

Tyler B. Smith

PHD CANDIDATE · UNIVERSITY OF CALIFORNIA, IRVINE

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Education

University of California, Irvine

PHD PHYSICS

• Advisors: Dr. Timothy M.P. Tait, Dr. Manoj Kaplinghat

Irvine, Ca

06/2020 - present

University of California, Irvine

MS PHYSICS

• Advisors: Dr. Timothy M.P. Tait & Dr. Manoj Kaplinghat

Irvine, Ca

06/2020 - 06/2022

University of California, Riverside

BS PHYSICS

• Magna Cum Laude
• Senior thesis/undergrad research advisor: Dr. Vanessa Bailey and Dr. Stephen Kane

Riverside, Ca

06/2018 - 06/2020

Fellowships

2024- **UCI-LANL-SoCalHub Fellowship**, Los Alamos National Lab / University of California, Irvine

2024- **Achievement Rewards for College Scientists (ARCS) Fellow**, University of California, Irvine

2022- **National Osterbrock Leadership Fellowship**, University of California, Irvine

2020- **NSF Graduate Research Fellowship**, University of California, Irvine

2020-2022 **UCI Chancellor's Fellowship**, University of California, Irvine

2019-2020 **California Alliance for Minority Participation Fellowship**, University of California, Riverside

2019-2020 **FIELDS Fellowship**, University of California, Riverside

2018 **Chaffey STEM Summer Research Fellowship**, Chaffey College

Publications

PUBLISHED

Smith, T, Brian Batell, Joshua Berger, Vedran Brdar, Alan D. Bross, and 27 more. 2022. Dark Sector Studies With Neutrino Beams. Contribution to Snowmass 2021. ArXiv: 2207.06898 [hep-ph]

Smith, T, Luis A. Anchordoqui, Akitaka Ariga, Tomoko Ariga, Weidong Bai, and 76 more. 2022. The Forward Physics Facility: Sites, experiments, and physics potential. Physics Reports, Volume 968, 19 July 2022, Pages 1-50

Smith, T, National Osterbrock Leadership (NOLP) Fellows. 2023. Reimagining the Astronomy PhD. <https://aas.org/nolp>

IN REVIEW

Smith, T, Timothy M.P. Tait. Conserved Currents are Not Anomaly-Safe. 2024. ArXiv: 2401.02483 [hep-ph]

Smith, T, Manoj Kaplinghat. Isolated Binary Black Hole Formation and Merger Rates from Galaxy Evolution. 2024. ArXiv: 2412.13318 [astro-ph]

IN PREP

Smith, T, Kaplinghat, M., Beyond Standard Model Physics and Pair-Instability Effects on the Black Hole Upper Mass Gap: A Population Study

Smith, T, Beacom, J., Capozzi, F., Roberts, L., Shirley L. Exploring Supernova Dynamics and Neutrino Properties via Comprehensive Spectral Analysis

Smith, T, Kaplinghat, M., Ryan, M., Silverman, M. Simulation of Early Galaxy Formation Using CDM and SIDM/WDM Models

Presentations

INVITED TALKS

Spring 2024. *Black Holes a Brief Tour*. Invited public lecture at Saddleback College, Mission Viejo, Ca.

SELECTED PRESENTATIONS

Smith, T.. 2025. Binary Black Hole Formation and Merger Rates from Galaxy Evolution. Oral. AAS #245. National Harbor, MD

Smith, T., Krimm, H., NOLP Fellows. 2025. Deepening Broader Impacts: Mentorship, DEI, and Career Advancement. Splinter Session. Organizer & Facilitator. AAS #245. National Harbor, MD

Smith, T. 2024. Binary Black Hole Formation and Merger Rates From Galactic Relations. Oral. GalFresca. Carnegie Observatories. Pasadena, Ca

Smith, T. 2024. Anomaly Constraints on MeV Dark Matter. Oral. UCR Dark Matter Workshop. Riverside, Ca

Smith, T. 2024. Modeling Binary Black Hole Populations: Insights from Stellar Evolution and Galaxy Formation. Poster. AAS #243. New Orleans, LA

Smith, T., NOLP Fellows. 2024. National Osterbrock Leadership Program Whitepaper Splinter Session. Workshop. Co-facilitator. AAS #243. New Orleans, LA

Smith, T. 2023. Conserved Currents and the Power of Enhancement. Oral. PASCOS. Irvine, CA

Smith, T., NOLP Fellows. 2023. Re-imagining the Astronomy PhD. Workshop. Co-facilitator. AAS #241. Seattle, WA

Smith, T. 2022. Binary Black Hole Demographics. Oral. AGS Symposium. 3rd Place Talk. Irvine, CA

Teaching Experience

Instructor of Record:

- 2025 **Conceptual Physics**, Chaffey College. Spring 2025.
- 2024 **Conceptual Physics**, Irvine Valley College. Fall 2024.
- 2024 **Conceptual Physics**, Chaffey College. Fall 2024.
- 2024 **Calculus Based Waves, Optics, Fluids**, UC Irvine. Summer 2024.
- 2024 **Conceptual Physics**, Orange Coast College. Spring 2024.

CERTIFICATES:

- 2024 **Certificate in Fellowship Mentorship and Writing Excellence**, Recognized School Wide
- 2022 **Mentoring Excellence Program**, Recognized University Wide

Outreach, Mentorship, & Honors

SERVICE AND OUTREACH

- 2024- **Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)**, Outreach Coordinator
- 2024- **Physics Graduate Caucus**, Outreach Coordinator
- 2021- **Physics and Astronomy Community Excellence**, Leadership Team and Leadership Mentor
- 2023-2024 **Diverse Educational Community & Doctoral Experience (DECADE)**, Officer
- 2021-2024 **Physics Graduate Caucus**, Administrator
- 2021-2024 **Physics and Astronomy Blog**, Project Lead
- 2019-2020 **UC Riverside California Alliance for Minority Participation (CAMP)**, Outreach Coordinator

MENTORING

- 2023- **UC Irvine PACE Leadership Mentor**, (6 graduate student leaders)
- 2024 **SURF Graduate Student Lead / Mentor**, (7 undergraduate students)
- 2024 **COSMOS Graduate Mentor**, (7 high-school students)
- 2021-2024 **UC Irvine PACE Exceleation Mentor**, (5 graduate students)

HONORS

- 2022 **3rd Place Talk in Astronomy, Physics, Math, and Computer Science**, AGS Symposium
- 2020 **R. Stephen White Endowment Award**, Univeristy of California, Riverside
- 2020 **Chancellor's Honors List**, Univeristy of California, Riverside
- 2018-2020 **Dean's Honors List**, Univeristy of California, Riverside