

Jed McKinney

NASA HUBBLE FELLOW AT UT AUSTIN

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Summary

Research	Charting the role of dust in the growth and evolution of galaxies from the first galaxies through today. Probing dust content and properties to constrain their physical nature, including active galactic nuclei. Using optical, near-infrared, mid-infrared, far-infrared/sub-mm, and radio observations to measure baryonic properties and numerical simulations to build a complete evolutionary picture of galaxy evolution. Support future mission development to build the next generation of observatories (PRIMA).
Mentoring	9 undergrad (6 to grad school), 3 grad, 2 postdocs. 9 student publications. Received Goldwater, NSF GRFP, NSF AAPF
Grants	\$992k in grant funding secured from NASA, NRAO, and Heising-Simons
Publications	12 first-author, 74 co-author, 8 student-led
Observing	12 PI programs on <i>JWST</i> , ALMA, VLA, IRAM, LMT (230 total hours).
Leadership	PRIMA Science Affiliate & Galaxy Evolution Working Group Lead, NASA Advisory Council (IRSTIG), Science collaboration leadership roles (COSMOS-Web, choir), Astronomy on Tap host/organizer (Austin, TX)

Education

The University of Massachusetts, Amherst

Astronomy PhD. Advisor: Alexandra Pope

Amherst, MA

Sept 2017 - August 2022

Tufts University

BS Astrophysics, Math Minor. Advisor: Anna Sajina

Boston, MA

Sept 2013 - August 2017

Positions

NASA Hubble Fellow

Faculty sponsor: Caitlin Casey (2024-2025), Julian Munoz (2025-present)

UT Austin

Aug 2024 - Present

Postdoctoral Fellow

Faculty sponsor: Caitlin Casey

UT Austin

Sept 2022 - July 2024

Caltech/IPAC Visiting Graduate Fellow

Advisor: Lee Armus

Caltech

Sept 2022 - July 2024

Graduate Research Assistant

Advisor: Alexandra Pope (PhD), Anne Jaskot

UMass

Sept 2017 - July 2022

Undergraduate Research Assistant

Advisor: Anna Sajina

Tufts

2015 - 2017

Grants

Heising-Simons Foundation Conference Support funded for \$70k

New Results Challenging Underlying Assumptions in Galaxy Evolution and Beyond

- Funds to host the inaugural conference for a science collaboration that I co-founded.
- Additional \$9k from the North American ALMA Science Center for junior participant travel support.

UT Austin

2024

JWST Cycle 3 AR #5213 funded for \$326k

SCUBADive: A JWST Archival Analysis of the Most Dust-Obscured Galaxies Across Cosmic Time

- Archival project to identify every JWST counterpart to bright sub-mm sources in all fields with JWST and sub-mm imaging.
- Two publications, two in-prep. 4 undergraduate projects, 2 current graduate theses, 3+ future graduate theses.

UT Austin

2024

JWST Cycle 2 GO #3224 funded for \$554k

Measuring Dust Evolution Over the Past 10 Billion Years with 3 — 12 μ m Spectra for 60 High- z Galaxies

- The first MIRI LRS survey with JWST
- One published paper (McKinney et al., 2025c), three in-prep. 2 undergraduate projects, 1 graduate thesis, 2+ future graduate theses.

UT Austin

2023

Archival ALMA Support SOSPADA-011 funded for \$34k

An archival analysis on the infrared sizes of distant, dust-obscured galaxies

- Funded the final year of my dissertation with an archival research grant from the North American ALMA Science Center.

UMass

2021

Observing

Pioneering empirical constraint on dust in the early Universe

1 approved PI JWST program: Cycle 2 GO #3224

Spectroscopic diagnostics of cold gas fueling star-formation

4 approved PI ALMA programs: 2021.1.00953.S, 2022.1.00101.S, 2023.1.00462.S, 2024.1.00538.S

2 approved PI VLA programs: 19B-254, 21A-036

1 approved PI IRAM program: 168-22

Dust continuum surveys of sub-millimeter galaxies in JWST legacy extragalactic fields

1 approved PI JWST AR program: Cycle 3 AR #5213

2 approved PI ALMA programs: 2023.1.00170.S, 2025.1.00869.S

1 approved PI LMT program: 2023-S2-US-16

Approved programs that I contributed to as co-investigator:

- 15 ALMA (over 300 hours), 9 JWST (over 300 hours), and several other LMT, GBT, SOFIA, SMA, and VLA programs.

Mentoring

Postdoctoral Fellows

2 former UT grad student mentees who I hired as postdocs before they departed for prize fellowships

- **Olivia Cooper** Former UT Postdoc, now NSF AAPF at CU Boulder. Regular meetings to discuss science and professional development.
- **Lindsay House** Former UT Postdoc, now SkAI Preceptor at UChicago, The SkAI Institute, and Chicago State University.

Graduate Students

Funded by my PI programs, GO #3224 and AR #5213

- **Miriam Eleazer** UMass grad, thesis on GO #3224. Regular meetings to discuss science and career goals.
- **Dhruv Zimmerman** UFlorida grad, visiting grad research fellow at UT under my supervision.
- **Elaine Gammon** (2025-present). Former undergrad mentee. Now externally advised UW NSF GRFP graduate student.

Undergraduate Students

5 to grad school, 7 1st-author publications, 2 Goldwater and 3 NSF GRFP recipients

- **Marcela Camberos Murillo** (2026 - Present), UT Undergrad.
- **Virginia Vanicek** (2024 - Present) UT Undergrad, accepted to UMD with NSF GRFP, advanced ApJ Letter in prep.
- **Elaine Gammon** (2023- 2025). UGA undergrad, UT REU. Undergrad advisee receiving Goldwater and GRFP.
- **Camila Silva** (2024 - 2025). UChicago Undergrad, UT REU. Now UCSC graduate student. Published AAS Research Note.
- **Cassidy Novack** (2025 - 2026) Whitman undergrad, UT Summer RA. In prep RNAAS, Post-bacc at NRAO.
- **Leo Sajkov** Tufts undergrad, worked on GO #3224. 1st author publication, now graduate student at Stanford.
- **Meredith Stone** (2018-2022) 1st author publication as UMass undergrad, Goldwater scholar. Now UArizona grad student.
- **Rucellie Jimenez** (2021-2022) UMass undergrad.
- **Owen Henry** (2019-2020) UMass undergrad, 1st author RNAAS.

Teaching

UT Introductory Astronomy for non-majors

Guest lectured extragalactic modules for 100+ undergrads.

UT Austin

2023

Summer Pre-College Astronomy

Designed and delivered lectures for rising freshman.

UMass

2018-2019

Computer Science Workshops for Undergrads

Built astronomy-oriented coding bootcamp for undergrads.

UMass

2018

Outreach and Service

Astronomy on Tap, Austin TX

Host and Organizer

UT Austin

2023 - Present

- Host of monthly show with crowds reaching 150+. One of the longest running Astronomy on Tap show in the country.
- Second AoT to ever reach 100 shows.
- Coordinated talks from NASA Headquarters, NASA Astronauts, and astronomers from around the world.

Junior Scientist Working Group Lead

COSMOS-Web collaboration

Virtual

2022 - 2024

- Led Junior Scientist working group of largest JWST Cycle 1 collaboration. Ran monthly meetings, led creation of code of conduct.

Conference Organizing

UT Austin

Organizer role in 3 conferences

2023 - 2025

- (SOC/LOC, grant coPI) Inaugural **choir** conference on science and mentoring.
- 8th (SOC/LOC) and 9th (SOC) New Horizons Bash Symposium. UT Austin conferences highlighting excellence in postdoctoral research.

Media Appearances

Austin, TX

Public television news, podcasts

2023 - Present

- Telemundo Odessa TV Interview. Television feature on JWST.
- Season 2 Episode 3 of Paradise City Podcast, "Paradise Is... A Starry Night" . Interview on the joy of discovery and community in Astronomy.

Department Roles

UT, UMass

4 committees, including UT Graduate Admissions

2020 - Present

- Several local organizing committees
- Summer REU research mentor (3 years)
- UT Austin 2023 Graduate Admissions Committee
- UMass Astronomy DEI committee chair
- UMass Freshman undergraduate Astronomy advisor
- UMass Graduate student recruitment committee

Membership

Science Collaborations

- choir, Leadership Council and Founding Member (2024 - Present)
- The Cosmic Evolution Survey (COSMOS), COSMOS-Web, COSMOS-3D (2022 - Present)
- The Cosmic Evolution Early Release Science (CEERS) Survey (2022 - Present)
- The Great Observatories All-sky LIRG Survey (GOALS, 2021 - Present)

Professional Organizations

- PRIMA Science Affiliate and Galaxy Evolution Working Group Lead (2025 - Present)
- PRIMA Galaxy Evolution Science Working Group Member (2023 - Present)
- NASA IR Science and Technology Integration Group Leadership Council (2022 - Present)
- New Great Observatories Science Analysis Group (2023 - Present)
- American Astronomical Society (2016 - Present)

Talks

2027	Invited , Stars, Black Holes, and Feedback From Cosmic Dawn to Cosmic Noon	Paris, FR
2026	Invited , Galaxy Formation at its Peak	Leiden, NL
2026	Contributed , COSMOS-Web 2026 Team Meeting	CA, USA
2026	Invited , Exploring the Aromatic Universe in the JWST Era	Ontario, CA
2026	Invited , PRIMA PI Science Overview	virtual
2026	Contributed , The First Billion Years of the Universe	CO, USA
2025	Contributed , Dust Universes 2025: the Fifth Pan Dust Conference	AZ, USA
2025	Contributed , NASA Hubble Fellowship Symposium	MD, USA
2025	Organizer Review Lecture , New Data that Challenge Underlying Assumptions in Galaxy Evolution	ME, USA
2025	Contributed , Infrared Fine-Structure Lines	MN, USA
2025	Contributed , Cosmic Frontiers Center Inaugural Conference	TX, USA
2025	Contributed , PRIMA Working Meeting	CA, USA
2025	Invited , UW Galaxy Evolution Seminar	WA, USA
2024	Contributed , Physical Simulations of PAH Emission in Galaxies II	VA, USA
2024	Contributed , CFC-CCA Workshop	TX, USA
2024	Invited , University of Maryland Colloquium	MD, USA
2024	Contributed , NASA Hubble Fellowship Symposium	CA, USA
2024	Invited , Cosmic Odysseys	Crete
2024	Contributed , The Physics and Impact of Astrophysical Dust	CO, USA
2024	Invited , IA-FORTH Astronomy Seminar	virtual
2024	Contributed , AAS 243	LA, USA
2023	Contributed , 10 Years of ALMA: Past, Present, and Future	Chile
2023	Invited , Texas A&M Astronomy Colloquium	TX, USA
2023	Contributed , COSMOS Team Meeting	NY, USA
2023	Contributed , CEERS Team Meeting	TX, USA
2023	Invited , NOIRLab FLASH Astronomy Seminar	AZ, USA
9 invited, 7 contributed , between 2018-2023		

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First-Author Publications

12 first-author publications since 2019 cited in 235 unique papers.

- JWST Reveals a Candidate Supermassive Black Hole Binary at $z = 4.3$ in the Brightest Sub-millimeter Galaxy in COSMOS-Web*** 2026
McKinney, J., Gupta, A., Munoz, J. B., et al., 2026, accepted to ApJL, arXiv: 2609.01711
- A JWST MIRI LRS Survey of 37 Massive Star-Forming Galaxies and AGN at Cosmic Noon – Overview and First Results*** 2026
McKinney, J., Eleazer, M., and Pope, A., et al., 2026, ApJ, 1001, 93
- Modeling Galaxies in the Early Universe with Supernova Dust Attenuation*** 2025
McKinney, J., Cooper, O., and Casey, C., et al., 2025, ApJL, 985, 21.
- SCUBADive I: JWST+ALMA Analysis of 289 Sub-millimeter Galaxies in COSMOS-Web*** 2024
McKinney, J., Casey, C., and Long, A., et al., 2024, ApJ, 979, 229
- A Near-Infrared Faint, Far-Infrared-Luminous Dusty Galaxy at $z \sim 5$ in COSMOS-Web*** 2023
McKinney, J., Manning, S., and Cooper, O., et al., 2023, ApJL, 956, 72
- Broad Emission Lines in Optical Spectra of Hot Dust-obscured Galaxies can Contribute Significantly to JWST/NIRCam Photometry*** 2023
McKinney, J., Finnerty, L., and Casey, C., et al., 2023, ApJL, 946, 39
- The IR Compactness of Dusty Galaxies Set Star-formation and Dust Properties at $z \sim 0 - 2$*** 2023
McKinney, J., Pope, A., Kirkpatrick, A., et al., 2023, ApJ, 955, 136
- Measuring the Total Ultraviolet Light from Galaxy Clusters at $z = 0.5 - 1.6$: The Balance of Obscured and Unobscured Star-Formation*** 2022
McKinney, J., Ramakrishnan, V., Lee, K-S., et al., 2022, ApJ, 928, 88
- Dust-Enshrouded AGN can Dominate Host-Galaxy-Scale Cold-Dust Emission*** 2021
McKinney, J., Hayward, C., and Rosenthal, L., et al., 2021, ApJ, 921, 55
- Regulating Star Formation in Nearby Dusty Galaxies: Low Photoelectric Efficiencies in the Most Compact Systems*** 2021
McKinney, J., Armus, L., and Pope, A., et al., 2021, ApJ, 908, 238
- Measuring the Heating and Cooling of the Interstellar Medium at High Redshift: PAH and [C II] Observations of the Same Star-forming Galaxies at $z \sim 2$*** 2020
McKinney, J., Pope, A., and Armus, L., et al., 2020, ApJ, 892, 119
- Neutral Gas and $\text{Ly}\alpha$ Escape in Extreme Green Pea Galaxies*** 2019
McKinney, J., Jaskot, A., and Oey, S., et al., 2019, ApJ, 874, 52

Co-Author Publications

74 total co-author publications since 2017, 8 student-led publications.

Student Publications

- Zimmerman, Dhruv; McKinney, Jed et al., 2026, arXiv:2610.19379 2026
- Vanicek, Virginia; McKinney, Jed et al., 2026, arXiv:2609.22428 2026
- Eleazer et al., incl. McKinney, 2026, ApJ, 1004, 67 2026
- Silva, Camilla; McKinney, Jed et al., 2026, RNAAS, 10, 10 2026
- Cooper et al., incl. McKinney, 2025, ApJ, 982, 125 2025
- Sajkov et al., incl. McKinney, 2024, ApJ, 977, 115 2024
- Stone et al., incl. McKinney, 2022, ApJ, 934, 27 2022
- Henry et al., incl. McKinney, 2019, RNAAS, 3, 199 2019

Significant contribution

Wang et al., 2026, arXiv:2608.27650	2026
Casey et al., 2026, OJAp, 967549	2026
Akins et al., 2026, ApJ, 1006, 229	2026
Lofaro et al., 2026, A&A, 712, 84	2026
Roy et al., 2026, arXiv:2606.23683	2026
Narayanan et al., 2026, arXiv:2606.20809	2026
Lambrides et al., 2026, NatAs, 10, 868	2026
Silverman et al., 2026, MNRAS, 546, 3	2026
Franco et al., 2026, ApJ, 999, 200	2026
Zavala et al., 2026, ApJ, 998, 36	2026
Akins et al., 2026, ApJ, 997, 218	2026
Harish et al., 2025, ApJ, 992, 45	2025
Silverman et al., 2025, arXiv:2509.20548	2025
Liu et al., 2025, MNRAS, 542, 397	2025
Akins et al., 2025, ApJ, 991, 37	2025
Casey et al., 2025, ApJ, 990, 61	2025
Akins et al., 2025, arXiv:2508.06607	2025
Franco et al., 2025, arXiv:2506.03256	2025
Sajina et al., 2025, ApJ, 985, 201	2025
Manning et al., 2025, arXiv 2505.09730	2025
Gentile et al., 2025, A&A, 697, 46	2025
Akins et al., arXiv:2503.00998	2025
Zavala et al., 2025, Nature Astronomy, 155	2025
Gentile et al., 2024, ApJ, 973, 2	2024
Franco et al., 2024, ApJ, 973, 23	2024
Zavala et al., 2024, 977, 9	2024
Long et al., 2024, arXiv:2408.14546	2024
Long et al., 2024, ApJ, 970, 68	2024
Casey et al., 2024, 975, 4	2024
Mizener et al., 2024, ApJ, 970, 30	2024
Casey et al., 2024, ApJ, 965, 98	2024
Akins et al., 2023, ApJ, 956, 61	2023
Casey & Kartaltepe et al., 2023, ApJ, 954, 31	2023
Pope et al., 2023, ApJL, 951, 46	2023
Song et al., 2022, ApJ, 940, 52	2022
Song et al., 2021, ApJ, 916, 73	2021
Stacey et al., 2021, MNRAS, 501, 1970	2021
Jaskot et al., 2019, ApJ, 885, 96	2019
Bonato et al., 2017, ApJ, 836, 171	2017

Minor contribution

Paquereau et al., 2026, arXiv:2606.31978	2026
Chworowsky et al., 2026, arXiv:2605.13966	2026
Abedini et al., 2026, MNRAS, 548, 337	2026
Fox et al., 2026, ApJ, 1002, 162	2026
Jecmen et al., 2026, ApJ, 1001, 234	2026
Gozaliasl et al., 2026, A&A, 708, 129	2026
Asada et al., 2026, arXiv:2601.120045	2026
Toni et al., 2026, A&A, 707, 87	2026
Gozaliasl et al., 2025, A&A, 703, 129	2025
Paquereau et al., 2025, A&A, 802, 163	2025
Shuntov et al., 20205, A&A, 695, 20	2025
Abedini et al., 2025, arXiv:2506.04138	2025
Gozaliasl et al., 2025, arXiv:2506.04031	2025
Toni et al., 2025, A&A, 697, 197	2025
Faisst et al., 2025, ApJ, 980, 204	2025
Kalita et al., 2025, MNRAS, 536, 3090	2025

Lambrides et al., arXiv:2409.13047	2024
Bianchin et al., 2024, ApJ, 965, 103	2024
Lambrides et al., 2024, ApJ, 961, 25	2024
Kirkpatrick et al., 2023, ApJ, 959, 7	2023
Young et al., 2023, ApJ, 958, 5	2023
Popescu et al., 2023, ApJ, 958, 12	2023
Lai et al., 2023, ApJ, 957, 26	2023
Fujimoto et al., 2023, ApJ, 955, 130	2023
Rich et al., 2023, ApJ, 944, 50	2023
Armus et al., 2023, ApJ, 942, 37	2023
Lai et al., 2022, ApJL, 941, 36	2022
U et al., 2022, ApJ, 940, 5	2022

Selected White Papers

McKinney, Jed and Lieb, Emily, 2026, <i>High Redshift Dust</i> , Published in <i>Summary of Discussion Sessions from The Dusty Universe 2025</i> .	2026
McKinney, Jed et al., 2025, <i>Constraining the Total Infrared Luminosities of the Most Luminous Little Red Dots</i> . Published in Volume 2 of the PRIMA GO Book.	2025
Long, A, McKinney, Jed , et al., 2025, <i>Dust in High Redshift Quiescent Galaxies</i> . Published in Volume 2 of the PRIMA GO Book.	2025
Delvecchio, I et al., incl. McKinney, Jed , 2025, <i>The AGN nature of Little Red Dots via PRIMA Stacking</i> . Published in Volume 2 of the PRIMA GO Book.	2025
Arriscado, L et al., incl. McKinney, Jed , 2025, <i>The metallicity-PAH relationship from the local universe to cosmic noon</i> . Published in Volume 2 of the PRIMA GO Book.	2025
McKinney, Jed et al., 2020, <i>An evolving photoelectric efficiency at cosmic noon?</i> . Published in Proceedings of the International Astronomical Union, Volume 352, pp. 243-245	2020
Jaskot, A and McKinney, Jed et al., 2020, <i>Neutral gas and the escape of ionizing radiation: Lessons from the low-redshift Green Peas</i> . Published in Proceedings of the International Astronomical Union, Volume 352, pp. 304-308.	2020