

Wynne Turner

Department of Astronomy

Center for Cosmology and AstroParticle Physics

The Ohio State University

4031 McPherson Laboratory

140 W 18th Ave

Columbus, OH 43210 USA

turner.1839@osu.edu

ORCID: 0009-0008-3418-5599

website: wynneturner.github.io

EDUCATION

The Ohio State University

2020 – present

Dissertation title: *Novel methods for Lyman-alpha forest cosmology*

Advisor: Paul Martini

Ph.D., Astronomy

(expected) June 2026

M.S., Astronomy

April 2024

University of California, Los Angeles

2016–2018

Honors College

B.S., Physics

Dec. 2018

HONORS & AWARDS

Ann S. Tuttle Paper Award (\$500)

2025

Three Minute Thesis (3MT) University Finalist

2025

David J.P. Will Prize in Computational, Survey & Data Science (\$1000)

2024

Edward F. Hayes Advanced Research Forum, 2nd place winner (\$400)

2024

Mathematical & Physical Sciences, Oral Presentations

OSU University Fellowship (\$28,000)

2020 – 2021

UCLA Honors College

2017 – 2018

CONFERENCE & SEMINAR PRESENTATIONS

Invited Talks

Seminar *University of California, Riverside*

Feb. 2026

Seminar *Ohio University*

Dec. 2025

Seminar *Berkeley Center for Cosmological Physics (BCCP)*

Nov. 2025

Seminar *University College London*

Oct. 2025

Seminar *Institute of Cosmology and Gravitation (Portsmouth)*

Oct. 2025

Seminar *Institut de Física d'Altes Energies (IFAE)*

Sept. 2025

Talk *Ohio Cosmic Connections Workshop*

Apr. 2025

Talk *Lyman-alpha Workshop (OSU)*

Oct. 2024

Plenary *DESI Collaboration Meeting (Marseille)*

July 2024

Contributed Talks

Dissertation Talk *247th AAS Meeting (Phoenix)*

Jan. 2026

Parallel Talks (6) *DESI Collaboration Meetings*

Dec. 2023 – Dec. 2025

Parallel Talk *COSMO-25 (Pittsburgh)*

Oct. 2025

Poster *Astrophysical Frontiers (Portland)*

June 2018

+ several local and internal DESI talks

SERVICE & OUTREACH

Activities

DESI Education & Public Outreach Committee Co-Chair	Aug. 2024 – present Aug. 2025 – present
<i>Broadening the accessibility of DESI's science and results through the DESI website, the development of paper guides, and coordinating efforts across the 700-member collaboration</i>	
DESI Support Observer (in-person at Kitt Peak)	7 half-nights, May 2025
OSU Polaris Undergraduate Mentorship Program <i>Mentored undergraduates in astrophysics and advised research projects that resulted in poster presentations.</i>	Mentor, 2021 – 2025
Polygence Mentorship Program <i>Mentored high school students in research projects that led to submission to a high school journal.</i>	Mentor, 2022 – 2023
SciAccess Zenith Mentorship Program <i>Mentored a low-vision high school student in an astronomy project.</i>	Mentor, 2020 – 2021

Talks & Panels

Plenary, DESI Collaboration Meeting (Phoenix) <i>Update from the Education & Public Outreach Committee</i>	Dec. 2025
Friends of Ohio State Astronomy & Astrophysics (FOSAA) <i>Public talk on DESI science</i>	Oct. 2025
Cesar Chavez High School (Arizona) <i>Virtual panel on careers in academia to a Title I high school</i>	Jan. 2024
Queen Elizabeth High School (Zimbabwe) <i>Virtual presentation on my research to a girls' high school physics class in Africa (more information)</i>	June 2023

RESEARCH POSITIONS

Graduate Student Researcher (OSU) Advisor: Paul Martini <i>Lyman-alpha forest cosmology with DESI</i>	2020 – present
Lab Scientist (UCLA) Advisor: Vassilis Angelopoulos <i>Electron Losses and Fields Investigation (ELFIN) science team</i>	2018 – 2020
Lab Scientist (UCLA) Advisor: Matt Malkan <i>Extragalactic astrophysics using HSC and Keck data</i>	2019
Research Assistant (UCLA) Advisor: Steven Furlanetto <i>Dust extinction modeling at high-z</i>	2017 – 2018
Research Assistant (UCLA) Advisor: Jean-Luc Margot <i>Asteroid radar database technology</i>	Summers 2017; 2018

ADVISING & MENTORING

Undergraduate Students (7)

Deeti Patel <i>primary advisor</i>	May 2025 – present
Elle Moore <i>Polaris Program</i>	Fall 2024 – Spring 2025
Abigail Falk <i>co-advised with Paul Martini</i>	Summer 2024
Jane Torma <i>Polaris Program</i>	Fall 2023 – Spring 2024
Kwasie Bobie <i>Polaris Program</i>	Fall 2022 – Spring 2023
Anya Phillips <i>Polaris Program</i>	Fall 2021 – Spring 2022
Hirak Basu <i>Polaris Program</i>	Fall 2021 – Spring 2022

High School Students (2)

<i>Polygence Mentorship Program</i>	
Haarika M.	Mar. 2023 – Jan. 2024
Amir A.	Apr. 2022 – Dec. 2022

TEACHING

Graduate Teaching Associate (OSU)

Spring 2024 – Spring 2025

TA for six courses over three semesters, with responsibilities including Cosmology, Advanced Astronomy Data Analysis, laboratory instruction, and three guest lectures

Grader (UCLA)

Spring 2017 – Fall 2018

PROGRAMMING LANGUAGES & SKILLS

Fluent: Python, L^AT_EX, bash, GitHub

Proficient: high-performance computing, deep learning (TensorFlow), IDL, R, SQL, Mathematica

PUBLICATIONS ([LINK TO MY ADS LIBRARY](#))

Lead Author

1. **W. Turner**, *A hybrid approach to covariance denoising for cosmological inference* | in preparation
2. **W. Turner**, A. Cuceu, P. Martini et al., *Probing the limits of cosmological information from the Lyman- α forest 2-point correlation functions* (2025), [arXiv:2509.14322](#)
3. **W. Turner**, P. Martini, N. Karacayli et al., *New Measurements of the Lyman- α Forest Continuum and Effective Optical Depth with LyCAN and DESI Y1 Data*, [ApJ, 976, 143 \(2024\)](#)

Contributing Author

* My contributions to DESI papers included extensive validation of different software and analysis choices that benefited the DR2 Lyman- α BAO analysis.

† My contributions to ELFIN papers included extensive software development and processing of new scientific data from the space satellite.

4. Q. Hang, L. Casas, W. d'Assignies, **W. Turner**, A. Font-Ribera, and B. Joachimi, *Calibrating redshift distributions at $z > 2$ with Lyman- α forest cross-correlations* (2026), [arXiv:2601.16962](#)
| Contributions: Produced the LyCAN data products used in the primary analysis; authored the majority of Section 3.2.

5. J. Pearson, H. Dickinson, S. Serjeant et al. (incl. **W. Turner**), *Galaxy Zoo: Cosmic Dawn – morphological classifications for over 41,000 galaxies in the Euclid Deep Field North from the Hawaii Two-0 Cosmic Dawn survey* (2025), [arXiv:2509.22311](https://arxiv.org/abs/2509.22311) | Contributions: Developed the galaxy morphology catalog used in Section 4.3
6. DESI Collaboration et al. (incl. **W. Turner**)*, *DESI DR2 results. I. Baryon acoustic oscillations from the Lyman alpha forest*, *Phys. Rev. D*, 112, 083514 (2025)
7. DESI Collaboration et al. (incl. **W. Turner**)*, *DESI DR2 results. II. Measurements of baryon acoustic oscillations and cosmological constraints*, *Phys. Rev. D*, 112, 083515 (2025)
8. DESI Collaboration et al. (incl. **W. Turner**)*, *Data Release 1 of the Dark Energy Spectroscopic Instrument* (2025), [arXiv:2503.14745](https://arxiv.org/abs/2503.14745)
9. L. Casas, H. K. Herrera-Alcantar, J. Chaves-Montero et al. (incl. **W. Turner**)*, *Validation of the DESI DR2 Ly α BAO analysis using synthetic datasets* (2025), [arXiv:2503.14741](https://arxiv.org/abs/2503.14741)
10. A. Brodzeller, M. Wolfson, D. M. Santos et al. (incl. **W. Turner**)*, *Construction of the damped Ly α absorber catalog for DESI DR2 Ly α BAO*, *Phys. Rev. D*, 112, 083510 (2025)
11. U. Andrade, E. Paillas, J. Mena-Fernández et al. (incl. **W. Turner**)*, *Validation of the DESI DR2 measurements of baryon acoustic oscillations from galaxies and quasars*, *Phys. Rev. D*, 112, 083512 (2025)
12. K. Lodha, R. Calderon, W. L. Matthewson et al. (incl. **W. Turner**)*, *Extended dark energy analysis using DESI DR2 BAO measurements*, *Phys. Rev. D*, 112, 083511 (2025)
13. W. Elbers, A. Aviles, H. E. Noriega et al. (incl. **W. Turner**)*, *Constraints on neutrino physics from DESI DR2 BAO and DR1 full shape*, *Phys. Rev. D*, 112, 083513 (2025)
14. E. Tsai, A. Palla, A. Norris et al. (incl. **W. Turner**)†, *Remote sensing of electron precipitation mechanisms enabled by ELFIN mission operations and ADCS*, *AdSpR*, 75, 9 (2025)
15. V. Angelopoulos, X. J. Zhang, A. V. Artemyev et al. (incl. **W. Turner**)†, *Energetic Electron Precipitation Driven by Electromagnetic Ion Cyclotron Waves from ELFIN’s Low Altitude Perspective*, *Space Sci Rev*, 219, 37 (2023)
16. V. Angelopoulos, E. Tsai, C. Wilkins et al. (incl. **W. Turner**)†, *Atmospheric scattering of energetic electrons from near-Earth space* (2021) | doi:[10.21203/rs.3.rs-319558/v1](https://doi.org/10.21203/rs.3.rs-319558/v1)
17. V. Angelopoulos, E. Tsai, L. Bingley et al. (incl. **W. Turner**)†, *The ELFIN Mission*, *Space Sci Rev*, 216, 103 (2020)