

## EDUCATION

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### Brown University

Doctor of Philosophy, Physics

Master of Science, Physics

– Advisor: Savvas Koushiappas, PhD

Providence, RI USA

2018–2023

2020

### Carnegie Mellon University

Bachelor of Science, Physics

Pittsburgh, PA USA

2014–2018

## PUBLICATIONS

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1. “Kinematics of the Sagittarius Dwarf Spheroidal core: A 5D Analysis for a 6D Methodology with Gaia DR3”  
Isabelle S. Goldstein, Louis E. Strigari  
arXiv:2501.11138
2. “Viability of ultralight bosonic dark matter in dwarf galaxies”  
Isabelle S. Goldstein, Savvas M. Koushiappas, and Matthew G. Walker  
Phys. Rev. D 106, 063010 (2022)
3. “Could the 2.6  $M_{\odot}$  object in GW190814 be a primordial black hole?”  
Kyriakos Vattis, Isabelle S. Goldstein, and Savvas M. Koushiappas  
Phys. Rev. D 102, 061301(R) (2020)

## RESEARCH EXPERIENCE

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### Texas A&M University

Postdoctoral Researcher

2023–Present

- Research focus on dark matter in dwarf galaxies using stellar kinematics.
- Worked with data from the Gaia space observatory.

### Brown University

Graduate Student Research Assistant

2018–2023

- Experience in cosmology, astroparticle physics, axion-like dark matter, dwarf galaxy dynamics and primordial black holes.
- Coding fluency in Python, Fortran 90, C++, and Cluster high performance computing.

### Carnegie Mellon University

Undergraduate Research Assistant with Dr. Matthew Walker

2017–2018

- Examined the strength of standard dwarf galaxy detection methods using gamma ray data with stellar data from the Sloan Digital Sky Survey and Pan-STARRS.

### Lawrence Berkeley National Labs

Assistant Researcher with the DESI and BOSS collaborations

Summer 2016

- Tested ultra faint spectra sky subtraction by integrating the Spectroperfectionism method into DESI and BOSS data analysis pipelines.

### Carnegie Mellon University

Undergraduate Student Research Assistant with Dr. Shirley Ho

2015–2016

- Dark matter and galaxy cross correlation bias for redshift dependance.

## RESEARCH INTERESTS

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My research interests lie in astrophysics and cosmology, particularly in the intersection between theory and observation. My previous work has focused on dark matter searches, as well as the large scale structure of dark matter in contrast to baryonic matter. I am interested in studying local group astrophysics to learn about the dark and light sector.

## TEACHING EXPERIENCE

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### **Center for the Integration of Research, Teaching & Learning at Texas A&M**

An Introduction to Evidence-Based Undergraduate Teaching Certificate

Fall 2024

### **Brown University**

Lab Instructor, PHYS 0470 Electricity and Magnetism

Fall 2018, 2019, 2020

- Course Instructor: Dr. Savvas Koushiappas  
Number supervised: 22, 24, 32

Lab Instructor, PHYS 0060 & 0160

Spring 2019

- Course Instructor: Dr. Meenakshi Narain  
Number supervised: 15

Lab Instructor, PHYS 0220 Astronomy

Spring 2020

- Course Instructor: Dr. Jonathan Pober  
Number of students: 200

Course Teaching Assistant, PHYS 0070 Analytical Mechanics

Spring 2021

- Course Instructor: Dr. James Valles  
Number of students: 85

## SCHOLARSHIPS AND AWARDS

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- Physics Merit Fellowship  
Brown University Department of Physics 2022-2023
- Award of Excellence as a Graduate Teaching Assistant  
Brown University Department of Physics, PHYS 0070 2021
- RI Space Grant Graduate Fellow with the NASA RI Space Grant Consortium 2021
- National Science Foundation Graduate Research Fellowship Program Honorable Mention 2020
- Associate Member of Sigma Xi Scientific Research Honors Society  
Brown University Chapter, Elected to Membership 2020
- Award of Excellence as a Graduate Teaching Assistant  
Brown University Department of Physics, PHYS 0470 2018
- Senior Leadership Recognition Award  
Carnegie Mellon University Department of Physics 2018
- NASA Pennsylvania Space Grant  
Investigating the CMB lensing potential: stacking with galaxies and gamma radiation density 2015
- H. Joseph Gerber Medal of Excellence  
Connecticut Academy of Science and Engineering 2014
- CERN Special Award at the Intel International Science and Engineering Fair  
European Organization for Nuclear Research 2014

## CONFERENCES

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### Workshop Papers or Presentations

- Title: *Constraining Dwarf Galaxy Dark Matter Distributions: Spherical Jeans Analyses for 3D Velocity Data* 2025  
Talk presented at the 2025 Virgo Consortium Workshop, University of Sussex, UK.
- Title: *Constraining Dwarf Galaxy Dark Matter Distributions: Spherical Jeans Analyses for 3D Velocity Data* 2024  
Poster presented at Small Galaxies, Cosmic Questions II, Durham University, UK.
- Title: *Constraining Dwarf Galaxy Dark Matter Distributions: Spherical Jeans Analyses for Line-of-Sight and 3D Velocity Data* 2024  
Talk presented at the Center for Theoretical Underground Physics and Related Areas
- Title: *The Viability Of Ultralight Bosonic Dark Matter In Dwarf Galaxies* 2024  
iPoster presented at 243rd annual meeting of the American Astronomical Society
- Title: *The Viability Of Ultralight Bosonic Dark Matter In Dwarf Galaxies* 2022  
Talk presented at the Mitchell Conference on Collider, Dark Matter, and Neutrino Physics
- Title: *Cross correlations of the CMB lensing potential and Sloan Digital Sky Survey galaxies* 2016  
Poster presented at Essential Cosmology for the Next Generation

### Conferences Organized

- LOC Co-chair for the Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2025  
Texas A&M University
- LOC Co-chair for Texas A&M Astrosymposium 2024  
Texas A&M University
- LOC graduate student organizer for the Conference for Undergraduate Women in Physics 2022  
Brown University, *Cancelled due to Covid-19*

### Conferences Attended

- LSST Dark Matter Workshop, Kavli Institute for Cosmological Physics at the University of Chicago 2019
- Summer School on Cosmology, International Centre for Theoretical Physics 2016

## ADDITIONAL EXPERIENCE

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### Community outreach

- Texas A&M Postdoc-Graduate Mentorship Program Mentor 2023-Present
- Guest speaker at the Urban Assembly School for Emergency Management (NYC, NY) 2022  
*Pursuing STEM in undergraduate and graduate level education*
- Pittsburgh Glass Center teaching assistant for community glassblowing classes and demonstrations 2015–2018