

Driving Community Learning at Cosmic Scales: Galaxies, Stars & Radical Mentorship Methods

Dr. Katy Rodriguez Wimberly

Assistant Professor

Department of Physics & Astronomy

CSU San Bernardino

Thursday, May 15, 2025

11:10 am - 12:00 Noon

Building 53, Room 215

Pizza will be served!



Abstract: The Early Universe remains elusive, particularly regarding the formation of the first stars and galaxies. Ultra-faint dwarf galaxies (UFDs), possible First Galaxy relics, offer insights into these cosmic mysteries. At CSUSB's Tiny Old Galaxies Lab (TOGL), we investigate UFDs like Hydrus I and Willman 1 to explore their chemical abundances and evolutionary histories, and implications for the Milky Way. Our research also uses RR Lyrae stars to measure our Galactic mass, leveraging SDSS-V and Gaia DR3. Alongside astrophysics, I research effective STEM mentorship — a vital component to student success, especially for those from historically marginalized groups. The Cal-Bridge Program supports STEM undergraduates pursuing PhDs through faculty mentorship, professional development, financial aid, peer networking, and summer research. This approach has improved scholar persistence, with mentorship as a key factor. I will discuss these findings, strategies to enhance mentorship, and upcoming Cal-Bridge opportunities.

Bio: Dr. Katy Rodriguez Wimberly is an Assistant Professor at CSU San Bernardino, with expertise in Near-Field Cosmology and galaxy evolution particularly in ultrafaint dwarf galaxies. Alongside astrophysics, Katy is also passionate about mentorship — she is Director of Mentorship for the Cal-Bridge Program, a CSU-UC STEM scholarship program, where her aim is to normalize a holistic approach to academic success and strengthen marginalized communities. She continues this work through her service on the Astronomical Society of the Pacific's Board of Directors. Katy, a SoCal native, first attended Mt. San Antonio College, then earned her Physics B.S from CSU Long Beach, her Physics Ph.D. from UC Irvine and completed a postdoc at UC Riverside, where she was an NSF MPS Ascend Fellow. Aside from work, Katy loves slightly contradictory things like hiking and bingeing anime, HIIT and gardening, and Disneyland and rock-climbing (though her 2 young kids make a lot of that hard).