

Eleanor Hall

PhD in particle theory

(415) 205 8849 
nellhall@berkeley.edu 
nellhall.com 

Education

University of California, Berkeley

August 2018 – December 2024

Doctor of Philosophy in Physics

Advisor: Hitoshi Murayama

Massachusetts Institute of Technology

August 2014 – June 2018

Bachelor of Science in Physics

Thesis Advisor: Jesse Thaler

Thesis: Photon Isolation and Jet Substructure

Research

Publications

Phase Transitions in the Early Universe

Graduate dissertation with new material

Asymmetric Dark Matter May Not Be Light

[arXiv:2107.03398]

Non-perturbative methods for false vacuum decay

[arXiv:2104.10687]

Asymmetric Matters from a Dark First-Order Phase Transition [arXiv:1911.12342]

Baryogenesis From a Dark First-Order Phase Transition [arXiv:1910.08068]

Photon isolation and jet substructure

[arXiv:1805.11622]

Talks and Seminars

PASCOS, UC Irvine, 2023

PONT, Avignon, 2023

Phase transitions and topological defects in the early universe, Harvard University, 2022 (Invited)

Strong and Electroweak Matter, 2021

Aspen winter workshop, 2021 (Invited)

University of Tokyo, 2020

Seminars: University of Florida, Helsinki Institute of Physics, TRIUMF, University of Toronto, UC Berkeley

Awards and Fellowships

Doug Tuttle and Lynn Brantley Fellowship

Berkeley Center for Theoretical Physics, 2021

Graduate Research Fellowship Program

National Science Foundation, 2018

Joel Matthew Orloff Award for Service

MIT Department of Physics, 2017

History Undergraduate Writing Prize

MIT History, 2017

Teaching

Courses taught

Physics 7A: Mechanics for Scientists and Engineers

Berkeley, 2023-2024

Physics 105: Analytic Mechanics

Berkeley, 2022

Physics 111B: Advanced Experimental Lab

Berkeley, 2019

Physics 8.B: Introductory Physics 2

Berkeley, 2019

8.13: Junior Lab

MIT, 2018, Undergraduate TA

Pedagogy education

Professional Preparation: Supervised Teaching of Physics Berkeley, 2018-2019

Mentorship Experience

Head Coach, High School Sailing Team

Port Townsend, WA, 2025

Identity and Gender Spectrum (IGenSpectrum)

UC Berkeley, 2019 – 2024

MIT Society of Physics Students

Secretary, 2017 – 2018

Vice President, 2016 – 2017

MIT Physics Code of Conduct Committee

2016-2018

Violin Bowmaking

November 2024 – May 2026

Apprenticed with: Charles Espey, Chimacum WA

Formal training in the 19th-century French school of violin bow-making. Three bows made, with education and experience in repairs and rehairing.

Skills

Coding: Fluency in Python, with extensive experience with NumPy, SciPy, and Matplotlib • C/C++ • Web programming (HTML, CSS, Javascript, etc.) • Sage, Mathematica • Some experience with Julia, MATLAB, LabView, and Maple.

Hands-on: Experience and competency with most machine + wood shop tools (from lathe to bandsaw to 19th-century hand-tools). Experience with Arduino, some analog electronics. Standard bench tools (oscilloscope, multimeter, etc.).

CAD: OnShape • Autodesk Inventor • Sketchup

Fun

Banjo • Guitar • Cello • Woodworking • Poetry • Dinghy racing • Audio+Radio