Dr. Erika Lynn **Wagoner**

Ph.D.

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Process-driven graduate student with research background in statistical analysis and modeling of large data sets. Goal-oriented with experience working in collaborations.

Experience

Graduate Research Assistant, University of Arizona   Jan 2015 – Now
Research advisor is Dr. Eduardo Rozo in the Department of Physics. Research focused on large scale structure methods and measuring the cosmic expansion rate using velocity dispersions around galaxy clusters. Used galaxy catalog data from the Sloan Digital Sky Survey and the Dark Energy Survey. Also generated and analyzed mock catalogs for code development and model testing.

Undergraduate Research Assistant, The Ohio State University   May 2013 – Jul 2014
Worked with Dr. Jennifer Johnson and Dr. Sarah Schmidt in the Department of Astronomy. Research focused on modeling M Dwarf colors, temperatures, and metallicities. Used data from the Sloan Digital Sky Survey and stellar isochrone models. Part of the Summer Undergraduate Research Program in Astronomy at OSU.

Undergraduate Researcher, The Ohio State University   Jun 2012 – Aug 2012
Worked with Dr. L Stanley Durkin in the Department of Physics. Research focused on testing upgraded board design for the Large Hadron Collider (LHC) Compact Muon Solenoid (CMS) detector.

Education

Doctor of Philosophy (Ph.D.), Physics, University of Arizona   Oct 2020
Title: Enabling Galaxy Clustering and Dynamics as Tools of Precision Cosmology. Advisor: Dr. Eduardo Rozo. Other Committee members: Dr. Elisabeth Krause, Dr. Sam Gralla, Dr. Elliott Cheu, Dr. Charles Wolgemuth

Bachelor of Science (B.S.), Physics and Astronomy, The Ohio State University   May 2014
Graduated *magna cum laude* (GPA 3.712), with honors in the Arts and Sciences, and with honors research distinction in Astronomy and Astrophysics. Successfully completed and defended an undergraduate thesis. Thesis advisors: Dr. Jennifer Johnson and Dr. Sarah Schmidt. Committee: Dr. L. Stanley Durkin and Dr. Donald Terndrup.

Teaching

Teaching Assistant, Introductory Physics   Aug 2014 – Dec 2014
Undergraduate course Physics 141, Dep. of Physics, University of Arizona

Undergraduate Tutor, Physics (various)   Sep 2011 – Jul 2014
Various undergraduate physics courses, Dep. of Physics, The Ohio State University

Computer skills

Programming languages: Python, C/C++, SQL, Mathematica

Markup languages: HTML, CSS, Markdown, reStructuredText, LaTeX

Operating systems: Linux, macOS

Other: Git, Bash, Microsoft Office, LibreOffice, Keynote, Numbers, Pages

Languages

Native language: **English**, Semi-fluent: **French**

Talks and Presentations

[1]   Dealing with Systematics at the Map Level   Jan 2020
      Dark Energy Science Collaboration Meeting, University of Arizona, Tucson, AZ, USA

[2]   Linear Model Systematics Mitigation   Nov 2019
      Dark Energy Survey Collaboration Meeting, University of Sussex, Falmouth, Brighton, UK

Honors and Awards Presentations

[1]   LSST DESC Travel Grant   Summer 2018

[2]   Graduate and Professional Student Council Travel Grant   Spring 2018
       University of Arizona

[3]   Graduation Honors (B.S.)
       magna cum laude
       with honors in Arts and Sciences
       with honors research distinction in Astronomy and Astrophysics

[4]   Smith Senior Award   Spring 2014
       The Ohio State University Department of Physics

[5]   Runner-up, Denman Undergraduate Research Forum   Spring 2014
       The Ohio State University

[6]   Smith Junior Award   Spring 2013
       The Ohio State University Department of Physics

[7] $\Sigma\Pi\Sigma$ Inductee   Spring 2012

Publications

First author papers

[1]   Linear Systematics Mitigation in Galaxy Clustering in the Dark Energy Survey Year 1 Data
       Erika L. Wagoner, Eduardo Rozo, Xiao Fang, Martín Crocce, Jack Elvin-Poole, and Noah Weaverdyck. 2021, *MN-RAS*. DOI: 10.1093/mnras/stab717. arXiv: 2009.10854

[2]   Measuring Cosmological Distances Using Cluster Edges as a Standard Ruler
       Erika L. Wagoner, Eduardo Rozo, Han Aung, and Daisuke Nagai in prep. Submitted to MNRAS

Peer-reviewed journals

[1]   Tomographic galaxy clustering with the Subaru Hyper Suprime-Cam first year public data release
       Andrina Nicola, David Alonso, Javier Sánchez, Anže Slosar, Humna Awan, Adam Broussard, Jo Dunkley, Eric Gawiser, Zahra Gomes, Rachel Mand elbaum, Hironao Miyatake, Jeffrey A. Newman, Ignacio Sevilla-Noarbe, Sarah Skinner, and **Erika L. Wagoner**. 2020, *J. Cosmology Astropart. Phys.* 2020, p. 044. DOI: 10.1088/1475-7516/2020/03/044. arXiv: 1912.08209

[2]   Clusters Have Edges: The Projected Phase SpaceStructure of SDSS redMaPPer Clusters
       Paxton Tomooka, Eduardo Rozo, **Erika L. Wagoner**, Han Aung, Daisuke Nagai, and Sasha Safonova. 2020, *arXiv e-prints*. DOI: 10.1093/mnras/staa2841. arXiv: 2003.11555. Accepted for publication in MNRAS

[3]   Core Cosmology Library: Precision Cosmological Predictions for LSST
       Nora Elisa Chisari, David Alonso, Elisabeth Krause, C. Danielle Leonard, Philip Bull, Jérémy Neveu, Antonio Villarreal, Sukhdeep Singh, Thomas McClintock, John Ellison, Zilong Du, Joe Zuntz, Alexand er Mead, Shahab Joudaki, Christiane S. Lorenz, Tilman Tröster, Javier Sanchez, Francois Lanusse, Mustapha Ishak, Renée Hlozek, Jonathan Blazek, Jean-Eric Campagne, Husni Almoubayyed, Tim Eifler, Matthew Kirby, David Kirkby, Stéphane Plaszczynski, Anže Slosar, Michal Vrastil, **Erika L. Wagoner**, and LSST Dark Energy Science Collaboration. 2019, *ApJS*, 242, p. 2. DOI: 10.3847/1538-4365/ab1658. arXiv: 1812.05995

[4]   Examining the relationships between colour, T_{eff}, and [M/H] for APOGEE K and M dwarfs
       Sarah J. Schmidt, **Erika L. Wagoner**, Jennifer A. Johnson, James R. A. Davenport, Keivan G. Stassun, Diogo Souto, and Jian Ge. 2016, *MNRAS*, 460, pp. 2611–2624. DOI: 10.1093/mnras/stw1139. arXiv: 1605.03732

Peer-reviewed conferences and workshops

[1]   Using APOGEE Data to Examine Late-K and Early-M Dwarfs
      Sarah J. Schmidt, **Erika L. Wagoner**, Jennifer Johnson, Jose Gregorio Fernandez Trincado, Annie Robin, Celine
      Reyle, Ryan Terrien, Carlos Allende-Prieto, Fred Hearty, Steven R. Majewski, and Ricardo P. Schiavon. *American
      Astronomical Society Meeting Abstracts #225*, 2015

Published code

[1]   CCL: Core Cosmology Library
      Nora Elisa Chisari, David Alonso, Elisabeth Krause, C. Daniellle Leonard, Philip Bull, Jérémy Neveu, Antonio Villar-
      real, Sukhdeep Singh, Thomas McClintock, John Ellison, Zilong Du, Joe Zuntz, Alexand er Mead, Shahab Joudaki,
      Christiane S. Lorenz, Tilman Troester, Javier Sanchez, Francois Lanusse, Mustapha Ishak, Renée Hlozek, Jonathan
      Blazek, Jean-Eric Campagne, Husni Almoubayyed, Tim Eifler, Matthew Kirby, David Kirkby, Stéphane Plaszczyn-
      ski, Anze Slosar, Michal Vrastil, and **Erika L. Wagoner**. 2019. ascl: 1901.003