Erika **Wagoner**

Graduate Research Assistant

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As a student doing research in astrophysics, I have extensive experience with modeling, statistics, and data visualization. My graduate research has also involved analysis of large survey data for cosmology. As such, I am very familiar with the challenges of data handling and analysis. I also audited one session of the Large Synoptic Survey Telescope (LSST) Data Science Fellowship Program (DSFP), which covered topics including continuous integration, code documentation, and database creation and queries.

As a member of both the Dark Energy Survey (DES) and the LSST Dark Energy Science Collaboration (DESC), I have experience in working in collaboration with others. I have also helped advise undergraduate researchers working with my PhD advisor, Dr. Eduardo Rozo.

Experience

Graduate Research Assistant, Department of Physics, University of Arizona   2015–2020
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 as well as mock catalogs.

Undergraduate Research Assistant, Department of Astronomy, The Ohio State University   2013–2014
Worked with Dr. Jennifer Johnson and Dr. Sarah Schmidt. 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, Department of Physics, The Ohio State University   2012
Worked with Dr. L Stanley Durkin. Research focused on testing upgraded board design for the Large Hadron Collider (LHC) Compact Muon Solenoid (CMS) detector.

Education

Philosophy Doctor (Ph.D.), Dep. of Physics, University of Arizona, USA   2020
Subject of dissertation: Measurement of H_0 using velocity dispersions of galaxies in clusters. Advisor: Dr. Eduardo Rozo. Other committee members: Dr. Elisabeth Krause, Dr. Sam Gralla, Dr. Elliott Cheu, and Dr. Charles Wolgemuth.

Bachelor of Science (B.S.), Deps. of Physics and Astronomy, The Ohio State University, USA   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   Fall 2014
Undergraduate course Physics 141, University of Arizona

Undergraduate tutor, Physics (various)   2011–2014
Various undergraduate physics courses, The Ohio State University

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

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

Operating systems: Windows, macOS, Linux

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

Languages

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

Talks and Presentations

[1]   Systematics Mitigation with Gaussian Processes
      Dark Energy Survey Collaboration Meeting, University of Pennsylvania, Pittsburgh, PA, June 2019

Honors and Awards

[1] LSST DESC Travel Grant
Summer 2018

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

[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
The Ohio State University Department of Physics, *Spring 2014*

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

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

Publications

Theses

[1] Testing Stellar Models for M Dwarfs
Wagoner. Bachelor's thesis, The Ohio State University, May 2014. HDL: 1811/60400

Peer-reviewed jounrals

[1] Core Cosmology Library: Precision Cosmological Predictions for LSST
Chisari, Alonso, Krause, Leonard, Bull, Neveu, Villarreal, Singh, McClintock, Ellison, Du, Zuntz, Mead, Joudaki, Lorenz, Tröster, Sanchez, Lanusse, Ishak, Hlozek, Blazek, Campagne, Almoubayyed, Eifler, Kirby, Kirkby, Plaszczynski, Slosar, Vrastil, Wagoner, LSST Dark Energy Science Collaboration. 2019, *ApJS*, 242, p. 2. DOI: 10.3847/1538-4365/ab1658. arXiv: 1812.05995

[2] Examining the relationships between colour, T_{eff}, and [M/H] for APOGEE K and M dwarfs
Schmidt, Wagoner, Johnson, Davenport, Stassun, Souto, 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
Schmidt, Wagoner, Johnson, Gregorio Fernandez Trincado, Robin, Reyle, Terrien, Allende-Prieto, Hearty, Majewski, Schiavon. *American Astronomical Society Meeting Abstracts #225*, 2015

Published code

[1] CCL: Core Cosmology Library
Chisari, Alonso, Krause, Leonard, Bull, Neveu, Villarreal, Singh, McClintock, Ellison, Du, Zuntz, Mead, Joudaki, Lorenz, Troester, Sanchez, Lanusse, Ishak, Hlozek, Blazek, Campagne, Almoubayyed, Eifler, Kirby, Kirkby, Plaszczynski, Slosar, Vrastil, Wagoner. 2019. ascl: 1901.003