
Brooke Kimsey-Miller

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EDUCATION	PhD., Astronomy , Indiana University	Anticipated August 2025
	Minor: Physics	May 2022
	Thesis: The Environments of Star-Forming Galaxies	
	Advisor: Provost Prof. John J. Salzer	
	M.A., Astronomy , Indiana University	May 2022
	B.S. , Indiana University	May 2019
	Degrees in Physics, Mathematics, and Astronomy/Astrophysics	
	Senior Honors Thesis in Astronomy: A Recipe for Green Pea Environments	
	Advisor: Provost Prof. John J. Salzer	
GRANTS AND FELLOWSHIPS	Doctoral Fellowship	2024-2025
	Indiana Space Grant Consortium, \$12,000	
	Dissertation Research Fellowship	2024-2025
	College of Arts & Sciences, Indiana University, \$23,000	
	FAMOUS Travel Grant	2024
	American Astronomical Society, \$1,000	
	Sullivan Graduate Fellowship	2023-2024
	Department of Astronomy, Indiana University, \$26,000	
HONORS AND AWARDS	Doctoral Fellowship	2023-2024
	Indiana Space Grant Consortium, \$12,000	
	McCormick Science Grant	2023
	College of Arts & Sciences, Indiana University, \$3,500	
	Master's Fellowship	2021
	Indiana Space Grant Consortium, \$6,000	
	Dr. Benjamin F. Peery, Jr Diversity Award	2024
	Department of Astronomy, Indiana University, \$500	
	2024 Executive Dean's Travel Award for Women in Science	2024
	Indiana University, \$750	
	Goethe Link Prize for Outreach & Public Education in Astronomy	2022
	Department of Astronomy, Indiana University, \$500	
	Research Scholarship Award	2019
	Department of Astronomy, Indiana University, \$1,500	
	Hollis & Grete Johnson Undergraduate Research Prize	2019
	Department of Astronomy, Indiana University, \$400	
	21st Century Scholarship	2017 - 2019
	Sponsored by the State of Indiana, Full Tuition Covered	

REFEREED PUBLICATIONS	[1] Brunker, S. W., Salzer, J. J., Kimsey-Miller, B. , and Cousins, B., <i>The Environments of Green Pea Galaxies. I. The KISS Sample</i> , 2024, The Astrophysical Journal, 926, 131.
	doi: 10.3847/1538-4357/ac469f

[2] **Kimsey-Miller, B.**, Brunker, S. W., Salzer, J. J., *The Environments of Green Pea Galaxies. II. The H α Dot Sample*, 2024, *The Astrophysical Journal*, 977, 79.
doi:[10.3847/1538-4357/ad8b4e](https://doi.org/10.3847/1538-4357/ad8b4e)

[3] **Kimsey-Miller, B.**, Baker, K. N., Salzer, J. J., Carr, D. J., Sieben, J., *The Star Formation Across Cosmic Time (SFACT) Survey. IV. A Second List of Faint Emission-Line Sources*, 2025, in preparation

[4] **Kimsey-Miller, B.** & Salzer, J. J., *The Environments of Star-Forming Galaxies Detected in the SFACT Survey*, 2025, in preparation

Summary: Two publications (one first author); two publications in preparation (both first author)

CONTRIBUTED CONFERENCE PRESENTATIONS

[1] Brunker, S. W., **Kimsey-Miller, B.**, Cousins, B., Salzer, J. *Probing the Environments of Extreme Star-Forming Galaxies*. American Astronomical Society Meeting 2019 Jan 6-10; Seattle, WA. [2019AAS...23336801B](#), Contributor

[2] Jewell, A., **Kimsey-Miller, B.**, Harmon, R. O., *Starspots on LO Pegasi*. American Physical Society April Meeting 2019; Denver, CO. [Volume 64, Number 3](#), Co-Presenter

[3] Epps, M., Brady, K., **Kimsey-Miller, B.**, Pilachowski, C., *Determining the age, distance, and metallicity of the M44 star cluster (the Beehive Cluster) using isochrone fitting on a Hertzsprung-Russell diagram*. Jim Holland Summer Science Research Symposium, Mentor

[4] **Kimsey-Miller, B.**, Salzer, J., Brunker, S., Carr, D., Sieben, J., *Exploring the Environments of SFACT Star-forming Galaxies*. American Astronomical Society Meeting 2024 Jan 7-11; New Orleans, LA. [2024AAS...24330615K](#), Presenter

[5] **Kimsey-Miller, B.**, *The Environments of Star Formation Across Cosmic Time (SFACT) Galaxies*. American Astronomical Society Meeting, 2025 Jan 12-16; National Harbor, MD., Dissertation Talk, Presenter

CONTRIBUTED TALKS

The Environments of Star-Forming Galaxies September 2024
Department of Astronomy Tea Talk, Indiana University

A Recipe for Green Pea Environments April 2019
Honors Thesis, Department of Astronomy, Indiana University

Starspots on LO Pegasi
Ohio Wesleyan University Lunch Talk July 2018
Patricia Belt Conrades Symposium, Ohio Wesleyan University July 2018
Indiana University Lunch Talk September 2019

RESEARCH EXPERIENCE

Exploring the Environments of Star-Forming Galaxies (SFGs) 2021 - Present
Indiana University

Advisor: Provost Prof. John J. Salzer

Utilizing spectroscopic redshift surveys to determine environments of SFGs detected by the Star Formation Across Cosmic Time (SFACT) Survey. Observing, reducing, and measuring over 3600 spectra from Hydra, a multi-object fiber positioner on the WIYN 3.5m telescope.

Does local galactic environment impact SFGs? 2019 - 2021
Indiana University

Advisor: Provost Prof. John J. Salzer

Derived star-formation rates, oxygen abundances, and local galactic environments of SFGs from a spectroscopic redshift survey in order to determine the impact of environment on star formation properties.

Exploring the environments of Green Pea Galaxies

2018 - 2019, 2024

Indiana University

Advisor: Provost Prof. John J. Salzer

Studied the environments of Green Pea galaxies, a rare and extreme class of starbursts.

Reduced and/or measured over 3300 spectra from Hydra for a redshift survey.

NSF REU: How do starspots on a sun-like star change over time?

Summer 2018

Ohio Wesleyan University

Advisor: Dr. Robert Harmon

Acquired, reduced, and analyzed imaging data to produce lights curves of a variable star,

LO Pegasi, and mapped light curves to starspots on a 2D model.

Learning IRAF and Python through studying globular clusters

Summer 2017

Indiana University

Advisor: Prof. Katherine Rhode

Using imaging data, I mastered Python and IRAF to analyze globular cluster candidates

in external galaxies, which was part of a larger project to study galaxy evolution.

**OBSERVING
EXPERIENCE****WIYN 3.5m telescope**

Fall 2021-Fall 2024

Kitt Peak National Observatory

64 nights, ODI & Hydra

Co-I from Spring 2022 to Fall 2024

14-inch reflector

Summer 2018

Perkins Observatory

5 nights, NSF REU research project

SKILLS

Image analysis, spectroscopy, cross-correlation techniques, statistical analysis, machine learning, Python, IRAF, SQL, ROOT, L^AT_EX, bash, Anaconda, GoogleCoLab, Docker, github, vi, JupyterLab, GoogleCoLab, Microsoft Office, Google Drive, Adobe Photoshop

**TEACHING
EXPERIENCE****Instructor of Record**

Indiana University

A105: Stars and Galaxies

Summer 2023

A100: The Solar System

Summer 2022

A107: The Art of Astronomy

Summer 2021

Associate Instructor

Indiana University

A103: Search for Life in the Universe

Fall 2020

A105: Stars and Galaxies

Spring 2019, 2020, 2021

A107: The Art of Astronomy

Fall 2019

Guest Lecturer

Indiana University

A115: Birth and Death of the Universe

Spring 2023

Undergraduate Grader

Indiana University

J112: Intro to College Math II

2018-2019

SERVICE**Women & Technology Summit**

Spring 2024

Center of Excellence for Women & Technology, Indiana University

Organized and served on a panel discussion, served as a moderator for a science talk, and helped organize a visiting scientist's trip to the Summit.

Poster Competition Judge

Spring 2024

Center of Excellence for Women & Technology, Indiana University

Diversity Committee/Club

2020 - present

AIP's TEAM-UP Project

2020 - 2023

Department of Astronomy in conjunction with Department of Physics

OUTREACH**Outreach Coordinator**

2021 - 2023

Department of Astronomy, Indiana University

Worked closely with many organizations to organize 40+ events and weekly Kirkwood Observatory Open House events for about 30 graduate students. The events I am most proud of include the University-wide Science Fest of 2021 and 2022 and the first invitation of the Department to the world's largest children's museum.

Other Outreach Events

2017 - Present

Various locations

Participated and/or organized 30+ events including Kirkwood Observatory Open House. Events I am most proud of include Jim Holland Research Initiative in STEM Education (RISE) and Girls in Engineering, Math, and Science (GEMS) events.