Uri Dickman

PhD Student
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Education

Sept 2025 - Present
University of California, Santa Barbara
Santa Barbara, CA
Doctor of Philosophy, Mechanical Engineering
Certificate in College and University Teaching
Fields: Computational Science and Engineering; Solid Mechanics, Structures, and Materials

Jan 2025 - May 2025
Case Western Reserve University
Cleveland, OH
Visiting Graduate Student, Applied Mathematics
Coursework: Computational Neuroscience

May 2024
Brown University
Providence, RI
Bachelor of Science, Physics with Honors

Research

Sept 2025 - Present
Graduate Student Researcher
Computational Applied Science Laboratory
Department of Mechanical Engineering, UC Santa Barbara
Santa Barbara, CA
Project: Machine Learning for Free Boundary Problems: Understanding Reactive Porous Media
Advisor: Frederic Gibou

July 2024 - Aug 2025
Project Analyst
Computational Biomathematics Laboratory
Department of Applied Mathematics, Case Western Reserve University
Cleveland, OH
Project: Fast, flexible, Python-integrated simulation of biophysical neural networks with complex plastic synapses
Supervisor: Peter Thomas

Jan 2023 - May 2024 **Undergraduate Research Assistant**
Solid State Nanofluidics and Nanoionics Group
Department of Physics, Brown University
Providence, RI
Project: The Specific Heat of Nano-confined Fluids
Advisor: Matthias Kuehne

Teaching

Sep 2025 – Present **Teaching Assistant**
College of Engineering, UC Santa Barbara
Santa Barbara, CA

- Engineering Mechanics: Dynamics (ME 16)
- Electrical and Electronic Circuits (ME 6)
- Mathematics of Engineering (ME 17)

Sep 2021 – Aug 2024 **Teaching Assistant**
Dept. of Physics & Dept. of Mathematics, Brown University
Providence, RI

- Calculus I (MATH 90)
- Calculus III (MATH 200)
- Basic Physics A (PHYS 30)
- Basic Physics B (PHYS 40)
- Analytical Mechanics (PHYS 70)

Awards and Fellowships

Feb - April 2026 **UR2PhD Mentorship Fellow**
Computing Research Association

May 2023 **Undergraduate Teaching and Research Award**
SPRINT, Brown University
Providence, RI

Sept 2022 **Mathematics Teaching Fellow**
Department of Mathematics, Brown University
Providence, RI

Presentations

November 19, 2025 — **Society for Neuroscience Annual Meeting**
San Diego, CA

- Presenting author, NEURONpyxl: Fast, flexible, Python-integrated simulation of biophysical neural networks with complex plastic synapses
- First-author, Fast/slow dissection and dimension reduction for a model of pattern generator variability
- Co-author, Modeling mechanisms of pattern generator variability

April 30, 2024 — **Senior Thesis Oral Defense**
Providence, RI
Title: The Specific Heat of Nano-confined Fluids

August 6, 2023 — **Summer Research Symposium**
Providence, RI
Presenting author, The Specific Heat of Nano-confined Fluids

Professional Memberships

June 2025 - Present — **Society for Neuroscience**
Graduate Student Member

May 2024 - May 2025 — **Sigma Xi Honor Society**
Associate Member

Technical Skills

Programming languages
Python, C++, MATLAB, Mathematica, Julia, Java

Scientific tools
PyTorch, Slurm, Linux, MPI, Git, NEURON, LAMMPS, LaTeX, Zotero

Skills
Scientific & high-performance computing, research, science education

Selected Projects

Self-hosted High-performance Computing Cluster

- Includes 9 Raspberry Pi nodes and 1 NVIDIA GPU node
- Slurm used for resource allocation
- Tunneling technology used to enable remote SSH login
- Advanced system administration for account and file management

Editorial Contributions

January 2026 - Present **Peer Reviewer**
Journal of Computational Physics

Publications

Peng, C., Ginzburg, J., Dickman, U., Bair, J., and Kuehne, M. (2025). Thermal characterization of suspended fine wires across continuum to free-molecular gas regimes using the 3ω method. *Phys. Rev. Appl.*, 24:064060

Dickman, U., Thomas, P. J., Chiel, H. J., Byrne, J. H., and Neveu, C. L. (2026). NEURONpyxl: Fast, flexible, Python-integrated simulation of biophysical neural networks with complex plastic synapses. *Frontiers in Computational Neuroscience*. In Review