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Minnesota Center for Philosophy of Science
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Areas of Specialization: General Philosophy of Science; History and Philosophy of Biology;
Philosophy of Technology

Areas of Concentration: Bioethics; Philosophy of Race; Early Modern Philosophy/Science

EDUCATION

- 2022 **University of Pittsburgh**, PhD in History and Philosophy of Science
 Chair: Sandra Mitchell
- 2015 **Georgetown University**, M. A. in Philosophy
- 2009 **Wesleyan University**, B. A. in Philosophy

EMPLOYMENT

- 2023–present **Minnesota Center for Philosophy of Science**, Postdoctoral Associate
- 2022–23 **University of Pittsburgh**, Visiting Lecturer, History and Philosophy of Science
- 2021–22 **Pittsburgh Center for Philosophy of Science**, Program Assistant

PUBLICATIONS

Peer Reviewed

- 2023 **Observations, Experiments, and Arguments for Epistemic Superiority in Scientific Methodology** (w/ Nora Boyd), *Philosophy of Science* 91: 111–131
- 2022 **Empirical Techniques and the Accuracy of Scientific Representations**, *Studies in the History and Philosophy of Science, Part A*, 94: 143–157

- 2019 **The Rise of Cryptographic Metaphors in Boyle and Their Use for the Mechanical Philosophy**, *Studies in the History and Philosophy of Science, Part A*, 73: 8-21
- 2017 **Mechanistic Explanation in Systems Biology: Cellular Networks**, *British Journal for the Philosophy of Science*, 68(1): 1-25
- 2017 **Causal Concepts Guiding Model Specification in Systems Biology**, *Disputatio, Special Issue on Causality and Modeling in the Sciences*, 9(47): 499-527

Currently Under Review

Crystallizing Techniques: Sample Preparations, Technical Knowledge, and the Characterization of Blood Crystals, 1840-1909

Representational Content and the Informativeness of Scientific Models

Review Articles

- forthcoming **History and Philosophy of Structural Biology Symposium Summary**, *Proceedings of the Seventeenth International Congress on Logic, Methodology and Philosophy of Science and Technology* (co-authors: Agnes Bolinska and Jacob Neal)
- 2016 **Review of P. Huneman (ed.), *Functions: Selection and Mechanisms***, in *History and Philosophy of the Life Sciences* 38(1): 161-164

In Preparation

“Pragmatic Representational Content in Scientific Models”

“Fine-Graining Accounts of Exploratory Experimentation: Data-Intensive Methods in Particle Physics and Molecular Biology”

“Theoretical vs. Empirical Models: A Distinction in Function, not Kind”

“Scaffolding and Generative Entrenchment in the Historical Development of Empirical Practices”

CONFERENCES AND TALKS

Conferences/Symposia Organized

- 2025 (accepted) Co-Organizer, **Pragmatism and Scientific Measurement**, University of Pittsburgh Center for Philosophy of Science
- 2024 (accepted) Co-Organizer, **Measurement Across the Life Sciences: Conceptual Issues**, Philosophy of Science Association 2024 Conference
- Co-Organizer, **Measurement Across the Life Sciences: Conceptual Issues**, Society for the Philosophy of Science in Practice 2024 Conference
- 2022 Committee Member, **Institutions and the Scientific Research Agenda**, University of Pittsburgh Center for Philosophy of Science

Invited Talks

- 2024 **Explanation and Gravitation: Boyle, Newton, and Early Modern Science in Dialogue**, Panelist, Traveling Early Modern Philosophy Organization
- 2023 **What Makes Scientific Models Informative?**, UMN History of Science, Technology, and Medicine Colloquium Series
- 2023 **Reciprocal Influence of Modeling and Experiment in the Large-Scale History of Protein Structure**, International Union of History and Philosophy of Science and Technology (IUHPST) Symposium Series, 17th International Congress on Logic, Methodology and Philosophy of Science and Technology (CLMPST)

Refereed Presentations

- 2024 (accepted) **Measurement in High-Throughput Biology: Beyond the “Objective” and “Data-Driven” Ideals**, Philosophy of Science Association 2024 Conference
- Measurement in High-Throughput Biology**, Society for the Philosophy of Science in Practice 2024 (SPSP) Conference
- Understanding Through Coordinated Practices: Uses of Deep Learning Algorithms in Structural Biology**, Machine Learning, Explain Yourself! Conference
- 2023 **Observations, Experiments, and Arguments for Epistemic Superiority in Scientific Methodology**, Philosophy of Experiment Workshop at Stockholm University
- Pragmatic Representational Content**, Fifth Annual Scientific Understanding and Representation Conference

- 2022 **Technical Understanding and Representational Content: How Experimentation Informs the Interpretation of Models**, Fourth Annual Scientific Understanding and Representation Conference
- Empirical Techniques and the Accuracy of Scientific Representations**, American Philosophical Association Pacific Division 2022 Meeting
- 2021 **Choosing Empirical Methods: Challenging the Superiority of Manipulation-Based Inquiry**, Philosophy of Science Association Poster Session (co-presenter: Nora Boyd)
- Dynamics of Modeling and Empirical Techniques in Protein Crystallography**, International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB)
- 2018 **Decoding the Secrets of Nature: Robert Boyle and Cryptographic Metaphors in Seventeenth Century Science**, History of Science Society
- Two Dogmas of Representationalism**, Society for Philosophy of Science in Practice (SPSP)
- Shaping Patterns into Structures: Protein Science and the Mobility of Data**, American Philosophical Association Pacific Division
- 2016 **Reconsidering Scientific Representation**, Philosophy of Science Association Poster Session
- Cartesian Cryptography and Norms of Scientific Explanation**, History of Philosophy of Science Conference
- Einstein and the Foundations of Geometry: A Deflationary Approach**, Irvine-Pittsburgh-Princeton Conference on the Conceptual and Mathematical Foundations of Physics
- 2015 **Mechanistic Explanation in Systems Biology: Cellular Networks**, International Society for the History, Philosophy, and Social Studies of Biology (IHPSSB)
- Causality and Underdetermination in Models of Biological Networks**, Causality and Modeling in the Sciences Conference
- Predictive Brains and Mental State Representations**, Social Minds Graduate Conference
- Analogy, Abstraction, and Symbolism in Early Rationalist Epistemology**, British Society for the History of Philosophy Conference

Invited Discussant

- 2021 **Perspectivism in the Philosophy of Science**, Campus BioMedico, Rome IT
(changed to online)
- 2015 **New Directions in Foundations of Physics**, Washington DC
- 2014 **New Directions in Foundations of Physics**, Washington DC

ACADEMIC TEACHING

Independent Instructor

- 2023 **Morality and Medicine**; University of Pittsburgh (3 sections)
- 2022 **Mind and Medicine: Understanding New Technologies**; University of
Pittsburgh (3 sections)
- 2021 **Morality and Medicine**; University of Pittsburgh (1 section)
- Race—History, Biology, Psychology, Philosophy**; University of Pittsburgh (1
section)
- 2020 **Morality and Medicine**; University of Pittsburgh (1 section)
- 2019 **Morality and Medicine**; University of Pittsburgh (1 section)
- 2018 **Magic, Medicine, and Science**; University of Pittsburgh (1 section)
- 2015 **Philosophy of Music**; Georgetown University (co-taught with Mark Lance)

Teaching Assistant, Discussion Leader, and Tutoring

- 2017 **Mind and Medicine** TA/DL, University of Pittsburgh
- 2016 **Nature of Emotions** TA/DL, University of Pittsburgh
- 2014 **Intro to Logic** TA, Georgetown University
- Intro to Ethics** TA/DL, Georgetown University
- 2013 **Intro to Philosophy** TA/DL, Georgetown University
- Intro to Philosophy** TA, Georgetown University

2012 **Intro to Ethics** TA, Georgetown University

COMPETITIVE GRANTS AND AWARDS

2024 Grant to Organize Workshop on Pragmatism and Measurement (\$10,000)
Center for Philosophy of Science, University of Pittsburgh

2022 Wesley C. Salmon Graduate Research Award (\$500)

2021 University of Pittsburgh International Studies Fund (\$1,000)

2021 Wesley C. Salmon Graduate Research Award (\$1,000)

2018 Wesley C. Salmon Graduate Research Award (\$1,000)

2015 Georgetown Graduate School Travel Grant (\$500)

SERVICE/PROFESSIONAL CONTRIBUTIONS

Reviewing and referee work

Ongoing Reviewer for •*Philosophy of Science*, •*British Journal for Philosophy of Science*, •*Studies in History and Philosophy of Science*, •*Synthese*, •*History and Philosophy of the Life Sciences*, •*Theoria*, •*European Journal for Philosophy of Science*, •*Journal for General Philosophy of Science*

2023 Teaching peer reviewer for Prof. Mark Borrello, University of Minnesota

2014 External referee for P.-A. Braillard and C. Malaterre (eds.), *Explanation in Biology* (Springer, 2015)

Committee and organizational work

2024 Search Committee Member, Minnesota Center for Philosophy of Science
2024 postdoctoral appointment

2022 Co-Organizer, Pittsburgh Summer Program (PSP6) for underrepresented
students in philosophy of science

2020 Volunteer, Pittsburgh Summer Program (PSP4) for underrepresented students
in philosophy of science

- 2018-2019 Co-Organizer, Pop-up Idea Kitchen, event series aimed at fostering conversations between graduate students in sciences and humanities
- 2015-2022 Member, University of Pittsburgh Graduate MAP Chapter
- 2014-2015 Member, Georgetown University Graduate MAP Chapter

Mentorship

- 2023-2024 Academic Mentor for University of Minnesota graduate students working in philosophy of science
- 2020-2021 Teaching Mentor for University of Pittsburgh HPS graduate students
- 2014 Logic Tutor for Georgetown University graduate students

SUMMER SCHOOLS AND WORKSHOP PARTICIPATION

- 2024 Epistemological Issues of Machine Learning in Science, Dortmund University
- 2021 Data Science Workshop, Center for Research Computing, University of Pittsburgh (nine 3-hour sessions)
- 2017 American Association of Philosophy Teachers Inclusive Pedagogy Workshop, University of Pittsburgh
- Georgetown Summer School on the Philosophy and Science of Active Materials, Georgetown University
- 2014 North American Summer School in Language, Logic, and Information, University of Maryland

PROFESSIONAL ORGANIZATION MEMBERSHIPS

American Philosophical Association
Philosophy of Science Association
Society for the Philosophy of Science in Practice
International Society for the History, Philosophy, and Social Studies of Biology
Society for the History of Philosophy of Science

RELEVANT NON-ACADEMIC EXPERIENCE

- 2015-2023 Event Organizer, Pittsburgh, PA: Contact presenters, coordinate staffing, maintain organizing schedule, manage finances, promote, and run events.
- 2007-2012 Private Tutoring, Middletown, CT and New York City, NY. Tutor for high-school students in Math, Physics, Test Prep.
- 2009-2012 Central Park Tutors, Empire Edge Academic Advising, and Mosaic Tutoring, New York City and Long Island, NY. Tutor in Math, Physics, Test Prep.

REFERENCES

Please note: all confidential letters can be requested through the HPS department assistant Delaney Szekeley: drs190@pitt.edu

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Teaching: Jonathan Fuller

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