

# Kevin A. Reiss

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## Education

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### Dartmouth College

PH.D. IN PHYSICS

Hanover, NH

Jun 2025 - Present

- NSF Graduate Research Fellow and Presidential Fellow

### Boston University

B.A. with honors IN PHYSICS

Boston, MA

Sep 2018 - May 2022

- College Prize (highest honor in department)
- GPA: 3.99/4.00, Summa Cum Laude

## Publications

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- Kevin A. Reiss and David K. Campbell, “The Metastable State of Fermi-Pasta-Ulam-Tsingou Models”, *Entropy*, vol. 25, no. 2. **2023**.
- Kevin A. Reiss, “The Metastable State of Fermi-Pasta-Ulam-Tsingou Models”, *Senior Honors Thesis*. **2022**.
- James Rohlfs and Kevin Reiss, “ElectroDynamics: A Novel Computational Approach”, *Wolfram Media*. **2021**.
- S. D. Pace, K. A. Reiss, and D. K. Campbell, “The  $\beta$  Fermi-Pasta-Ulam-Tsingou Recurrence Problem”, *Chaos*, vol. 29, no. 11. **2019**.

## Research

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### Quantum Benchmarking: Random Circuits

Dartmouth College

ADVISOR: PROF. JAMES WHITFIELD

Sep 2025 - Present

- Constructing and comparing different models of random quantum circuits
- Evaluating benchmarking models like Quantum Volume against performance on problems like Hamiltonian simulation

### Fermi-Pasta-Ulam-Tsingou Problem

Boston University

ADVISOR: PROF. DAVID CAMPBELL

Feb 2019 - May 2022

- Explored FPUT recurrences in the  $\beta$ -FPUT model, using a combination of analytical and numerical techniques
- Performed statistical analysis on data derived from symplectic integration of a Hamiltonian system
- Published and presented results with implications on the equipartition theorem, and the metastable state of localized systems
- Mentored undergraduate researchers through REU programs, honors theses, and introductory research

## Experience

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### ResCon Technologies

Columbus, OH

MACHINE LEARNING ALGORITHM DEVELOPER

Sep 2022 - Jun 2024

- Led a small team to improve accuracy during GPS-denied inertial navigation, resulting in a provisional patent
- Developed novel algorithms to implement Next-Generation Reservoir Computing on edge hardware
- Researched systems of interest to discover use cases of min-data machine learning

### Wolfram Research

Champaign, IL

MACHINE LEARNING DEVELOPER INTERN

Jun 2022 - Sep 2022

- Trained a neural network to solve partial differential equations using physically motivated methods, with minimal training data
- Formally presented and disseminated research and results

## Skills

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**Programming** Python, Mathematica, Git, L<sup>A</sup>T<sub>E</sub>X, Julia, Fortran, Matlab, Java

**Languages** English (native), French, Spanish

## Honors & Awards

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| <b>Graduate Research Fellowship</b> , National Science Foundation, 2025                                 | National  |
| <b>Presidential Fellowship</b> , Guarini School of Graduate and Advanced Studies, 2025                  | Dartmouth |
| <b>College Prize for Excellence in Physics</b> , Boston University College of Arts and Sciences, 2022   | BU        |
| <b>ΦBK (Phi Beta Kappa) Inductee</b> , Phi Beta Kappa, 2022   | National  |
| <b>Harold C. Case Scholarship</b> , Boston University Office of Fellowships and Scholarships, 2021      | BU        |
| <b>Goldwater Scholarship</b> , Barry Goldwater Scholarship and Excellence in Education Foundation, 2020 | National  |
| <b>Provost's Scholars Award</b> , Boston University Office of the Provost, 2020                         | BU        |
| <b>Presidential Scholarship</b> , Boston University Office of the President, 2018                       | BU        |

## Presentations

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| May 2022 “ <b>The Metastable State of Fermi-Pasta-Ulam-Tsingou Models</b> ”, Honors Thesis Oral Defense                        | Boston, MA          |
| Mar 2022 “ <b>Timing of the Fermi-Pasta-Ulam-Tsingou Metastable State</b> ”, American Physical Society                         | Chicago, IL         |
| Mar 2021 “ <b>The Fermi-Pasta-Ulam-Tsingou Metastability Issue</b> ”, American Physical Society                                | Online              |
| Aug 2020 “ <b>Metastability and the Fermi-Pasta-Ulam-Tsingou Lattice</b> ”, BU Physics Research Opportunities                  | Online              |
| Mar 2020 “ <b>Destruction of Fermi-Pasta-Ulam-Tsingou Recurrences</b> ”, American Physical Society                             | Online              |
| “ <b>The <math>\beta</math> Fermi-Pasta-Ulam-Tsingou Recurrence Problem</b> ”, BU Undergraduate Research Opportunities Program | BU Metcalf Ballroom |

## Leadership & Teaching

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|--|---------------------|
| <b>Treasurer</b> , Dartmouth BridgeUSA   | Sep 2025 - Present  |
| <b>Learning Assistant</b> , BU PY405/PY406: Electromagnetic Fields and Waves I & II          | Sep 2020 - May 2022 |
| <b>Treasurer</b> , Boston University’s Robotics and Ambient Intelligence Labs                | Sep 2020 - Sep 2021 |
| <b>Research Mentor</b> , Research In Science and Engineering (RISE)                          | Jul 2021 - Aug 2021 |
| <b>Mentor</b> , Wolfram Summer Camp  | Jul 2021            |
| <b>Ambassador / Mentor</b> , Boston University Physics Research Opportunity (REU)            | May 2020 - Aug 2020 |
| <b>Mentor</b> , Physics PeeRs for Incoming Student Mentorship Program (PRISM)                | Aug 2020 - May 2022 |
| <b>Section Leader / Member</b> , Boston University Marching, Pep, Scarlet, and Concert Bands | Aug 2018 - May 2022 |

## Committees

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| 2021-22 <b>Harold C. Case Member</b> , Provost's Faculty Teaching Awards Committee | BU |
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## Classwork

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| PHYS116 <b>Quantum Information Science</b> , Prof. James Whitfield; Dartmouth                | Spring 2026 |
| PHYS90 <b>Intermediate Quantum Mechanics</b> , Prof. Chandrasekhar Ramanathan; Dartmouth     | Winter 2026 |
| ENGS121 <b>Implementations of Quantum Information</b> , Prof. Mattias Fitzpatrick; Dartmouth | Grade: HP   |
| PHYS100 <b>Mathematical Methods for Physicists</b> , Prof. Rufus Boyack; Dartmouth           | Grade: HP   |
| PY580 <b>Machine Learning for Physicists</b> , Prof. Pankaj Mehta; BU                        | Grade: A    |
| PY502 <b>Computational Physics</b> , Prof. Anders Sandvik; BU                                | Grade: A    |
| PY511 <b>Quantum Mechanics I</b> , Prof. Shyamsunder Erramilli; BU                           | Grade: P    |
| PY541 <b>Statistical Mechanics</b> , Prof. Claudio Chamon; BU                                | Grade: A    |
| MA561 <b>Methods of Applied Mathematics I</b> , Prof. Gene Wayne; BU                         | Grade: A    |
| PY452 <b>Quantum Physics II</b> , Prof. Ken Lane; BU   | Grade: A    |
| EK103 <b>Computational Linear Algebra</b> , Prof. Kamal Sen; BU                              | Grade: A    |