


Emmy Blumenthal — Curriculum Vitae

Pronouns: They/them

Princeton, NJ || Salt Lake City, UT

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 0009-0002-1409-9550

Education

Princeton University

Sep. 2024 – Present

PhD in Physics

Boston University (BU)

Sep. 2019 – May 2023

B.A. in Physics (with Honors) and Mathematics (double major)

- Thesis: Typicality and Chaos in Asymmetric Consumer-Resource Models (Advisor: Pankaj Mehta)
- GPA: 3.91, Magna cum laude in College of Arts and Sciences

Honors and Awards

- [Hertz Fellow](#) (2024–2029)
- [National Science Foundation Graduate Research Fellowship Program](#) (2024–2027)
- [Princeton Centennial Fellowship](#) (2024–2029)
- [BU Department of Physics College Prize for Excellence](#) (awarded to one senior in each department)
- [American Physical Society Division of Biological Physics Travel Award](#) (March Meeting 2023)
- [BU Undergraduate Research Opportunities Project](#) (4 semesters)
- [BU Trustee Scholarship](#) (full-tuition, merit-based)
- [University of Utah Department of Chemistry High School Research Award](#)

Scientific Papers

- [Emmy Blumenthal](#), Jason W. Rocks, Pankaj Mehta, *Phase transition to chaos in complex ecosystems with non-reciprocal species-resource interactions*, [Physical Review Letters](#) 132, 12740, **Editors' Suggestion** (2024).
- [Emmy Blumenthal](#), Pankaj Mehta, *Geometry of ecological coexistence and niche differentiation*, [Physical Review E](#) 08, 044409 (2023).
- Deniz Aybas, Janos Adam, [Emmy Blumenthal](#), Alexander O Sushkov, et. al., *Search for axionlike dark matter using solid-state nuclear magnetic resonance*, [Physical Review Letters](#) 126, 141802 (2021).
- Matthew J. Kummer, Yoo Seok Lee, Mengwei Yuan, Bassam Alkotaini, John Zhao, [Emmy Blumenthal](#), Shelley Minter, *Substrate channeling by a rationally designed fusion protein in a biocatalytic cascade*, [JACS Au](#) (2021).
- Min Li, Kevin Klunder, [Emmy Blumenthal](#), Matthew B Prater, Jack Lee, John E Matthiesen, Shelley D Minter, *Ionic liquid stabilized 2,2,6,6-Tetramethylpiperidine 1-Oxyl catalysis for alcohol oxidation*, [ACS Sustainable Chemistry & Engineering](#) (2020).

Research Presentations

- [American Physical Society March Meeting](#), Minneapolis, MN (2024)
“Phase transition to chaos in complex ecosystems with non-reciprocal species-resource interactions”
- [American Physical Society March Meeting](#), Las Vegas, NV (2023)
“A new geometric framework for niche theory and consumer-resource models”

- MIT Physics of Living Systems Talks, Invited Speaker, *Cambridge, MA* (2023)
“Typicality and dynamical fluctuations in nonreciprocal consumer-resource models”
- BU Chapter of Society of Physics Students (Photon), Invited Speaker, *Boston, MA* (2023)
“Statistical physics and chaos in consumer-resource models for complex ecosystems”
- BU Biological Design Center Symposium, Poster Presentation, *Boston, MA* (2023)
“Phase transition to chaos in complex ecosystems with nonreciprocal species-resource interactions”

Research Experience

Biophysics Theory Lab (Dr. Pankaj Mehta) BU <i>Undergraduate Researcher (UROP funded) until May 2023</i> <i>Full-time Post-baccalaureate Researcher from May 2023 to Aug. 2024</i>	Dec. 2021 – Aug. 2024
Quantum Lab (Dr. Alexander O Sushkov) BU <i>Undergraduate Researcher (UROP funded)</i>	May 2020 – Sep. 2021
Bioelectrochemistry Lab (Dr. Shelley Minteer) University of Utah <i>High School Research (Award funded)</i>	May 2018 – Sep. 2019
Systematic Randomness Testing Wolfram Summer School <i>Research Project</i>	Jul. 2019

Teaching, Mentoring, and Outreach Experience

Physics Department BU <i>Learning Assistant — CAS PY 451, 452 (Quantum Mechanics I & II)</i>	Sep. 2022 – May 2023
Faculty of Computing and Data Sciences (CDS) BU <i>Lead tutor — CDS DS 122 (Foundations of Data Science III)</i> <i>Tutor — CDS DS 121, 210 (Foundations of Data Science II, Programming for Data Science)</i>	Sep. 2022 – May 2023
Wizards After School Program BU Community Service Center <i>Volunteer</i>	Sep. 2022 – May 2023
PeeRs for Incoming Student Mentorship (PRISM) BU <i>Mentor</i>	Sep. 2021 – May 2022
Chapter of Society of Physics Students (Photon) BU <i>Member, regular presenter</i>	Sep. 2019 – May 2023