

M. Katy Rodriguez Wimberly

NSF MPS ASCEND POSTDOCTORAL FELLOW · UNIVERSITY OF CALIFORNIA, RIVERSIDE

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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.

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, 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

Irvine, California

Ph.D. in Physics

Sep 2016 - Dec 2021

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

University of California, Irvine

Irvine, California

M.S. in Physics

Sep 2016 - June 2019

- GPA: 3.34 out of possible 4.00

California State University, Long Beach

Long Beach, California

M.S. in Physics

Aug 2015 - May 2016

- GPA: 4.00 out of possible 4.00
- Transferred to Ph.D. Program

California State University, Long Beach

Long Beach, California

B.S. in Physics

Jan 2011 - May 2015

- Minor: Math
- Overall GPA: 3.15 out of possible 4.00
- Major GPA: 3.20 out of possible 4.00

Mount San Antonio College

Walnut, California

A.A.

Jan 2004 - June 2009

- Majors: Fine Arts, Natural Science & Math, Social & Behavioral Sciences
- Overall GPA: 3.32 out of possible 4.00

Publications

A Model of Mentorship for Students from Historically Underrepresented Groups in STEM

Understanding Interventions

Rodriguez Wimberly, M.K., et al.

2022

- Under Review
- arXiv: 2209.03395

Sizing from the Smallest Scales: The Mass of the Milky Way

MNRAS, 513, 4968

Rodriguez Wimberly, M.K., et al.

2022

Characterizing the Infall Times and Quenching Timescales of the Milky Way Satellites with *Gaia* Proper Motions

MNRAS

Fillingham, S.P. et al.

2019

- Under Review
- arXiv: 1906.04180

Suppressing Star Formation on the Smallest Scales: What Role Does Environment Play?

MNRAS, 483, 4031

Rodriguez Wimberly, M.K., et al.

2019

SETI Observations of Exoplanets with the Allen Telescope Array

AJ, 152.6 (2016b): 181

Harp, G.R. et al.

2016

Highlighted Awards

NSF MPS Ascend Postdoctoral Fellow, 2021 - Current

AAS National Osterbrock Fellow, 2020 - 2021

NSF Graduate Research Fellow, 2016 - 2021

Eugene Cota-Robles Fellow, 2016 - 2021

Teaching Experience

ASTR110L: Introduction to Astronomy Lab

CSU Long Beach

Instructor on Record

Aug 2015 - May 2016

- Duties included creating and implementing syllabi based off the department's experiment schedule, homework assignments, exams and final projects (sample syllabi can be viewed at https://mkrodriguezvimberly.github.io/outreach_teaching_service/astro100Lsyllabus.html).
- CSULB Official Instructor Evaluations were given after each term and I was guided on how to interpret the feedback and implement desired improvements by the CSULB Physics & Astronomy Department Chair.

Highlighted Mentorship

Cal-Bridge Mentorship Handbook

Revision Team Lead

June 2021

- Led team of 4 other Cal-Bridge Alumni in rewriting the program's mentorship handbook with the guidance of the program's director.
- 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

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

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

Society Memberships

Astronomical Society of the Pacific, Board of Directors Member, Diversity Committee Co-Chair

2017 - Present

American Astronomical Society, Member

2015 - Present

American Physical Society, Member

2015 - 2017

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

2011 - 2015

Invited Talks

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
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 130 th Annual Meeting	September 2018

Recent Contributed Presentations

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

Cal-Bridge Mentorship Committee Chair Cal-Bridge Program: A bridge program assisting undergraduate STEM students into graduate programs <ul style="list-style-type: none">Led revision of program's mentorship handbookLed creation and execution of professional development workshop focused on relational mentoring using the revised mentorship handbook	2020 - Present
Astronomical Society of the Pacific Board of Directors Member Diversity Committee Co-Chair	2019 - Present
Cal-Bridge Director of Peer Mentoring Program Creator & Organizer of Peer Mentoring Program for Cal-Bridge Scholars	2019 - Present
APS-IDEA Network: UCI Team Member Network creating equitable, inclusive and diverse communities	2020-2021
UCI Physics & Astronomy Community Excellence <ul style="list-style-type: none">Co-Creator of Peer Mentoring Programs for 1st Year Physics Graduate StudentsGroup Sessions & 1-on-1 Mentoring with Trained Peer MentorsOur Website: uci-pace.github.io	2018-2021

Highlighted Media Pieces

Mercury Magazine Contributor (Research Focus)

Astronomical Society of the Pacific

2018 - Present

Author: Katy Rodriguez Wimberly

Road to Happiness: Featured Alumni Story

California State University STEM Network

August 2022

Author: Monica Alarcon

The Reionization of Katy Rodriguez Wimberly

UC Irvine School of Physical Sciences Features

September 2021

Author: Lucas Van Wyk Joel

Ultra-Faint Dwarf Galaxies: Cosmic Fossils?

Astronomy YouTube SciComm Playlist

2018-2020

Creator: Katy Rodriguez Wimberly

Katy Rodriguez Wimberly: Changing My Life for Science

The Story Collider: True, Personal Stories About Science

May 2017

Speaker: Katy Rodriguez Wimberly

Employment History

UCI Competitive Edge Program , Graduate Student Peer Mentor	2017 & 2018
UCI Competitive Edge Program , Graduate Student Researcher	2016
CSULB 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
CSULB 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 Perspectives 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 programmingCo-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

2015-2019

Pen Pal during each Academic Year with a grade school student interested in space science.

UCI DECADE Learning Community - Invited Workshop Leader

2018

Created and Lead Workshop on Facing Impostor Phenomena

Reclaiming STEM Science Communication Workshop - Invited Speaker

2018

Presented "Building Your Social Media Brand"

UCI Physics & Astronomy Stride! Peer Mentoring

2018

Mentoring & Activities Focused on Graduate Applications & Transition

UCSC Osterbrock Sierra Conference Planning Committee, Co-I

2017

Lead Professional Development Planning & Execution

SPS CSULB Chapter Secretary

2013-2015

- Assist in outreach program & event planning & execution
- Assist in chapter and physics department event planning and execution

CSULB Science Outreach

2013 - 2014

Workshop Leader for Mexican American Engineers & Scientists CSULB Chapter

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
227 th 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 Ongsy

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