Uri Dickman

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Education

University of California-Santa Barbara — Santa Barbara, CA
Doctor of Philosophy, Mechanical Engineering — *Sept. 2025 – Present*

- *Emphasis*: Computational Science and Engineering | *Minor*: Solid Mechanics, Materials, and Structures
- *Advisor*: Frederic Gibou

Brown University — Providence, RI
Bachelor of Science, Physics with Honors — *Sept. 2020 – May 2024*

- *Honors Thesis*: "The Specific Heat of Nano-confined Fluids"
- *Presentations*: Oral Thesis Defense (May 2024), Summer Research Poster Symposium (August 2023)

Research Experience

Project Analyst — July 2024 – August 2025
Case Western Reserve University — *Cleveland, OH*

- Computational neuroscience researcher in the BRAIN Initiative *Aplysia californica* (Calif. sea hare) consortium.
- Developed a computational tool in NEURON to enable efficient computation of complex models for Central Pattern Generator circuits, such as those found in *Aplysia californica*.
- Demonstrating applications to data assimilation and dynamical systems.

Undergraduate Research Assistant — Jan. 2023 – May 2024
Brown University — *Providence, RI*

- Conducted computational and experimental physics research about the specific heat of nano-confined fluids in single-walled carbon nanotubes (CNTs) in Prof. Matthias Kuehne's Nanofluidics group.
- Accomplishments: Detailed Molecular Dynamics characterization of thermodynamics of water-filled CNT, developed a finite difference algorithm to analyze transient heat conduction in a water-filled CNT, programmed a Raman spectroscopy scanning routine to detect isolated CNTs, grow CNTs on substrates and deposit metal contacts, take 4-probe electrical measurements.

Work Experience

Academic Tutor — July 2024 – May 2025
ModernSmart, Inc. — *Remote*

- Provide individualized remote tutoring for high school students in Honors and AP Physics and AP Calculus.
- Create curricula to prepare students for their courses and exams, and supplement their school work.

Line Cook — July 2024 – Dec. 2024
Aladdin's Eatery — *Cleveland Heights, OH*

- Build strong teamwork and collaboration skills with fellow cooks and servers to work efficiently and provide high quality food to customers.

Undergraduate Teaching Assistant — Sept. 2021 – Aug. 2024
Brown University — *Providence, RI*

- Teaching assistant for 9 courses, including Analytical Mechanics, Multivariable Calculus, and Calculus I.
- Held office hours, graded exams and homework, led problem-solving recitations, completed administrative work for courses, made solutions for homework and exams.

Instructional Laboratory Demonstrations Assistant — February 2022 – May 2024
Brown University — *Providence, RI*

- Designed and prepared live demonstrations for physics courses to convey physics concepts.
- Created a new website to host the archive of physics demonstrations.

Awards

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

- Grant awarded to students in order to conduct full-time summer research at Brown University.

Math Teaching Fellowship Sept. 2022 – Dec. 2022
Brown University *Providence, RI*

- Fellowship program with stipend awarded to students committed to teaching mathematics at the college level.
- Participated in discussions about research-based pedagogical methodology and teaching observations with Brown faculty. Program accompanied by a teaching assistantship.

Relevant Coursework

Courses: Compuational Physics, Computational Neuroscience, Solid State Physics I, Advanced Electromagnetic Theory, Thermodynamics and Statistical Mechanics, Quantum Mechanics A and B, Data Mining and Analysis, Program Design with Data Structures and Algorithms, Honors Statistical Inference I, Applied ODEs and PDEs

Skills & Interests

Scientific Tools: LAMMPS, NEURON, LaTeX, Linux, Numpy, Pandas, Slurm, Zotero, Microsoft Office

Programming Languages: Python, MATLAB, Julia, Java

Other skills: Scientific computing, teaching, numerical methods, scientific writing, teamwork, independent learning

Interests: Chamber music, orchestra, violin performance, cooking, music production