
Department of Logic and Philosophy of Science
University of California, Irvine

Lead and selected readings for a weekly reading group that discussed research papers in Bayesian epistemology, decision theory, and related areas, with members from both UCI LPS and departments at other institutions.

Journal Reviewer: Philosophy of Science, Journal of Philosophical Logic.

GRADUATE COURSES TAKEN

– Bayesianism (Brian Skyrms & Simon Huttegger)
– Chance (Brian Skyrms & Simon Huttegger)
– Social Dynamics (Brian Skyrms & Simon Huttegger)
– Homotopy Type Theory (Toby Meadows)
– Effective Descriptive Set Theory (Toby Meadows)
– Proof Theory (Toby Meadows)
– Forcing (Toby Meadows)
– Category Theory (Toby Meadows)
– Defending the Axioms (Toby Meadows)
– Naming and Necessity (Toby Meadows & Kai Weihmeier)
– Evolution of the Social Contract (Brian Skyrms & Simon Huttegger)
– Machine Learning (Stephen Mandt)
– History of Analytic Philosophy (Jeremy Heis)
– Philosophical Foundations of Quantum Mechanics (Jeff Barrett)
– Philosophy of Cosmology (Jim Weatherall)
– Philosophy of Science Foundations (P. Kyle Stanford)

REFERENCES

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