

# Alexander Williams Tolbert

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## Contact Information

**Office:** 36 Eagle Row, 5th Floor, PAIS 570: Quantitative Theory & Methods Dept, Emory University

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## Education

**PhD in Philosophy**, University of Pennsylvania, 2019-2023  
Advisers: Michael Kearns, Quayshawn Spencer, Anita Allen  
Committee: Samuel Freeman, Aaron Roth, Scott Weinstein

**M.A. in Statistics**, The Wharton School, University of Pennsylvania, 2019-2023

**M.S. in Biochemistry**, Virginia Polytechnic Institute and State University, 2017-2019

**M.A. in Philosophy**, Virginia Polytechnic Institute and State University, 2017-2019

**B.S. in Biology**, University of Mobile, 2009-2013

## Academic Appointments

**Assistant Professor**, Department of Quantitative Theory and Methods, Emory University, starting Fall 2024

**Postdoctoral Researcher (2023-Present, Transitioning to Assistant Professor in Fall 2024)**

Department of Quantitative Theory and Methods  
Emory University

**Visiting Graduate Scholar, Fall 2020**

The Graduate School and University Center of the City University of New York  
Supervisor: Charles Mills

## Areas of Specialization

- Philosophy of Science
- Causal Inference
- Machine Learning (Learning Theory, Algorithmic Fairness)
- Game Theory

- Social & Political Philosophy
- Philosophy, Politics & Economics
- Philosophy of Race

## Area of Concentration

Logic and Computation

## Publications

1. Aaron Roth, Alexander Tolbert, and Scott Weinstein. Reconciling individual probability forecasts. In *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, pages 101–110, 2023
2. Alexander Tolbert. Causal agnosticism about race: Variable selection problems in causal inference. *Philosophy of Science*, 2024. Forthcoming
3. Alexander Williams Tolbert. Race and causation. *Philosophy Compass*, Forthcoming
4. Alexander Williams Tolbert. Machine learning fairness from bias mitigation to design and deployment. In Adrian Currie, editor, *Philosophy of Science – A User’s Guide*. MIT Press, Forthcoming
5. Alexander Williams Tolbert. Algorithms, justice, and the urban ghetto. *Synthese*, Forthcoming

## Manuscripts in Under Review: RR

1. Alexander Williams Tolbert. An epistemic case for reparations in addressing positivity violations in causal inference. *Synthese*, Forthcoming

## Works in Progress Preprinted

1. Alexander Tolbert and Emily Diana. Correcting underrepresentation and intersectional bias for fair classification. *arXiv preprint arXiv:2306.11112*, 2023

## Manuscripts in Submission

1. Alexander Williams Tolbert. Examining anti-ethics critiques within a capabilities model of reparative justice. *Radical Philosophy Review*, Forthcoming
2. Alexander Williams Tolbert and Jamelle Watson-Daniels. Racial disregard in ai. *American Philosophical Quarterly*, Forthcoming
3. Alexander Williams Tolbert. Addressing sensitive attributes in algorithmic decisions through extended conditional independence. *American Philosophical Quarterly*, Forthcoming
4. Alexander Williams Tolbert. Causal knowledge and fairness in predictive data science. *Synthese*, Forthcoming

## Talks and Presentations

1. *Biennial Meeting of the Philosophy of Science Association*  
**Title:** Causal Race Agnosticism  
**Year:** 2022

2. *TOC4Fairness Seminar, Simons Collaboration on the Theory of Algorithmic Fairness, supported by The Simons Foundation*  
**Title:** Individual Probability, Reference Class Problem, Model Multiplicity, Reconciling Belief  
**Year:** 2022
3. *Penn Law Symposium on Innovation and Criminal Justice*  
**Title:** Algorithms in Criminal Justice (Panel)  
**Year:** 2022
4. *Biennial Meeting of the Philosophy of Science Association*  
**Title:** Against Predictive Invariance  
**Year:** 2021
5. *Biennial Meeting of the Philosophy of Science Association*  
**Title:** Exploitation, or Amelioration? Dueling Pictures of Data-Scientific Rationality  
**Year:** 2021
6. *Bias and Discrimination in Big Data and Algorithmic Processing Conference – BIAS*  
**Title:** Against Predictive Invariance  
**Year:** 2021
7. *Pacific Division Meeting: American Philosophical Association*  
**Title:** Causation and Algorithmic (un)Fairness in Machine Learning  
**Year:** 2021
8. *Eastern Division Meeting: American Philosophical Association*  
**Title:** Causation and Algorithmic (un)Fairness in Machine Learning  
**Year:** 2021
9. *Ernest E. Just Biomedical Society at the University of Pennsylvania*  
**Title:** Causation and Algorithmic (un)Fairness in Machine Learning  
**Year:** 2020
10. *Philosophy and Physical Computing Conference*  
**Title:** Dynamics and Biochemical Kinds  
**Year:** 2019
11. *Virginia Tech Department of Biochemistry Speakers in Biochemistry Series*  
**Title:** Exploring the Ability of the Inositol 1,3,4 Trisphosphate 5/6-Kinase (ITPK) to Accommodate Inositol hexakisphosphate (InsP6)  
**Year:** 2019
12. *Philosophy and Physical Computing Conference*  
**Title:** Finding Natural Kinds  
**Year:** 2018

## Work Experience

**Jun 2022 –** Amazon Web Services (Remote)

**Fall 2022** *Research Scientist II Intern*

Supervisor: Peter Hallinan

Research Topic: Algorithmic Harm and Bias Database (Working Paper)

Language: Python

**Jun 2021 –** Amazon Web Services (Remote)

**Sep 2021** *Research Scientist Intern*

Supervisor: Peter Hallinan

Research Topic: An Algorithmic Framework for Bias

Language: Python

**Jun 2022 –** Wharton Sports Analytics and Business Initiative, University of Pennsylvania, Philadelphia, PA  
**Aug 2022** *Instructor*  
Supervisor: Abraham J. Wyner  
Duties: Instructor for Money-ball Academy, a program designed to draw in talented middle and high school students from minority and underrepresented backgrounds into coding and data science.  
Language: R

## Service

- Founder and Organizer, W. E. B. Du Bois, Ida B. Wells Symposium on Socially Aware Data Science and Ethical Issues in Modeling (2022-)
- Founder and Organizer, University of Pennsylvania Philosophy of Computation and Data Workshop (2021-)
- Organizer, Penn-Rutgers Philosophy of Race Reading Group (2020-)
- Africana Summer Institute Fellow, University of Pennsylvania (2020-2021)
- Co-President, Minorities and Philosophy, Virginia Tech (2018-2019)
- Editorial assistant, HOPOS: The Journal of the International Society for the History of Philosophy of Science (2018-2019)

## Teaching Assistantships

### University of Pennsylvania

- VLST 101: Eye, Mind, and Image (Spring 2022)
- PHIL 025-001: Philosophy of Science (Fall 2021)
- PHIL 077: Philosophy of Law (Spring 2021)
- PHIL 277-001: Justice, Law, and Morality (Fall 2020)

### Virginia Polytechnic Institute and State University

- PHIL 2125: History of Modern Philosophy (Fall 2018)
- PHIL 1304: Morality and Justice (Spring 2017)
- PHIL 1304: Knowledge and Reality (Fall 2017)

## Selected Coursework

### University of Pennsylvania

- Philosophy of Race (Spring 2022)
- Modern Statistical Learning Theory (Spring 2022)
- Mathematics of High-Dimensional Data (Spring 2022)
- Algorithmic Fairness (Fall 2021)
- Theoretical Machine Learning & Algorithms (Fall 2021)
- Observational Studies (Spring 2021)
- Modern Data Mining (Spring 2021)

- Kant and Kantian Moral Constructivism (Spring 2021)
- Introduction To Africa and African Diaspora Thought (Fall 2020)
- Mathematical Foundations of Computer Science (Fall 2020)
- Introduction to Nonparametric Methods and Log-linear Models (2020)
- Liberalism and Challenges of Racial and Economic Justice (2020)
- Mathematical Logic (Spring 2020)
- Modern Political Philosophy (Spring 2020)
- Plato's Republic (Fall 2019)
- Applied Regression and Analysis of Variance (Fall 2029)
- The Methodology of Political Philosophy (Fall 2029)

### Virginia Polytechnic Institute and State University

- Intermediate Philosophy of Science (Fall 2018)
- Issues in Bioethics (Spring 2018)
- Intermediate Philosophy of Biology (Spring 2018)
- Advanced Logic: Set Theory, Analysis, and Model Theory (Spring 2018)
- Kant's Critique of Pure Reason (Fall 2017)
- Symbolic Logic (Fall 2017)
- Origins of Analytic Philosophy (Fall 2017)

## Programming Skills

### ■ Proficient

R  
Python

### ■ Familiarity

SQL  
Java

### ■ Everyday Workflow

LaTeX  
Git

## Awards

- Fontaine Fellow, University of Pennsylvania (2019-2023)
- Graduate Scholar, Multicultural Academic Opportunities Program, Virginia (2017-2019)

## References

<b>Name</b>	Prof. Michael Kearns
<b>Reference Type</b>	Research (Thesis Advisor)
<b>Email</b>	mkearns@cis.upenn.edu
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**Name** Prof. Aaron Roth  
**Reference Type** Research (Thesis Committee Member)  
**Email** aaroth@cis.upenn.edu  
**Website** <https://www.cis.upenn.edu/aaroth/>  
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Room 406B,  
Philadelphia, PA 19104

**Name** Prof. Quayshawn Spencer  
**Reference Type** Research, Teaching (Thesis Advisor)  
**Email** qspencer@upenn.edu  
**Website** <https://philosophy.sas.upenn.edu/people/quayshawn-spencer>  
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**Name** Prof. Anita Allen  
**Reference Type** Research, (Thesis Advisor)  
**Email** aallen@law.upenn.edu  
**Website** <https://www.law.upenn.edu/faculty/aallen2/>  
**Phone** (215)-898-9035

**Name** Prof. Samuel Freeman  
**Reference Type** Research, Teaching (Thesis Committee Member)  
**Email** sfreeman@sas.upenn.edu  
**Website** <https://philosophy.sas.upenn.edu/people/samuel-freeman>  
**Phone** (215)-898-8563

**Name** Prof. Scott Weinstein  
**Reference Type** Research (Thesis Committee Member)  
**Email** weinstein@cis.upenn.edu  
**Website** <https://philosophy.sas.upenn.edu/people/scott-weinstein>  
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**Name** Prof. Kareem Khalifa  
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**Phone** (310)- 825-4641

**Name** Prof. Dylan Small  
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**Email** dsmall@wharton.upenn.edu  
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