Katelyn J. Wagner

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EDUCATION

Rochester Institute of Technology **Anticipated 2025**
Ph.D. Astrophysical Sciences and Technology
- GPA: 3.79/4.00

Rochester Institute of Technology **Summer 2022**
M.S. Astrophysical Sciences and Technology
- *"Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1"*
- GPA: 3.79/4.00

Roberts Wesleyan College **May 2020**
B.S. Physics
- GPA: 3.81/4.00
- Magna Cum Laude, Global Honors

RESEARCH EXPERIENCE

Parameter Inference for Eccentric Black Hole Binaries
Rochester Institute of Technology August 2022 - Current
Advisor: Dr. Richard O'Shaughnessy

Improved Lattice Template Placement for a Search for Continuous Gravitational Waves from Scorpius X-1
Rochester Institute of Technology May 2019 - July 2022
Advisor: Dr. John Whelan

Simulations of Precession Damping for Viscoelastic Rotators
University of Rochester May 2018 - January 2019
Advisor: Dr. Alice Quillen

PUBLICATIONS

Katelyn J Wagner. Template Lattices for a Cross- Correlation Search for Continuous Gravitational Waves from Scorpius X-1. Master's thesis, Rochester Institute of Technology, 2022

Katelyn J Wagner, John T Whelan, Jared K Wofford, and Karl Wette. Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1. *Classical and Quantum Gravity*, 2022

R. Abbott *et al.* (The LIGO-Virgo-KAGRA Collaboration). Model-based cross-correlation search for gravitational waves from the low-mass X-ray binary Scorpius X-1 in LIGO O3 data. *Astrophysical Journal Letters*, 09 2022

Alice C Quillen, **Katelyn J Wagner**, and Paul Sánchez. Simulations of wobble damping in viscoelastic rotators. *Monthly Notices of the Royal Astronomical Society*, 485(1):725–738, 02 2019

TALKS	RIT Master's Thesis Defense - July 2022 *Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1*
	RIT AST Graduate Research Jamboree - October 2021 *Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1*
	14th Edoardo Amaldi Conference on Gravitational Waves - July 2021 *Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1*
	LIGO-Virgo-KAGRA Collaboration Meeting - March 2021 *Template Lattices for a Cross-Correlation Search for Sco X-1*
	RIT AST Graduate Research Jamboree - October 2020 *Improved Lattice and Coordinate Choices for a Search for Continuous Gravitational Waves from Sco X-1*
	LIGO-Virgo-KAGRA Collaboration Meeting - September 2020 *Improved Lattice and Coordinate Choices for Cross-Correlation Search for Sco X-1*
	LIGO Continuous Wave Group Telecon - September 2020 *Full O3 Scorpius X-1 CrossCorr Update*
	RIT Undergraduate Research Symposium - August 2019 *Template Placement for a Search for Continuous Gravitational Waves*
	UR Summer Research Symposium - August 2018 *Simulations of Precession Damping for a Homogeneous Viscoelastic Rotator*
OUTREACH	**Mentoring**: Research project with sophomore Haylli Yunga - Ongoing *Ossining Science Research Program*
	Teaching: Curriculum development with Marko Ristić for high school astronomy program in summer 2023 *Rochester Institute of Technology*
	Public: ImagineRIT ("Making Waves - Gravitational Waves!) Virtual Exhibit *Rochester Institute of Technology*
	Lecture: Big Data in Astronomy - January 2021 *Cicero-North Syracuse High School AP Computer Science Class, Girls Who Code*
	Mentoring: Work-shopping code with students - Ongoing *Cicero-North Syracuse High School AP Computer Science Class*
PROFESSIONAL AFFILIATIONS	LIGO Scientific Collaboration Sigma Pi Sigma
PROFESSIONAL DEVELOPMENT	Data Carpentry: Pilot Workshop for Astronomers - November 2020 Penn State Summer School in Statistics for Astronomers XVI - June 2021 Code/Astro - A Software Engineering Workshop for Astronomy - June 2021
COMPUTER SKILLS	Computer Programming and Data Analysis: • Python, Maple • UNIX shell scripting (Bash)

Document Editing and Development Tools:

- TEX (LATEX, BIBTEX)
- Git (GitHub, GitLab)
- Microsoft Office, Mac iWork Suite, Google Suite
- Data Analysis: Matplotlib, Pandas

Operating Systems:

- Linux-Debian (primary), Mac OS, Windows

Technical Skills:

- Trained to operate the 24-inch computerized Cassegrain telescope at the University of Rochester's C.E.K. Mees Observatory

HONORS AND AWARDS

Sigma Pi Sigma Honor Society (SPS)
Chi Alpha Sigma Honor Society
Benjamin Titus Roberts Full-tuition Grant - *Roberts Wesleyan College*
Ensemble Scholarship, Violin - *Roberts Wesleyan College*
Dean's List, High Honors - *Roberts Wesleyan College*

TEACHING EXPERIENCE

Roberts Wesleyan College Teaching Assistant

- AST 201: Descriptive Astronomy
- PHY 101 LAB: Mechanics
- PHY 102 LAB: Electricity
- PHY 115: Physics of Music

Tutoring (Certified CRLA Level 1)

- Introductory Physics sequence (I, II, and III), Calculus sequence (I, II, and III), Descriptive Astronomy, Statistics, Linear Algebra

LEADERSHIP & SERVICE

C.E.K. Mees Observatory, Naples, NY
Student Tour Guide **Summer 2018**
Present history of the observatory and general introductory astronomy information, as well operate 24-inch computerized Cassegrain telescope to show a variety of astronomical objects to the public tour.

Roberts Wesleyan College
President, *Society of Physics Students* **2018 Academic Year**
Organizing preview day for prospective students, fundraising, planning activities

Women's Varsity Soccer Team
Roberts Wesleyan College **Fall 2016 - Spring 2020**
NCAA Division II, starting defensive midfielder