KATHLEEN CREEL

EDUCATION

University of Pittsburgh, Pittsburgh, PA
PhD in History and Philosophy of Science, 2020.

Simon Fraser University, Burnaby, BC
Masters in Philosophy, 2015.

Williams College, Williamstown, MA
Bachelor of Arts in Computer Science and in Philosophy, 2010.

EMPLOYMENT

Northeastern University, Boston, MA
Assistant Professor, 2022 –
Department of Philosophy and Religion, Khoury College of Computer Sciences

Stanford University, Stanford, CA
Embedded EthiCS Fellow, 2020 – 2022

MIT Lincoln Laboratory, Lexington, MA
Software Engineer, Applied Research, 2010 - 2011

PEER REVIEWED ARTICLES

1. Jain, Shomik, Vinith Suriyakumar, **Kathleen Creel**, and Ashia Wilson. 2023. "Algorithmic Pluralism: A Structural Approach To Equal Opportunity." *Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO)*.
2. Toups, Connor, Rishi Bommasani, **Kathleen Creel**, Sarah Bana, Dan Jurafsky, and Percy Liang. 2023. "Ecosystem-level Analysis of Deployed Machine Learning Reveals Homogeneous Outcomes." *Neural Information Processing Systems (NeurIPS)*.
3. McCradden, Melissa, Jonathan Herington, **Kathleen Creel**, Ronald Boellaard, Abhinav Jha, Arman Rahmim, Peter Scott, John Sunderland, Richard Wahl, Sven Zuehlsdorff and Babak Saboury. 2023. Ethical Considerations for Artificial Intelligence in Medical Imaging: Data Collection, Development, and Evaluation, *Journal of Nuclear Medicine*, December 2023, 64 (12) 1848-1854.
4. McCradden, Melissa, Jonathan Herington, **Kathleen Creel**, Ronald Boellaard, Abhinav Jha, Arman Rahmim, Peter Scott, John Sunderland, Richard Wahl, Sven Zuehlsdorff and Babak Saboury. 2023. Ethical Considerations for Artificial Intelligence in Medical Imaging: Deployment and Governance, *Journal of Nuclear Medicine*, October 2023, 64 (10) 1509-1515.
5. **Creel, Kathleen** and Deborah Hellman. 2022. "The Algorithmic Leviathan: Fairness, Arbitrariness, and Opportunity," *Canadian Journal of Philosophy* vol 52, issue 1, pp. 26 - 43.
6. Keyes, Os, and **Kathleen Creel**. 2022. "Artificial Knowing Otherwise." *Feminist Philosophy Quarterly* 8 (3/4).
7. Bommasani, Rishi, **Kathleen Creel**, Ananya Kumar, Dan Jurafsky, and Percy Liang. 2022. Picking on the Same Person: Does Algorithmic Monoculture lead to Outcome Homogenization? *NeurIPS*.

8. Birch, Jonathan, **Kathleen Creel**, Abhinav Jha, and Anya Plutynsiki. 2022. "Clinical decisions using AI must consider patient values," *Nature Medicine*, 28, 229232.
9. **Kathleen Creel** and Tara Dixit. 2022. Privacy and Paternalism: The Ethics of Student Data Collection, MIT Case Studies in Social and Ethical Responsibilities of Computing, Summer 2022.
10. **Creel, Kathleen**. 2020. "Transparency in Complex Computational Systems," *Philosophy of Science*, Volume 87 Issue 4.

NON-REVIEWED ARTICLES

1. Stall et. al. 2023. "Ethical and Responsible Use of AI/ML in the Earth, Space, and Environmental Sciences". *ESS Open Archive*
2. Bommasani et. al. 2021. "On the Opportunities and Risks of Foundation Models," *arXiv*

GRANTS

NSF Research Community Development Grant ($300k), Summer Training Program to Expand the Al and Data Ethics Research Community (#2147220), 2022 - 2025, Co-PI.

HAI-Azure Cloud Credits Award ($50k), 2022, PI Percy Liang

Stanford Ethics, Society, and Technology Hub Award ($15k), 2021

American Philosophical Association Travel Grant, 2019

Newberry Travel Grant, 2018

Wesley Salmon Fund Travel Award, Fall 2017, Spring 2018

National Science Foundation Scholarship to Grace Hopper Conference for Women in Computing, 2009

Williams College Class of 1960's Scholar, 2006 - 2007

National Merit Scholar, 2005

AWARDS

Herbert A. Simon Award for Outstanding Research in Computing and Philosophy, International Association of Computing and Philosophy, 2023.

Award recognizes "scholars at an early stage of their academic career whose research is likely to reshape debates at the nexus of Computing and Philosophy."

Ernest Nagel Early-Career Scholar Essay Award, Philosophy of Science Association, 2020.

Award recognizes "the best single-authored essay published in *Philosophy of Science* during the award year" by an early career scholar.

Elizabeth Baranger Teaching Award, University of Pittsburgh, Honorable Mention, 2019

History Of Philosophy Of Science Syllabus Competition Winner, 2018

Winner of the 2018 competition for most innovative syllabus organized by the *History Of Philosophy of Science* journal.

INVITED PRESENTATIONS

Algorithmic Monoculture and Systemic Exclusion

Colloquium, University of Vermont, Burlington	October 2023
Colloquium, San Jose State University, San Jose	October 2023
Keynote, Hofstra University Presidential Scholars Symposium	September 2023
Keynote, International Association of Computing and Philosophy, Prague	June 2023
Institute for Ethics in AI, Workshop on Algorithmic Bias, Oxford	June 2023
Ethical Foundations of Data Science Workshop, Rochester	April 2023
Algorithms and Workplace Justice, Stanford	October 2022

Embedded Ethics: A New Approach

Stanford, California	March 2023

Picking on the Same Person: Homogenization and the Ethics of Scale

Cornell Tech, New York	October 2022
Institute for Human-Centered Artificial Intelligence (HAI), Stanford	May 2022
Pacific APA, Symposium on 'Attention'	April 2022
HLRS High Performance Computing Center, Stuttgart	April 2022
Machine Learning, Abstract Thought, & the Expanding Reach of AI: Ethical and Conceptual Frontiers, University of Cincinnati	April 2022
University of Wisconsin-Milwaukee	March 2022
Google, Bioethics Speaker Series	December 2021

A Molyneux Problem for Interpretable Machine Learning

Interpretable ML in Natural & Social Sciences, Tubingen	October 2022
Upstate Workshop on AI and Human Values, University of Rochester	March 2021

Let's Ask The Patient: Stereotypes, Personalization, & Risk in Medical AI, July 2021
King's College London, Colloquium Series on Stereotyping and Medical AI

The Algorithmic Leviathan, co-authored with Deborah Hellman

Oxford University	June 2022
Society for Practical Philosophy, keynote	September 2021
University of Amsterdam, Netherlands	February 2021
Institute for Human-Centered Artificial Intelligence (HAI), Stanford	February 2021
Surrey Centre for Law & Philosophy: Symposium on Ethics & Algorithms	January 2021
Workshop on Algorithmic Fairness, Copenhagen	November 2020
TU Eindhoven, Netherlands	June 2020

Function and User-Satisfaction in Explainable AI, ETAPS 2021

First International Workshop on Trusted Automated Decision-Making	March 2021

The One and the Sun: Emanation and Hermetism in Plotinus, Oslo August 2019
Hermetica in Late Antiquity Workshop

What Makes a Good Explanation? July 2019
Panel presentation in "What Makes a Good Explanation? Cognitive Dimensions of Explaining Intelligent Machines" at Cognitive Science, Montreal

REFEREED CONFERENCE PRESENTATIONS

Ecosystem-level Analysis of Deployed Machine Learning
NeurIPS, New Orleans — December 2023

Don't Use Machine Learning to Evaluate Grants
British Society for Philosophy of Science — July 2023

Picking on the Same Person — December 2022
NeurIPS, New Orleans

Machine Molyneux Problems — November 2022
Philosophy of Science Association, Pittsburgh

To Hedge or Not to Hedge: Scientific Claims & Public Reason — March 2022
Values in Science and Political Philosophy, Claremont McKenna.

A Molyneux Problem for Science — April 2021
Molyneux's Question: A Three-Dimensional Approach, Trinity College Dublin.

Functional Approach to Explainable AI — March 2021
Overcoming Opacity in Machine Learning: Symposium at the Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behavior (AISB).

Anti-Reductionist Machine Testimony — November 2019
Canadian Society for Epistemology, Montreal, Canada

Noise in a Noisy World: Finding Metagenomic Patterns — July 2019
International Society for the History, Philosophy, & Social Studies of Biology, Oslo

Early Modern Correspondences — April 2019
Teaching Hub Session: "New Approaches to the Early Modern Survey"
American Philosophical Association Meeting, Pacific Division, Vancouver

Demystifying Publishing Together: A 12 Week Graduate Workshop — April 2019
Minorities and Philosophy Session: "Creating Inclusive Spaces"
American Philosophical Association Meeting, Pacific Division, Vancouver

Signal, Noise, and the Detection of Scientific Phenomena — February 2019
American Philosophical Association Meeting, Central Division, Denver

'There must be a Tub to Amuse the Whale' — July 2018
Joseph Black's Methodology Reconsidered
History of Philosophy of Science Annual Meeting, Groningen, NL

Explainable Artificial Intelligence — June 2018
Society for Philosophy of Science in Practice, Ghent

Malebranche, Monsters, and the Maternal Imagination — January 2018
Newberry Library Multi-Disciplinary Conference, Chicago

Transparency in Complex Computation
Epistemic Opacity in Computer Simulation & Machine Learning, Stuttgart — November 2018
Models and Simulations 8, Columbia, SC — March 2018
Philosophy of Machine Learning Workshop, Irvine, CA — March 2018
Philosophical Perspectives on Data-Intensive Science, Hannover, DE — October 2017

Machine Learning as Experiment, Pittsburgh — April 2014
Philosophy of Scientific Experimentation 4

INVITED COMMENTARY

Penn-Georgetown Digital Ethics Workshop March 2023
Comment on “Value Encroachment on Scientific Understanding (in ML),” Emily Sullivan

American Philosophical Association Meeting, Eastern Division January 2021
Comment on “Just Machines,” Clinton Castro

American Philosophical Association Meeting, Central Division February 2020
Comment on “Really Real Patterns,” Tyler Millhouse

Ethics of Technology At Work & in Public Institutions, Harvard Jan. 2020
Comment on “The Hidden Assumptions Behind Counterfactual Explanations & Principal Reasons,” Barocas, Selbst, & Raghavan

Ethics of Algorithmic Decision-Making in Democratic Institutions Nov. 2019
Comment at Princeton on “Power, Process, and Automated Decision-Making,” A. Waldman

American Philosophical Association Meeting, Pacific Division, March 2018
Comment on “Prediction in Science: How Big Data Does - and Doesn’t - Help,” R. Northcott

Will Science Remain Human?, Rome March 2018
Comment on panel of Paul Humphreys, Eric Winsberg, Emanuele Ratti

TEACHING AND ADVISING

Courses Taught Northeastern University 2022-

- **AIDE Summer Training Program** (Summer 2023): 12 graduate students, new syllabus, NSF-funded summer program at Northeastern, co-taught with John Basl.
- **Knowledge in a Digital World** (Spring 2023): 39 students
- **Philosophy of Science** (Spring 2023): 10 students, new syllabus
- **Knowledge in a Digital World** (Fall 2022): 38 students, new syllabus

Advising 2020-

- **Committee Member**: Grace Fan (Khoury College, 2023-)
- **Informal Advising**: Sophia Wushanley (Michigan), Xin Hui Yong (MIT), and Heather Champion (University of Western Ontario).
- **Undergraduate Theses**: Marilyn Zhang (Stanford), Ryan Kearns (Stanford)

SERVICE

Department Service Northeastern University 2022-

- Currently serving on search committee for Khoury College of Computer Sciences (AI Focus) (Fall 2023/Winter 2024)
- Currently serving on search committee for Ethics, Values, and Design Search (Fall 2023/Winter 2024)
- Currently serving on search committee for Technology and Social Power Search (Fall 2023/Winter 2024)
- Primary co-organizer with John Basl and Ron Sandler of Summer 2023 NSF Summer Training Program to Expand the Al and Data Ethics Research Community.
  - Co-organized 9 week summer school for advanced graduate students.
  - Co-led bi-weekly ethics of technology seminar.
  - Created and led programming lab for philosophy grad students, culminating in large language model final project.
- Served on search committee for Health and Ethics Search (Fall 2022/Winter 2023)
- Assisted with search committee for Health and Ethics Search (Fall 2021/Winter 2022)

Service to the College Northeastern University 2022-

- Panelist for The Womens Research Engagement Network (WREN), ”Ethics in Research” Event at Northeastern, 2022.
- Guest lecture in Aanjhan Ranganathan's *Introduction to Computer Science Research* course, 2022.

Service to the Discipline Northeastern University 2021-

- Panelist for *Philosophy in an Inclusive Key (PIKSI) Boston*, 2023
- Presenter/session leader at *IDEAS Boston*, 2023

- Lead organizer of a two day workshop *Algorithms and Workplace Justice*, Stanford, CA, 2022.
- Reviewer for *Artificial Intelligence*, *British Journal of Philosophy of Science*, *Dialogue*, *Erkenntnis*, *European Journal for Philosophy of Science*, *Philosophy of Science*, *Studies in History and Philosophy of Science*, *Synthese*, Dutch Research Council (NWO), NSF, *NeurIPS 2021-22* Datasets and Benchmarks Track. Program committee *AIES 2021-22*, *FAccT 2022 - 24*, *XAI 4 2022*.

Service to the Public/Other Entities 2021-

Advisor to AdeptID, an algorithmic hiring startup that is implementing my research as part of their candidate recommendation algorithm.

Contributed to the development of the joint NASA-AGU (American Geophysical Union) report "Ethical and Responsible Use of AI/ML in the Earth, Space, and Environmental Sciences", 2023.

Quoted in Caroline Mimbs Nyce, "You Should Ask a Chatbot To Buy You A Drink," *The Atlantic*, April 2023

Profiled in Melissa De Witte, "How a new program at Stanford is embedding ethics into computer science," *Stanford Report*, October 2023

Research discused in Sigal Samuel, "What happens when ChatGPT starts to feed on its own writing?," *Vox*, 2023

Ideas and text from "Ecosystem Graphs" paper influenced EU AI Act regulation on Foundation Models.