Carolyn Drake

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Education

Vanderbilt University   Nashville, TN
Ph.D., Astrophysics   Expected May 2026

Whitman College   Walla Walla, WA
B.S., Physics & Astronomy   May 2020

Employment

Gradaute Student Researcher   Vanderbilt University
  Project: Created a framework that completes preparatory analysis towards coordinating LISA gravitational wave detections with their electromagnetic counterparts using archival survey data.

REU Researcher   Texas A&M University
  Project: Preformed large-scale Cepheid identification in M33 using a 3σ clipping algorithm based on period-luminosity relationships using images in the *gri* band-passes.

REU Researcher   University of Wyoming
  Project: Probed the star formation history of two nearby dwarf galaxies using deep *ugr* imaging taken during a 6 week observing run at the Wyoming Infrared Observatory along with other ancillary data.

Observing Experience

MDM 3 nights, Kitt Peak 2.4m Hitlner Telescope, CCD photometry
WIRO 15 nights, Wyoming 2.3m research telescope, CCD photometry

Teaching & Outreach

Astronomy Lab Graduate Teaching Assistant	*Aug 2020 - May 2022*
Physics Fellow Tutor	*Aug 2018 - May 2020*
Undergraduate Astronomy Lab Teaching Assistant	*Dec 2018 - May 2020*
Women in STEM Club *co-founder*	*Aug 2017 - May 2020*
Dyer Observatory Events	*Aug 2021 - April 2024*
College Station Telescope Nights	*Jun 2019, July 2019*

Certifications

EMIT DEI certification specifically for the emerging multi-messenger astronomy field, *in progress*
Certificate in College Teaching Teaching Pedagogy certification focused on student-informed practices, *April 2024*

Publications

1. **Carolyn L. Drake**, J. Runnoe, et. al., "Preliminary census of galaxies in the LISA localisation volume: I. Searching for LISA candidate massive black hole binary merger hosts using Sloan Digital Sky Survey photometry", accepted, MNRAS, expected Fall 2025

2. W. Yu, **Carolyn L. Drake**, et. al., "Contaminating Electromagnetic Transients in LISA Gravitational-wave Localization Volumes. I. The Intrinsic Rates", 2025, ApJ, 981, 141

3. Daniel A. Dale and Kristin R. Anderson and Louis M. Bran and Isaiah S. Cox and **Carolyn L. Drake** and Nathan J. Lee and Jacob D. Pilawa and F. Alexander Slane and Susana Soto and Emily I. Jensen and Jessica S. Sutter and Jordan A. Turner and Henry A. Kobulnicky, 2020, "Radial Star Formation Histories in 32 Nearby Galaxies", AJ, 159, 5

Talks & Presentations

1. **A Preliminary Census of Time-Evolving LISA Error Volumes Utilizing SDSS Photometry**, *contributed talk*, The 10 Years to LISA Conference at JpL, April 2025

2. **A Preliminary Census of Time-Evolving LISA Error Volumes Utilizing SDSS Photometry**, *contributed talk*, AAS 245th, January 2025

3. **A Preliminary Census of Time-Evolving LISA Error Volumes Utilizing SDSS Photometry**, *contributed talk*, The International LISA Symposium, July 2024

4. **A Preliminary Census of Time-Evolving LISA Error Volumes Utilizing SDSS Photometry**, *contributed talk*, LISA AstroWG Conference, September 2023

5. **Developing Methods of Identifying Candidates for Massive Black Hole Binaries**, *poster*, Hanna Harmon, Jessie Runnoe, **Carolyn L. Drake**, Sara Frederick, Mike Eracleous, Tamara Bogdanovic, AAS 243rd, January 2024

6. **EDGES: Radial Star Formation Histories in Nearby Galaxies UGC07408 and IC4182**, *poster*, **Carolyn L. Drake**, Emily L. Jensen, Jessica Sutter, Jacob Pilawa, Louis Marlon Bran, Nathan Lee, Jordan Turner, Henry Kobulnicky, Daniel Dale, Isaiah Samuel Cox, Susana Soto, Frederick A Slane, Kristin Anderson, AAS 233rd, January 2019

Awards & Fellowships

FINESST Grant — NASA
$150,000 — Dec 2024 - Dec 2027

AAS International Travel Grant — American Astronomical Society
$1,244.80 — May 2024

NASA International LISA Symposium Travel Grant — NASA
$1,500 — April 2024

Vanderbilt Graduate School International Travel Grant — Vanderbilt University
$850 — June 2024

The Lagemann Award — Vanderbilt University
$1,000 — May 2021

NSF REU Fellowship — Texas A&M University
$5,000 — June - July 2019

NSF REU Fellowship — University of Wyoming
$5,000 — June - July 2018