

KRISTIN N. BAKER

CONTACT INFORMATION	Indiana University Department of Astronomy 727 East Third Street Bloomington, IN 47405-7105	E-mail: knb1@iu.edu ORCID: 0009-0007-4371-9882 Website: kristinbak99.github.io
RESEARCH INTERESTS	Extragalactic astrophysics: galaxy evolution ; interstellar medium ; intergalactic medium ; chemical abundances ; the Epoch of Cosmic Reionization	
EDUCATION	Ph.D. in Astronomy , Indiana University Minor: Physics Advisor: Dr. John Salzer	Anticipated Aug. 2027
	M.A. in Astronomy , Indiana University	2025
	B.S. in Physics , Georgia State University <i>Summa Cum Laude</i>	2020
GRANTS AND FELLOWSHIPS	Sullivan Research Fellowship Astronomy Department, Indiana University, \$27,720	2025-2026
	Dissertation Fellowship Indiana Space Grant Consortium, \$12,000	2025-2026
HONORS & AWARDS	Executive Dean's Travel Award for Women in Science Goethe Link Prize for Outreach and Public Education in Astronomy Goethe Link Prize for Outreach and Public Education in Astronomy Provost's Travel Award for Women in Science Indiana University College of Art and Science Travel Award Zell Miller Scholarship Georgia State University Admission Foundation Scholarship	2024 2024 2023 2023 2023 2023 2017-2020 2017-2018
RESEARCH EXPERIENCE	Research Assistant , <i>Indiana University</i> Advisor: Dr. John Salzer Study of the properties of Green Pea galaxies detected within the Star Formation Across Cosmic Time (SFACT) Survey. Follow-up abundance quality spectra obtained with HET 10m telescope to study the evolution of chemical abundances in GPs over the redshift range $z = 0.31\text{--}0.51$.	2024 - Present
	SFACT Survey Team Member , <i>Indiana University</i> PI: Dr. John Salzer Emission-line galaxy survey utilizing the One Degree Imager and Hydra Multi-fiber positioner + Bench Spectrograph on the WIYN 3.5m telescope. Lead imaging observations and data reduction processes. Lead Observer : 5.5 nights, Supporting Observer : 38.5 nights	2022 - Present
	Undergraduate Research Assistant , <i>Georgia State University</i> Advisor: Dr. Jay Dunn Study of the variability in absorption features associated with outflowing material from central supermassive black hole in NGC 3783 as a way to characterize the physical changes in the gas over time.	2019 - 2021
PUBLICATIONS	Published: Benzt, M., Baker, K. N. , Coumarbatch, K. et al., "V-Band Photometric Monitoring of 782 Montefiore," Minor Planet Bulletin, Vol 49, No. 4, 257	

Submitted:

Kimsey-Miller, B. K., Salzer, J. J., **Baker, K. N.** et al., "The Environments of Star-Forming Galaxies Detected in the SFACT Survey : Do Mergers and Interactions Drive the Star Formation ?," *submitted*

In Preparation:

Baker, K. N., Salzer, J. J., Kimsey-Miller, B. K. et al., "Searching for Green Pea Galaxies in the SFACT Survey," *in preparation*

PRESENTATIONS

Professional Talks:

Green Peas Across Cosmic Time: Selecting Green Pea Galaxies in the SFACT Galaxies.
Tea Talk Series, Astronomy Department, Indiana University, March 2025

Galaxy Dominoes: A New Tactile Tool for Teaching Astronomy.
Tea Talk Series, Astronomy Department, Indiana University, October 2021

The Study of Outflowing Material in NGC 3783.
STEM Conference, Georgia State University, November 2020

Conference Posters:

Pea Haw! Expanding the Frontier of Green Peas to $z = 0.51$ in the SFACT Survey.
American Astronomical Society #246, Anchorage, AK, June 2025

The Many Faces of the Tactile Galaxy Cards.
American Astronomical Society #241, Seattle, WA, January 2023

Continuing Evolution of Outflows in NGC 3783.
Conference for Undergraduate Women in Physics, Norman, OK, January 2020

Continuing Evolution of Outflows in NGC 3783.
Georgia Regional Astronomy Meeting, Atlanta, GA, October 2019

Public Talks:

Pea Haw: Green Pea Galaxies and the Epoch of Reionization.
Astronomy on Tap, Bloomington IN., November 2024

Preparing for a Solar Eclipse.
Astronomy on Tap, Bloomington IN., April 2024

Preparing for a Solar Eclipse.
Bloomington IN., February 2024

Solar Eclipses.
Brown County Public Libraries, Bloomington IN., November 2023

Preparing for a Solar Eclipse.
Indiana University Center for Rural Engagement Webinar Series, Bloomington IN., October 2023

Co-I OBSERVING
PROGRAMS**WIYN, 3.5m**

New Extreme Emission-line Galaxies and Their Evolution, PI: Dr. Samir Salim
Hydra Multi-fiber Positioner + Bench Spectrograph
1. Proposal 2025B-924437, 4 nights

2025

Measuring Metallicities of High Redshift SFACT Galaxies, PI: Dr. Katherine Rhode
Hydra Multi-fiber Positioner + Bench Spectrograph
1. Proposal 2025B-557428, 2 nights

2025

SFACT: A Deep Narrow-Band Imaging Survey with WIYN, PI: Dr. John Salzer
Hydra Multi-fiber Positioner + Bench Spectrograph, One Degree Imager

7. Proposal 2025B-460461, 10 nights	2025
6. Proposal 2025A-836325, 3 nights	2025
5. Proposal 2024B-866563, 6.5 nights	2024
4. Proposal 2024A-649553, 5 nights	2024
3. Proposal 2023B-181920, 6.5 nights	2024
2. Proposal 2023A-858344, 10 nights	2023
1. Proposal 2022B-289225, 8 nights	2022

TEACHING EXPERIENCE

Guest Lectures, Indiana University

- A103: "Life in the Universe: Extragalactic Astronomy"
 A100: "Preparing for a Solar Eclipse"
 A105: "Preparing for a Solar Eclipse"
 A222: "Preparing for a Solar Eclipse"

Dec. 2024
 Feb. 2024
 Feb. 2024
 Jan. 2024

Instructor of Record, Indiana University

- A105: Stars and Galaxies

Summer 2023, 2024

Associate Instructor, Indiana University

- Astronomy 452: Extragalactic Astronomy
 Astronomy 222: General Astronomy II
 Astronomy 221: General Astronomy I
 Astronomy 107: The Art of Astronomy
 Astronomy 107: The Art of Astronomy

Spring 2024
 Spring 2023
 Fall 2022, 2024
 Spring 2022
 Fall 2021

COMMUNITY INVOLVEMENT & LEADERSHIP

Service:

- Tea Talk Coordinator, *IU Astronomy Graduate Leadership*
 Graduate Student Mentor, *IU Astronomy Graduate Leadership*
 PyIU Organizing Committee, *PyIU: A Workshop Series on Python Essentials*
 Informal Mentor, *IU Astronomy Alice Palma Undergraduate Research Program*
 Eclipse Coordinator, *IU Astronomy*
 Eclipse Microgrant Allocation Committee, *IU Center for Rural Engagement*
 Accessibility Intern, *Geneva Lake Astrophysics and STEAM*
 President, *GSU Society of Physics Students*

2025 - Present
 2024 - Present
 2022 - Present
 2023 - 2025
 2023 - 2024
 2023
 2021
 2019 - 2020

Public Outreach:

- PyIU: A Workshop Series on Python Essentials, *Instructor, Code developer*
 Kirkwood Observatory Open Nights, *Telescope operator and tour guide*
 IU Science Fest, *Astronomy demo leader*
 Indianapolis Children's Museum Stem Exploration Day, *Astronomy demo leader*
 Kirkwood Observatory Solar Saturdays, *Solar telescope operator*
 Women & Technology Summit Booth, *Astronomy demo leader*
 International Day of Women and Girls in Science, *Astronomy demo leader*
 Fernbank Observatory, *Night sky guide*

2022 - Present
 2021 - Present
 2022 - 2025
 2021 - 2025
 2025
 2024
 2023
 2018

Professional Development:

- PyIU: A Workshop Series on Python Essentials, *Indiana University* 2022 - Present
 Organizer and code developer for the PyIU program, a free, graduate student-led Python workshop series for undergraduate. The program engages students of various backgrounds in astronomy and physics research.
 Github: : <https://github.com/BrandonRadzom/pyiu>

- Peer Review Workshop, *American Astronomical Society Meeting* 2025
 Participated in a peer review training workshop provided by AAS journal editors. Through completion of workshop, earned certificate and status as certified reviewer in AAS Journals system.

Code/Astro Software Engineering Workshop, *Northwestern University*

2024

Selected to participate in the week-long 2024 Code/Astro Workshop. The workshop covers best practices in producing and publishing open-source software development. Worked in a small group to build a software package from scratch. Github: <https://github.com/rhoward314/galpal>

SKILLS**Programming Languages**

Python, IDL, Java

Softwares

IRAF, L^AT_EX, TOPCAT, Blender, Adobe Photoshop, Microsoft Office Suite