

# DEVONTAE C. BAXTER

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

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## Research Interests

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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

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**NSF Astronomy & Astrophysics Postdoctoral Fellow at UC San Diego**

**July 2023 – Present**

*Mentor: Alison L. Coil*

*San Diego, CA*

## Education

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**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*

## Awards, Grants, and & Fellowships

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**NSF Astronomy and Astrophysics Postdoctoral Fellowship**

2023-2026

UC Chancellor's Postdoctoral Fellowship

2023-2025

Sullivan Postdoctoral Fellowship (declined)

2023

AAS National Osterbrock Leadership Program Fellowship

2020-2023

Honorable Mention: UC Irvine President's Dissertation Year Fellowship

2022

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

2015-2017

Georgia Hope Scholarship

2015-2017

## Publications

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

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

## Professional Talks

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\*=invited; †=contributed

*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

## Observing Experience

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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 & Leadership

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### Advising:

<b>Sophia Um</b> - STARTastro Undergraduate Research Scholar	2024
Guided the student on a project that successfully identified and characterized isolated quenched dwarf galaxies in cosmological simulations, contributing to a deeper understanding of the processes that shut down star formation in this poorly understood galaxy population.	

### Program Development & Leadership:

<b>Founder and Program Director</b> - Computational Astrophysics Research Preparation (CARP)	2023-Present
NSF-funded coding and mentorship program for junior college transfer students.	
<b>Program Coordinator</b> - Computational Research Access NEtwork (CRANE)	2022-Present
Global coding and mentorship program for historically underrepresented scholars.	
<b>Program Chair</b> - 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 & Outreach

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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

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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

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*Hubble Space Telescope* Cycle 32 TAC Expert Reviewer 2024  
Social Event Chair - UCI Physics Grad Caucus 2018-2020

## Professional Memberships

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

## Skills

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**Technical Skills:** Python, L<sup>A</sup>T<sub>E</sub>X, Bash, HTML/CSS, Mathematica, Git, ADQL/SQL, Machine Learning (PyTorch, Tensorflow)

**Soft Skills:** Scientific Communication, Leadership & Project Management, Teaching and Mentoring across diverse backgrounds

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