

Brian DiGiorgio Zanger

he/him | (650) 804-9605 | bzanger@colby.edu | digiorg.io

CURRENT POSITION

Colby College

Visiting Assistant Professor of Physics and Astronomy

Waterville, ME

Fall 2023–

EDUCATION

University of California, Santa Cruz

Doctor of Philosophy, Astronomy & Astrophysics

Santa Cruz, CA

June 2023

University of California, Santa Cruz

Master of Science, Astronomy & Astrophysics

Santa Cruz, CA

June 2019

Carleton College

Bachelor of Arts, Physics

Cum Laude, Phi Beta Kappa

Senior Thesis (with Distinction): The Large-Scale Structure of the Universe

Northfield, MN

June 2017

TEACHING

Stars, Stellar Systems, and Cosmology (Colby AS151) Professor

Spring 2024

- Taught introductory course for nonmajors with activity-based structure
- Helped rework labs to take advantage of new telescopes

Galaxies and Cosmology (Colby AS342) Professor

Spring 2024

- Led upper-level seminar for advanced students

Introduction to Scientific Computing (Colby PH398) Professor

Spring 2024

- Newly approved weekly seminar on analyzing data with modern data science techniques

Introduction to Astrophysics (Colby AS231) Professor

Fall 2023

- Taught upper-level class required for astronomy minor
- Interfaced with lab instruction on modern research-grade telescope

Extraterrestrial Life (Colby AS172) Professor

Fall 2023

- Reworked and taught large lecture class for undergraduate nonmajors
- Used active learning, demonstrations, and interdisciplinary projects

Overview of the Universe (UCSC ASTR 2) Teaching Fellow

Summer 2022

- Developed curriculum, lesson plans, activities, and assessments for an introductory astronomy class for nonmajors with >20 students
- Centered course on Universal Design and active learning with emphasis on practical astronomy

Intro. to Astr. Research & Teaching (UCSC ASTR 205) Lead Instructor

Fall 2019, Fall 2022

- Designed a pedagogy course for incoming astronomy graduate students
- Based curriculum and activities on tenets of active learning, Universal Design, and hands-on experience

UCSC Department of Astronomy & Astrophysics Teaching Assistant

2017-2023

- *The Space-Age Solar System* (UCSC ASTR 6, Winter 2023): Created active learning worksheets and activities for optional TA sections for undergraduate nonmajors
- *Introduction to the Cosmos* (UCSC ASTR 1, Winter 2022): Planned and ran weekly TA sections for >100 undergraduate nonmajors using worksheets based on active learning principles
- *Physics of Stars* (UCSC ASTR 112, Spring 2019): Graded and ran homework help sessions for a class of 55 upper-level undergraduates
- *Introduction to Cosmology* (UCSC ASTR 5, Fall 2017/Spring 2023): Planned and ran required weekly TA sections for 60+ undergraduates using worksheets and reading discussions

FIRST-AUTHOR PUBLICATIONS

- **DiGiorgio Zanger, B.**, Westfall, K. B., Bundy, K., Drory, N., Bershad, M. A., Campbell, S., Weijmans, A.-M., Masters, K. L., Stark, D., Law, D. *The Strength of Bisymmetric Modes in SDSS-IV/MaNGA Barred Galaxy Kinematics*. Submitted to ApJ
- **DiGiorgio, B.**, Bundy, K., Westfall, K. B., Leauthaud, A., Stark, D. *A Novel Framework for Modeling Weakly-Lensed Kinematics and Imaging at Moderate Redshift*. 2021, ApJ, 922, 116

INVITED RESEARCH TALKS

- **University of Minnesota - Morris** Morris, MN: “Modeling Irregularities in Galaxy Rotation with Spatially-Resolved Spectroscopy” *January 2024*
- **Colby College** Waterville, ME: “Modeling Irregularities in Galaxy Rotation with Spatially-Resolved Spectroscopy” *April 2023*
- **University of Utah Scientific Research Initiative** Salt Lake City, UT: “Modeling Irregularities in Galaxy Rotation with Spatially-Resolved Spectroscopy” *March 2023*
- **Lycoming College Physics Colloquium** Williamsport, PA: “Modeling Irregularities in Galaxy Rotation with Spatially-Resolved Spectroscopy” *February 2023*
- **Santa Cruz Galaxy Workshop** Santa Cruz, CA: “A Novel Framework for Modeling Weakly Lensing Shear Using Kinematics and Imaging at Moderate Redshift” *August 2022*
- **SDSS-IV Milky Way As a Galaxy Working Group** Online Review Talk: “Extragalactic Bar Observations” *July 2022*
- **SDSS Collaboration Meeting** Online Conference: “NIRVANA: Non-axisymmetric velocity field models of MaNGA galaxies”, *August 2021*
- **Month of Online MaNGA** Online Conference: “NIRVANA: Non-axisymmetric velocity field models of MaNGA galaxies”, *November 2020*
- **UCSC Astronomy FLASH** Santa Cruz, CA: “Kinematic Weak Lensing with MaNGA and Future Instruments”, *May 2019*
- **MaNGA Collaboration Meeting** Oxford, UK: “Kinematic Weak Lensing in MaNGA”, *April 2019*

LEADERSHIP, SERVICE & MENTORING

Undergraduate Research Advising Colby College

- Nico Flota-Sanchez (2023–): *The effect of kinematic asymmetries on Tully-Fisher scatter*
- Zora Lewis (2023–): *Stellar population gradients in barred galaxies*

Head Teaching Assistant UCSC Astronomy Department 2019 – 2020, 2022 – 2023

- Mediated TA disagreements between graduate students and department leadership
- Helped professors and TAs transition to online learning during the beginning of covid

Python Bootcamp Instructor Lamat Institute REU 2020 – 2023

- Created and facilitated hands-on Python data science activities to prepare students for an REU
- Transitioned materials and instructions to an online modality during covid

Conflict Resolution Team Member UCSC Department of Astronomy & Astrophysics *November 2021*

- Negotiated intradepartmental conflicts with team of faculty representatives and professional mediators
- Presented discussion results to Diversity Equity & Inclusion Committee and graduate student body

OUTREACH

- “Ask an Astronomer” Lead Representative** UC Observatories *2018 – 2023*
- Answered astronomy questions submitted by the public
 - Redesigned and maintained website for collecting new questions and archiving old answers]
 - Trained new members of the website team
- Observatory Open House Worker** Lick Observatory & Goodsell Observatory *2014-2019*
- Taught public about astronomy and telescopes during public observatory events
 - Trained to operate modern small amateur telescopes and CCDs as well as large antique refracting telescopes
- “Ask an Astronomer” Outreach Talks Online** *Summer 2020*
- Ask an Astronomer Live Online Q&A – UC Observatories Virtual Event (*July 2020*)
 - Ask an Astronomer: What It’s Like Being California’s On-Call Astronomer for the Internet – [Hiller Aviation Museum](#) & Santa Cruz Public Library (*Summer 2020*)

HONORS AND CERTIFICATES

- Excellence in Teaching Award** UCSC Astronomy Department *2021-2022*
- Annual award given to a graduate student who demonstrates ”an exceptional talent for and interest in teaching”
- Graduate Pedagogy Fellow** UCSC Teaching & Learning Center *2022*
- Completed a program focused on equitable and accessible course design
 - Practiced ideas of Universal Design and active learning
- Summer Course Design & Delivery** UCSC Teaching & Learning Center *Spring 2022*
- Learned techniques for creating equitable and accessible syllabi and assessments

ACCEPTED PROPOSALS

- Osterbrock Minigrant** Osterbrock Leadership Program *March 2023*
- Awarded funds for buying active learning supplies for astronomy TAs and creating corresponding lesson plans
- Frontera Startup Allocation** Texas Advanced Computing Center *July 2021*
- Received 1000 hours of computation time on TACC’s Longhorn supercomputer