

# Nathalie K. Jones

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## Education

**Northwestern University**  
*Ph.D. Student, Astronomy*

Evanston, IL  
September 2022 - Present

**Northwestern University**  
*M.S., Astronomy*

Evanston, IL  
August 2025

**Bard College**  
*B.A., Physics Major*

Annandale-on-Hudson, NY  
August 2017 - May 2021

[Senior Project Thesis](#): “Brightening of the Bridge: Reflections of a Past Sgr A\* Outburst in Galactic Center Molecular Clouds”

## Research Experience

**Candidate Companions and Survey Statistics for the Gemini Planet Imager**  
April 2024 - Present  
*Northwestern University & Center for Interdisciplinary Research and Exploration in Astrophysics (CIERA)*  
Advisor: Jason Wang

- Create master detection table, categorize detected objects, select candidate threshold, astrometry and spectral extraction of candidates.
- Perform astrometric and spectral extraction using `pyKLIP` package.
- Develop spectral fitting `Python` routine, compare template spectra (SpeX Prism Library, PHOENIX) to Gemini Planet Imager Exoplanet Survey ( GPIES ) data to spectroscopically characterize detected objects.

**Nebular Emission Line Diagnostics of  $z \sim 0.7$  Pathfinder Galaxy Sample**  
January - September 2023  
*Northwestern University & CIERA*  
Advisor: Allison Strom

- Developing custom spectral fitting `Python` script in order to analyze pathfinder observations of  $z \sim 0.7$  galaxies.
- Collect information on similar spectroscopic surveys, including data availability; Access archival data.
- Creating emission diagnostic diagrams for new MOSFIRE observations, including N2BPT, S2BPT, Mass-Excitation Diagram, and Stellar Mass ( $M_*$ ) vs.  $[NII]/H\alpha$ .

**Monitoring the Bridge Molecular Cloud Over 20-years**  
September 2021 - June 2022  
*Bard College Physics Program, Post-Baccalaureate Researcher*  
Advisor: Shuo Zhang

- Analyze and access archival XMM-Newton observations of the “Bridge” cloud in order to supplement NuSTAR data.
- Fit models to X-ray spectra.
- Produce images, plots for publication.
- Write paper draft for submission in ApJ.

## **X-Ray Reflections in Galactic Center Molecular Clouds**

July 2020 - May 2021

*Bard College, Senior Thesis Project*

Advisors: Shuo Zhang, Matthew Deady

- Analyzing new and archival data from the Nuclear Spectroscopic Telescope Array (NuSTAR) of Galactic Center Molecular Cloud “Bridge”.
- Creating plots of X-Ray brightening trends of the Bridge Cloud over 8 years.
- Writing senior thesis.

## **Professional Experience**

### **Program Coordinator; [CIERA REACH](#)**

2024, 2025

- Plan and schedule Astro 101 lectures, activities, and panels. Recruit volunteer presenters, activity leaders.
- Manage students and volunteers. Facilitate talks, program transitions, and daily schedule to ensure program runs successfully.
- Present Astro 101 talks, lead activities such as ‘Ask me anything’ panel and ‘Introduction to Cosmology’.
- Utilize and manage Google Drive materials including presentations, schedules and student resources.

### **Virtual Summer Camp Instructor; *Lavner Education, Philadelphia***

2021

- Instruct students ages 6-13 in wide range of STEM related topics, including:
- Coding in Scratch and Python, Math Olympics and Virtual Science Lab camps, advanced gameplay and worldbuilding in Minecraft, Roblox, and Kerbal Space Program.
- Full-time instructor over Zoom.

## **Selected Posters & Presentations**

### **The Gemini Planet Imager Exoplanet Survey: Analysis of Candidate Companions**

*Poster; Accepted, October 2025; 51 Peg b 30th Birthday Conference,  
Observatoire de Haute-Provence*

### **GPIES Candidate Companions & Observational Astronomy in Hawaii**

*Presentation; May 2025; CIERA Observers Meeting*

### **GPIES Candidates Update & Prelim. Analysis**

*Presentation; November 2024; GPI Data Telecon*

### **Observing and Understanding Intermediate z Galaxies and Star Formation History**

*Presentation; March 2023; CIERA Observers Meeting*

### **Brightening of the Bridge: Reflections of a Past Sgr A\* Outburst in Galactic Center Molecular Clouds**

*Virtual Presentation; May 2022; [ASNY Undergraduate Writing Prize Talk](#)*

### **Reflections: Reprocessed X-Ray Emission in the Galactic Center and Life After Bard**

*Undergraduate Seminar; April 2022; [Bard College Department of Physics](#)*

### **20-Year-Long Time Variability of Galactic Center Molecular Cloud “Bridge” Revealed by NuSTAR and XMM-Newton**

*iPoster; January 2022; #239 AAS Conference*

**Continuing Brightening of a Sgr A Complex Molecular Cloud: Revealing More Details about Past Sgr A\* Activities,**  
*iPoster; June 2021; #238 AAS Conference*

**Press Releases** Shuo Zhang, **Nathalie Jones**, & Field Rogers, *Giant Molecular Clouds: Storytellers of the Galactic Center's History in the Past Few Hundred Years*; [#239 AAS Conference](#)

**Awards & Honors** **CIERA Board of Visitors Fellowship** 2025-2026  
**UN CIFAL/NSF Certificate of Completion, GIS for Sustainability and Resilience in the Pacific, Foundations Course** 2024  
*Chaminade Univeristy, Honolulu*  
**NSF ALL-SPICE Alliance Scholarship (\$1500),** 2024  
*Chaminade University, Honolulu*  
**Undergraduate Writing Prize (\$500), Astronomical Society of New York** 2022  
**Fulbright Scholarship Alternate** 2021  
**Bard Scholarship, Bard College** 2017 - 2021  
**Bard Summer Research Institute Scholarship, Bard College** 2019 & 2020

**Additional Teaching Experience** **Teaching Assistant: PHYS 136-2 & 3,** 2024 - 2025  
*Northwestern University*  
**Planetary Astrophysics: ASTRON 314/414 Grader,** 2025  
*Northwestern University*  
**Introduction to Physics II Tutor, Bard College** 2020  
**Global Energy Tutor, Bard College** 2020

**Outreach & Leadership** **Indigenous Graduate Student Collective President;** May 2025 - Present  
*Northwestern University*  
**CIERA Astronomer Evening Lecturer; Dearborn Observatory** March 2025  
**DEI, Teaching Assistant Committees; [Northwestern PAGSC](#)** 2024 - Present  
**Annual Public Lecture Volunteer; [CIERA](#)** 2024  
**Astronomy Night Out Volunteer; [CIERA](#)** 2023, 2024  
**Activity Leader; [CIERA REACH](#)** 2023  
**Physics Club President; Bard College** 2021

**Mentorship** **Christopher Hays & Warit Wijitworasart;** 2024 - 2025  
*Physics Masters Students*  
[Northwestern PAGSC Mentorship Program](#)