

## Katherine Alatalo, Ph.D.

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ADS link to first author+student papers [here](#).  
Full co-author list [here](#).

### Research Interests

- Understanding galaxy evolution and transformation, particularly across non-traditional pathways
- How turbulence impacts the efficiency of star formation within molecular gas
- The relationship between supermassive black hole growth, molecular gas, and galaxy evolution
- Studying the interplay between morphologies and star formation quenching

### Professional History

Associate Astronomer w/o Tenure, Space Telescope Science Institute Oct 2017 – present  
Science Mission Office

- **The JWST Science Policies Group, Lead**
- **The JWST Science Policies Group, Deputy**
- **The JWST Proposal Writing Master Class, Creator**
- **The Shocked Poststarburst Galaxy Survey (SPOGS), Principal Investigator**

Assistant Research Scientist, Johns Hopkins University Apr 2018 – present

- The Shocked Poststarburst Galaxy Survey (SPOGS)
- Thesis advisor, Dr. Elizaveta Sazonova, Ms. Yuanze Luo, Mr. Justin Otter, Ms. Maya Skarbinski

Hubble Postdoctoral Fellow, The Carnegie Observatories Aug 2015 – Oct 2017

*Sponsor:* John Mulchaey (Director, Carnegie Observatories)

- The Shocked Poststarburst Galaxy Survey (SPOGS)
- Studying the interplay between gas and quenching galaxies

Postdoctoral Scholar, Infrared Processing and Analysis Center, Caltech Oct 2012 – Aug 2015

*Advisor:* Phil Appleton (IPAC, Caltech)

- Investigating star formation suppression in highly turbulent objects
- Mapping CO(1–0) and [C II] in Hickson Compact Groups

Graduate Student Researcher, UC–Berkeley Dept of Astronomy Aug 2005 – Oct 2012

*Advisor:* Carl Heiles (UC – Berkeley)

- Mapping molecular gas rich ETGs in the ATLAS<sup>3D</sup> survey using CARMA
- Multiwavelength follow-up of AGN feedback in NGC 1266

### Education

University of California, Berkeley Astrophysics Ph.D., 2012

*Advisor:* Carl Heiles, “Molecular Gas in Early-type Galaxies” M.A., 2008

University of Michigan General Physics, Astronomy B.S. (High Distinction), 2004

*Advisors:* Timothy McKay & Carl Akerlof, “Optical counterparts to gamma-ray bursts”

## Grants & Awards

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2023 STScI Director's Discretionary Research Fund Award (\$64K)	2023
2022 co-I NASA ADAP (\$750k; PI: Rowlands)	2022
2022 STScI Director's Discretionary Research Fund Award (\$15K)	2022
2021 STScI Director's Discretionary Research Fund Award (\$65K)	2021
2020 STScI Director's Discretionary Research Fund Award (\$65K)	2020
Hubble Postdoctoral Fellowship (\$360K)	2015–2018
AAS International Travel Grant (\$5K)	2009–2014
IAU Travel Award (\$1K)	2012, 2014
NSF Graduate Research Fellowship (\$150K)	2006–2009
Phi Beta Kappa	2005
Michigan Space Grant Consortium (\$1K)	2003, 2004

## Professional Contributions

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Chair, SOC, <i>The End of Star Formation at the End of the World</i> , Puerto Varas, Chile	2026
SOC, <i>Recipes to regulate star formation at all scales:</i>	
<i>From the nearby Universe to the first galaxies</i> , Baltimore, Maryland	2023
SOC, <i>Extreme Galaxies and their Environments as Probes of Galaxy Formation</i> , Reykjavik, Iceland	2020
Creator, <i>JWST Master Class</i> , Baltimore, MD, USA	2019
SOC, <i>JWST and EUCLID Galaxy Evolution Synergies</i> , Noordwijk, Netherlands	2018
NASA “Young Leaders” Focus Group, 231 <sup>st</sup> AAS Meeting, Washington, DC	2018
Referee for ApJ, ApJ Letters, A&A, MNRAS, PASJ, Nature, Nature Astronomy	2014–present
Chair, SOC, <i>GalPath 2016</i> , Catalina Island, CA, USA	2016
Review Panel Member, the <i>Hubble Space Telescope</i>	2016, 2017
Review Panel Member, National Science Foundation	2014
Time Allocation Committee Member, CARMA	2014
SOC, <i>First CARMA Symposium</i>	2010

## Professional Memberships

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Full Member, The American Astronomical Society	2003–present
High-z Science Working Group chair: The Galaxy Evolution Probe (PI: Jason Glenn)	2018–present
Member, high-z working group for the Next Generation VLA	2015–present
Member, nearby galaxies working group for the Next Generation VLA	2015–present
Member, The International Astronomical Union	2015–present

## Selected Successful Observing Proposals (Principle Investigator)

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<b>4 nights, LDSS3 on Magellan</b>	2017–present
“Toward an archeological understanding of violently quenching galaxies using LDSS3”	
<b>120 ks, Chandra ACIS, Cycle 18 (\$56K)</b>	2016
“Mapping AGN feedback in molecular outflow host NGC 1266 with <i>Chandra</i> ”	
<b>4 orbits, Hubble Space Telescope WFC3, Cycle 24 (\$59K)</b>	2016
“Watching AGN feedback at its birth: <i>HST</i> observations of nascent outflow host IC 860”	
<b>46 SNAP objects, Hubble Space Telescope WFC3, Cycle 24 (\$94K)</b>	2016
“Opening a New Window into Galaxy Evolution Through the Lens of CO-detected SPOGs”	
<b>9 nights, FIRE on Magellan</b>	2015–2017
“Using FIRE to determine the role of shocks in unexpectedly transitioning galaxies”	
<b>13 nights, Direct CCD on Irénée duPont Telescope</b>	2016–present
“Mapping the interaction Histories of SPOGs through tidal tails”	

<b>30 objects, CCD on Gran Telescopio de Canarias (GTC)</b> (co-PI w/ U. Lisenfeld)	2016
“Searching for interaction signatures in galaxies quenching their star formation”	
<b>3 nights, TripleSpec on William Herschel Telescope</b> (co-PI w/ U. Lisenfeld)	2016
“What is quenching SF in transitioning galaxies?”	
<b>4 nights, SpeX on Infrared Telescope Facility (IRTF)</b>	2015
“Using SpeX to determine the role of shocks in unexpectedly transitioning galaxies”	
<b>350 hrs, CARMA</b>	2014
“Hitting the bullseye: studying the culprit of quenching SF in transitioning galaxies.”	
<b>100 hrs, Arecibo</b>	2014
“Hitting the bullseye: studying the culprit of quenching SF in transitioning galaxies.”	
<b>140 hrs, CARMA</b>	2012,2013
“Searching for turbulent, shock-heated molecular gas in HCGs through CO mapping”	
<b>6 hrs, ALMA Cycle 0</b>	2011
“Mapping Shock Chemistry in NGC 1266: Local Example of AGN-driven Feedback”	
<b>3 orbits, Hubble Space Telescope ACS, WFC3, Cycle 19 (\$32K)</b>	2011
“Mapping Recent Star Formation and Dust in NGC 1266, a Local Example of AGN-driven Feedback”	
<b>8 hrs, VLBA</b>	2011
“VLBA Observations of the Unusual Galaxy NGC 1266”	
<b>80 hrs, CARMA</b>	2011
“The physics of AGN feedback in Markarian 231”	
<b>32 hrs, SMA</b>	2010–2011
“High Resolution Observations of the Outflow in NGC 1266: a Candidate for AGN Feedback”	
<b>30 ks, Chandra ACIS, Cycle 11 (\$23K)</b>	2009
“NGC 1266: Local Candidate for AGN Feedback”	
<b>300 hrs, CARMA</b>	2008–2011
“Probing AGN Feedback in Extraordinary S0 NGC 1266”	
<b>500 hrs, CARMA</b> (co-PI w/ T. Davis)	2008–2011
“A Complete Census of Molecular Gas in Local Early-type Galaxies”	

### Invited Scientific Presentations and Colloquia

<i>Colloquium.</i> U. Wisconsin Milwaukee of Physics & Astronomy, Milwaukee, WI, USA	2025
Invited talk, <i>BCD-V: The Multi-Wavelength View of the Dust Enshrouded Evolution of Galaxies</i> , Jukkasjärvi, Sweden,	2025
<i>Colloquium.</i> U. Toledo Department of Physics & Astronomy, Toledo, OH, USA	2024
<i>Colloquium.</i> Yale Department of Astronomy, New Haven, CT, USA	2024
Invited presentation, <i>JWST Town Hall, 235<sup>th</sup> AAS Meeting</i> , Honolulu, HI, USA	2020
Invited talk. <i>Behind the Curtain of Dust III</i> , Sesto, Italy,	2019
<i>Invited Seminar.</i> Oxford University Department of Astronomy, Oxford, UK	2019
<i>Invited Review.</i> <i>Royal Astronomical Society Specialist Discussion</i> , London, UK	2019
<i>Colloquium.</i> UCLA Department of Physics & Astronomy, Los Angeles, CA	2019
<i>Colloquium.</i> Mt. Stromlo Observatory / Australia National University, Canberra, Australia	2018
<i>Colloquium.</i> University of Pittsburgh Physics & Astronomy, Pittsburgh, PA	2018
<i>Colloquium.</i> The Carnegie Observatories, Pasadena, CA	2018
Invited talk. “Multiphase AGN Feeding & Feeding”, Sexten Center for Astrophysics, Sesto, Italy	2018
<i>Colloquium.</i> Steward Observatory/NOAO, Tucson, AZ	2018
Invited panel. “The Present and Future of Far-Infrared and Sub-mm Space and Airborne Astronomy” Splinter Session, 231 <sup>st</sup> AAS Meeting, Washington, DC	2018
Invited talk. “The Physics of Quenching Massive Galaxies at High Redshift” The Lorentz Center for scientific workshops, Leiden, Netherlands	2017
Invited talk. “From Black Hole to Environment: Galaxy Evolution Across Multiple Wavelengths”	

Canberra, Australia	2017
Invited talk. “Behind the Curtain of Dust II”, Sexten Center for Astrophysics, Sesto, Italy	2017
Colloquium. Cal State University, Northridge, Northridge, CA	2017
Colloquium. University of Oklahoma Physics & Astronomy Department, Norman, OK	2017
Seminar. University of Michigan Physics Department, Ann Arbor, MI	2017
Colloquium. Space Telescope Science Institute, Baltimore, MD	2017
Colloquium. Physics & Astronomy Department, UNC – Chapel Hill, Chapel Hill, NC	2017
Colloquium. Cornell Astronomy Department, Ithaca, NY	2017
Review talk. The physics of groups and galaxy properties therein, Paris, France	2016
Colloquium. Institute for Astronomy, U. Hawaii, Honolulu, HI	2016
Colloquium. RSAA Colloquium, Mt. Stromlo Observatory, Canberra, Australia	2016
Public talk. <a href="#">The Carnegie Observatories Spring Lecture Series</a> , Pasadena, CA	2016
Astronomy Seminar. UC - Riverside, Riverside, CA	2016
Colloquium. ASTRON, Dwingeloo, Netherlands	2016
Colloquium. University of Amsterdam, Amsterdam, Netherlands	2016
Invited talk. “Sweeping galaxies clean: cold molecular outflows as drivers of galaxy evolution.” Sexten Center for Astrophysics, Sesto, Italy	2016
Colloquium. Harvard Institute of Theory & Computation (ITC), Boston, MA	2015
Lunch Seminar. The University of Chicago, Chicago, IL	2015
Invited talk. “Extragalactic Relativistic Jets: Cause and Effect.” Bangalore, India	2015
Colloquium. The Carnegie Observatories, Pasadena, CA	2015
Colloquium. Universidad de Concepción, Concepción, Chile	2015
Invited talk. “A 3D View on on Galaxy Evolution.” Heidelberg, Germany	2015
Targeted talk. “Unveiling the AGN–Galaxy Evolution Connection.” Puerto Varas, Chile	2015
Invited talk. “Behind the curtain of dust, the molecular view of activity in (U)LIRGS.” Sexten Center for Astrophysics, Sesto, Italy	2014
Colloquium. SOFIA Colloquium. Moffett Field, CA	2014
Public Talk. Pixar University presents: “The Secret Lives of Galaxies.” Emeryville, CA	2014
Colloquium. Virginia Polytechnic Institute and State University, Blacksburg, VA	2013
Colloquium. Herzberg Institute of Astronomy, Victoria, BC, Canada	2013
Seminar. UW - Milwaukee Astronomy Seminar, Milwaukee, WI	2013
Colloquium. University of Wisconsin - Madison, Madison, WI	2013
Invited talk. “Galaxies vs Black Holes.” Castellammare del Golfo, Sicily, Italy	2013
Colloquium. Wednesday astronomy seminar. UC - San Diego, San Diego, CA	2011

### Contributed Talks and Seminars

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Talk, Winds throughout the Universe, Annapolis, ND	2024
Talk, 231 <sup>st</sup> AAS Meeting, Washington, DC	2018
Talk, The Changing Face of Galaxies, Hobart, Tasmania, Australia	2016
Talk. Star formation, magnetic fields, and diffuse matter in the galaxy, Madison, WI	2016
Talk. The Interplay Between Local and Global Processes in Galaxies, Cozumel, Mexico	2016
Talk. 2016 Hubble Fellows Symposium, Baltimore, MD	2016
Lunch talk. Leiden Observatory Galaxies Lunch, Leiden, Netherlands	2016
Talk. Next Generation Very Large Array Workshop at the AAS, Kissimmee, FL	2016
Talk. WISE at 5. Pasadena, CA	2015
Talk. 225 <sup>th</sup> American Astronomical Society Meeting. Seattle, WA	2015
Seminar. IfA Tea Talk. Honolulu, HI	2014
Seminar. Yale Astronomy Seminar. New Haven, CT	2014
Seminar. Optical & Infrared Seminar at Harvard CfA. Cambridge, MA	2014

Talk. Astro-ph Discussion Lunch. Princeton, NJ	2014
Seminar. UC–Irvine Astronomy Seminar. Irvine, CA	2014
Seminar. UC–Santa Barbara Santa Barbara, CA	2014
Seminar. IPAC Lunch Seminar. Pasadena, CA	2014
Talk. Transformational Science in the ALMA Era: Multiwavelength Studies of Galaxy Evolution Charlottesville, VA	2014
Talk. Galaxies in 3D across the Universe. Vienna, Austria	2014
Lunch Talk. The Carnegie Observatories. Pasadena, CA	2014
Talk. Powerful AGN and their Host Galaxies Across Cosmic Time. Port Douglas, Australia	2014
Seminar. Radio Astronomy Lab Seminar. Berkeley, CA	2014
Seminar. UCSC Friday Lunch Time Astrophysics Seminar. Santa Cruz, CA	2014
Talk. Tuesday UVA/NRAO Astronomy Lunch Talks. Charlottesville, VA	2013
Talk. CARMA Science Symposium. Chicago, IL	2013
Talk. Friday Lunch Discussion. STSCI. Baltimore, MD	2013
Talk. Monday UVA/NRAO Astronomy Lunch Talks. Charlottesville, VA	2013
Talk. First Year of ALMA Science. Puerto Varas, Chile	2012
Talk. Jets 2012. Charlottesville, VA	2012
Seminar. Tuesday Bender group talk. MPE, Garching bei München, Germany	2012
Thesis talk. 219th AAS Meeting. Austin, TX	2012
Talk. The Starburst-AGN Connection under the Multiwavelength Limelight ESAC–ESA, Villanueva de la Cañada, Spain	2011
Seminar. Wednesday Lunch Seminar. NRAO, Socorro, NM	2011
Talk. Extragalactic Discussion Group. Institute for Astronomy, Honolulu, HI	2011
Talk. The Second CARMA Science Symposium. Berkeley, CA	2011
Talk. Astronomy Seminar. Univ. of Michigan. Ann Arbor, MI	2010
Talk. Astronomy Seminar. Stony Brook University. Stony Brook, NY	2010
Talk. Friday “Lunch” Talk. UMass - Amherst. Amherst, MA	2010
Talk. Owens Valley Radio Observatory. Big Pine, CA	2010
Talk. The First CARMA Science Symposium. U. Illinois, Urbana, IL	2009
Talk. Nearly Normal Galaxies. UC - Santa Cruz, Santa Cruz, CA	2009
Seminar. Lunch Talk. Gemini Observatory. Hilo, HI	2009

## Broader Impacts

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Co-Founder and Ally, “ <a href="#">The Astronomy Allies</a> ”	2015–present
Executive Council, “ <a href="#">The Astronomy Allies</a> ”	2015–2016
Judge, The Doxey Prize (AAS)	2017
Co-Organizer, “Pasadena Astronomy Writers’ Retreat”	2016
Head Organizer, “ <a href="#">The Carnegie Radio Showcase</a> ”	2016
Organizing committee, “Pasadena Astronomy Postdoc Retreat”	2016
Participant, “NextProf Science 2015”, U. Michigan	May 26–29, 2015
Judge, The Chambliss Poster Competition (AAS)	2014–present
Mentor, “Women Mentoring Women”, Caltech	2013–2016
Liaison, “East Bay Astronomical Society”, UC – Berkeley	2009–2010
Volunteer, “Chabot Space & Science Center”, UC – Berkeley	2010
Member, “Society of Women in the Physical Sciences”, UC – Berkeley	2006–2011
Founder, “Society of Women in Physics”, University of Michigan	2004

## Student Mentoring Experience

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The Nature of High-Redshift Quenching Galaxies Co-advisor of Maya Skarbinski, (Johns Hopkins University)	2022 – present
Understanding the Nature of Molecular Gas in MaNGA Post-starburst Galaxies Co-advisor of Justin Otter, (Johns Hopkins University)	2020 – present
The Energetics and Nuclear Activity of Transitioning Galaxies Co-advisor of Yuanze Luo, (Johns Hopkins University)	2019 – 2025
Mapping the Changing Morphologies of Transitioning Galaxies Ph.D. Advisor of Dr. Elizaveta Sazonova, (Johns Hopkins University)	2018 – 2022
The unusual case of dwarf galaxy IC 2520 Lauren Dysarz, (St. Thomas University → U.C. - Santa Barbara)	2024 – present
Understanding the Radio Properties of shocked poststarburst galaxies Sophie Lebowitz, (Ohio State University → U. Arizona)	2019 – 2020
Mocking Exoplanet Atmospheres for NIRISS SOSS discovery Lindsey Wiser, (Johns Hopkins University)	2018 – 2019
Characterizing the environments of shocked poststarburst galaxies Laura Jaliff, (California Institute of Technology)	2017 – 2019
Understanding shocked gas using Integral Field Spectroscopy of SPOGs Carson Adams, (California Institute of Technology)	2017 – 2018
Classifying morphologies of shocked poststarburst galaxies Tess Stewart, (Stanford University)	2016 – 2017
Shocked P <sub>O</sub> starburst Galaxy Survey. III. The Ultraviolet Properties of SPOGs Felipe Ardila, (Princeton University → UC - Santa Cruz)	2016 – 2018
Enhanced C I in an ACT-selected Lensed Submillimeter Galaxy at $z = 2.64$ : Evidence for a Molecular Outflow at High Redshift Guido Roberts-Borsani, (University College – London) Maria Jesus Jinéñez-Donaire (Center for Astrophysics / Harvard) Mario Daprà (VU University, Amsterdam)	2016 – 2017
Turbulence in Hickson Compact Group NGC 7674 Diane Salim, (Australia National University → Rutgers University)	2015 – 2020

## Teaching Experience

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Teaching & Lab Assistant, “Radio Astronomy Practical Lab”, UC – Berkeley	Spring 2007
Teaching Assistant, “Introduction to Astrophysics 1”, UC – Berkeley	Fall 2006
Teaching Assistant, “Introduction to Astrophysics 2”, UC – Berkeley	Spring 2006
Teaching Assistant, “Introduction to General Astronomy”, UC – Berkeley	Fall 2005

## Data Experience

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- Reduced data from: ALMA, SMA, CARMA, Herschel and Swift UVOT, Magellan FIRE, HST
- Analyzed: UB<sub>V</sub> photometry, radio & mm images, stellar population spectral fitting, Spitzer, Herschel PACS, ALMA and CARMA imaging
- Attended: CARMA Summer School (2008), Presenting Data and Information by Edward Tufte (2010), EVLA Synthesis Imaging School (2010), IRAM single dish summer school (2015)