

# Loren Robinson

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## Education

### University of Madison - Wisconsin

PH.D. IN ASTRONOMY

Madison, WI

Expected May 2028

### University of Madison - Wisconsin

M.S. IN ASTRONOMY

Madison, WI

May 2025

### The Ohio State University

B.S. IN ASTRONOMY AND ASTROPHYSICS, PHYSICS

Columbus, OH

May 2023

- Cumulative GPA: 3.939

## Publications

### The SDSS-V Black Hole Mapper Reverberation Mapping Project: Investigating Coordinated Variability in BAL Quasars

ROBINSON, L., GRIER, C. AND THE SDSS-V BHM-RM TEAM

In prep

### The Connection Between PAH and MIR Emission Features and Physical Processes in Ultra Luminous Infrared Galaxies

ROBINSON, L., FARRAH, D. ET AL.

APJ

Submitted February 2025

## Technical Skills

### Programming

Machine Learning, Data Analysis, Python (Pandas, Numpy, Scipy, Scikit-learn & more), SQL, HTML, GitHub/git, Linux, Bash, LaTeX, C++, Mathematica

### Languages

English, American Sign Language

### Systems

CERN's LXPLUS, Ohio Supercomputer Center (OSC), The University of Utah Center for High Performance Computing (CHPC)

## Research

### SDSS Collaboration

RESEARCH ASSISTANT

Madison, WI

August 2023 - Present

- Advisor: Dr. Catherine Grier; University of Wisconsin-Madison
- Build data analysis pipeline to investigate coordinated variability in broad absorption (BAL) quasars.

### University of Hawai'i

NATIONAL SCIENCE FOUNDATION REU RECIPIENT

Honolulu, HI

May 2022 - July 2022

- Advisor: Dr. Duncan Farrah; University of Hawai'i's Institute for Astronomy
- Studying Polycyclic Aromatic Hydrocarbon (PAH) emission features in Ultra-Luminous Infrared Galaxies (ULIRGs)
- Additional participation in remote observing and semi-weekly professional development seminars.

### ATLAS Group

RESEARCH ASSISTANT

Columbus, OH

August 2021 - December 2022

- Advisors: Dr. K.K. Gan and Zachary Pollock; The Ohio State University
- Assisting the ATLAS group at Ohio State University with analysis of optical shifts during VCSEL (vertical-cavity surface-emitting laser) production.
- Writing and manipulating code in C++ and Python.

## Instructional Experience

### Astronomy 140

TEACHING ASSISTANT

Madison, Wisconsin

Jan. 2026 - May 2026

### Astronomy 103

TEACHING ASSISTANT

Madison, Wisconsin

Aug. 2025 - Dec. 2025

### Astronomy 103

GRADER

Madison, Wisconsin

Jan. 2024 - May 2024

### Astronomy 1101

INSTRUCTIONAL ASSISTANT

Columbus, OH

Aug. 2022 - May 2023

### Astronomy 1221

INSTRUCTIONAL ASSISTANT

Columbus, OH

Jan. 2022 - May 2022

## Presentations & Posters

<b>The SDSS-V Black Hole Mapper Reverberation Mapping Project: Spectral Analysis To Investigate Coordinated Variability in Broad Absorption Line Quasars</b>	<i>Anchorage, Alaska</i>
ROBINSON, L., GRIER, K., SDSS-RM BHM COLLABORATION   246TH AMERICAN ASTRONOMICAL SOCIETY MEETING	<i>June 2025</i>
<b>The SDSS-V Black Hole Mapper Reverberation Mapping Project: Spectral Analysis To Investigate Coordinated Variability in Broad Absorption Line Quasars</b>	<i>Madison, Wisconsin</i>
ROBINSON, L., GRIER, K., SDSS-RM BHM COLLABORATION   244TH AMERICAN ASTRONOMICAL SOCIETY MEETING	<i>June 2024</i>
<b>Examining the Connection Between Polycyclic Aromatic Hydrocarbon Emissions and Physical Processes in Ultra Luminous Infrared Galaxies</b>	<i>Seattle, WA</i>
ROBINSON, L., FARRAH, D. ET AL.   241ST AMERICAN ASTRONOMICAL SOCIETY MEETING	<i>January 2023</i>
<b>Examining the Connection Between Polycyclic Aromatic Hydrocarbon Emissions and Physical Processes in Ultra Luminous Infrared Galaxies</b>	<i>Columbus, Ohio</i>
ROBINSON, L., FARRAH, D. ET AL.   OHIO STATE SECOND-YEAR TRANSFORMATIONAL EXPERIENCE PROGRAM EXPO	<i>Nov. 2022</i>
<b>Examining the Connection Between Polycyclic Aromatic Hydrocarbon Emissions and Physical Processes in Ultra Luminous Infrared Galaxies</b>	<i>O'ahu, Hawai'i</i>
ROBINSON, L., FARRAH, D. ET AL.   UNIVERSITY OF HAWAII SUMMER UNDERGRADUATE RESEARCH EXPERIENCE SYMPOSIUM	<i>July 2022</i>
<b>Examining the Connection Between Polycyclic Aromatic Hydrocarbon Emissions and Physical Processes in Ultra Luminous Infrared Galaxies</b>	<i>O'ahu, Hawai'i</i>
ROBINSON, L., FARRAH, D. ET AL.   UNIVERSITY OF HAWAII RESEARCH EXPERIENCE FOR UNDERGRADUATES SYMPOSIUM	<i>July 2022</i>

## Relevant Coursework

<b>Data Science Programming II</b>	<i>University of Madison-Wisconsin</i>
CS 320	<i>Fall 2024</i>
<ul style="list-style-type: none"> <li>Use object-oriented programming to create tree and graph data structures to represent hierarchical data and implement algorithms for efficiently searching these structures.</li> </ul>	
<b>Introduction to Artificial Intelligence</b>	<i>University of Madison-Wisconsin</i>
CS 540	<i>Fall 2023</i>
<ul style="list-style-type: none"> <li>Applied the foundational tools in Machine Learning and Artificial Intelligence. Understand core techniques in Natural Language Processing.</li> <li>Consider how Artificial Intelligence and Machine Learning problems are applied in Real - World settings and the Ethics of Artificial Intelligence.</li> </ul>	
<b>Big Data Analytics</b>	<i>The Ohio State University</i>
PHYSICS 5680	<i>Fall 2022</i>
<ul style="list-style-type: none"> <li>Introduction to machine learning and advanced algorithms, with an emphasis on practical physics-based applications.</li> </ul>	

## Honors & Awards

<b>Wisconsin Space Grant Consortium Graduate &amp; Professional Research Fellowship</b>	<i>Madison, WI</i>
	<i>2025</i>
<b>L. Earl Slusher Scholarship</b>	<i>Columbus, OH</i>
	<i>2023</i>
<b>Finalist in Seventh Annual American Statistical Association DataFest Competition</b>	<i>Columbus, OH</i>
	<i>2023</i>
<b>Second-Year Transformational Experience Program Fellowship Recipient</b>	<i>Columbus, OH</i>
	<i>2021</i>
<b>Helen Cowan Book Award winner</b>	<i>Columbus, OH</i>
	<i>2020</i>
<b>8x Ohio State University Dean’s List</b>	<i>Columbus, OH</i>
	<i>2019-2023</i>
<b>Provost Scholarship</b>	<i>Columbus, OH</i>
	<i>2019-2023</i>
<b>Jillian Schrader-Towne Memorial Math Scholarship</b>	<i>Medina, OH</i>
	<i>2019-2023</i>

## Public Outreach

<b>Universe in the Park</b>	<i>Madison, WI</i>
PRESENTER	<i>May 2024 - Present</i>
<ul style="list-style-type: none"> <li>Travel to state parks throughout Wisconsin during the summer camping season, giving talks, answering questions, and leading the general public in an observing session.</li> </ul>	

## Workshops

August **CodeAstro**, 40-hour course in Python-based software development for astronomers, covering software  
2025 development paradigms & environments, version tracking, testing, documentation, packaging, & profiling.  
June 2024 **AAS Software Carpentry Workshop**, Workshop focused on technical development skills.

*Evanston, IL*

*Madison, WI*