Mason Price

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Education

Brandeis University — Waltham, MA

B.S., Mathematics *and* Physics (highest honors) — 2025

- Magna Cum Laude

Publications

1. **Mason Price**, Daichi Hayakawa, Thomas E. Videbæk, Rupam Saha, Botond Tyukodi, Michael F. Hagan, Seth Fraden, Gregory M. Grason, W. Benjamin Rogers. "**From toroids to helical tubules: Kirigami-inspired programmable assembly of two-periodic curved crystals from DNA origami**". *Under revision, PNAS*, 2025.

2. Rupam Saha, Daichi Hayakawa, Thomas E. Videbaek, **Mason Price**, Wei-Shao Wei, Juanita Pombo, Daniel Duke, Gaurav Arya, Gregory M. Grason, W. Benjamin Rogers, Seth Fraden. "**Modular programming of interaction and geometric specificity enables assembly of complex DNA origami nanostructures**". *Under revision, Nature Communications*, 2025.

Research Experience

Rogers Lab — Brandeis University — 2023 – 2025

Research Assistant

- Automated kinetic Monte Carlo (KMC) simulations using Python and Bash on a high-performance computing cluster (HPCC), enabling more than 10,000 simulations and efficient data analysis.
- Developed a MATLAB-based geometry optimization algorithm to generate triangular meshes used in a publication
- Designed publication-quality figures in MATLAB for a paper and multiple posters.
- Designed and implemented a Python-based interactive application for 3D visualization, enabling lab members to efficiently generate figures.

Sciolla Lab — Brandeis University — 2022

Research Assistant

- Performed data analysis of ATLAS Run-2 data, utilizing Python and ROOT to support high-energy physics research.

Research Interests

Scientific computing, computational mathematics, self-assembly

Skills

Programming: Python, MATLAB, C/C++, Bash, Julia

Software and tools: Git, Linux, LaTeX, Mathematica

Selected Honors

- **Molly W. and Charles K. Schiff Award in Science**, Brandeis University — 2025
- **Jerome A. Schiff Undergraduate Fellowship**, Brandeis University — 2024
- **Math Mentor of the Year Award**, Brandeis University — 2024
- **Science Mathematics and Research for Transformation (SMART) Scholarship** — 2024-2025
- **Dean's List**, Brandeis University — 2022-2025

Talks

Global Physics Summit — American Physical Society (APS) 2025
Talk and *Poster*

- *"Kirigami design for programmable self-assembly of complex curved surfaces"*

MIT Polymer Day — MIT 2024
Poster

- *"Programmable assembly of toroids and helical tubules using DNA origami building blocks"*

New England Complex Fluids Workshop — Brandeis University 2024
Short Talk

- *"Self-assembly of toroids using DNA origami building blocks"*

SciFest — Brandeis University 2023
Poster

- *"Self-assembly of DNA origami structures: toroids and helical tubules"*

Selected Courses

Real Analysis, Differential Geometry, Topology, Complex Analysis, Statistical Physics and Thermodynamics

Guided Reading Programs

Studied in Guided Reading Programs (GRPs) led by graduate students.

1. **Category Theory**, culminating in a presentation on the Snake Lemma. 2024
2. **Introduction to Mapping Class Groups**, culminating in a presentation on topology and the definition of mapping class groups. 2023

Teaching Assistant (TA) Experience

1. Introductory Physics Lab II 2024
2. Introductory Physics Lab I 2023

Community Involvement

Math mentor, Department of Mathematics, Brandeis University 2024

- Mentored four students in navigating the mathematics major, offering academic and professional guidance.
- Facilitated networking by organizing meetings with other students and department representatives.

Journal club coordinator, Physics club, Brandeis University 2024

- Organized and presented discussions on physics publications to make advanced topics accessible to a broader undergraduate audience.

Secretary, Robotics Club, Brandeis University 2024

- Guided fellow students in designing, building, and soldering custom robots.
- Fostered team-work at the National Havoc Robotics League (NHRL).