
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., *The Environments of Green Pea Galaxies. I. The KISS Sample*, 2022, The Astrophysical Journal, 926, 131.
doi:[10.3847/1538-4357/ac469f](https://doi.org/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.**, Salzer, J. J., & Baker, K. N., *The Environments of Star-Forming Galaxies Detected in the SFACT Survey*, 2025, in preparation

[4] **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

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, [2025AAS...24513001K](#), 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 4000 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 3200 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 - Spring 2025 Kitt Peak National Observatory 67 nights, ODI & Hydra Co-I from Spring 2022 to Spring 2025 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 ^A T _E X, bash, Anaconda, GoogleCoLab, Docker, github, vi, JupyterLab, GoogleCoLab, Microsoft Office, Google Drive, Adobe Photoshop
TEACHING EXPERIENCE	Instructor of Record Indiana University <i>A105: Stars and Galaxies</i> Summer 2023 <i>A100: The Solar System</i> Summer 2022 <i>A107: The Art of Astronomy</i> Summer 2021 Associate Instructor Indiana University <i>A103: Search for Life in the Universe</i> Fall 2020 <i>A105: Stars and Galaxies</i> Spring 2019, 2020, 2021 <i>A107: The Art of Astronomy</i> Fall 2019 Guest Lecturer Indiana University <i>A115: Birth and Death of the Universe</i> Spring 2023 Undergraduate Grader Indiana University <i>J112: Intro to College Math II</i> 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.