

# Clara Bradley

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## Research Interests

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

## Employment

- Jan 2025 –    **Lecturer, University College London**  
Department of Philosophy

## Education

- 2019 – 2024    **University of California, Irvine**  
Department of Logic and Philosophy of Science  
Ph.D. Philosophy (October 2024)
- Graduate Emphasis in Physics  
Dissertation: “Symmetry and Equivalence in the Constrained Hamiltonian Formalism”  
Advisor: James Owen Weatherall
- 2015 – 2019    **University of Bristol**  
M.Sci. Physics and Philosophy  
*First-Class Honours*

## Publications

- 2025    **Do First-Class Constraints Generate Gauge Transformations? A Geometric Resolution**  
*The British Journal for the Philosophy of Science, Forthcoming.*  
<https://doi.org/10.1086/739597>.

- 2025 **Excess Structure in the Constrained Hamiltonian Formalism**  
*Philosophy of Science, Forthcoming.* <https://doi.org/10.1017/psa.2025.10187>.
- 2025 **The Relationship Between Lagrangian and Hamiltonian Mechanics: The Irregular Case**  
*Philosophy of Physics, 3(1): 9, 1-23.* <https://doi.org/10.31389/pop.197>.
- 2023 **The Representational Role of Sophisticated Theories**  
*Philosophy of Science, 91(5): 1478-1487.* <https://doi.org/10.1017/psa.2023.131>.
- 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>.

## Book Reviews

- 2025 **“Background Independence in Classical and Quantum Gravity” by James Read**  
*Philosophy of Science, 92(4): 1034-1038.* <https://doi.org/10.1017/psa.2025.3>

## Works in Progress

### **We Have Never Been Sophisticated (with James Owen Weatherall)**

Under Review [draft available].

### **Revisiting the ‘Hole Argument’ and the ‘Problem of Time’**

In Preparation.

### **A paper on dynamic deliberation and game-theoretic solution concepts (with Calum McNamara)**

In Preparation.

## Invited Talks

- October 2025 The Relationship Between Lagrangian and Hamiltonian Mechanics: The Irregular Case  
*MCMP Colloquium in Logic and Philosophy of Science, Munich*
- September 2025 The Difference Between Reduction and (Internal) Sophistication Is Pragmatic  
*Cambridge-LMU workshop, Cambridge*
- June 2025 Revisiting the ‘Hole Argument’ and the ‘Problem of Time’  
*BLOC Workshop, KCL*
- May 2025 The Relationship Between Lagrangian and Hamiltonian Mechanics: The Irregular Case  
*Popper Seminar, LSE*
- April 2025 The Relationship Between Lagrangian and Hamiltonian Mechanics: The Irregular Case  
*CamPos, Cambridge*
- March 2025 Are Reduction and Sophistication Always Viable Alternatives?  
*University of Bristol Research Seminar*
- March 2025 Are Reduction and Sophistication Always Viable Alternatives?  
*Oxford Philosophy of Physics Seminar*
- May 2024 The Relationship Between Lagrangian and Hamiltonian Mechanics: The Irregular Case  
*New Directions in the Foundations of Physics Conference*
- October 2023 The Relationship between Lagrangian and Hamiltonian Mechanics: The Irregular Case  
*Symmetry and Structure Workshop, Irvine*
- 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, Irvine*

## Refereed Talks

- November 2024 The Extended Hamiltonian is Not Trivial  
*PSA 29th Biennial Meeting, New Orleans*
- 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*

## Outreach Talks

- January 2026 What Makes Science, “Science”?  
*Westminster School, London*
- December 2025 Philosophy of Physics and Space-Time  
*Oxford Continuing Education Day, Oxford*

## Teaching Experience

### Lecturer, UCL

- 2025, 2026 Philosophy of Space and Time
- 2025, 2026 Formal Epistemology

2025 Science and Pseudoscience

**Instructor of Record, UC Irvine**

Fall 2023 Introduction to Logic  
*Outstanding Teaching Award*

**Guest Lecturer**

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

**Awards, Grants and Recognition**

2024 Outstanding Scholarship Award \$500 (University of California, Irvine)

2024 Justine Lambert Paper Prize \$1000 (University of California, Irvine)

2023 Outstanding Teaching Award for Introduction to Logic (University of California, Irvine)

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**

2025-26 Departmental Tutor for Year 2 Undergraduates (UCL)

2025-26 Head of Student Engagement (UCL)

2025-26 Department Events Liaison (UCL)

August 2023 Panelist and Speaker at LPS Summer Diversity Program (UC Irvine)

2022–2023 LPS Graduate Representative (UC Irvine)

2018–2019 Administrator for the Centre for Science and Philosophy (University of Bristol)

Referee for: *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*, *Foundations of Physics*, *Cambridge Elements*.