

Clara Bradley

Department of Logic and Philosophy of Science
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Research Interests

- AOS Philosophy of Physics, Philosophy of Science
AOC Logic, Formal Epistemology, Social Epistemology

Education

- 2019 – present **University of California, Irvine**
Department of Logic and Philosophy of Science
Ph.D. Philosophy (Expected Spring 2024)

Graduate Emphasis in Physics
Dissertation: “Surplus Structure and Equivalence in the Context of the
Costrained Hamiltonian Formalism”
Advisor: James Owen Weatherall
- 2015 – 2019 **University of Bristol**
M.Sci. Physics and Philosophy
First-Class Honours

Publications

- 2023 **The Representational Role of Sophisticated Theories**
Philosophy of Science (forthcoming).
- 2022 **Mathematical Responses to the Hole Argument: Then and Now**
with James Owen Weatherall.
Philosophy of Science, 89 (5):1223-1232. <https://doi.org/10.1017/psa.2022.58>.
- 2021 **The Non-Equivalence of Einstein and Lorentz**
The British Journal for the Philosophy of Science, 72(4):1039-1059.
<https://doi.org/10.1093/bjps/axz014>.
Editors' Choice Article.

- 2020 **On Representational Redundancy, Surplus Structure, and the Hole Argument**
with James Owen Weatherall.
Foundations of Physics, 50:270–293. <https://doi.org/10.1007/s10701-020-00330-y>.

Works in Progress

The Physical Significance of Partial Observables: Connecting Gauge and Surplus Structure

Under Review [draft available].

Do First-Class Constraints Generate Gauge Transformations? A Geometric Perspective

In Preparation.

The Many Independence Theses

In Preparation.

A Paper on Conservation of Momentum in AQUAL (with James Owen Weatherall)

In Preparation.

Invited Talks

- May 2024 Title TBA
New Directions in the Foundations of Physics
- May 2023 Do First-Class Constraints Generate Gauge Transformations? A Geometric Perspective
Quantum Spacetime in the Cosmos Conference, Perimeter Institute
- November 2022 Do First-Class Constraints Generate Gauge Transformations? A Geometric Perspective
Foundations of Physics @ Harvard Series (Online)
- February 2022 Partial Observables and Representational Redundancy
University of Bristol Philosophy of Science Seminar (Online)
- June 2019 The Non-Equivalence of Einstein and Lorentz
Oxford Philosophy of Physics Group, Oxford
- September 2018 The Non-Equivalence of Einstein and Lorentz
UC Irvine Philosophy of Physics Research Group

Refereed Talks

- July 2023 Do First-Class Constraints Generate Gauge Transformations? A Geometric Perspective
21st European Conference on Foundations of Physics, Bristol
- November 2022 The Representational Role of Sophisticated Theories
PSA 28th Biennial Meeting, Pittsburgh
- November 2021 Mathematical Responses to the Hole Argument: Then and Now
PSA 27th Biennial Meeting, Baltimore
- October 2021 The Significance of Isomorphic Models
20th European Conference on Foundations of Physics, Paris
- July 2017 The Non-Equivalence of Einstein and Lorentz
The British Society for the Philosophy of Science Annual Conference, Edinburgh

Teaching Experience

Instructor of Record, UC Irvine

- Fall 2023 Introduction to Logic
- Teaching Assistant, UC Irvine**
- Winter 2023 Philosophy of Sex (Cailin O'Connor)
- Fall 2022 Computer-Based Research in the Social Sciences
- Spring 2021, Spring 2022 The Good Life (James Owen Weatherall and Cailin O'Connor)
- Winter 2021 Critical Reasoning (Daniel Herrmann)
- Winter 2020 Scientific Inquiry (JB Manchak)

Guest Lecturer

- Spring 2023 Structure and Equivalence, UC Santa Barbara (Thomas Barrett)

Awards, Grants and Recognition

- 2019–2025 Social Science Merit Scholarship (University of California, Irvine)
- 2019–2022 Provost Fellowship \$20,000 (University of California, Irvine)

- 2019 Graduate Dean's Recruitment Fellowship \$5000 (University of California, Irvine)
- 2019 Peter Fowler Memorial Prize for Continued Excellence (University of Bristol)
- 2019 Philosophy Finalist Prize (University of Bristol)
- 2018 Undergraduate Faculty of Science Award (University of Bristol)

Professional Service

- August 2023 Panelist and Speaker at LPS Summer Diversity Program (UC Irvine)
- 2022–2023 LPS Graduate Representative (UC Irvine)
Communicate department matters between faculty and graduate students, coordinate graduate student participation in department colloquia, coordinate prospective student visit weekend, organize graduate student events.
- 2018–2019 Administrator for the Center for Science and Philosophy (University of Bristol)

Journal Referee: *Philosophy of Science, The British Journal for the Philosophy of Science, Studies in History and Philosophy of Science, European Journal for the Philosophy of Science, Philosophy of Physics.*