Karina Barboza

The Ohio State University
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Education

Expected 2028	Ph.D in Astronomy, **The Ohio State University**
July 2024	M.S. in Astronomy, **The Ohio State University**
June 2021	B.S. in Astrophysics, **University of California**, Los Angeles

Honors & Awards

Mar 2026	Society of Indigenous Physicists Fred Begay Fellowship
Mar 2026	NASA Group Achievement Award to the NEOWISE Data Team Center
Feb 2025	IPAC Visiting Graduate Fellowship
Jul 2024	¡Lánzate!/Take Off! Higher Education Travel Grant
May 2024	AUI/IAU/Heising-Simons Scholar Travel Grant
Apr 2024	NSF Graduate Student Research Fellowship

Publications

Karina Barboza, Laura A. Lopez, et al. 2026, "A Multi-wavelength Analysis on the Diffuse Hot Gas and X-ray Binaries Associated with JWST-Identified Bubbles in NGC 628," in prep.

Karina Barboza and Christopher Kochanek, 2024, MNRAS, 535, 1315, "Searching for Triple Systems Unbound by Supernovae"

Erik B. Monson, Bret D. Lehmer, incl. **Karina Barboza**, 2026, arXiv:2602.20397, "Constr–aining the Sub-Galactic Relationship Between Star Formation and the Hot Interstellar Medium in NGC 4254"

Jorge A. Zavala, Andreas L. Faisst, incl. **Karina Barboza**, 2026, ApJL, 998, L36, "ALMA & JWST Identification of Faint Dusty Star-Forming Galaxies up to z∼8"

Research Experience

The Ohio State University
Advisors: Laura Lopez, Adam Leroy, Smita Mathur 2024−Present

- Investigating JWST-identified bubbles in NGC 628 with archival Chandra data to determine the role and conditions of stellar feedback in shaping galaxies.

Advisor: Christopher Kochanek 2022−2024

- Searched for unbound triple systems created in galactic supernova explosions to constrain the role of higher order systems in massive stellar evolution and compact object formation.

Infrared Processing and Analysis Center at Caltech
Advisor: Andreas Faisst 2025− Present

- Conducting research on dusty, high-redshift galaxies using ALMA CHAMPS and JWST data to study ISM properties, star formation, and galaxy evolution across cosmic time.

Advisor: David Cook 2022

- Increased the efficiency of finding electromagnetic counterparts of gravitational waves by improving the completeness of known galaxies.

La Serena School of Data Science 2024
Advisor: Humberto Farias Aroca

- Developed an intelligent chatbot, CARINA, that processes natural language queries to search astronomical data in IVOA virtual observatories. Using language models and Retrieval-Augmented Generation, CARINA converts user inquiries into ADQL queries and retrieves data, simplifying access to astronomical repositories.

University of Hawaii at Manoa 2020 – 2021
Advisor: Andreea Petric

- Analyzed the morphology and kinematics of a triple AGN merger using SITELLE data, focusing on features, gas expulsion velocity, and impacts on the interstellar medium.

University of California, Los Angeles 2019 – 2020
Advisors: Brad Hansen, Jon Zink

- Helped develop open-source pipeline ExoMult to identify binary systems. Using the Shane Telescope, binary targets were identified and the gathered data was implemented to further the software's development.

Teaching & Mentoring Experience

Intro to Astronomy (ASTR 1101) **TA**– Prof. Lopez Aug 2025–Dec 2025
LAMAT REU Program **Mentor**, UCSC Jun 2026–Aug 2026

Workshops & Schools

Les Houches School of Physics, Summer School
France, July 2026 (selected participant; attending virtually due to LAMAT)

La Serena School for Data Science: Applied Tools for Data Driven Science, Winter School
Chile, August 2024

High Resolution X-Ray Spectroscopy Workshop, Workshop
MIT, August 2023

Technical Skills

Languages: Fluent in English, Spanish, P'urepecha
Coding Languages: C++, Python, SQL, ADQL, LaTeX
Machine Learning: Natural Language Processing, Retrieval-Augmented Generation (RAG)
Astronomy Software: DS9, AstroPy, CIAO
OS: Linux Ubuntu, MacOS, Windows 10

Work Experience

Nov 2021–Aug 2022 | Infrared Processing and Analysis Center, **Caltech**
Data Pipeline Operator for NEOWISE mission where I helped discover, track, and characterize near-Earth asteroids and comets, particularly those posing a threat to Earth.

Conferences/Talks/Posters

A Multi-wavelength Approach to Star-forming Environments Within Galaxies at Different Scales, TALK, Caltech, Aug 2025

PHANGS-Chandra and Associated Projects, TALK
PHANGS Team Meeting, France, February 2025

Diffuse Hot Gas and X-ray Binaries Associated with JWST-Identified Bubbles in NGC 628, TALK, NSBP-NSHP Joint Conference, Texas, Nov 2024

Diffuse Hot Gas and X-ray Binaries Associated with JWST-Identified Bubbles in NGC 628, POSTER, XXXII IAU General Assembly, South Africa, Aug 2024

Chandra X-ray Observations of PHANGS Galaxies, TALK
PHANGS Team Meeting, Germany, Feb 2024

Diffuse Hot Gas and X-ray Binaries Associated with JWST-Identified Bubbles in NGC 628, POSTER, 243rd Meeting of the American Astronomical Society, Louisiana, Jan 2024

National Society of Black Physicists, CONFERENCE
Knoxville, Tennessee, Nov 2023

Searching for Unbound Triple Systems Created in Galactic Supernova Explosions, POSTER
20th Divisional Meeting of the High Energy Astrophysics Division, Hawaii, Mar 2023

SACNAS National Diversity in STEM, CONFERENCE
San Juan, Puerto Rico, Oct 2022

The Morphology and Kinematics of SDSS J$0849+1114$, TALK
237th Meeting of the American Astronomical Society, Virtual, Jan 2021

Morphology and Kinematics of a Triple AGN Merger, TALK, POSTER
University of Hawaii at Manoa, Jul 2020

Outreach

May 2025– Present	Black In Astro Social Media Assistant, VOLUNTEER
Jan 2024	Graduate Program Recruitment at the 243rd AAS, VOLUNTEER
Aug 2023–Present	Scientific Thinkers, VOLUNTEER
Jun 2023–Aug 2023	UCLA Planetarium Show Presenter, VOLUNTEER
Jul 2023–Aug 2023	RISE Tutor, VOLUNTEER
Jun 2023–Present	Caltech Astronomy Stargazing Lecture Series VOLUNTEER

Membership

American Astronomical Society (AAS)
Black In Astro (BIA)
League of Underrepresented Minoritized Astronomers (LUMA)
Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
Society of Indigenous Physicists (SIP)