

DEVONTAE C. BAXTER

The University of California, San Diego - Department of Astronomy & Astrophysics

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Research Interests

I am interested in the evolution and formation of galaxies in extreme environments, from nascent protoclusters in the early universe to nearby galaxy clusters. I specialize in merging cosmological simulations with multi-wavelength observations of galaxies across a wide range of stellar masses and environments to model and constrain the drivers of galaxy growth and quenching. Additionally, I am committed to creating more inclusive STEM spaces.

Positions Held

NSF Astronomy & Astrophysics Postdoctoral Fellow at UC San Diego

July 2023 – Present

Mentor: Alison L. Coil

San Diego, CA

Education

The University of California, Irvine

May 2023

Doctorate of Philosophy (Ph.D.) in Physics | Advisor: Michael C. Cooper

Irvine, CA

Georgia Institute of Technology

May 2017

Bachelor of Science (B.S.) in Physics with highest honors | Advisor: Alberto Fernandez-Nieves

Atlanta, GA

Publications

Baxter, Devontae C., et al. 2024, *The Importance of Gas Starvation in Driving Satellite Quenching in Galaxy Groups at $z \sim 0.8$* . ApJ, in review.

L. Xie, G, et al. incl. **Baxter, Devontae C.**, 2024, *The First Quenched Galaxies: When and How?* ApJL, 967, L42.

Baxter, Devontae C., et al. 2023, *When the Well Runs Dry: Modelling Environmental Quenching of High-mass Satellites in Massive Clusters at $z \gtrsim 1$* . MNRAS, 526, 3716

E. Kukstas, et al. incl. **Baxter, Devontae C.**, 2023, *The GOGREEN Survey: A Critical Assessment of Environmental Trends in Cosmological Hydrodynamical Simulations at $z \approx 1$* . MNRAS, 518, 4782

Baxter, Devontae C., et al. 2022, *The GOGREEN Survey: The GOGREEN Survey: Constraining the Satellite Quenching Timescale in Massive Clusters at $z \gtrsim 1$* . MNRAS, 515, 5479

M. K. Rodriguez Wimberly, et al. incl. **Baxter, Devontae C.** 2022, *Sizing from the Smallest Scales: The Mass of the Milky Way*. MNRAS, 513, 4968

Baxter, Devontae C., et al. 2021, *A Machine Learning Approach to Measuring the Quenched Fraction of Low-Mass Satellites Beyond the Local Group*. MNRAS, 503, 1636

S. Mahajan, et al. incl. **Baxter, Devontae C.** 2020, *Reverse Janssen Effect in Narrow Granular Columns*. PRL, 124, 128002

Awards, Grants, and & Fellowships

NSF Astronomy and Astrophysics Postdoctoral Fellowship

2023-2026

UC Chancellor's Postdoctoral Fellowship

2023-2025

Sullivan Postdoctoral Fellowship (declined)

2023

Honorable Mention: UC Irvine President's Dissertation Year Fellowship

2022

AAS National Osterbrock Leadership Program Fellowship

2020-2023

UCI Physics & Astronomy Graduate Student Mentor Award

2020-2023

LSSTC Data Science Fellowship

2019-2022

Honorable Mention: Ford Foundation Predoctoral Fellowship

2019

UCI Eugene Cota-Robles Graduate Fellowship

2017-2023

Tulsa Community Foundation: AMC Cares Scholarship
Georgia Hope Scholarship

2015-2017
2015-2017

Professional Talks

*Washington State University Physics & Astronomy Colloquium	Nov 2024
*University of Florida Astronomy Colloquium	Nov 2024
*UC Davis Cosmology and Astronomy Seminar	Oct 2024
†Ensenada San Diego Astrophysical Society Meeting	Sep 2024
†Galaxy Formation and Evolution in Southern California Conference	Sep 2024
†President's Postdoctoral Fellowship Program Academic Spring 2024 Retreat	April 2024
†AAS 243 Meeting, New Orleans, LA (Dissertation Talk)	Jan 2024
†NSF AAPF Fellows Symposium	Jan 2024
*The Center for Relativistic Astrophysics Seminar, Georgia Institute of Technology	Nov 2023
*UC San Diego Astronomy Colloquium	Oct 2023
*The Baryon Cycle of Protocluster Galaxies, Leiden, the Netherlands	Oct 2023
*First Structures in the Universe 2023, Paris, France	Sept 2023
*Inaugural Conference for Emerging Black Academics in STEM, Caltech, CA	May 2023
†AAS 240 Meeting, Pasadena, CA	June 2022
*University of Kansas Astronomy Seminar	April 2022
*Little Galaxies Journal Club, The Ohio State University	March 2021

*=invited; †=contributed

Observing Experience

W.M. Keck Observatory/MOSFIRE	1.5 nights	MOSFIRE Survey of Galaxies in Early Rich Environments	Co-I
W.M. Keck Observatory/KCWI	4.5 nights	KCWI Survey of Ultradiffuse Galaxies in the Field	Co-I
W.M. Keck Observatory/DEIMOS	3.5 nights	DEIMOS Survey of the JWST CEERS Field	Co-I
W.M. Keck Observatory/DEIMOS	6.5 nights	Constraining the Physics of Satellite Quenching at $z < 1$	Co-I

Advising Experience

Sophia Um - UCSD Astronomy & Astrophysics Undergraduate 2024-Present
I am actively guiding Sophia's project related to identifying and characterizing isolated quenched dwarf galaxies in cosmological simulations.

Program Development & Leadership

Founder and Program Director - Computational Astrophysics Research Preparation (CARP) 2023-Present
NSF-funded coding and mentorship program for junior college transfer students.

Program Coordinator - Computational Research Access NEtwork (CRANE) 2022-Present
Global coding and mentorship program for historically underrepresented scholars.

Program Chair - UCI Physics and Astronomy Community Excellence Peer Mentoring Program 2020-2023
Student-led program focused on 1-on-1 and group mentoring for first-year graduate students at UC Irvine.

Teaching Experience

Instructor - STARtastro Programming & Plotting in Python Workshop	July 2024
Instructor - Computational Astrophysics Research Preparation Spring Workshop	May 2024
Instructor - Computational Research Access NEtwork 2024 Workshop	May 2024
Teaching Assistant - UC Carpentries Fall Workshop Series	Sep 2023
Instructor - LSSTC Data Science Fellowship Program Workshop	June 2023
Instructor - Computational Research Access NEtwork 2023 Workshop	May 2023
Instructor - Physics Olympiad Winter Bootcamp at Ardent Academy for Gifted Youth	December 2019
Teaching Assistant - Physics 20E (Life in the Universe) at UC Irvine	Spring 2019
Teaching Assistant - Physics 20B (Cosmology) at UC Irvine	Winter 2019
Teaching Assistant - Physics 20D (Space Science) at UC Irvine	Fall 2018

Telescope Operator - UCI Astronomy Public Outreach Program
Spanish Interpreter - Good Samaritan Health Center in Atlanta, Georgia

2018-2020
Spring 2017

Certificates

Instructor Certification from *The Carpentries*
International organization that teaches foundational coding skills to
Certification in Course Design from UCI Division of Teaching Excellence and Innovation
Certification for the Integration of Research, Teaching and Learning from UCI Division of Teaching Excellence and Innovation
Mentoring Excellence Program Certification from UCI Graduate Division

Professional Service

UCSD Astronomy & Astrophysics Colloquium Committee Member	2024-2025
<i>Hubble Space Telescope</i> Cycle 32 TAC Expert Reviewer	2024
Social Event Chair - UCI Physics Grad Caucus	2018-2020

Professional Memberships

American Astronomical Society	2020-Present
National Society of Black Physicists	2024-Present

Skills

Technical Skills: Python, L^AT_EX, Bash, HTML/CSS, Mathematica, Git, ADQL/SQL, Machine Learning (PyTorch, Tensorflow)

Soft Skills: Scientific communication, project management, teaching and mentoring across diverse backgrounds

Foreign Languages: Spanish (fluent), French (intermediate)

References

Reference 1

Dr. Michael Cooper
cooper@uci.edu
Ph.D. Advisor

Reference 2

Dr. Alison Coil
acoil@ucsd.edu
Postdoctoral Mentor

Reference 3

Dr. Gregory Rudnick
grudnick@ku.edu
Research Collaborator