

Catherine Elena Fielder



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EDUCATION

- 2014 – PRESENT **Doctor of Philosophy in Physics**
EXPECTED JULY 2022
Physics and Astronomy
University of Pittsburgh
- 2016 **Master of Science in Physics**
Physics and Astronomy
University of Pittsburgh
- 2010 – 2014 **Bachelor of Science in Physics**
MAGNA CUM LAUDE, PHI BETA KAPPA, SIGMA PI SIGMA, DEANS LIST
Department of Physics
Texas Tech University

RESEARCH INTERESTS

The formation and evolution of galaxies and dark matter halos, including:

- Studying properties of the Milky Way and leveraging the Milky Way to fill in knowledge gaps on galaxy formation and evolution
- Investigating the properties of dark matter halos and their role in galaxy evolution
- Integrating machine learning techniques into astronomy

AWARDS

- 2014 **Outstanding Research Talk**
Los Alamos National Lab
- 2014 **Mary E. Warga Predoctoral Fellowship**
University of Pittsburgh

PUBLICATIONS (3 FIRST AUTHOR, 4 NTH AUTHOR)

Fielder, Catherine; Newman, Jeffrey; Andrews, Brett; Boardman, Nicholas Fraser; Zasowski, Gail; Licquia, Tim; Masters, Karen L.; Salim, Samir (2021). Constraining the Milky Way's Ultraviolet to Infrared SED with Gaussian Process Regression *Submitted to Monthly Notices of the Royal Astronomical Society*

Fielder, Catherine E.; Mao, Yao-Yuan; Zentner, Andrew R.; Newman, Jeffrey A.; Wu, Hao-Yi; Wechsler, Risa (2020). Illuminating dark matter halo density profiles without subhaloes. *Monthly Notices of the Royal Astronomical Society*, 499(2), 2426–2444.

Stark, David V; Masters, Karen L; Avila-Reese, Vladimir; Riffel, Rogemar; Riffel, Rogerio; Boardman, Nicholas Fraser; Zheng, Zheng; Weijmans, Anne-Marie; Dillon, Sean; **Fielder, Catherine**; Finnegan, Daniel; Fofie, Patricia; Goddy, Julian; Harrington, Emily; Pace, Zachary; Rujopakarn, Wiphu; Samonso, Nattida; Shamsi, Shoaib; Sharma, Anubhav; Warrick, Elizabeth; Witherspoon, Catherine; Wolthuis, Nathan (2021). H I-MaNGA: tracing the physics of the neutral and ionized ISM with the second data release. *Monthly Notices of the Royal Astronomical Society*, 503(1), 1345-1366.

Boardman, Nicholas Fraser; Zasowski, Gail; Newman, Jeffrey; Andrews, Brett; **Fielder, Catherine**; Bershady, Matthew; Brinkmann, Jonathan; Drory, Niv; Krishnarao, Dhanesh; Lane, Richard; Mackereth, Ted; Masters, Karen; Stringfellow, Guy (2020). Are the Milky Way and Andromeda unusual? A comparison with Milky Way and Andromeda Analogs. *Monthly Notices of the Royal Astronomical Society*, 498(4), 4943–4954

Boardman, N.; Zasowski, G.; Seth, A.; Newman, J.; Andrews, B.; Bershady, M.; Bird, J.; Chiappini, C.; **Fielder, C.**; Fraser-McKelvie, A.; Jones, A.; Licquia, T.; Masters, K. L.; Minchev, I.; Schiavon, R. P.; Brownstein, J. R.; Drory, N.; Lane, R. R. (2020). Milky Way analogues in MaNGA: multiparameter homogeneity and comparison to the Milky Way. *Monthly Notices of the Royal Astronomical Society*, 494(3), 3672-3701.

Masters, Karen L.; Stark, David V.; Pace, Zachary J.; Phipps, Frederika; Rujopakarn, Wiphu; Samanso, Nattida; Harrington, Emily; Sánchez-Gallego, José R.; Avila-Reese, Vladimir; Bershad, Matthew; Cherinka, Brian; **Felder, Catherine E.**; Finnegan, Daniel; Riffel, Rogemar A.; Rowlands, Kate; Shamsi, Shoaib; Newnham, Lucy; Weijmans, Anne-Marie; Witherspoon, Catherine A. (2019). H I-MaNGA: H I follow-up for the MaNGA survey. *Monthly Notices of the Royal Astronomical Society*, 488(3), 3396-3405.

Felder, Catherine E., Mao, Yao-Yuan, Newman, Jeffrey A., Zentner, Andrew R., Licquia, Timothy C. (2019). Predictably missing satellites: subhalo abundances in Milky Way-like haloes. *Monthly Notices of the Royal Astronomical Society*, 486(4), 4545-4568.

Author name in bold

CONFERENCES AND TALKS

INVITED TALKS	Galaxies/ISM Group Talk, The Ohio State University - Oct. 6, 2020
CONTRIBUTED TALKS	Linking the Galactic and Extragalactic, digital at the University of Sydney – Dec. 2020 Lunch Talk Series, National Radio Astronomy Observatory/University of Virginia - Oct. 27, 2020 Morning Astro Tea, Sydney Institute for Astronomy/The University of Sydney - Oct. 26, 2020 Talk Series, International Centre for Radio Astronomy Research, Australia - Oct. 22, 2020 Galaxy Lunch, Yale University - Oct. 21, 2020 Astronomy Seminar, Vanderbilt University - Oct. 16, 2020 Astronomy Seminar, New Mexico State University - Oct. 5, 2020 SDSS-IV Collaboration Meeting – June 2020 Great Lakes Cosmology Workshop 12, Rochester Institute of Technology, Rochester USA – Aug. 2019 Great Lakes Cosmology Workshop 11, Mc Master University, Hamilton, Ontario Canada – 2016
POSTERS	Small Galaxies Cosmic Questions, Durham, United Kingdom – July 2019 Dark Matter 2018, Kingston, Ontario Canada – 2018
DEPARTMENTAL TALKS	Astro Student Seminar – Sept. 2020, Dec. 2019, May 2019, Dec. 2018, Dec. 2017

TEACHING AND MENTORING EXPERIENCE

PROJECT MENTOR, PHD STUDENT	Lorena Mezini, Exploring subhalo effects on host halo properties
TEACHING ASSISTANT	Astro 087: Basics of Space Flight (University of Pittsburgh, fall 2014, spring 2015) Astro 088: Stonehenge to Hubble (University of Pittsburgh, spring 2018) Phys 0111: Introduction to Physics 2 (University of Pittsburgh, spring 2015)
TEACHING FELLOW	Astro 087 and Astro 088 (University of Pittsburgh, fall 2018)
GUEST LECTURE	for Astro Bootcamp, topic of \LaTeX (University of Pittsburgh, July 1, 2020)

ADDITIONAL SKILLS

COLLABORATIONS	SDSS-IV Milky Way as a galaxy group MaNGA H I Follow-up Team
COMPUTER LANGUAGES	Python, IDL, \LaTeX , Mathematica
SPOKEN LANGUAGES	English, Japanese (competent)
OBSERVING	WIYN 3.5m telescope, Kitt Peak National Observatory, 1 week of observing for the Sweet Spot Survey Green Bank Telescope Observer Training Workshop, 1 week Fall 2017 Observational Techniques course at TTU using 12" and 20" telescopes at the Preston Gott Observatory, Fall 2013

OUTREACH

Speaker for Astronomy on Tap (Fall 2018)

National project for bringing astronomy to the general public.

High School Class Lecture (March 2020)

Guest lecture on dark matter at Shadyside Academy.

High School Visit Lecture (Oct. 2019)

Guest lecture on astrophysics research for the Avonworth High School visit to the Pitt Physics and Astronomy department.

SPS Research Lecture (Sept. 2020)

Guest lecture on astrophysics research for the Pitt Society of Physics students.

SPS Student Mentor (Fall 2020)

Through the Women and Minorities in Physics group I mentor undergraduate students with a research interest in astronomy.

REFERENCES

Dr. Jeffrey Newman

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University of Pittsburgh
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Dr. Brett Andrews

POSITION Research Assistant Professor
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Dr. Gail Zasowski

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Dr. Yao-Yuan Mao

POSITION Post Doctoral Researcher, Einstein Fellow
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Rutgers
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Dr. Andrew Zentner

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