Mason Price

masonprice@brandeis.edu

Education

Brandeis University — Waltham, MA

B.S., Mathematics and *Physics* — 2025

- Magna Cum Laude
- Highest Honors in Physics

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**". *arXiv*, 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**". *arXiv*, 2024.

Research Experience

Rogers Lab — Brandeis University — 2023 – 2025

Research Assistant

- Created a MATLAB-based geometry optimization algorithm to explore new structural configurations for triangular meshes used in a publication.
- 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.
- Designed and implemented a Python-based interactive application for 3D visualization, enabling lab members to efficiently generate publication-quality 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, Applied Math in Soft Matter, Computational Geometry

Skills

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

Software and tools: Mathematica, Git, LaTeX, Fusion 360

Selected Honors

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

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

SciFest — Brandeis University 2023
Poster
- *"Self-asembly of DNA origami structures: toroids and helical tubules"*

Selected Courses

Real Analysis, Differential Geometry, Topology, Complex Analysis, Abstract Algebra, Statistical Mechanics and Thermodynamics

Teaching Assistant Experience

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

Participated in Directed Reading Programs

1. Category Theory 2024
2. Introduction to Mapping Class Groups 2023

Extracurricular Activities

- **Journal club coordinator**: Physics Club 2024-2025
- **Vice-president**: Robotics Club 2024
- **Math Mentor**, Math Department at Brandeis University 2024