

NATHAN R. SANDFORD

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RESEARCH INTERESTS

(Extra-)Galactic Archaeology, Near-field Cosmology, Resolved Stellar Populations;
Dark Matter, Stellar Spectroscopy, Galactic Chemical Evolution

EDUCATION

Ph.D., Astrophysics, University of California, Berkeley	Aug 2023
Advisor: Dr. Dan Weisz	
Thesis: “Pushing Stellar Archaeology Farther & Fainter with Low-Resolution Spectroscopy”	
M.A., Astrophysics, University of California, Berkeley	Dec 2018
B.A., Physics, <i>magna cum laude</i> , Pomona College	May 2017
Academic Advisor: Dr. Philip Choi	
Research Advisor: Dr. Yu Lu	
Thesis: “Exploring Gas-Phase Metallicity Gradients in Disk Galaxies: A Semi-Analytic Approach”	

RESEARCH POSITIONS

NSF Astronomy & Astrophysics Postdoctoral Fellow, UC Santa Cruz	2026–present
Postdoctoral Researcher & Arts and Science Fellow, University of Toronto	2023–2026
Graduate Research Assistant & NSF GRFP Fellow, UC Berkeley	2017–2023
Summer Visiting Researcher, MPA, Heidelberg	2018, 2019

TEACHING & PEDAGOGY

See Table 1 for details.

University of California Observatories / Institute for Scientist & Engineer Educators

Professional Development Program, Team Lead	2025–2026
Professional Development Program, Participant	2024–2026
AstroTech Summer School Instructor	Summer 2024, 2026
Sonoma State, ASTR 231 Celestial Sphere Lab	Fall 2025

University of Toronto

Guest Lecturer, AST 1420, <i>Galactic Structure and Dynamics</i>	Spring 2026
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UC Berkeley

Certificate in Teaching and Learning in Higher Education	2023
Graduate Student Instructor, Astro 375, <i>Instruction Techniques in General Astronomy</i>	Fall 2020, Spring 2022
Head Graduate Student Instructor, Astro C10, <i>Introduction to General Astronomy</i>	Fall 2018
Graduate Student Instructor, Astro C12, <i>The Planets</i>	Spring 2018
Graduate Student Instructor, Astro C10, <i>Introduction to General Astronomy</i>	Fall 2017

Pomona College

Quantitative Skills Center: STEM Mentor/TA Workshop Series	Spring 2016
Student Mentor, Phys 142, <i>Electricity & Magnetism</i>	Spring 2017
Student Mentor & Lab TA, Astro 101, <i>Techniques in Observational Astrophysics</i>	Fall 2015, Fall 2016
Student Mentor, Astro 002, <i>Introduction to Galaxies and Cosmology</i>	Spring 2016
Student Mentor, Phys 101, <i>Foundations of Modern Physics</i>	Fall 2015
Lab TA, Astro 051, <i>Advanced Introductory Astronomy</i>	Spring 2015

OUTREACH

AstroTech Summer School	2024, 2026
UC Berkeley Compass Lecture	2023
UAW 2865, UAW 5810 & UAW-SRU Picket Line Astronomy Outreach, UC Berkeley	2022
Astronomy Department Exposition at Cal Day, UC Berkeley	2017–2019
15th Annual Open House, The Carnegie Observatories	2016
Astronomy Department Founder’s Day Exposition, Pomona College	2015
Science Night, Stork Elementary School	2014

MENTORSHIP

Katie Sharpe (UC Berkeley Astro Ph.D.), <i>Ph.D. Thesis</i> “Alpha Elements and the Baryon Cycle in Isolated Dwarf Galaxies” (<i>Co-supervised with Prof. Dan Weisz</i>)	2023–present
Matteo Moretti (UofT Phys/Astro B.Sc.), <i>Summer Undergrad. Research Program (SURP)</i> , <i>AST 425</i> “Unraveling the Formation History of the Andromeda Galaxy with JWST Spectroscopy”	2026–present
Aishani Chaudhuri (UofT Scarborough Phys/Astro B.Sc.), <i>SURP</i> “Hunting for Binary Stars in DESI Multi-epoch Spectroscopy”	2025–present
Nava Wolfish (UofT Phys/Astro B.Sc. → Toronto Blue Jays R&D Intern), <i>SURP</i> , <i>AST 425</i> “Reduction and Analysis of JWST Resolved Star Spectroscopy”	2025–2026
Rosayla Coulthard (UofT Phys/Astro B.Sc.), <i>Research Opportunity Program (ROP)</i> , <i>AST 430</i> “Validating Predicted Abundances for The Spectra of DESI Data Releases,” “Carbon-Enhanced Metal-Poor Star Properties within Milky Way Halo Satellites” (<i>Co-supervised with Mairead Heiger</i>)	2024–2026
Juan Carlos Aranda Muñoz (Natl. U. of Colombia Physics B.Sc.), <i>Mitacs Research Internship</i> “Forecasting Dwarf Galaxy Dark Matter Profile Constraints for DESI”	Summer 2025
Julia Kim (UofT Phys/Math B.Sc. → MIT Ph.D. in Operations Research), <i>SURP</i> , <i>MA Thesis</i> “Applying Contrastive Learning to JWST Stellar Spectroscopy”	2024–2025
Xuanqi Wei (UofT Math/Stats B.Sc. → UPenn MSE in Scientific Computing), <i>ROP</i> “Searching for Stars in the Outskirts of Ursa Minor with Gaussian Mixture Models”	Summer 2024
Colin McCurdy (UofT Phys/Astro B.Sc. → UofT Physics Learning Services Specialist), <i>AST 425</i> “Spectroscopic Data Reduction and Analysis of Triangulum II Keck/LRIS Observations”	2023–2024
Shuhan Zheng (UofT Phys/Astro B.Sc.) → UofT M.Eng in Aerospace Studies, <i>AST 424</i> “Literature Review on the Chemical Abundances of Stars in Local Group Dwarf Galaxies”	2023–2024

SERVICE

Co-Chair, DESI Milky Way Survey Working Group	2026–present
Journal Referee for ApJS, MNRAS, A&A	2024–present
Co-Chair, DESI Topical Group on Dark Matter Studies with Streams, Dwarf Galaxies, and M31	2025–2026
Postdoc Representative, UofT Astronomy Dept. Faculty Committee	2024–2026
Summer Undergraduate Research Program Committee, UofT Astronomy Dept.	2024–2025
Department Steward, CUPE 3902 Unit 5	2024–2025
UCO Lick/APF Time Allocation Committee	2023–2024
LOC, Toronto DESI Milky Way Survey Workshop	2024
Department Organizer, UAW 2865/UAW-Student Researchers United	2020–2023
Grad. Student / Postdoc Seminar Coordinator, UCB Astronomy Dept.	2021–2022
Grad. Student Representative, UCB Astronomy Dept. Faculty Search Committee	2022
Grad. Student Representative, UCB Astronomy Dept. Climate & DEI Committee	2020–2021
Grad. Student Representative, UCB Astronomy Dept. Small Council	2020–2021
UCB MPS Undergraduate DEI and Advancement Task Force	2019–2020
UCB Astronomy Dept. Prospective Grad. Student Visit Committee	2017–2020
Co-PI, Conference Organizer & UC Berkeley Rep., Osterbrock Sierra Conference	2018
Physics Department Liaison, Pomona College	2014–2017
Pomona College Academic Affairs Team	2015

HONORS & AWARDS

NSF Astronomy & Astrophysics Postdoctoral Fellowship	2026–present
Arts & Science Postdoctoral Fellowship, University of Toronto	2024–2026
NSF Graduate Research Fellow, National Science Foundation	2020–2023
Robert J. Trumpler Graduate Excellence Award, UC Berkeley	2022
Outstanding Graduate Student Instructor Award, UC Berkeley	2019
James A. Buchanan Scholarship, UC Berkeley	2017
Magna Cum Laude, Pomona College	2017
The Frank Brackett, Jr., and Davida Brackett Prize, Pomona College	2017
Phi Beta Kappa, Pomona College	2016
Barry Goldwater Scholarship	2016

AWARDED GRANTS

Canadian Space Agency Grant JWST-GO-10246 (Science PI, CA\$98,230)	<i>pending</i>
STScI Grant JWST-GO-10246 (Science PI, \$473,861)	2026
NSF Astronomy & Astrophysics Postdoctoral Fellowship (\$330,000)	2026
Canadian Space Agency Grant JWST-GO-04735 (Science PI, CA\$97,900)	2025
STScI Grant JWST-GO-04735 (Science PI, \$238,335)	2024
Faculty of Arts & Science Postdoctoral Fellowship Award (2 years stipend & benefits)	2024
NSF Graduate Research Fellowship (3 years stipend & tuition)	2020
Osterbrock Mini-grant (Co-PI, \$1500), <i>Reviving the Sierra Conference: A Collaborative Meeting For UC Astronomy Graduate Students</i>	2017

COLLABORATIONS

Dark Energy Spectroscopic Instrument (DESI)	2024–present
Southern Stellar Stream Spectroscopic Survey (S ⁵)	2023–present

PUBLICATIONS, TALKS & POSTERS

ADS Bibliography

1st Author Publications:

- **Sandford, N.**, et al., “The Metal-poor Halo of Ursa Minor,” In DESI MWS working group review.
- **Sandford, N.**, et al., “Chemodynamics of Boötes I with S⁵: Revised Velocity Gradient, Dark Matter Density, and Galactic Chemical Evolution Constraints,” 2026, [ApJ, 998, 47](#).
- **Sandford, N.**, Weinberg, D., Weisz, D. & Fu, S., “Strong Outflows and Inefficient Star Formation in the Reionization-era Ultra-faint Dwarf Galaxy Eridanus II,” 2024, [MNRAS, 530, 2315S](#).
- **Sandford, N.**, Weisz, D. & Ting, Y.-S., “Validating Stellar Abundance Measurements from Multi-Resolution Spectroscopy,” 2023, [ApJS, 267, 18](#).
- **Sandford, N.**, Weisz, D. & Ting, Y.-S., “Forecasting Chemical Abundance Precision for Extragalactic Stellar Archaeology,” 2020, [ApJS, 249, 24](#).

2nd-5th Author Publications:

- Mura-Guzman, A., Ji, A., **Sandford, N.**, et al., “The unusual α -richness of dwarf galaxy stellar streams,” Submitted to MNRAS.
- Koposov, S., Li, T., Allende Prieto, C., Medina, G., **Sandford, N.** et al., “DESI Data Release 1: Stellar Catalogue,” 2026, [OJA, 9](#).
- Qiu, T., Wang, W., Koposov, S., Li, T., **Sandford, N.**, et al., “The Binary Fraction of Stars in the Dwarf Galaxy Ursa Minor via Dark Energy Spectroscopic Instrument,” 2026, [ApJ, 1000, 33](#).
- Gountanis, N., Weinberg, D., Beverage, A., **Sandford, N.**, et al., “Modeling the Ages and Chemical Abundances of Elliptical Galaxies,” 2025, [ApJ, 985, 184](#).
- Gull, M., Weisz, D., Senchyna, P., **Sandford, N.**, et al., “A Panchromatic Study of Massive Stars in the Extremely Metal-Poor Local Group Dwarf Galaxy Leo A,” 2022, [ApJ, 941, 206](#).
- Xiang, M., Ting, Y.-S., Rix, H.W., **Sandford, N.**, et al., “Abundance Estimates for 16 Elements in 6 Million Stars from LAMOST DR5 Low-Resolution Spectra,” 2019, [ApJS, 245, 34](#).

Nth-Author Publications:

- Ou, T. et al. (*incl. Sandford, N.*), “From observing strategies to velocity dispersion bias: forward modeling unresolved binaries in ultra-faint dwarf galaxies,” Submitted to ApJ, [arXiv:2609.19407](#).
- Li, T. et al. (*incl. Sandford, N.*), “Boötes III is a Tidally Disrupting Ultra-Faint Dwarf Galaxy on an Eccentric Polar Orbit,” Submitted to OJA, [arXiv:2607.07803](#).
- Nguyen, T. et al. (*incl. Sandford, N.*), “Dark Matter in Draco and Boötes I: Hints of a Core in an Ultra-Faint Dwarf from Simulation-Based Inference,” Submitted to MNRAS, [arXiv:2606.26218](#).
- Byström, A. et al. (*incl. Sandford, N.*), “Constraining the Galactic bar using the M92 stellar stream,” Submitted to MNRAS, [arXiv:2605.07918](#).
- Jarvis, N. et al. (*incl. Sandford, N.*), “Characterizing the GD-1 Stream with DESI Year 3 Data,” Submitted to ApJ, [arXiv:2604.20958](#).
- Medina, G. et al. (*incl. Sandford, N.*), “The mass of the Milky Way from outer halo stars measured by DESI DR1,” Submitted to ApJ, [arXiv:2508.19351](#).

- Xu, S. et al. (*incl. Sandford, N.*), “Planetary Accretion Is Less Frequent in Wide Binaries: Evidence from Metal-Enriched White Dwarfs in DESI DR1,” 2026, ApJ, in press, [arXiv:2609.11798](#).
- Heiger, M. et al. (*incl. Sandford, N.*), “It’s a matter of time: Empirical Constraints on Supernova Yields and Delay Times from Dwarf Spheroidal Galaxies,” 2026, [ApJ, 1007, 139](#).
- Mohammed, N. et al. (*incl. Sandford, N.*), “The Kinematically Hot, Extremely Metal-Poor C-19 Stellar Stream in DESI DR2,” 2026, [ApJ, 1005, 200](#).
- Lambert, M. et al. (*incl. Sandford, N.*), “Signatures of a Tidally Induced Spiral Arm at the Anticenter of the Milky Way and a Kinematically Extended Anticenter Stream Using DESI DR2,” 2026, [AJ, 171, 292](#).
- DESI Collaboration et al. (*incl. Sandford, N.*), “Data Release 1 of the Dark Energy Spectroscopic Instrument,” 2026, [AJ, 171, 285](#)
- Li, S. et al. (*incl. Sandford, N.*), “The Milky Way stellar halo is twisted and doubly broken: insights from DESI DR2 Milky Way Survey observation,” 2026, [ApJ, 999, 108](#).
- Ding, J. et al. (*incl. Sandford, N.*), “The Draco Dwarf Spheroidal Galaxy in the First Year of DESI Data,” 2025, [ApJ, 994, 134](#).
- Zheng, W. et al. (*incl. Sandford, N.*), “SN 2023ixf in the Pinwheel Galaxy M101: From Shock Breakout to the Nebular Phase,” 2025, [ApJ, 988, 61](#).
- Fu, S. et al. (*incl. Sandford, N.*), “Stellar Metallicities and Gradients in the Faint M31 Satellites Andromeda XVI and Andromeda XXVIII,” 2024, [ApJ, 975, 2](#).
- Fu, S. et al. (*incl. Sandford, N.*), “Stellar Metallicities and Gradients in the Isolated, Quenched Low-Mass Galaxy Tucana,” 2024, [ApJ, 965, 36](#).
- Fu, S. et al. (*incl. Sandford, N.*), “Metallicity Distribution Function of 13 Ultra-Faint Dwarf Galaxy Candidates from Hubble Space Telescope Narrow-band Imaging,” 2023, [ApJ, 958, 167](#).
- Jacobson-Galan, W. et al. (*incl. Sandford, N.*), “SN 2023ixf in Messier 101: Photo-ionization of Dense, Close-in Circumstellar Material in a Nearby Type II Supernova,” 2023, [ApJL, 954, L42](#).
- Beverage, A. et al. (*incl. Sandford, N.*), “From Carbon to Cobalt: Chemical compositions and ages of $z \sim 0.7$ quiescent galaxies,” 2023, [ApJ, 948, 140](#).
- Fu, S. et al. (*incl. Sandford, N.*), “Metallicity Distribution Function of the Eridanus II Ultra-Faint Dwarf Galaxy from Hubble Space Telescope Narrow-band Imaging,” 2022, [ApJ, 925, 6](#).

Non-Refereed Publications:

- Magrini, L. et al. (*incl. Sandford, N.*), “HRMOS White Paper: Science Motivation,” 2023, [arXiv:2312.08270](#).
- Bundy, K. et al. (*incl. Sandford, N.*), “The Keck-FOBOS spectroscopic facility: conceptual design,” 2020, [SPIE, 11447](#).

Code Contributions:

- Gountanis, N., **Sandford, N.**, et al. 2024, [Zenodo:13845124](#)
“Flexible ANalytic Chemical Evolution”
- **Sandford, N.** 2020, [Zenodo:3924672](#)
“Chem-I-Calc: The Chemical Information Calculator”
- Prochaska, J. X. et al. (including **Sandford, N.**). 2020, [Zenodo:3743493](#)
“PypeIt: Release 1.0.0”
- Rybizki, J. et al. (including **Sandford, N.**). 2019, [ASCL:1909.006](#)
“ChempyMulti: Multi-star Bayesian inference with Chempy”

Talks: (* invited)

*AAS 247th Meeting: DESI Special Session, Phoenix, AZ, USA	Jan 2026
*UofT TASTY Talk, Toronto, ON, CA	Dec 2025
*DESI Collaboration Meeting Plenary Talk, Berkeley, CA, USA	July 2025
DESI Collaboration Meeting, Cancún, QR, MX	Dec 2024
*UofT TASTY Talk, Toronto, ON, CA	Nov 2024
Small Galaxies, Cosmic Questions II, Durham, UK	July 2024
CASCA 2024, Toronto, ON, CA	June 2024
AAS 241st Meeting: Contributed Dissertation Talk, Seattle, WA, USA	Jan 2023
*KICP Seminar, University of Chicago, Chicago, IL, USA	Oct 2022
OSU Astronomy Galaxy Hour, Columbus, OH, USA	Oct 2022
Yale Astronomy Galaxy Lunch Seminar, New Haven, CT, USA	Sept 2022
Harvard ITC Luncheon, Cambridge, MA, USA	Sept 2022
IAUGA 2022 FM 9: Stellar Synthetic Spectra to Study Stellar Populations in the Gaia Era, Busan, KR	Aug 2022
A Comprehensive View of Galaxy Evolution from the Milky Way to I Zwicky 18, Sesto, IT	July 2022
EAS 2022 S4a: Satellite Galaxies and Tidal Streams in the Framework of	June 2022

Cosmological Models, Valencia, ES	
Spatially Resolved Spectroscopy with ELTs, Online	Sept 2021
Massively Parallel Large Area Spectroscopy from Space, Online	June 2021
*WMKO Science Talk, Waimea, HI, USA	Oct 2019
UC Berkeley Astronomy Lunch Talk, Berkeley, CA, USA	Oct 2019
Small Galaxies, Cosmic Questions, Durham, UK	July 2019
Posters:	
Near Field Cosmology in the Era of Big Data: Local Group and Beyond, Toronto, ON, Canada	July 2026
55th Annual AAS DDA Meeting, Toronto, ON, Canada	May 2024
241st AAS Meeting, Seattle, WA, USA	Jan 2023
Linking the Galactic and Extragalactic, Wollongong, NSW, Australia	Nov 2022
2021 Keck Science Meeting, San Diego, CA, USA	Sept 2021
STScI Multi-Object Spectroscopy Workshop, Online	May 2021
2020 Keck Science Meeting, San Diego, CA, USA	Sept 2020
229th AAS Meeting, Grapevine, TX, USA	Jan 2017
227th AAS Meeting, Kissimmee, FL, USA	Jan 2016
Pomona College Summer Research Symposium, Claremont, CA, USA	Sept 2015
Graduate Thesis:	
“Pushing Stellar Archaeology Farther & Fainter with Low-Resolution Spectroscopy” Ph.D. Dissertation, UC Berkeley	August 2023
Undergraduate Thesis:	
“Exploring Gas-Phase Metallicity Gradients in Disk Galaxies: A Semi-Analytic Approach” Thesis with distinction, Pomona College	May 2017
AWARDED TELESCOPE TIME	
PI: JWST GO-10246 - 131.3 hours	2026
<i>Exploring the Accretion History and Halo of Giant Elliptical Cen A with Resolved Stars</i>	
PI: DESI Dedicated Tile Call - 7 hours	2025
<i>DESI Andromeda Region Kinematic Survey</i>	
PI: JWST GO-4735 - 25.5 hours	2024
<i>A Closer Look at the Formation and Evolution of M31’s Inner Disk</i>	
co-I (lead co-I Katie Sharpe; admin. PI Dan Weisz): Subaru/PFS - 1 night	2026B
<i>Alpha Elements and the Baryon Cycle in IC 1613</i>	
co-I (PI Alessandro Savino): JWST GO-4783 - 24.40 hours	2024
<i>Anchoring the JWST Population II Distance Ladder to Gaia</i>	
co-I (PI Dan Weisz): Subaru/HSC - 2 nights	2024B
<i>Resolved Metallicity Maps of M31’s Halo</i>	
co-I (PI Dan Weisz): JWST GO-3788 - 25.3 hours	2023
<i>Alpha Elements and the Baryon Cycle in Isolated Dwarf Galaxies</i>	
co-I (PI Dan Weisz): Keck/DEIMOS - 3 nights	2022B
<i>A Spectroscopic Investigation of Two Metal-rich Ultra-faint Galaxies around M31</i>	
co-I (PI Dan Weisz): Keck/ESI - 2 nights	2021B
<i>The Progenitors of Extremely Low-mass White Dwarfs</i>	
co-I (PI Dan Weisz): HST GO-16686 - 30 orbits	2021
<i>The Metallicity Distribution Functions of Faint M31 Satellites</i>	
co-I (PI Dan Weisz): Keck/LRIS, MOSFIRE - 2 nights	2020A
<i>Characterizing Extremely Metal-Poor Massive Stars in Leo A</i>	
co-I (PI Dan Weisz): HST GO-16226 - 23 orbits	2020
<i>The Metallicity Distribution Functions of Quenched Field Dwarf Galaxies</i>	
co-I (PI Dan Weisz): HST GO-15901 - 43 orbits	2019
<i>The Metallicity Distribution Functions of Ultra-Faint Dwarf Galaxies</i>	
Lead co-I (admin. PI Dan Weisz): Keck/LRIS - 1 night	2019B
<i>Triangulum II: Globular Cluster or Dwarf Galaxy?</i>	
Lead co-I (admin. PI Dan Weisz): Keck/LRIS - 1 night	2019A
<i>The Chemical Enrichment of the Pre-Reionization Fossil Galaxy Sextans</i>	

OBSERVING EXPERIENCE

Mayall/DESI (4 full-nights, 15 half-nights)	2024–2025
Lick/KAST (2 nights)	2023
Keck/LRIS (3.5 nights)	2018–2021
Keck/DEIMOS (2.75 nights)	2020
Keck/NIRES (0.5 nights)	2018
Keck/MOSFIRE (0.5 nights)	2018
Craft Observational Astronomy Workshop, Lick Observatory	2017
Pomona College Table Mountain Observatory (~30 nights)	2015–2017

REFERENCES

Prof. Daniel Weisz

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University of California, Berkeley
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Prof. Constance Rockosi

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University of California, Santa Cruz
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Prof. Sergey Koposov

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Prof. Ting Li

Assistant Professor of Astronomy
University of Toronto
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Dr. Anne Metevier

Director of Lick Observatory College Partnerships
University of California Observatories
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Prof. Philip Choi

Associate Professor of Physics and Astronomy
Pomona College
philip.choi@pomona.edu

Table 1: Summary of Teaching Experiences

Course	Institution	Dates	Role	Responsibilities	# Students
AstroTech Instrumentation Summer School	UC Berkeley	Summer 2026	Instructor	Led introduction to optics lab; Developed and implemented new curriculum; Led instruction of software specialists; Provided instruction in inclusive teamwork; Facilitated spectrograph design and integration; Led ISEE PDP instruction team; Served as mentor for AstroTech Apprentice; Contributed to AstroTech career round table	~30 undergrad and grad students
		Summer 2024		Led optomechanics lab; Developed and implemented new curriculum; Facilitated spectrograph design and integration	
AST 1420: Galactic Structure and Dynamics	U. Toronto	Spring 2026	Guest Instructor	Gave two lectures on galactic chemical evolution; Developed and graded class project on galactic chemical evolution models	~10 grad students
Various Summer Undergraduate Research Programs	U. Toronto	2023–2026	Research Supervisor	Supervised undergrad. research projects; Mentored undergrad. students; Provided training in technical & professional skills	7 undergrad students
Astro 424, 425 & 430: Research Topic in Astronomy	U. Toronto	2023–2026	Research Supervisor	Supervised undergrad. research projects; Mentored undergrad. students; Provided training in technical & professional skills	5 undergrad students
Astro 231: Introduction to Observational Astronomy	Sonoma State	Fall 2025	Guest Instructor	Led celestial sphere lab; Developed and implemented new curriculum; Led ISEE PDP instruction team	~30 undergrad students
Astro 375: Instruction Techniques in General Astronomy	UC Berkeley	Fall 2020, Spring 2022	Instructor	Taught and demonstrated pedagogical techniques; Developed and implemented new curriculum; Provided teaching feedback to first-time TAs	~20 undergrad and grad students
Astro C10: Introduction to General Astronomy	UC Berkeley	Fall 2018	Head TA	Led and provided teaching feedback to team of 16 TAs and 13 graders; Gave substitute lectures; Held office hours; Worked with Disabled Students Program to provide academic accommodations; Handled instances of academic misconduct	~850 undergrad students
Astro C12: The Planets	UC Berkeley	Spring 2018	TA	Led discussion sections; Designed lesson plans; Evaluated exams	~30 undergrad students
Astro C10: Introduction to General Astronomy	UC Berkeley	Fall 2017	TA	Led discussion sections; Held office hours; Designed lesson plans; Designed and evaluated exams	~60 undergrad students
Various Physics & Astronomy Courses	Pomona College	2015–2017	Mentor, TA, Grader	Led tutorial sessions; Assisted lab instruction; graded assignments	~30 undergrad students