

Lori Porter

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Education

- **Columbia University** **New York, NY**
Ph.D. in Astrophysics Aug 2023 - present
- **University of Louisville** **Louisville, KY**
B.S. in Physics, Concentration in Astrophysics, Summa Cum Laude Aug 2019 - May 2023
- Minor in Applied Statistics and Data Science
- **Craft Academy for Excellence in Science and Mathematics** **Morehead, KY**
High School Diploma Aug 2017 - May 2019
- **Tianjin Normal University** **Tianjin, China**
Study Abroad May 2018 - Jul 2018

Awards, Scholarships, and Grants

- National Center for Women in Tech (NCWiT) Collegiate Award Finalist Apr 2023
- National Science Foundation Graduate Research Fellowship Program (NSF GRFP) Mar 2023
- Society of Physics Students National Travel Award Dec 2022
- Hertz Fellowship Semifinalist Nov 2022
- Honorable Mention Presentation - Gulf Coast Undergraduate Research Symposium Nov 2022
- Bullitt Best Paper in Astronomy Oct 2022
- Dean's Travel Award - Gulf Coast Undergraduate Research Symposium Oct 2022
- NASA Kentucky EPSCoR REU Space Grant Aug 2022
- Chambliss Astronomy Achievement Student Award Jul 2022
- American Astronomical Society FAMOUS Grant Jun 2022
- Society of Physics Students National Travel Award Apr 2022
- Barry Goldwater Scholarship Mar 2022
- Craft Academy Outstanding Alumni Nov 2021
- University of Louisville Dean's Scholar Jan 2021
- University of Louisville Honors Scholar Jan 2021-May 2023
- University of Louisville Dean's List Fall 2019-May 2023
- University of Louisville Honors Program Fall 2019-May 2023
- University of Louisville Brown Fellow Fall 2019-May 2023
- Trustee's Scholarship Fall 2019-May 2023
- Harold L. Adams Memorial Scholarship Fall 2019
- Craft Academy's Most Promising Researcher Award May 2019
- President's Volunteer Service Award - Bronze May 2019

Publications

First Author:

Porter, L.E., Orr, M.E., et al. High-Redshift Outflows and Superbubble Breakout in FIRE-2. In prep.

Porter, L.E., Holwerda, B.W., et al. The Loneliest Galaxies in the Universe: A GAMA and GalaxyZoo Study on Void Galaxy Morphology. MNRAS, Volume 524, Issue 4, October 2023 <https://doi.org/10.1093/mnras/stad1125>.

Porter, L.E., Orr, M.E., Burkhart, B., et al. Spatially Resolved Gas-phase Metallicity in FIRE-2 Dwarfs: Late-Time Evolution of Metallicity Relations in Simulations with Feedback and Mergers, MNRAS, Volume 515, Issue 3, September 2022. <https://doi.org/10.1093/mnras/stac1958>

N-th Author:

Henry, C., Holwerda, B., Declair, M., et al. The vertical profile of edge-on spiral galaxies in ultraviolet. In prep.

Smith, D., Haberzettl, L., **Porter, L.**, et al. Galaxy and Mass Assembly: Galaxy Morphology in the Green Valley, Prominent Rings and Tighter Spiral Arms. MNRAS, Volume 517, Issue 3, December 2022. <https://doi.org/10.1093/mnras/stac2258>

Porter-Temple, R., Holwerda, B.W., Hopkins, A., et al. Galaxy And Mass Assembly: Galaxy Zoo spiral arms and star formation rates. MNRAS, Volume 515, Issue 3, September 2022. <https://doi.org/10.1093/mnras/stac1936>

B.W. Holwerda, Smith, D., **Porter, L.**, et al. Galaxy and Mass Assembly (GAMA): Self-Organizing Map Classification of Nearby Galaxies. MNRAS, Volume 513, Issue 2, June 2022. <https://doi.org/10.1093/mnras/stac889>

Onić, D., Filipović, M.D., Bojičić, I., et al. XMM-Newton observations of the Galactic supernova remnant G5.9+3.1. A&A, 625 A93. <https://doi.org/10.1051/0004-6361/201834230>

Research Experiences

Inflows and Outflows of High-Redshift Galaxies

May 2022 - present

Flatiron Institute / Center of Computational Astrophysics

Mentored by Dr. Blakesley Burkhart and Dr. Matt Orr

Explored the physics of gas inflows and outflows in Milky Way-mass progenitor galaxies and their possible connection to superbubble breakout. Supported by the Flatiron Institute and James Graham Brown Foundation.

Gas Phase Metallicities in FIRE-2 Dwarfs

May 2021 - April 2022

Flatiron Institute / Center of Computational Astrophysics

Mentored by Dr. Blakesley Burkhart and Dr. Matt Orr

Utilized the FIRE-2 simulations to investigate the gas-phase mass-metallicity relation (MZR) of dwarf galaxies in the local Universe. Supported by the Flatiron Institute and James Graham Brown Foundation.

The Loneliest Galaxies in the Universe

October 2019 - May 2023

University of Louisville

Mentored by Dr. Benne Holwerda

Project during the academic semesters using Python, GAMA, and Galaxy Zoo to conduct observational analysis of void galaxies and their average morphology. Supported by NASA KY EPSCoR REU Space Grant as of August 2022, senior honors thesis successfully defended in October 2022.

XMM-Newton Observations of the Galactic Supernova Remnants G32.4+0.1, G5.9+3.1, and G359.1-0.5

August 2017 - May 2019

Morehead State University / Craft Academy for Excellence in Science and Mathematics

Mentored by Dr. Thomas Pannuti

Project during the academic semesters using DS9, and XMM-Newton Observatory to conduct observational analysis of supernova remnants and their average morphology.

Employment

- **Flatiron Institute** **New York, NY**
Summer Intern/Guest Researcher *May 2022 - Aug 2022*
 - Utilized data from the FIRE-2 simulations to investigate outflows in Milky Way-progenitors from redshifts $z=3$ to $z=1$.
- **University of Louisville** **Louisville, KY**
Undergraduate Teaching Assistant *Jan 2022 - Dec 2022*
 - Co-instructor on record for Differential Equations lecture and recitation (Fall 2022)
 - Co-instructor on record for Introductory Astronomy lab (Spring 2022)
- **Flatiron Institute** **New York, NY**
Summer Intern/Guest Researcher *May 2021 - Aug 2021*
 - Utilized data from the FIRE-2 simulations to investigate metallicity scaling relations in dwarf galaxies.
- **University of Louisville** **Louisville, KY**
Student Researcher *Oct 2019 - present*
 - Conducted observational astronomy analysis using a variety of GAMA and Galaxy Zoo catalogues.
 - Completed an Honor's thesis and drafting a first-author paper.
- **University of Louisville** **Louisville, KY**
Student Assistant in Stacks Maintenance *Jun 2019 - Sep 2021*
 - Responsible for accurate shelving and maintenance of over two million books in the University of Louisville's Ekstrom Library
 - Assisted with patron requests and questions regarding item retrieval.
 - Managed Interlibrary Loan Requests, inventory, and other special projects.

Presentations

Talks

2022 Gulf Coast Undergraduate Research Symposium	October 2022
2022 Kentucky Area Astronomical Society	April 2022
2021 Brown Fellows Symposium	October 2021
2021 Kentucky Area Astronomical Society	April 2021
2019 Celebration for Student Scholarship	May 2019

Posters

241st Meeting of the American Astronomical Society	January 2023
240th Meeting of the American Astronomical Society	June 2022
2022 SPS Zone 8 Meeting	March 2022
2020 Brown Fellows Symposium	October 2020
2020 Kentucky Area Astronomical Society	May 2020
2019 Kentucky Area Astronomical Society	April 2019
2019 Posters at the Capitol	February 2019
2018 Kentucky Academy of Science	November 2018

Technical Skills

Programming languages: Python, R, HTML/CSS

Operating systems: Windows, Mac OS, Ubuntu 20.04

Software: LaTeX, MATLAB, Microsoft Office Suite, SAO DS9, SPSS, SAS

Service and Leadership

Representative , Brown Fellows Selection Committee (Class of 2027)	Feb 2023
Organizer , 2022 Bullitt Lecture in Astronomy	Oct 2022
President , Society of Physics Students	May 2022 - present
Communications Officer , Society of Physics Students	Aug 2021 - May 2022
Organizer , 2022 Zone 8 Meeting	Mar 2022
Co-organizer , James Webb Space Telescope Outreach Event	March 2022
Co-organizer , Bullitt Lecture in Astronomy	Oct 2021
Volunteer , Mortar Board Honors Society - Pallas Chapter	April 2021 - April 2022
Co-organizer , Kentucky Area Astronomical Society Meeting 2020	Mar 2020
Speaker , Craft Academy Graduation	May 2019
Speaker , Kentucky Association for Gifted Education	February 2019
Vice President of Service , Alpha Phi Omega	Oct 2018 - May 2019

Professional Affiliations and Extracurriculars

Sigma Xi Scientific Research Honors Society	July 2022
Sigma Pi Sigma Physics Honors Society	April 2022
American Physical Society	Jan 2022
American Astronomical Society	Oct 2021
Mortar Board Senior Honors Society	April 2021
Society for Women in Physics and Astronomy	March 2020
Society of Physics Students	March 2020
Kentucky Area Astronomical Society	Mar 2019