

Employment

9/2022–Present Assistant Professor at Northwestern
9/2021–8/2022 Adjunct Assistant Professor at Northwestern
9/2018–8/2022 51 Pegasi b Fellow at Caltech

Education

8/2013–8/2018 University of California, Berkeley
Ph.D. in Astrophysics (August 2018)

- *Footage of Other Worlds: Unveiling the Dynamical Architecture of Young Exoplanetary Systems* (Advisor: James Graham)

M.A. in Astrophysics (2016)
8/2009–5/2013 Cornell University
B.A. in Physics (Magna Cum Laude) and Minor in Computer Science (2013)

Research Interests

- Imaging faint exoplanets next to the glare of their bright host stars
- Characterizing exoplanets through their orbital and atmospheric properties
- Using novel instrumentation, large datasets, and machine learning to find new exoplanets
- Software development for astronomy

Awards & Distinctions

2025 Sloan Research Fellow
2023 RCSA Scialog Fellow
2018-2022 Heising Simons Foundation 51 Pegasi b Postdoctoral Fellow
2018 Mary Elizabeth Uhl Prize, UC Berkeley Astronomy Department
2016 Chambliss Astronomy Achievement Student Award, AAS
2013 Kievel Prize, Cornell Physics Department
2013 Merrill Presidential Scholar, Cornell University

External Grants

Space Telescope Science Institute/James Webb Space Telescope 2024-2027
“Into The Spotlight: Unveiling Wide-Separation Sub-Jupiters for Future JWST Characterization” (JWST- GO-05835.022)
Space Telescope Science Institute/James Webb Space Telescope 2024-2027
"Arcana of the Ancients: A Spectral Metallicity Survey of the Lowest-Mass Stars and Brown Dwarfs (JWST-GO-04668.012-A)
Space Telescope Science Institute/James Webb Space Telescope 2024-2027
Uncharted Worlds: Towards a Legacy of Direct Imaging of Sub-Jupiter Mass (JWST-GO-04050.017-A)
NASA/Nancy Grace Roman Space Telescope 2023-2026
Imaging and Characterizing Exoplanets with the Roman Coronagraph and Open-Source Tools (80NSSC24K0087)
Space Telescope Science Institute/Hubble Space Telescope 2023-2026

A Fomalhaut deep field to test the dust cloud paradigm of Fomalhaut b (HST-GO-17139.008-A)

Heising-Simons Foundation 2023-2025

Spectroscopic Signatures of Planet Formation on a Population Level with KPIC (2023-4598)

NASA/Exoplanets Research Program 2023-2025

Dynamical Signatures of Planet Formation in Wide-Separation Exoplanets and Brown Dwarfs (80NSSC23K0280)

Heising-Simons Foundation 2023-2025

Code/Astro 2023-2025 Workshops at Northwestern (#2023-4167)

Space Telescope Science Institute/James Webb Space Telescope 2022-2025

High Contrast Imaging of Exoplanets and Exoplanetary Systems with JWST (JWST-ERS-01386.047-A)

Heising-Simons Foundation 2022

Code/Astro 2022 software engineering workshop for astronomers (#2022-3407)

Heising-Simons Foundation 2020-2022

Orbitize!: A comprehensive orbit-fitting software package for the high-contrast imaging community (#2019-1698)

Service and Leadership

Reviewer	A&A, AJ, ApJ, ApJL, JATIS, JOSS, Astronomy & Computing, NASA FINESST, NSF AAG, Royal Society Fellowship, Fondo Nacional de Desarrollo Científico y Tecnológico (Chile)
TACs	CIERA Telescope Allocation Committee, JWST External Panelist, Caltech Optical Observatories, Chinese Telescope Access Program, NOIRLab Galactic Habitable Worlds Observatory Characterizing Exoplanets Steering Committee
2024	Nancy Grace Roman Space Telescope Coronagraph Instrument Community Participation Program: Data Reduction & Simulations Co-Lead
2023-Present	Keck Planet Imager and Characterizer (KPIC) Project Scientist and Executive Committee Chair
2022-Present	Keck Science Steering Committee
2021-Present	Gemini Planet Imager Science Steering Committee
2021-Present	High Resolution Infrared Spectrograph for Exoplanet Characterization (HISPEC) Key Science Program Co-Lead
2021	NASA Exoplanet Archive Atmospheres Advisory Panel
2020-Present	Code/Astro Workshop, Founder and Organizer
2020	ExSoCal SOC
2020	High-Resolution Infrared Spectroscopy for Exoplanet Characterization Hackathon OC
2020-Present	ExoGRAVITY Steering Committee
2018-2021	AAS Chambliss Award Judge
2016-2018	Graduate Student Peer Mentoring Program (UC Berkeley)

Press

2024 First compositional measurements of a protoplanet. [Northwestern News Article](#)

- 2023 Created 17-year exoplanet time-lapse that was featured on various news outlets including Forbes and Space.com. [Northwestern News Article](#)
- 2023 Created 12-year HR 8799 time-lapse that was viewed millions of times online and featured on CNET, Gizmodo, and Reddit. [Northwestern News Article](#)
- 2022 Contributed to JWST's first exoplanet image. Featured on [Northwestern News](#) and [WTTW](#).
- 2021 Measuring the Days of Super Jupiters. Featured by [Keck Observatory](#).
- 2020 Confirming Two Newborn Planets. Featured by [Keck Observatory](#).
- 2019 First detection of a planet with optical interferometry. Featured on [Caltech News](#).
- 2017 Created HR 8799 time-lapse that was viewed a million times online, featured on Astronomy Picture of the Day, and shown on a PBS children's TV show

Invited Talks

- Northwestern Department of Electrical and Computer Engineering Meet-the-Faculty Seminar Series, Evanston, IL, February, 2025.
- Biomedical and Astronomical Signal Processing Frontiers, Villars-sur-Ollon, Switzerland, January 2025.
- Northwestern Physics Horizons, Evanston, IL, November, 2024.
- NASA Sagan Summer Workshop, Pasadena, CA, August, 2024.
- Center for Astrophysics | Harvard & Smithsonian Colloquium, Cambridge, MA, February 2024.
- University of Chicago Astronomy Colloquium, Chicago, IL, February 2024.
- NASA Sagan Summer Workshop, Pasadena, CA, August, 2023.
- NASA Exo-Explorers Meeting, Online, June 2023.
- New Mexico State University Astronomy Colloquium, Las Cruces, NM, February 2023.
- Biomedical and Astronomical Signal Processing Frontiers, Villars-sur-Ollon, Switzerland, February 2023.
- University of Michigan Astronomy Colloquium, Ann Arbor, MI, January, 2023.
- UC Berkeley Astronomy Colloquium, Berkeley, CA, January, 2023.
- Observing the Universe in Motion: 5 Years of GRAVITY, Ringberg, Germany, October, 2022.
- Exoplanets in the 21st Century, Heidelberg, Germany, May, 2022.
- UMass Amherst Astronomy Colloquium, Online, January, 2022.
- SPIE Optics + Photonics: Techniques and Instrumentation for Detection of Exoplanets, San Diego, CA, August 2021.
- CIERA Special Seminar, Online, March, 2021.
- University of Amsterdam Astronomy Colloquium, Online, March 2021.
- University of Arizona Origins Seminar, Online, February, 2021.
- Yale Exoplanet and Stars Seminar, Online, February, 2021.
- UCSC Colloquium, Online, April, 2020.

UCLA Astrophysics Lunch Talk, Los Angeles, CA, February, 2020.

Planetary Science Seminar, Caltech, February, 2020.

JPL Astrophysics Luncheon Seminar, Pasadena, CA, January, 2019.

ExSoCal, Pasadena, CA, September, 2018.

IPAC Seminar, Pasadena, CA, May, 2017.

Planetary Science Seminar, Caltech, May, 2017.

Center for Integrative Planetary Science Seminar, UC Berkeley, April, 2016.