

INFO

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Location:

Madison, Wisconsin, United States

Additional:

[2022 Research iPoster](#)
[MMO – DLA Research iPoster](#)

Will Jarvis

EDUCATION

2025–TBD	University of Massachusetts – Amherst Degree Program: Astronomy Ph.D.
2020–2024	University of Wisconsin, Madison, Wisconsin Degree Awarded: B.S. Astronomy/Physics with Honors in the Major GPA: 3.614
2019–2020	Oberlin College – Oberlin, OH GPA: 3.79

SUMMARY

I graduated from the University of Wisconsin–Madison with a B.S. in Astronomy/Physics. Now, I am a **National Science Foundation Graduate Research Fellow** at the University of Massachusetts - Amherst

I have extensive experience in astronomical research, team leadership, and STEM outreach. I have led both a research team and a large outreach organization. I was the featured astronomer at Kennedy Space Center's **Eclipse Day 2024**. I am pursuing a Ph.D. in Astronomy developing tools to discover and analyze clusters of massive stars more than 10 billion light years away. I am also interested in science policy and legislation.

EMPLOYMENT / INTERNSHIP / RESEARCH HISTORY

2020–Present	University of Wisconsin – Madison – Madison, WI Research Assistant, Grader. Advisors: Dr. Eric Hooper, Dr. Marsha Wolf, Dr. Sebastian Heinz <ul style="list-style-type: none">Studying how radio-loud Active Galactic Nuclei impact the star formation rates of their host galaxies with spectral age analysis of AGN radio emission and estimated star formation rates.Developed a Monte Carlo simulation in Python to estimate the standard errors of simulated data.Using the Broadband Radio Astronomy Toolset (BRATS) to study the emission histories of AGN. These maps help us link AGN activity and star formation.Commissioned the Astronomy Department's new 16" telescope and helped students acquire data for the optical portion of the Astronomy 465 Observational Astronomy and Data Analysis Lab.Graded and provided feedback to 44 students in Astronomy 236: History of Matter in the Universe.
2021–Present	University of Hawai'i Institute for Astronomy – Honolulu, HI Research Assistant. Advisor: Dr. David Sanders <ul style="list-style-type: none">Joined the Hawai'i Research Experiences for Undergraduates (REU) program funded by the National Science Foundation.Studying the relationship between AGN activity and host galaxy morphology with data from the GOODS Survey.Analyzed spectral energy distributions and morphologies from galaxies to better understand the evolution of AGN and their host galaxies, including the role of mergers in spurring AGN activity.Lead visual classification program with UW Astronomy Club.Worked full-time during the summer of 2023 to complete a quantitative morphological analysis using the GaLight Python Package.Advised a high school student studying AGN host galaxies using the James Webb Space Telescope. The student is a co-author.Submitting to the Astrophysical Journal June 2025.

AWARDS

- National Science Foundation (NSF) Graduate Research Fellowship (GRFP) (~\$150,000)
- 2022, 2023 Astronaut Scholarship (\$15,000x2)
- 2022 Hilldale Fellowship (\$4000)
- Wisconsin Space Grant Consortium Research Scholarship (\$4000)
- 2024 Hubert Mack Thaxton Fellowship (\$3750)
- 2025 Peter Livingston Fellowship (\$2200)
- Bromley Research Travel Grant (\$500)
- Various other small-dollar awards totaling \$5000

2022–2023

REU - Maria Mitchell Observatory – Nantucket, MA

Research Intern

- As with UH, this was part of the Research Experiences for Undergraduates program.
- Reduced data from the Keck Cosmic Web Imager (KCWI) using the Pypelt data reduction pipeline.
- Searched for nearly-invisible galaxies called Damped Lyman Alpha Systems (DLAs). These may evolve into the spiral galaxies of today.
- Used KCWI spectroscopic data to create narrowband images of the possible DLAs, though we lacked the S/N ratio for verified detections.
- **Helped run twice-weekly public observing nights at Loines Observatory for thousands of people and recorded star reports for ACK 97.7 FM.**

LEADERSHIP

2021–2022

Pulsar Search Collaboratory

Co-Lead, Giant Pulse Group (2021-2022). Mentor (2020-2021)

- Joined the PSC as an Undergraduate Mentor. I helped teach new high school students how to search for pulsars in specialized prepfold plots. Also taught the science of pulsars to students, answered questions, and provided guidance in reading scientific literature.
- Within a year, I led one of the largest expansions of research programs in its history. We began three new research teams beginning in early 2021 providing valuable research experiences for these students.
- I led a research team of 6 high schoolers and 4 faculty/advisors investigating giant pulses and glitching events from the Crab Pulsar until health issues forced my departure in Spring 2022.
- Taught radio telescope operation, data-processing techniques, and general astronomy topics to students.
- Conducted daily observations with the 20m Green Bank Telescope through the Skynet Telescope Network.

INTERESTS

- Galaxy Evolution
- Globular Clusters
- Cosmology
- Active Galactic Nuclei
- Science Policy
- Astrophotography
- STEM Outreach
- Music (Drumming)
- Hiking

2022–2023

Astronomy Club, University of Wisconsin - Madison

President (2022-May 2023), Event Coordinator (2022)

- Organized club Q&A with Dr. Jocelyn Bell Burnell and hosted a panel of radio astronomers, including Dr. Bell Burnell, for Promega Institute.
- Ran the largest star party in club history. More than 300 attendees viewed the stars and toured research laboratories.
- Planned and led the colloquium of Dr. Stephanie LaMassa (NIRISS Instrument, James Webb Space Telescope, STScI). I also organized a public lecture with Dr. LaMassa.
- Reached more than 4000 community members and students through outreach, including:
 - School programs, star parties such as Moon Over Monona Terrace, and public speaking events with speakers like Dr. Stephanie LaMassa.
 - Hosted Astronaut Brewster Shaw for a Q&A session with students.
 - Advocated for increased undergraduate involvement in the Astronomy Department. I worked with the Department to create multiple undergraduate departmental positions, including representatives to Department meetings and the Climate Committee.

Presentations and Posters in Chronological Order

Noteworthy talks are fully bolded.

- **W. Jarvis**, N. Lewandowska. "Persistent RFI Observed with the 20m Green Bank Telescope." Pulsar Group Meeting at West Virginia University
- **W. Jarvis**. "Supernovae Throughout History." Virtual Lecture at the Online Moon Over Monona Terrace Star Party. October 2020.
- **W. Jarvis**, E. Hooper, M. Wolf. "How do Active Galactic Nuclei Impact Star Formation Rates in Host Galaxies?" Talk at the UW–Madison Undergraduate Research Symposium. April 2021.
- **W. Jarvis, C. Auge, D. Sanders**. "**Multi-Wavelength and Morphological Properties of X-ray Selected AGN and Host Galaxies in the GOODS Fields.**" Talk at the University of Hawaii Institute for Astronomy Research Symposium. July 2021.
- **W. Jarvis**. "Galaxies – Island Universes." Talk. Astronomy Club at UW–Madison. February 2022.
- **W. Jarvis, C. Auge, D. Sanders**. "A Multiwavelength and Morphological Analysis of X-ray Selected AGN in the GOODS Fields." iPoster at the 240th Meeting of the American Astronomical Society. June 2022.
- **W. Jarvis, R. Jorgenson, M. Rafelski**. "Finding Milky Way Progenitors: The Hunt for Damped Lyman- α Systems in Emission." Talk at the Maria Mitchell Observatory REU Research Symposium. August 2022.
- **W. Jarvis, R. Jorgenson, M. Rafelski**. "**Searching for Lyman- α Emission in the Troughs of Damped Lyman- α Systems (DLAs) using Keck/KCWI.**" iPoster at the 241st Meeting of the American Astronomical Society. January 2023.
- **W. Jarvis, E. Hooper, M. Wolf, M. Morris, A. Vang**. "**An Analysis of Radio AGN Plasma Ages Calibrated Using Magneto-Hydrodynamic Jet Simulations.**" Poster at the 20th Meeting of the High Energy Astrophysics Division. March 2023.
- **W. Jarvis, J. Shokler, A. Miller**. "A Basic Introduction to Astrophotography." Lecture. Astronomy Club at UW–Madison. April 2023.
- **W. Jarvis, E. Hooper, M. Wolf, M. Morris, A. Vang**. "An Analysis of Radio AGN Plasma Ages Calibrated Using Magneto-Hydrodynamic Jet Simulations." Poster. UW–Madison Undergraduate Research Symposium. April 2023.
- **W. Jarvis, A. Krishnan, J. Ye**. "Measuring the Rotation Curve of the Milky Way Using the 2.3 Small Radio Telescope." Talk. UW–Madison Undergraduate Research Symposium. April 2023.
- **W. Jarvis, E. Hooper, M. Wolf, M. Morris, A. Vang**. "An Analysis of Radio AGN Plasma Ages Calibrated Using Magneto-Hydrodynamic Jet Simulations." Poster at the UW–Madison Astronomy Department Research Symposium. April 2023.
- **W. Jarvis, C. Auge, D. Sanders**. "A Multiwavelength and Morphological Analysis of X-ray Selected AGN in the GOODS Fields." Talk at Monday Science Seminar. Astronomy Department, UW–Madison. October 2023.
- **W. Jarvis, C. Auge, D. Sanders**. "A Multiwavelength and Morphological Analysis of X-ray Selected AGN in the GOODS Fields." Astronomy Club at UW–Madison Research Symposium. Astronomy Department, UW–Madison. December 2023.
- **W. Jarvis**. "Black Holes, Astronauts, and the Next Generation of Scientists." Astronaut Scholarship Foundation Board of Trustees. December 2023.
- **W. Jarvis**. "**Telling Time, Distances, and History: The 5000-Year Story of Recorded Eclipses.**" Kennedy Space Center, April 2024.
- **W. Jarvis**. "**Monstrous Black Holes and Growing Galaxies.**" Kennedy Space Center. April 2024.
- **W. Jarvis**. "**What Changed First: The Galaxy or the Black Hole?**" Karben4 Brewing. Astronomy on Tap. April 2024.
- W. Jarvis. "An Analysis of Radio AGN Plasma Ages Calibrated Using Magneto-Hydrodynamic Jet Simulations and Their Application to Real Galaxies." UW–Madison Honors Symposium. April 2024.
- **W. Jarvis**. "**From Simulation to Sky: A Data Reduction and Processing Pipeline for Simulated Black Hole Jets and Early Physical Insights.**" Astronaut Scholarship Foundation Astronaut Hall of Fame Induction Weekend. Kennedy Space Center. May 2025
- **W. Jarvis**. "**Early-career Science and Astronaut Scholars.**" Astronaut Hall of Fame Induction Weekend. Kennedy Space Center. May 2025