

M. Katy Rodriguez Wimberly

ASTROPHYSICS ASSISTANT PROFESSOR · CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

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Appointments

California State University, San Bernardino

Assistant Professor

San Bernardino, California

August 2023 - Present

University of California, Riverside

NSF MPS Ascend Postdoctoral Research Fellow

• Advisors: Profs. Laura Sales & Gaby Canalizo

Riverside, California

Jan '21 - Aug '23

Pomona College

Lecturer

Claremont, California

Jan - May '23

Research Statement(s)

I study Near-Field Cosmology and Galaxy Evolution using both optical telescopes and cosmological simulations. In particular, my work focuses on ultra-faint dwarf galaxies — researching these possible relics of the first galaxies ever formed to learn more about the Early Universe, how the earliest galaxies evolve, and how they can be used as a tool to learn more about our own galaxy, the Milky Way. Additionally, I study RR Lyrae stars in the Milky Way's stellar halo to explore our Galaxy's mass and stellar structures through a different lense.

Alongside this astrophysics research, I work to improve the astronomical community for all, including publishing articles to help spread successful programs. I have created peer mentorship programs implemented at my alma mater, UC Irvine, at my postdoctoral institution, UC Riverside, and within the Cal-Bridge Program. My aim is to normalize a holistic approach to academic success and strengthen marginalized communities.

Education

University of California, Irvine

Ph.D. in Physics

- Thesis Advisor: Prof. Michael Cooper
- Thesis: Ultra-Faint Dwarf Galaxies: Investigating the Evolution of Our Universe & Those Who Study It

Irvine, California

Sep 2016 - Dec 2021

University of California, Irvine

M.S. in Physics

- GPA: 3.34 out of possible 4.00

Irvine, California

Sep 2016 - June 2019

California State University, Long Beach

M.S. in Physics · Transferred to Ph.D. Program

- GPA: 4.00 out of possible 4.00

Long Beach, California

Aug 2015 - May 2016

California State University, Long Beach

B.S. in Physics · Minor in Math

- Major GPA: 3.20 out of possible 4.00

Long Beach, California

Jan 2011 - May 2015

Mount San Antonio College

A.A. · Majors in Fine Arts, Natural Science & Math, Social & Behavioral Sciences

- Overall GPA: 3.32 out of possible 4.00

Walnut, California

Jan 2004 - June 2009

Grants

NSF MPS Ascending Faculty Catalyst Award

Driving Community Learning at Cosmic Scales: Defining Ultrafaint Dwarf Galaxies & Radical Mentorship Methods

\$242,456

2024 - 2026

Astrophysics Research Consortium: SDSS-V FAST

Linking Velocities and Brightness in Variable Stars: Toward Measuring the Total Mass of the Milky Way Out to 30 kpc

\$45,834

2024 - 2025

NSF AST Conference Grant	\$49,950
Cal-Bridge Doctoral Scholars Summer Institute Conference	2024
PATHS	\$15,200
Linking Velocities and Brightness in Variable Stars: Towards Measuring the Mass of the Milky Way	2023
New York Community Trust: Astrophysics Grant	\$4,000
Equipment Purchase - Laptops for Astrophysics Data Reduction & Analysis	2024
NSF AST Conference Grant	\$49,375
Cal-Bridge Summer Institute Alumni Conference	2023

Highlighted Awards

NSF MPS Ascend Postdoctoral Fellow, 2021 - 2023
AAS National Osterbrock Fellow, 2020 - 2021
NSF Graduate Research Fellow, 2016 - 2021
Eugene Cota-Robles Fellow, 2016 - 2021

Peer Reviewed Publications

A Model of Mentorship for Students from Historically Underrepresented Groups in STEM	<i>Understanding Interventions</i>
Rodriguez Wimberly, M.K., et al.	2023
Sizing from the Smallest Scales: The Mass of the Milky Way	<i>MNRAS</i> , 513, 4968
Rodriguez Wimberly, M.K., et al.	2022
Characterizing the Infall Times and Quenching Timescales of the Milky Way Satellites with <i>Gaia</i> Proper Motions	<i>MNRAS</i>
Fillingham, S.P. et al.	2019
• arXiv: 1906.04180	
Suppressing Star Formation on the Smallest Scales: What Role Does Environment Play?	<i>MNRAS</i> , 483, 4031
Rodriguez Wimberly, M.K., et al.	2019
SETI Observations of Exoplanets with the Allen Telescope Array	<i>AJ</i> , 152.6 (2016b): 181
Harp, G.R. et al.	2016

Teaching Experience

CSU San Bernardino	<i>Current</i>
PHYS3100: Mathematical Methods of Physics — Professor	
PHYS1500: Tools for Physicists — Professor	
ASTR3310: Astrophysics of Galaxies and Cosmology — Professor	
ASTR2300: Introduction to Astronomy for Scientists — Professor	
Pomona College	<i>Jan - May 2023</i>
ASTR002: Introduction to Galaxies and Cosmology — Lecturer	
CSU Long Beach	<i>Aug 2015 - May 2016</i>
ASTR110L: Introduction to Astronomy Lab — Instructor on Record	

Highlighted Mentorship Products

Cal-Bridge Mentorship Handbook

Revision Team Lead

June 2021

- Revisions focus on reciprocal mentor-mentee relationships (especially in that as much as students need to adapt to academia, mentors and academia need to adapt to students), highlighting hurdles specific to many underrepresented groups within STEM, and mental health
- Publicly available at <https://tinyurl.com/CBMentorshipHandbook>

Cal-Bridge Mentor Map

Author

Aug 2020

- Created a Mentor/Support Network Map designed specifically for undergraduate STEM students.
- Publicly available at <https://tinyurl.com/CBMentorshipMap>

Observing Experience

6 Nights **Keck Observatory**, Mass-Metallicity Relation for UFDs

LRIS, Lead Co-I

1.5 Nights **Keck Observatory**, Chemical Abundances in UFD, Willman 1

DEIMOS, Lead Co-I

15 Nights **Keck Observatory**, Extragalactic Star Formation Quenching Survey

DEIMOS, Co-I

Oct 2015 **UCO/Lick Observatory**, Robert P. Kraft Observational Astronomy Workshop

Skills

Programming

Python (Pandas, SciPy, NumPy, Scikit-learn, AstroPy), IRAF (DEIMOS Mask Design, Wavelength Calibration), MySQL, Fortran95, Mathematica, HTML, Certified LabVIEW Associate Developer

Tools

Unix, Shell (Bash/Zsh), \LaTeX (Overleaf/R Markdown), Pypelt, Aladin, DS9, Gwyddion, Git, Atomic & Magnetic Force Microscopy.

Soft Skills

Mentorship, Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Society Memberships

Astronomical Society of the Pacific, Vice President, Diversity Committee Co-Chair, Board Fellow

2017 - Present

American Astronomical Society, Early Career Task Force, Meetings Task Force, Demographics Committee

2015 - Present

American Physical Society, Member

2015 - 2017

Society of Physics Students - CSULB, CSULB Chapter Secretary (2013-2015), Member

2011 - 2015

Invited Talks

Pedagogical Practices for Building Welcoming Astrophysics Classrooms, 246th American Astronomical Society Meeting Special Session

Jun 2025

Astronomy Colloquium, Cal Poly San Luis Obispo Physics Department Colloquium

May 2025

Invited Public Talk, Santa Barbara Astronomical Unit at The Santa Barbara Museum of Natural History

May 2025

Invited Research Pitch, CSU STEM-NET Virtual Research Cafe 10.0

Mar 2025

Towards Equity in the Classroom, 244th American Astronomical Society Meeting Special Session

Jun 2024

Astronomy Colloquium, California State University, Long Beach, Department of Physics & Astronomy

Feb 2024

Astronomy Colloquium, California State University, Los Angeles, Department of Physics & Astronomy

Sep 2023

Lamat Institute Summer Speaker, University of California, Santa Cruz, Department of Astronomy

Aug 2023

Astronomy Colloquium, University of Texas, Austin, Department of Astronomy

Apr 2023

First Friday Astronomy, Boise State University, Department of Physics

Mar 2023

241st Meeting of the American Astronomical Society, NSF AAPF Symposium Mentorship Panelist

Jan 2023

Astronomy Colloquium, University of Michigan, Department of Astronomy

September 2022

Conversations in Equity & Inclusion, University of Michigan, Department of Astronomy

September 2022

Astronomy Brown Bag Lunch, MIT

May 2022

Physics & Astronomy Colloquium, Pomona College

April 2022

Cosmology & Astronomy Seminar, University of California, Davis

October 2021

CCAPP Little Galaxies Meeting, The Ohio State University

October 2021

Lunchtime Seminar, The Carnegie Observatories

September 2021

Lunchtime Seminar, The Carnegie Observatories

February 2020

Barriers to Equity, Inclusion & Diversity in Astronomy, Plenary Speaker, Presented on Imposter Syndrome, Astronomical Society of the Pacific 130th Annual Meeting

September 2018

Recent Contributed Presentations

246th Meeting of the American Astronomical Society , Phase-Calibrating Velocities in RR Lyrae Stars	Jan 2025
American Physical Society's Global Physics Summit , Ultra-faint Dwarf Galaxies: Hydrus I & Willman 1	Mar 2025
241st Meeting of the American Astronomical Society , NSF AAPF Symposium	Jan 2023
Astronomical Society of the Pacific 2022: A Virtual Conference , Contributed Oral Presentation	December 2022
Keck Science Meeting , Oral Presentation	September 2022
GalFESCA Conference , Oral Presentation	September 2022
240th Meeting of the American Astronomical Society , Dissertation Contributed Oral Presentation	June 2022
Science by Diverse Scientists: A Cal-Bridge Physics & Astronomy Seminar , Oral Presentation	April 2022
Galaxy Formation & Evolution in the Era of the Roman Space Telescope , Oral Presentation	October 2020
Space Telescope Science Institute's 2020 Spring Symposium — The Local Group: Assembly & Evolution , Poster Presentation	September 2020

Highlighted Service Activities

Astronomical Society of the Pacific Board

2017 - Present

Premier professional society for promoting public science interest, engagement, and literacy.

- Vice President (2025-2027)
- Jr. Board Fellow Selection Committee Co-Chair (2022 - Current)
- Board of Directors' Diversity Committee Co-Chair (2019 - Current)
- Board of Directors Member (2019 - 2025)
- Jr. Board Fellow (2017 - 2019)

Cal-Bridge Program

2019 - Present

A bridge program assisting primarily UMR students through STEM career pathways.

- Director of Mentorship (2023 - Current)
- Doctoral Summer Institute, NSF Conference Grant PI (July 2023)
- Doctoral Summer Institute, Pedagogy Training Co-I (July 2023)
- Mentorship Committee Chair (2020 - 2023)
- Director of Peer Mentorship Program (2019 - 2023)

American Astronomical Society

2022 - Present

Premier professional society in the U.S. for astronomers.

- Invited Demographics Committee Member (2023 - Current)
- Invited Meetings Task Force Member (2023 - Current)
- Invited Early Career Perspectives Task Force Member (2022 - Current)

APS-IDEA Network: UCI Team Member

2020-2021

Network creating equitable, inclusive and diverse communities

UCI Physics & Astronomy Community Excellence

2018-2021

- Co-Creator of Peer Mentoring Programs for 1st Year Physics Graduate Students
- Group Sessions & 1-on-1 Mentoring with Trained Peer Mentors
- Our Website: uci-pace.github.io

Highlighted Media Pieces

Mercury Magazine Contributor (Research Focus)

2018 - Present

Astronomical Society of the Pacific

Author: Katy Rodriguez Wimberly

Road to Happiness: Featured Alumni Story

August 2022

California State University STEM Network

Author: Monica Alarcon

The Reionization of Katy Rodriguez Wimberly

September 2021

UC Irvine School of Physical Sciences Features

Author: Lucas Van Wyk Joel

Ultra-Faint Dwarf Galaxies: Cosmic Fossils?

2018-2020

AstronomoMouse YouTube SciComm Playlist

Creator: Katy Rodriguez Wimberly

Employment History

UCI Competitive Edge Program , Graduate Student Peer Mentor	2017 & 2018
UCI Competitive Edge Program , Graduate Student Researcher	2016
CSLUB Physics Dept. , Teaching Assistant - Astronomy Lab Instructor	2015-2016
UCI Summer Internship Program , Cal-Bridge Student Researcher	2015
US Army Reserves , Staff Sergeant, Saxophonist, Human Resources Manager	2003-2015
CSLUB Physics Dept. , Learning Assistant	2013-2015
SETI Institute REU , CAMPARE Student Researcher	2014
LSAMP Academic Year Fellowship , Student Researcher	2013-2014
University of Texas, Brownsville Physics REU , Student Researcher	2012
CSULB Physics Dept. , Winter Research Student Researcher	2012
Dept. of Defense Army Civilian , 300th Army Band Unit Administrator	2009-2012
Anbeten Productions , Design Assistant/Consultant	2006-2009
Disneyland Attractions Dept. , Innoventions Supervisor, Project Lead & Performer	2007-2009
Mt. San Antonio College Theatre Dept. , Asst. Costumer	2006
Disneyland Entertainment Dept. , Costumer & Atmosphere Character	2003-2006

References

Dr. Laura Sales lsales@ucr.edu - 951.827.7037	Professor - UC Riverside
Dr. Michael Cooper cooper@uci.edu - 949.824.6485	Professor - UC Irvine
Dr. Alex Ji alexji@uchicago.edu - 773.702.8203	Professor - University of Chicago
Dr. Alex Rudolph alrudolph@cpp.edu - 909.717.1851	Professor - Cal Poly Pomona

Previous Awards

UCI Latino Excellence & Achievement Award , 2020
UCI Physics & Astronomy Department Award for Outstanding Contributions , 2019
UCI Graduate Division Tom Angell Mentor Fellowship , 2019
Doctoral Diversity Initiative Fellow , 2016
Diversity Recruitment Fellowship , 2016
Nevin Graduate Endowment Fellowship , 2016
CSU-UC Cal-Bridge Scholar , 2014 - 2017
LSAMP PROUD Scholar Award , 2015
CSULB Physical Sciences and Mathematics Scholar , 2014
CSULB Physics Department Scholarship , 2014
Louis Stokes' Alliance for Minority Participation Academic Year Fellow , 2013 - 2014
CSULB Physics Department Scholarship , 2013

Past Service Activities

DreamWakers Speaker Virtual chats with grade school science classrooms.	2017 - Present
NASA SMD Bridge Program Workshop Early Career Prospectives Breakout Discussion Facilitator.	2022
EmpowHER: Empowering Women through High School Engagement and STEM Research-Keynote Speaker Inaugural Annual Conference to enhance student success in STEM	2022 University of California, Irvine

UCI Competitive Edge Workshop Leader Created and Lead Workshop on Impostor Phenomena	2020
APS Conference for Undergraduate Women in Physics at UCI Local Organizing Committee <ul style="list-style-type: none"> Assisted in proposal, promotion, recruitment, and programming Co-Leader of ASCEND@UCI Mini Conference - Our Website: https://sites.uci.edu/cuwip2020/ascend-at-uci/ 	2020
Astronomical Society of the Pacific Junior Board Fellow First ever Junior Board Fellow on the ASP Board of Directors	2017-2019
Bruin Brains Research Conference - Keynote Speaker TRIO Programming at Salt Lake Community College, UT	2019
Expand Your Horizons Event - Keynote Speaker Annual Workshop for 6-10th Grade Girls Interested in STEM	2019 Salt Lake Community College, UT
UCI Physics & Astronomy Inclusive Excellence Committee Department Committee to Improve Climate and Diversity	2017-2019 A Graduate Student Representative
UCI Physics & Astronomy Physics Graduate Caucus Department Organization to Improve Graduates' Experience	2017-2019 Mentorship Chair
UCI Physics & Astronomy Admission Task Force Department Committee to Improve Diversity in Admissions	2018-2019 A Graduate Student Representative
UCI Astronomy Outreach Telescope Volunteer for Elementary-level Classroom Night Sky Viewing Parties	2016-2019
Astronomy Outreach for Underrepresented Youth K-12 Classroom Visits for underrepresented groups ranging from ethnic minorities to Autistic and Downs Syndrome students.	2016-2019
Letters to a Pre-Scientist Scientist Pen Pal Pen Pal during each Academic Year with a grade school student interested in space science.	2015-2019
UCI DECADE Learning Community - Invited Workshop Leader Created and Lead Workshop on Facing Impostor Phenomena	2018
Reclaiming STEM Science Communication Workshop - Invited Speaker Presented "Building Your Social Media Brand"	2018
UCI Physics & Astronomy Stride! Peer Mentoring Mentoring & Activities Focused on Graduate Applications & Transition	2018
UCSC Osterbrock Sierra Conference Planning Committee, Co-I Lead Professional Development Planning & Execution	2017
SPS CSULB Chapter Secretary <ul style="list-style-type: none"> Assist in outreach program & event planning & execution Assist in chapter and physics department event planning and execution 	2013-2015
CSULB Science Outreach Workshop Leader for Mexican American Engineers & Scientists CSULB Chapter	2013 - 2014

Past Contributed Presentations

Keck Science Meeting , Oral Presentation	September 2022
Cal-Bridge's Science by Diverse Scientists , Oral Presentation	September 2020
GalFRESCA @ UCI , Oral Presentation	August 2019
Keck Science Meeting , Poster Presentation	September 2018
UCSC Galaxy Workshop , Oral Presentation, Recording of the presentation can be found here!	August 2018
GalFRESCA, CalTech , Oral Presentation	August 2017
UCI Summer Research Symposium , Poster Presentation	August 2016
227th AAS Meeting , Poster Presentation	January 2016
APS Far West Meeting , Oral Presentation	October 2015
CAMPARE Research Symposium , Oral Presentation	September 2015
UCI Summer Research Symposium , Oral Presentation	September 2015
CSULB Student Research Symposium , Poster Presentation	October 2014
Astrobiology Science Conference , Oral Presentation	June 2015
CAMPARE Research Symposium , Oral Presentation	September 2014
SETI Institute REU Symposium , Oral Presentation, <i>Lightening Talk</i> version found here at 22:00 minutes	August 2014
CSULB Student Research Symposium , Poster Presentation	October 2013
Conference for Undergraduate Women in Physics , Poster Presentation	January 2013
University of Texas, Brownsville REU Symposium , Oral Presentation	January 2013

Past Media Pieces

Astronomy on Tap! AoT Davis AoT West LA	March 2021 Co-Presenter: Katy Rodriguez Wimberly
Katy Rodriguez Wimberly Receives Latino Excellence and Achievement Award UC Irvine School of Physical Sciences News	May 2020 Author: Lucas Van Wyk Joel
PACE Yourself UC Irvine School of Physical Sciences Features	April 2020 Author: Lucas Van Wyk Joel
M. Katy Rodriguez Wimberly Profile 1 Million Women in STEM	May 2020 Author: Katy Rodriguez Wimberly
The Cal-Bridge Program Cultivating Excelencia Podcast Interview	Summer 2020 Producer: Michelle Espino Lira
Astronomouse American Physical Society Forum on Graduate Student Affairs Newsletter	Winter 2019 Author: Katy Rodriguez Wimberly
Interview with Katy Rodriguez Wimberly Exploring New Worlds: An Astrophysicist's Journey from Academia to Industry	September 2019 Interviewer: Ines Juvan-Beaulieu
Reclaiming STEM: addressing the gap in diverse and inclusive trainings Sister STEM	June 2019 Authors: Evelyn Valdez-Ward AND Linh Anh Cat
Student Spotlight: Katy Rodriguez Wimberly UCI Physics & Astronomy Blog	April 2019
California Program Cultivates Minority Physics and Astronomy Ph.D. Students Diverse Issues in Higher Education	October 2018
Cal-Bridge: Changing the Face of STEM One Student At A Time STEM For All Multiplex	May 2018
Peer Pressure Ep 38: Astronomy, Not Astrology with Katy Wimberly Peer Pressure Podcast	February 2018 Interviewers: Dominic Lozano and Brandon Ongs

Great Gram!

Careers with STEM

November 2017

Interviewer: Eliza Brockwell

Hundreds gather at UCI to witness 'Great American Eclipse'

OC Register

August 2017

Author: Tomoya Shimura

Student Highlight: Katy Rodriguez Wimberly

Astronomy in Color

April 2016

Interviewer: Jorge Moreno

CSU LSAMP PROUD - Program Recognizing Outstanding Undergraduate Distinction

California State University Louis Stokes Alliance For Minority Participation

October 2015