

Billie Beach

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EDUCATION

California State University, Long Beach (CSULB)

Master of Science in Physics

May 2024

California State University, Northridge (CSUN)

Bachelor of Science in Physics, Option in Astrophysics

May 2021

Cum Laude

HONORS & AWARDS

Betty & Martin Altshiller Memorial Scholarship

Apr. 2021

Dean's List

Spring 2018-Spring 2021

PUBLICATIONS

Chen, R., Kuhlmann, W., Fischer, A.R., Diaz, E., & **Beach, B.** (2020). Host Galaxy Identification for Supernova Surveys. *The Astrophysical Journal*, 12(5), 175-185.

PRESENTATIONS

Host Galaxy Environment as a Parameter for SN Ia Standardization

Apr. 2021

Society of Physics Students Regional Conference, Pomona, CA

Type Ia Supernovae and their Host Galaxies

Mar. 2021

CSUN Annual Student Research and Creative Works Symposium, Northridge, CA

RESEARCH EXPERIENCE

CSUN Department of Physics and Astronomy – Northridge, CA

Undergraduate Research Assistant

Aug. 2020-May 2021

- Contributed to three-year-long National Science Foundation funded project titled "From Stars to Active Galactic Nuclei. Photoionization, Photoexcitation, Opacities, and Spectra of Low Ionization Fe-peak Species", which was granted \$150,000 for astrophysical research.
- Plotted photoionization data from various celestial objects for Dr. Jose Martinez using the Python computer language, primarily with the matplotlib library.
- Organized compilations of data from research publications for use in references and citations.

TEACHING EXPERIENCE

CSULB Physics Lab – Long Beach, CA

Teaching Assistant

Sep. 2021-Present

- Instruct undergraduate students in introductory physics course labs once per week and articulate key learning points in each session.
- Effectively manage time to review lab material, conduct necessary experiments, and report findings during each lab session.
- Grade lab reports and provide constructive feedback to support students' academic development.

TRiO Veterans Upward Bound – Northridge, CA

Math Tutor

Sep. 2019-May 2021

- Tutored small groups of local veterans (average age 50) in algebra on a weekly basis.
- Adjusted tutoring methods to accommodate different learning styles.

VOLUNTEER EXPERIENCE

Griffith Observatory – Los Angeles, CA

Museum Guide

Jan. 2019-May 2020

- Guided informal and formal tours of observatory for patrons of all ages.
- Engaged museum patrons with hands-on museum exhibits.
- Led tours aligned with California fifth-grade science curriculum.

AFFILIATIONS

Society of Physics Students, CSUN Chapter

Sep. 2018-May 2021

Sigma Pi Sigma Honor Society

Aug. 2019-May 2021

CSUN Astronomy Club

Jan. 2020-Dec. 2020