CONTACT

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EMPLOYMENT

2022 -	Professor, Department of Astronomy, Ohio State University
2018 - 2022	Associate Professor, Department of Astronomy, Ohio State University
2015 - 2018	Assistant Professor, Department of Astronomy, Ohio State University
2014	Associate Astronomer, National Radio Astronomy Observatory
2011 - 2014	Assistant Astronomer, National Radio Astronomy Observatory
2009 - 2011	Hubble Fellow, National Radio Astronomy Observatory
2006 - 2009	Postdoctoral scholar, Max Planck Institute for Astronomy with Dr. Fabian Walter

EDUCATION

2006	Ph. D. in Astrophysics, University of California at Berkeley *"Molecular Gas in Dwarf Galaxies"* Advisors: Leo Blitz & Alberto Bolatto
2002	M.A. in Astrophysics, University of California at Berkeley
1999	B.A. in Astronomy and Astrophysics and Physics (Magna Cum Laude), Harvard University

RESEARCH INTERESTS

I aim to understand the physics of the interstellar medium, star formation, and stellar feedback and to relate these to the evolution of galaxies. My work combines cutting-edge observations from across the electromagnetic spectrum, and often involves developing new analysis techniques aimed at combining cross-wavelength data to gain astrophysical insight. I also lead new radio, millimeter, and infrared surveys, and have been a leader in producing high quality, high impact, and broadly useful public data sets for nearby galaxies.

PUBLICATION SUMMARY

(see attached selected and full publication lists)

I am an author of 345 refereed articles, including 26 first-author publications, 54 second-author publications, and 49 third-author publications. My articles have been cited more than 30,000 times, the h-index describing my full work is 89. Works where I am first, second, or third author have more than 18,000 citations. This link connects to a NASA ADS library containing the full list of my publications.

AWARDS

2025	National Academy of Sciences Henry Draper Medal
2021 - 2024	Humboldt Research Award
2017	National Science Foundation CAREER Award
2009 - 2011	NASA Hubble Fellowship

TEACHING

Interstellar and Intergalactic Medium (2017,2019,2021,2023, 2025)	Graduate, Ohio State
Radio Astronomy (2014, co-taught)	Graduate, U. Virginia
From Planets to the Cosmos (2018,2019,2020,2021,2024)	Undergraduate, Ohio State
Life in the Universe (2015,2016,2017)	Undergraduate, Ohio State
Cosmology: The History of the Universe (2018)	Undergraduate, Ohio State

Selected Other Teaching Activities: As a staff member at NRAO, I designed material and gave presentations aimed at training scientific community members in interferometry, radio observations, and radio data reduction. I also participated as a presenter and instructor at the Max Planck Summer School on JWST (2023), the GISM International School on the ISM (2021), the NRAO Synthesis Imaging School (2012), and the IRAM Summer School (2009). From 2016-2019, I ran two-week summer project aimed at introducing STEM-interested high school students to research as part of the Ohio Supercomputing Center's Summer Institute.

MENTORSHIP AND ADVISING

This section lists local mentees and institutions where I was employed. I also extensively support the training, work, and professional development of junior scientists within my research collaborations.

Ph.D. students	Debosmita Pathak (current student), Rebecca McClain (current student), Devisree Tallapaneni (current student), Grace Krahm (current student), Ness Mayker Chen (advisor, 2024), Jiayi Sun (advisor, 2021), Sarah Kessler (advisor, 2021), Molly Gallagher (advisor, 2019), Loreto Barcos Munoz (co-advisor, 2017), Andreas Schruba (mentor, 2010), Frank Bigiel (mentor, 2008)
Undergraduate and Masters students	Joshua Machado (M.A.), Cheoljong Lee (M.A.), John Allan (M.A.), and research supervision or co-supervision for 12 undergraduate researchers
Postdoctoral scholars	Ryan Chown (2023-2025), Sumit Sarbadhicary (CCAPP Fellow, 2021-2024), Amy Sardone (NSF Fellow, 2019-2023), Samantha Benincasa (CCAPP Fellow, NSERC Fellow, Presidential Fellow, 2020-2022), Dyas Utomo (2017-2020), Alexia Lewis (CCAPP Fellow, 2016-2017)

SELECTED DEPARTMENT AND PROFESSIONAL SERVICE

2019 - 2025	Graduate studies chair for Ohio State Department of Astronomy
2014 - 2016	Next Generation Very Large Array working group co-lead
2018 - present	Next Generation Very Large Array Science Advisory Committee
2021 - present	NRAO Data/CASA User's Committee (chair 2022)
2021, 2023	AUI Visiting Committee to review NRAO (chair 2023)
2024, 2025	NRAO User's Committee

Other external service: *Telescope proposal review* including for JWST, HST, NRAO facilities, Arecibo, MeerKAT, SOFIA, LMT, CARMA. *Grant proposal review* including for NSF, NRAO development programs, individual national agencies in other countries. *NSF external panel reviewing NRAO. Referee* for MNRAS, AAS journal, A&A, Nature. *Telescope advocacy* including for the Green Bank Observatory, Next Generation VLA, PRIMA proposed IR probe. *Scientific Organizing Committee* for > 5 international conferences.

Other internal service (at Ohio State): Graduate admissions committee (chair 2017-2019), Center for Cosmology and Astroparticle Physics board member, Astronomy Coffee facilitator

SELECTED RESEARCH COLLABORATIONS :

PHANGS
(2015 – present)
www.phangs.org

The 100+ person PHANGS team aims to combine the best telescopes in the world to produce breakthroughs in our understanding of baryonic physics in galaxies. I am co-founder, the project scientist, a member of the steering committee, PI of our Cycle 2 JWST Treasury, co-PI of our ALMA Large Program and Cycle 1 JWST Treasury, and have served as working group lead and led development of our ALMA pipeline. PHANGS has produced key breakthroughs and 100+ publications since 2015.

The Local Group L-Band Survey
(2019 – present)
www.lglbs.org

I am PI of the Local Group L-Band survey, the first "Extra Large" VLA program. We are currently using the VLA to make transformational observations of the atomic gas and continuum emission from Local Group galaxies. Observations began in 2021 and are concluded in winter 2023.

HERACLES
(2007-2015)

I was co-PI (with Fabian Walter) of HERACLES, an IRAM Large Program that produced molecular gas maps that our team paired with *Spitzer*, *Herschel*, GALEX, and VLA maps to make key breakthroughs in understanding the phase structure and star formation processes in galaxy disks.

Other extended research collaborations: THINGS (VLA), KINGFISH *(Herschel),* EDGE (CARMA, ALMA, CALIFA, GBT), *Spitzer* Survey of the Small Magellanic Cloud *(Spitzer),* PAWS (IRAM/NOEMA), EMPIRE (ALMA/IRAM/NOEMA), z0MGS (GALEX/WISE/VLA/*Herschel*), PHAT (HST)

SELECTED OBSERVING AWARDS :

Selected Observing Programs:

ALMA Large Program "The 10pc Survey of Molecular Gas and Feedback"	PI
ALMA Large Program PHANGS-ALMA	Co-PI
IRAM 30-m Large Programs HERACLES	Co-PI
JWST Cycle 1 Treasury PHANGS-JWST	Co-PI
JWST Cycle 2 Treasury Survey of 55 galaxies	PI
VLA Extra Large Survey of the Local Group	PI

Principal Investigator on additional projects at: ALMA, HST, JWST, VLA, GBT, the IRAM telescopes, CARMA, BIMA, ARO/NSF 12-m telescope, *Herschel.*

Additionally co-investigator on projects at: *Spitzer,* MeerKAT, e-Merlin, LMT, JCMT, Very Large Telescopes, Submillimeter Array, SOFIA. Including PHANGS large programs on HST, VLT/MUSE.

RESEARCH GRANT AWARDS

National Science Foundation	CAREER award (2017)
National Science Foundation	Astronomy and astrophysics grants (AAG), three awards (2016, 2016, 2022)
NASA	Astrophysics data analysis program (ADAP), two awards (2016, 2017)
NASA via Space Telescope Science Institute	*Hubble* and JWST observing support, >10 awards (2012-2025)

National Radio Astronomy Observatory	Student observing support (SOS), two awards (2017, 2021)
National Radio Astronomy Observatory	ALMA development program (2013)

More than $2.5M in funding to my current institution (Ohio State) as PI since 2015.

SELECTED INVITED PRESENTATIONS

Invited colloquia: Princeton University (2024, 2013), Stanford KIPAC (2023), Ohio State University (2023, 2014, 2009), University of Illinois at Urbana Champagne (2022, 2015), Max Planck Institute for Radio Astronomy (2022), Joint ALMA Observatory (2021), Max Planck Institute for Astronomy (2021, 2015), University of Victoria Astronomy Seminar (2021), Joint Heidelberg Colloquium (2018), Yale University Astronomy Seminar (2017), Cornell University (2017), Space Telescope Science Institute (2017), University of Wisconsin at Madison (2017, 2010), SOFIA Science Center (2016), Case Western Reserve University (2016), University of Kentucky (2015), University of Chile (2015), NYU Astronomy Seminar (2015), UC Berkeley (2014), New Mexico State University (2014), University of Toledo (2014), Carnegie Observatories (2011), University of Toronto (2011), McMaster University (2011), University of Massachussetts (2011), University of Washington (2010), NRAO Socorro (2010), University of Maryland (2009), Joint Astronomy Colloquium Garching (2009)

Selected invited conference presentations since 2011 at: Galaxy Evolution Under the Microscope (Munich, 2025), The Physics of Star Formation (Lyon, 2023), DSA 2000 Conference (Pasadena, 2023), UVEX Science Meeting (Pasadena, 2023), IAU Symposium 373 (Busan, 2022, presentation at plenary session), "ISM Big Data" meeting-in-meeting AAS (2020), Views on the Interstellar Medium in galaxies in the ALMA (Bologna, 2019), ngVLA Science Meeting (Charlottesville, 2019), Hendrik van de Hulst Centennial Symposium (Leiden, 2018), The Laws of Star Formation (Cambridge, 2018), Linking Observations and Theory Across the Scales of Star Formation (Sextens, 2017), The Physics of the ISM (Cologne, 2017), The origin of galaxies, stars, and planets in the era of ALMA (Pasadena, 2017), US Radio Futures II (Baltimore, 2017) The Milky Way and Its Environment (Paris, 2016), The Magnetized ISM (Madison, 2016), The Cold Universe (Santa Barbara, 2016), Molecular Gas in Galactic Environments (Charlottesville, 2016), Dissecting Galaxies at High Redshift (Santiago, 2015), The GBT at High Frequencies (2015), IAU Symposium 315 (2015, presentation in plenary session), Gas in and Around Galaxies (Ringberg, 2014), 3D2014: Gas and Stars in Galaxies (Garching, 2014), Phases of the ISM (Heidelberg, 2013), Regulation of Star Formation in Molecular Gas (Ringberg, June 2013), CARMA Science Symposium (Chicago, 2013), Black Hole and Galaxy Growth at High Redshift (Jerusalem, October 2012), Star Formation in Dwarf Galaxies (Flagstaff, 2012), Galactic-Scale Star Formation (Heidelberg, July 2012), Cosmic-ray induced phenomenology in star-forming environments" (San Cugat, April 2012), Multiwavelength Views of High Redshift Galaxies (Santiago, 2011)

Highlights include: Presentations at two plenary sessions of the IAU (2015, 2022)