

# Christian Pratt

Physics Ph.D. Candidate  
University of California, Davis

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## Education

2021 — Ph.D. *Physics*  
University of California, Davis  
Advisor: Prof. James Crutchfield

2022 M.Sc. *Physics*  
University of California, Davis

2021 B.Sc. *Physics*  
University of California, Davis

2019 A.A. *Mathematics*  
San Diego Community College District

## Research Positions

2022 — Graduate student researcher  
[Complexity Sciences Center](#)  
University of California, Davis  
Advisor: Prof. James Crutchfield

2019 - 2021 Undergraduate research student  
Experimental particle physics  
University of California, Davis  
Advisor: Prof. Michael Mulhearn

## Publications

2024 **C. Z. Pratt**, K. J. Ray and J. P. Crutchfield. Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing. To appear in *Chaos*. [arXiv:2406.12153](https://arxiv.org/abs/2406.12153)

2025 **C. Z. Pratt**, K. J. Ray and J. P. Crutchfield. Extracting Equations of Motion from Superconducting Circuits. *Physical Review Research*. [10.1103/PhysRevResearch.7.013014](https://doi.org/10.1103/PhysRevResearch.7.013014)

2021 J. Swaney, M. Mulhearn, **C. Z. Pratt**, C. Shimmin, and D. Whiteson. Measurement of Smartphone Sensor Efficiency to Cosmic Ray Muons. [arXiv:2107.06332](https://arxiv.org/abs/2107.06332)

## Presentations

2025 Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing. *APS March Meeting 2025*. Anaheim, California.

2024 [Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing](#). Technical seminar. Complexity Sciences Center, University of California, Davis.

2024 Universal Dynamical Computing on the Nanoscale. *Dynamic Days 2024*. Davis, California.

2023 Universal Dynamical Computing on the Nanoscale. *Information Engines at the Frontiers of Nanoscale Thermodynamics*. Telluride, Colorado.

2023 Equations of Motion for Dynamical Computing. *Army Research Office on-site visit*. Complexity Sciences Center, University of California, Davis.

## Teaching

2025 University of California, Davis: Teaching Assistant  
256A: Physics of Information

2021 - 2022 University of California, Davis: Teaching Assistant  
7B: Fluid mechanics, electrical circuits, Newtonian mechanics  
7C: Modern physics, waves, optics  
9A: Classical mechanics

## Awards & Honors

Winter 2025 Graduate Student Researcher Fellowship  
Department of Physics and Astronomy  
University of California, Davis

Spring 2024 Graduate Student Researcher Fellowship  
Department of Physics and Astronomy  
University of California, Davis

Spring 2023 Graduate Student Researcher Fellowship  
Department of Physics and Astronomy  
University of California, Davis

2018	NASA Community College Aerospace Scholar
2016 - 2019	Dean's Honors List San Diego Community College District

## **Service and Outreach**

2020 - 2021	Mentor, Support Encourage and Develop For Children (SendForC)
2018	Volunteer, New Story Charity
2017 - 2018	Volunteer, San Diego Rescue Mission
2016 - 2018	Volunteer, San Diego Air and Space Museum

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