Ryan O'Loughlin
Curriculum Vitae

Area of Specialization: Philosophy of Science

Areas of Competence: Environmental Philosophy, Logic, and Philosophy of Technology (AI ethics)

Department of Philosophy
Queens College CUNY
65-30 Kissena Blvd
Flushing NY 11367

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EMPLOYMENT

2025- **CUNY Graduate Center**
Doctoral faculty member in Earth and Environmental Sciences

2022- **Queens College City University of New York**
Assistant Professor of Philosophy

EDUCATION

2017-2022 **Ph.D.** **Indiana University-Bloomington (June 2022)**
History and Philosophy of Science
Dissertation: "The Role of Model Intercomparisons in Climate Science."
Chair: Elisabeth Lloyd

2015-2017 **M.A.** **Ohio University**
Philosophy
Thesis: "Thomas Kuhn and Perspectival Realism."

2010-2014 **B.S.** **University of Wisconsin-Stevens Point**
Sociology (cum laude)

PUBLICATIONS

Peer-reviewed Journal Articles

2026 **O'Loughlin, R.,** and Visioni, D. "When are small-scale field experiments in solar geoengineering worth pursuing?" *European Journal for Philosophy of Science*.16:54. https://doi.org/10.1007/s13194-026-00762-9

2025 **O'Loughlin, R.,** Li, D., Neale, R., and O'Brien, T.A. "Moving beyond post hoc explainable artificial intelligence: a perspective paper on lessons learned from dynamical climate modeling," *Geoscientific Model Development*, 18, 787–802, https://doi.org/10.5194/gmd-18-787-2025

2024 O'Loughlin, R., "Why we need lower-performance climate models," in *Climatic Change*, 177(2), 1-21. https://doi.org/10.1007/s10584-023-03661-7

2023 O'Loughlin, R. "Diagnosing errors in climate model intercomparisons," in *European Journal for Philosophy of Science.* 13(2). 1-29. https://doi.org/10.1007/s13194-023-00522-z

2022 **O'Loughlin, R.**, and Dan Li. "Model Robustness in Economics: the admissibility and evaluation of tractability assumptions," in *Synthese.* 200, 1-23. https://doi.org/10.1007/s11229-022-03608-y

2021 O'Loughlin, R. "Robustness Reasoning in Climate Model Comparisons" in *Studies in History and Philosophy of Science: Part A.* 85, 35-43. https://doi.org/10.1016/j.shpsa.2020.12.005

2020 O'Loughlin, R. "Seepage, Objectivity, and Climate Science" in *Studies in History and Philosophy of Science: Part A*. 81, 74-81. https://doi.org/10.1016/j.shpsa.2019.07.002

Invited papers, reviews, and other publications

Forth. **O'Loughlin, R**., Stuart Gluck, and Elisabeth Lloyd. " Why practice-oriented philosophy of the geosciences is essential: The case of "Model Robustness" *Comprehensive Philosophy of Science: Philosophy of the Geosciences*, edited by Miguel Ohnesorge and Aja Watkins.

2025 O'Loughlin, Ryan. [book review] "Values in Science, written by Kevin Elliott", *Journal of Moral Philosophy*. https://doi.org/10.1163/17455243-20221202

2021 O'Loughlin R. "The Influence of Climate Contrarianism on Scientific Research" in the Fall issue (No. 104) of the Canadian Society for History and Philosophy of Science's *Communiqué* https://cshps.ca/no-104-autumn-automne-2021/

Public-facing writing

2025 O'Loughlin, Ryan. "Why imperfect climate models are more helpful than you think." *Yale Climate Connections*. https://yaleclimateconnections.org/2025/06/why-imperfect-climate-models-are-more-helpful-than-you-think/

RESEARCH GRANTS

2026 Principal Investigator (PI), amount $139k, Alfred P. Sloan Foundation, "The Productive Role of Error in AI-Driven Modeling" (grant # forthcoming), 2026-2028.

AWARDS AND SMALL GRANTS

2026 Beyond the Ivory Tower Writing Workshop ($2000, funded by the John Templeton Foundation). [Training for public-facing writing]. Held at Northeastern University, June 5th and 6th.

2025 PSC-CUNY Cycle 56 Research Grant, Summer ($3500)

2023 Queens College Research Enhancement Grant, for travel to NCAR in Spring 2024 ($1000); additional $2500 provided by Mellon Foundation Fund

PSC-CUNY Cycle 54 Research Grant, Summer ($3500)

2022 Victor E. Thoren Graduate Student Research Fellowship ($3000), awarded to an exceptional student near the conclusion of their graduate career. Indiana University, HPSC dept.

2021 Travel Support from the National Science Foundation (Philosophy of Science Association Biennial Meeting)

2019 APA Graduate Student Stipend Award (Pacific Division American Philosophical Association meeting)

2018 Travel Support from the National Science Foundation (Philosophy of Science Association Biennial Meeting)

Indiana University's Graduate and Professional Student Government Travel Award for travel to 2019 Pacific Division American Philosophical Association meeting

2017 Mary Spetnagel Philosophy Award for outstanding accomplishments in the second year of graduate study. Ohio University, Department of Philosophy

Outstanding Teaching Assistant Award. Ohio University, Department of Philosophy

2016 Idus Murphree Award for outstanding performance in the first year of graduate study. Ohio University, Department of Philosophy

Student Achievement Award for work in scientific modeling and fictions; nominated by Yoichi Ishida. Ohio University, Department of Philosophy

TALKS AND PRESENTATIONS

Invited Talks

2026 Participant in the "Weather and Climate Modeling: Value Across Disciplines" panel at the LEAP (Learning the Earth with Artificial Intelligence and Physics) 6th Annual Meeting. Oct. 5-7, at Teachers College (Columbia University), NYC.

2026 Keynote talk, "Trust without Truth: how philosophy can help science navigate uncertainty." LaGuardia Philosophy and Social Science Conference. May 11th at LaGuardia Community College, Queens, NY

2026 "From Models to Field Experiments: When Is Solar Geoengineering Research Worth Doing?" Colloquium talk at CUNY Grad Center, Department of Earth and Environmental Science. April 23, New York, NY

2025 "From Robustness to Antifragility: A Philosophical Perspective on Climate and Earth System Models." Colloquium talk at Brown University's Department of Earth, Environmental, and Planetary Sciences. Sept. 25, Providence, RI

"Convergence, Divergence, and Trust in Climate Models." Seminar program for the Environmental Science Initiative at the CUNY Advanced Science Research Center. (Mar. 12th), New York, NY.

2023 "A philosophical take on error and lower-skill models in climate science." Queens College School of Earth and Environmental Sciences Colloquium (Sept. 27th), Queens, NY

"Why we should want models to disagree: the value of "bad" models in climate science." NASA Goddard Institute for Space Studies (May 3), New York, NY

2022 "Why we should want models to disagree: the value of error diagnosis and low-skill models in climate science." National Center for Atmospheric Research, Climate & Global Dynamics lab (Oct. 25) Boulder, CO; presented virtually

Peer-Reviewed Conference Presentations

2026 "When Are Small-Scale Field Experiments in Solar Geoengineering Worth Pursuing?" Resources for the Future (RFF) and Harvard SRM Research Workshop. Sept 9-10, in Washington D.C. (Funding awarded for travel and lodging)

"Antifragility in Scientific Modeling." Asian Philosophy of Science Association's First Meeting, in Singapore, July 22-24.

*"When Are Small-Scale Field Experiments in Solar Geoengineering Worth Pursuing?" Gordon Research Conference on Climate Engineering. June 21-26, in Newry, Maine.

Φ"Earning Credibility in AI-Driven Climate Science: The Role of Component-Level Understanding." European Geophysical Union (EGU) Annual Conference. May 3-8. Presented virtually.

2025 "When Are Small-Scale Field Experiments in Solar Geoengineering Worth Pursuing?" World Climate Research Programme's Virtual Workshop Series on Stratospheric Aerosol Injection, Oct. 6-9.

*"Moving beyond post hoc Explainable Artificial Intelligence: lessons learned from dynamical climate modeling." Machine Learning for Actionable Climate Science Gordon Research Conference, (June 22-27), Smithfield Rhode Island.

2024 *"Can philosophers help make advances in climate modeling?" Philosophy of science Past, Present, and Future, Minnesota Center for Philosophy of Science, (Oct. 17-19), Minneapolis, MN.

2023 "Can subpar models contribute to climate justice? The case of geoengineering research," Society for the Social Studies of Science 2023 conference (Nov. 8 -11) Honolulu, HI.

"The value of error and failure in climate modeling: a philosophical perspective." World Climate Research Programme Open Science Conference, (Oct. 23-27), in Kigali Rwanda; presented virtually.

"Diagnosing Errors in Climate Model Intercomparisons," Long Island Philosophical Society, Annual Conference (April 1st) at St. John's University, Queens NY.

2022 "Competition and pluralism in climate modeling," Philosophy of Science Association 2022 Biennial meeting (Nov. 10-13) in Pittsburgh, PA

2021 "Tractability Assumptions, Holism, and Model Robustness." Philosophy of Science Association 2020 Biennial meeting (Nov. 11-14) in Baltimore, MD

"Historical and Contemporary Climate Model Intercomparisons: Lessons for Pluralism in Modeling." 8th Biennial Meeting of the European Philosophy of Science Association (Sept. 15-18); presented virtually

"Climate model comparisons: history and philosophical implications." Canadian Society for the History and Philosophy of Science Annual Meeting (May 29 – June 2) held virtually

"Can we infer an absolute timescale via local data? Lessons from Paleoclimatology," [paper co-authored with Dan Li]. Boston University Philosophy Grad Student Conference (April 22-23) held virtually

2019 "Climate Models: Robust and Explanatory." 13th Graduate Climate Conference (Nov. 7-10) in Woods Hole, MA

"Objectivity, Seepage, and Climate Science." Pacific Division American Philosophy Association meeting (April 17-20) in Vancouver, BC

"Objectivity, Seepage, and Climate Science." 3rd IU Graduate Student Conference on the History and Philosophy of Science and Medicine (March 29th-30th), in Bloomington, IN

2018 *"A challenge to Seepage in the Global Warming 'hiatus'." American Geophysical Union meeting (Dec. 10-14), in Washington D.C.

*"A challenge to Seepage in the Global Warming 'hiatus'." Philosophy of Science Association Biennial meeting (Nov. 1-4) in Seattle, WA

2016 "The Problem with Regarding Models as Fictions." Mid-South Philosophy Conference (Feb. 19-20) at Rhodes College in Memphis, TN

*Poster Presentation
Φ Invited to submit

Lunchtime & interest group talks

2025 [With Dan Li] "Moving beyond post-hoc XAI: A perspective paper on lessons learned from dynamical climate modelling" (Feb. 12th). Climate and Global Dynamics Machine Learning group. Boulder, CO; presented virtually

2024 "The Ethics of Researching Stratospheric Aerosol Injections," at NASA Goddard Institute for Space Studies (Dec. 4th), New York, NY

2024 "Value-laden research and Climate Interventions," at NASA Goddard Institute for Space Studies (May 29th), New York, NY

2024 "Philosophy and Modeling Earth's Future," at Queens College, Social Science Faculty Research Seminar (April 8th), Flushing, NY

2023 [With Dan Li] "Holism in Climate Modeling" at NASA Goddard Institute for Space Studies (Dec. 20), New York, NY

RESEARCH EXPERIENCE & TRAINING

2018-2021 Research Assistant to Prof. Elisabeth Lloyd, Indiana University Bloomington.

2019&2021 Research Assistant for Elisabeth Lloyd's "A Methodological Study of Big Data and Atmospheric Science," (NSF #1754740) at the National Center for Atmospheric Research, Boulder, CO.

TEACHING EXPERIENCE & PEDAGOGY

Queens College-City University of New York

Intro to Philosophy (FA22, SP23, FA23, SP24, FA24, SP25, SU25, FA25, SU26)

Philosophy of the Environment (FA22, SP23, SP24, FA24, FA25)

Logic and Scientific Reasoning (FA26)

Philosophy of the Natural Sciences (SP25)
-cross-listed philosophy and environmental sciences course, special topic: Pluralism and Indigenous perspectives on climate science

Problems in Philosophy: Why should we trust (climate) models if they're all wrong? (FA23)
-cross-listed philosophy and environmental sciences course

Pedagogy

2026 Critical AI Literacy Institute (CALI) Faculty Fellowship ($6000 stipend) – Ecological Implications track

2025 Open Educational Resource Winter Intensive Faculty Fellowship ($2000 stipend)

Indiana University-Bloomington

As main instructor:

Geoengineering and Climate Change: the ethical, the practical, and the wicked, a self-designed undergraduate course. FA21. Selected by the Board of Educational Programmers and the Collins Faculty Curriculum Committee. Collins Living and Learning Center

Scientific Reasoning, an undergraduate course. SP18, FA19, SP20*, Fall 2020*, SP21*. Department of History and Philosophy of Science and Medicine

*Taught online, combination of synchronous and asynchronous class structure

Environmental Science, a 2-week summer course for high school students. Summer 2019. Co-taught. Foundations in Science and Mathematics Program

As teaching assistant:

The Intricate Human: Global Climate Change: Linking Human and Planetary Health. SP22. (Andrew Libby and Michael Wasserman).

Evolution and Creationism. FA17. (Elisabeth Lloyd). Course was a cross-listed Social and Historical Studies College of Arts and Sciences course

Pedagogy

2021 Intercultural Competence Certificate. Professional training to develop skills in intercultural communication and collaboration.

Ohio University

As main instructor:

Principles of Reasoning, SU16, FA16, and SP17. Dept. of Philosophy

As teaching assistant:

Principles of Reasoning. FA15 (Yoichi Ishida) and SP16 Alfred Lent). Dept. of Philosophy

SERVICE TO THE DEPARTMENT AND COLLEGE

Queens College-City University of New York

2026-2027 BA/MA Program Director and Graduate Student Advisor
CUNY Career Success Fellow ($1000 stipend)

2025-2026 Member of Personnel and Budget committee
Academic Renewal Initiative (representative for School of Social Sciences; $3000 stipend)
PSC Grant Reviewer: Anthro, Classics, Philosophy, Linguistics (3 total)

2024-2025 Member of Personnel and Budget committee
Advisor for master's thesis (Jonathan Baruch, now at UPenn Law)
Reviewer for Social Science Research Enhancement Grants (13 total)
PSC Grant Reviewer: Anthro, Classics, Philosophy, Linguistics (2 total)

2023-2024 Member of Personnel and Budget committee
PSC Grant Reviewer: Anthro, Classics, Philosophy, Linguistics (3 total)
Philosophy Club: Truth and Justice Panel (March 10th)

2022-2023 External Member of SEES search committee
Philosophy lecturer-line search committee member
Advisor for undergraduate senior thesis (Leonard Wu)
Co-led (with Dan Li) Philosophy Club discussion:
"How not to be replaced by AI: decision making and human values in a changing world" (May 10th)

Indiana University-Bloomington

2020-2022 IU HPS Graduate Student Weekly Writing Group (Organizer)
2018-2019 Chair (President), IU HPS Graduate Student Association
2017-2018 Social Chair, IU HPS Graduate Student Association

PROFESSIONAL SERVICE AND AFFILIATIONS

Referee for Research Grants

Dutch Research Council (2026)

Swiss National Science Foundation (2024)

Referee for Academic Journals

Philosophy of Science (2025, 2026); *Synthese (2025, 2026), British Journal for the Philosophy of Science* (2021, 2024, 2025, 2026); *Science of the Total Environment* (2021); *European Journal for Philosophy of Science* (2023, 2024, 2025, 2026); *Journal for General Philosophy of Science* (2025, 2026); *Frontiers in Climate* (2023); Artificial Intelligence for Earth Systems (2026)

Conference Planning, Chairing, and Commentary

2024 Eastern Division APA. New York, NY. Jan. 15-18. Commentary for Ezekial Vergara's "Just Cause, Economic Sanctions, and Climate Change."

2022 American Geophysical Union 2022 Meeting. Convener for session "Making Climate Models & Data Actionable: Evaluating and Quantifying Uncertainty in Climate Models and Emulators"

2021 Philosophy of Science Association 2020 Biennial Meeting. Chair for session, "Why Trust Science?"

2021 Canadian Society for the History and Philosophy of Science. Chair for session on climate science and policy

IU HPS Workshop on Ethical, Epistemological, and Historical Perspectives on Public Health and Wellness (program committee)

2020 Central Division APA. Chicago, IL, Feb. 26-29. Commentary for Corey Dethier's "Statistically indistinguishable ensembles and the evaluation of climate models"

2019 IU HPS Women's Conference. Bloomington, IN, Oct. 26th (Co-lead organizer with Luma Melo)

3rd Annual IU HPS grad student conference. Bloomington, IN, March 29-30th. Program committee and commentary for Ilyas Manakkadavan's "New Reproductive Technology: Medical Discourse, Belief and Faithful Reasoning: 'Islamic' Response from Muslims of Kerala"

2018 2nd IU Annual IU HPS grad student conference. Bloomington, IN, March 23-24th. Program committee and commentary for Mousa Mohammadian's "From Peirce's Abduction to Lipton's Inference to the Best Explanation: Two Historical Developments Fill the Gap"

Memberships

Philosophy of Science Association
European Philosophy of Science Association
American Philosophical Association
American Geophysical Union
Society for the Social Studies of Science

Outreach

CUNY Climate Consortium (C3) (2023 - present)
Science Fest at Indiana University-Bloomington (2017, 2018)
Makah Water Foundation in Cameroon, Africa. Study abroad volunteer trip (Winter 2013)

LANGUAGES

English (native)
Mandarin Chinese (lower-intermediate proficiency in both speaking and reading)