

AJA WATKINS

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RESEARCH AREAS

Areas of Specialization: Philosophy of science (climate science, historical sciences, biology), especially issues related to models and data

Areas of Competence: Feminist philosophy; science and values; bioethics; environmental ethics; logic

EDUCATION

Boston University *2018-2023 (expected)*
Ph.D. Philosophy (Candidate)
Dissertation advisor: Alisa Bokulich
Dissertation: Paleoclimate Analogues as Climate Models: Implications for Philosophy and Scientific Practice

Northeastern University *2013-2018*
B.S. Philosophy and Mathematics
Minor in Law and Public Policy

PUBLICATIONS

Refereed Articles

- [6] Watkins, A. (2021). The epistemic value of the living fossils concept. *Philosophy of Science*, 88(5), 1221-1233. doi: 10.1086/714875
- [5] Watkins, A. (2021). Multi-model approaches to phylogenetics: Implications for idealization. *Studies in History and Philosophy of Science Part A*, 90:285–297. doi: 10.1016/j.shpsa.2021.10.006
- [4] Watkins, A. (2021). Reevaluating the grandmother hypothesis. *History and Philosophy of the Life Sciences*, 43(3), 103. doi: 10.1007/s40656-021-00455-x
- [3] Watkins, A. (2021). Development and microbiology. *Biology & Philosophy*, 36(4), 34. doi: 10.1007/s10539-021-09809-y
- [2] Watkins, A. (2021). Testing for phenotypic plasticity. *Philosophy, Theory, and Practice in Biology*, 13, 1–23. doi: 10.3998/ptpbio.16039257.0013.003
- [1] Watkins, A., & Bocchi, F. (2020). Pathogen versus microbiome causation in the holobiont. *Biology & Philosophy*, 35(1), 7. doi: 10.1007/s10539-019-9709-8

Invited Articles & Reviews

- [5] (forthcoming in *The SAGE Encyclopedia of Theory in STEM*) “Data Models.” with Alisa Bokulich
- [4] Watkins, A. (2021). Review: *The Genesis Quest: The Geniuses and Eccentrics on a Journey to Uncover the Origin of Life on Earth* by Michael Marshall. *The Quarterly Review of Biology*, 96(3), 211–211. doi: 10.1086/716130
- [3] Watkins, A., & Smead, R. (2020). Review: *The Origins of Unfairness: Social Categories and Cultural Evolution*, Cailin O’Connor. Oxford University Press, 2019, 256 pages. *Economics & Philosophy*, 36(2), 324–330. doi: 10.1017/S026626712000005X
- [2] Hepçaylayan, C., Watkins, A., & Powell, R. (2020). What is Paradoxical About ‘Fermi’s Paradox’? *Acta Biotheoretica*, 68(4), 469–477. doi: 10.1007/s10441-020-09376-x
- [1] Zucker, J., Rassaby, D., Watkins, A., & Smead, R. (2019). Bargaining and Intersectional Disadvantage: Reply to O’Connor, Bright, and Bruner. *Social Epistemology Review and Reply Collective*, 8 (7): 1-8. <https://wp.me/p1Bfg0-4ei>

In preparation

(undergoing minor revisions) “Androcentrism in Biological Typing”

(undergoing minor revisions) “Are We in a Sixth Mass Extinction? The Challenges of Answering and Value of Asking” (with Federica Bocchi, Alisa Bokulich, Leticia Castillo Brache, & Gloria Grandpierre)

(under review after R&R) “Using Paleoclimate Analogues to Inform Climate Projections”

(under review) “Scaling Procedures in Climate Science: Using Temporal Scaling to Identify a Paleoclimate Analogue”

(draft) “When are fossils data?”

(draft) “Sex eliminativism” (with Marina DiMarco)

DISSERTATION SUMMARY

My dissertation lies at the intersection of philosophy of climate science, philosophy of the historical sciences, and philosophy of model-based science. I focus on how scientists use episodes of climate change in Earth’s deep past that significantly resemble incipient climate change (“paleoclimate analogues”) to inform their climate projections. I argue that we should conceptualize paleoclimate analogues as kind of climate model – a naturally-occurring, full-size, concrete model – and that viewing paleoclimate analogues through this lens has important philosophical implications. It follows, for instance, that the usefulness of models does not depend on our ability to experimentally manipulate them (we cannot manipulate the deep past). I also argue that the historical sciences can be predictive: they can use the *past as a guide to the future*. I give several recommendations for scientists, including some guidance on how to process paleoclimate data in order for it to be used to inform our climate projections. I also suggest that paleoclimate analogues should be used locally, on the scale of particular regions or ecosystems, rather than globally.

REFEREED PRESENTATIONS

(2022, November – *upcoming*) Sex eliminativism. Philosophy in Biology and Medicine (PhilIn-BioMed) Network Meeting – flash talk. *with Marina DiMarco*

(2022, November – *upcoming*) When are fossils data? Philosophy of Science Association Biennial Meeting – Society for Philosophy of Science in Practice Cognate Session on “Beyond Incompleteness: New Perspectives on Fossil Data.”

(2022, August – *upcoming*) Multi-Proxy Paleoclimate Reconstructions: Consilience, Robustness, and Calibration. The Future of the Past: Philosophical Issues in the “Historical” Sciences at The Hebrew University of Jerusalem.

(2022, July) Scale Models in Climate Science: Using Temporal Scaling to Identify a Paleoclimate Analogue. Society for Philosophy of Science in Practice Biennial Meeting.

(2022, June) Climate Data and Paleoclimate Proxy Data: A Comparison of Measurement Processes. Measurement at the Crossroads: Measuring and Modeling.

(2022, April) Scaling Procedures in Climate Science: Using Temporal Scaling to Identify a Paleoclimate Analogue. Scientific Understanding and Representation (SURE) Annual Workshop.

(2022, March) The Past is Key to the Future: Paleoclimate Analogues for Contemporary Climate Change. Annual Notre Dame History and Philosophy of Science, Technology, and Values (ND HPSTV) Graduate Conference.

(2021, December) Fossils as Data Models. 3rd Palaeontological Virtual Congress.

(2021, November) The Epistemic Value of the Living Fossils Concept. Contributed paper at Philosophy of Science Association Biennial Meeting.

(2021, November) Using Temporal Scaling to Establish a Paleoclimate Analogue. Philosophy of Science Association Biennial Meeting - Poster Session.

(2021, September) The Past as Key to the Future: The Paleoclimate as an Analogue Model for Contemporary Climate Change. European Philosophy of Science Association Biennial Meeting.

(2021, August) The Earth as its Own Analogue Model: How Paleoclimate Data Inform Climate Projections. Integrated History and Philosophy of Climate Data Conference at the Oeschger Centre for Climate Change Research at the University of Bern.

(2021, July) Analogue Models in Paleontology. International Society for the History, Philosophy, and Social Studies of Biology Biennial Meeting.

(2021, May) Accommodating horizontal inheritance in phylogenetics. Canadian Society for the History and Philosophy of Science Annual Meeting.

(2021, May) Using Temporal Scaling to Establish Paleoclimate Analogues. The Geological Society conference on Climate Change in the Geological Record.

(2021, May) Living Fossils as Paleoclimate Proxies: The Case of *Ginkgo biloba*. Philosophy of Plant Biology Workshop.

(2021, April) Multi-Model Approaches to Phylogenetics and the Purposes of Idealization. Scientific Understanding and Representation (SURE) Annual Workshop.

(2021, January) Using Temporal Scaling to Establish a Paleoclimate Analogue. Philosophy of Science Association - Virtual Poster Session.

(2020, June) Accommodating horizontal inheritance in phylogenetics. Philosophy of Biology at the Mountains - on Zoom.

(2020, February) Criticizing inferiorizing science. Colloquium paper presented at the American Philosophical Association Central Division Meeting.

(2019, November) A new defense of the grandmother hypothesis. Paper presented at the Northern New England Philosophical Association Annual Conference.

(2019, July) Deontic logic and ‘ought implies can.’ Poster presented at the Rocky Mountain Ethics Congress.

COMMENTATING & CHAIRING

(2022, May) Echo Chambers & Political Thought (Mind and Morality Lab, BU): Chair

(2021, November) Philosophy of Science Association: Chair

(2021, January) Eastern APA: Commentator (“Ontology Meets Logic: A Defense of Ontological Pluralism,” Jun Young Kim) and Chair

(2020, June) Athena in Action: Lead Discussant (“Conceptual Engineering: Not What It Seems,” Ari Koslow)

(2020, March) Pacific APA: Commentator (“Rational Aversion to Information,” Sven Neth); cancelled due to COVID-19

(2020, January) Eastern APA: Commentator (“The Residual Access Problem,” Sharon Berry)

(2019, August) Rocky Mountain Ethics Congress: Commentator (“Can Desert be Geometrized?,” Stephen Kershnar)

(2019, May) Logic, Epistemology, and Metaphysics Workshop (BU): Chair

RESEARCH GROUPS & VISITS

Visit to Australian National University Centre for Philosophy of the Sciences (Summer 2023 – *upcoming*): Hosted by Rachael Brown (Director of CPS).

Visit to University of Auckland (Summer 2023 – *upcoming*): Hosted by Emily Parke.

Philosophy of the Geosciences Research Group (2020-Present): Research group at Boston University on philosophical issues in the geosciences (geology, climate science, etc.), organized by Alisa Bokulich.

Mind and Morality Lab (2019-Present): Research group at Boston University on moral psychology, organized by Victor Kumar. I served as the lab manager in 2020-2021.

Rossetti Research Group (2018-2019): Research group at Northeastern University on interdisciplinary philosophy, organized by Rory Smead. I served as the student coordinator in 2018.

AWARDS

National Science Foundation Graduate Research Fellowship (Fall 2020 - Summer 2023): Three years of full tuition and stipend support plus additional funding for home institution (BU).

Center for the Humanities Graduate Student Award – Edwin S. and Ruth M. White Prize and Angela J. and James J. Rallis Memorial Award (April 2022): Competitive awards given by the BU Center for the Humanities to outstanding graduate students.

Graduate Research Abroad Fellowship (December 2021): Competitive support for humanities and social sciences graduate students to pursue research abroad.

Dissertation Scholarship (November 2021): BU philosophy department support for dissertation research (deferred).

BU Women’s Council Scholarship (April 2021): Competitive scholarship for women graduate students.

BU Graduate Student Organization Travel Grant (April 2021): Competitive award for conference travel.

Boston University Graduate School of Arts and Sciences Summer Dissertation Fellowship (Summer 2020).

TEACHING EXPERIENCE

Boston University

Science, Technology, and Values (Full Responsibility)

Philosophy of Science (Full Responsibility)

Medical Ethics (Teaching Fellow)

Northeastern University

Introduction to Logic (Teaching Assistant)

Ethics and Evolutionary Games (Teaching Assistant)

GRADUATE COURSEWORK

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Philosophy of Science

Philosophy of the Historical and Earth Sciences (Alisa Bokulich, BU)

Philosophy of Modeling (directed study with Alisa Bokulich, BU)

Philosophy of Climate Science (Wendy Parker, Virginia Tech) *

Philosophy of Science (Alisa Bokulich, BU)

Philosophy of Biology (Rachell Powell, BU)

Philosophy of Physics (Lydia Patton, Virginia Tech) *
Philosophy of Developmental Biology (directed study with Rachell Powell, BU)
Gender, Race, and Science (Alisa Bokulich, BU) *
Feminist Philosophy of Science (directed study with Samia Hesni, BU)

Science

Phenotypic Plasticity (Karen Warkentin, BU Biology) *
Long-term Climate Variation (David McGee and Oliver Jagoutz, MIT Earth, Atmospheric, and Planetary Sciences) *
Marine Biogeochemistry (Robinson Fulweiler, BU Earth & Environment and Biology)
Foundations in Quantitative Paleontology (summer school organized by University of Helsinki)
The History of Ancient Environments, Climate, and Life (Kristin Bergmann, MIT Earth, Atmospheric, and Planetary Sciences) *

Logic and Epistemology

Advanced Logic (Rory Smead, NU)
Epistemology (Michaela McSweeney, BU)

Contemporary Ethics

Philosophy of Gender and Race (Victor Kumar, BU)
Luck and Credit (Daniel Star, BU)

History of Philosophy

Plato (Marc Gasser-Wingate, BU)
Aristotle (David Roochnik, BU)
Kant (Sally Sedgwick, BU)
Hume (Aaron Garrett, BU)

SERVICE & PROFESSIONAL DEVELOPMENT

New England Future Faculty Workshop at Northeastern University: Participant, 2022
Philosophy Department Graduate Student President (BU): Co-President, 2021-2022
American Association of Philosophy Teachers Seminar: Participant, 2021
Philosophy of Science Association Underrepresented Philosophy of Science Scholars Program: Mentee, 2020-Present
Philosophy Graduate Student Conference (BU): Co-organizer, 2019-2021
Minorities and Philosophy Chapter (BU): Member and undergraduate mentor, 2019-Present
Graduate School of Arts and Sciences International PhD Mentor Program (BU): Mentor, 2019
Public Philosophy Conference (BU): Assistant organizer, 2019

Journal Refereeing: British Journal for the Philosophy of Science, Studies in History and Philosophy of Science, European Journal for Philosophy of Science.

REFERENCES

Alisa Bokulich

Dissertation Advisor

Professor, Boston University
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Wendy Parker

Dissertation Committee Member

Professor, Virginia Tech
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Wally Fulweiler

Dissertation Committee Member

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Rachell Powell

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Victor Kumar

Teaching Reference

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