London Willson

Physics Department
University of Connecticut
Storrs, CT 06269

Pronouns: they/them/theirs & she/her/hers
E-mail: london.willson@uconn.edu
Github: londonwillson

Education and Research Experience

2022 – Present **University of Connecticut**, Storrs, Connecticut.
PhD in Physics, expected in 2028.
MSc in Physics, expected in 2025.
Thesis: Spin and Supermassive Binary Black Hole SEDs in LISA.
Advisor(s): Dr. Jonathan Trump

2024 – Present **Graduate Research Assistant**
University of Connecticut with Dr. Jonathan Trump

- Using MCMC methods to fit multi-parameter models of UV and Optical SEDs from 39 low redshift AGN to measure massive black hole spin, Eddington accretion rate, and mass.

2022 – 2024 **Graduate Research Assistant**
University of Connecticut and Yale with Dr. Chiara Mingarelli

- Searched for evidence of continuous nHz gravitational waves in the NANOGrav 15-year PTA data using targeted location constraints based on astrophysical properties of 13 SMBHB candidates

2017 – 2021 **University of Oklahoma**, Norman, Oklahoma.
Astrophysics and Mathematics.

Thesis: Classifying Super-Chandrasekhar Type Ia Supernovae Through Spectra .
Advisor(s): Dr. Eddie Baron

- Utilized the synthetic spectra code SYNOW to adjust ion properties to fit emission/absorption light curves from the first month of 9 SNeIa with exceptionally strong CII lines.

Teaching and Outreach Experience

2022 – Present **Graduate Teaching Assistant**
University of Connecticut

- Teaching assistant for calculus-based introductory physics courses targeted at engineers utilizing studio-style, active learning classroom strategies.

Summer 2025 **BRIDGE Program Instructor**
University of Connecticut

- Lecture and lab instructor of a four week introductory mechanics course for the UConn BRIDGE+ program. Focused on thorough exploration of fundamental skills for physics through studio style practice problems and labs.

- Developed and delivered a five week exploratory physics course for the UConn BRIDGE program. Focused on problem solving and math skills through the lens of physics via hands on activities.

2021-2022 **High School Science Teacher**
Noble High School, Noble, OK

- Taught Physical Science, Physics, and Astronomy to 9th-12th graders in line with Oklahoma Academic Standards. Developed Astronomy course from scratch with a quarterly emphasis on citizen science projects.
- Partnered with the GEAR-UP program with the University of Oklahoma's K20 Center as a teacher mentee. Received regular, individual training on topics such as active learning, classroom management, and project development.

2023-Present **STARs Colead**, University of Connecticut

- Ongoing leader within the UConn STARs program, created under the NSF Career grant of Dr. Cara Battersby. Position allows for close mentoring of a small community of physics and astronomy undergrads via the creation of professional development opportunities and guiding semester long undergraduate developed lessons on physics topics to be presented at local high schools for outreach.

Publications

Agarwal et al *The NANOGrav 15 yr Data Set: Targeted Searches for Supermassive Black Hole Binaries*, in prep

- Contributed major analysis and `QuickCW` searches

Presentations

November 11, 2023 *Fall 2023 STARs @ AAPT-NES*, Talk at 2023 AAPT-NES Fall Meeting

October 18, 2023 *Updates on NG 15-year Dataset: Targeted Search for Continuous Waves from SMBHBs*, Co-Talk with Nikita Agarwall at NANOGrav 2023 Fall Meeting

March 29, 2023 *Project Overview: Targeted Searches for Supermassive Black Hole Binaries in the 15-Year Dataset*, Talk at: NANOGrav 2023 Spring Meeting

January 18, 2020 *Analyzing SN 2012fr Spectra through SYNOW* Poster at: Conference for Undergraduate Women in Physics 2020

- Awarded *Best Oral Presentation*

Conferences and Workshops Attended

July 2025 Courses to Careers (C2C) Workshop: Addressing Ableism in Physics through Faculty-Student Partnerships

March 2024 NANOGrav Spring Collaboration Meeting 2024

November 2023	Yale Gravitational Wave Symposium*
November 2023	AAPT - New England Section Fall Meeting*
October 2023	NANOGrav Fall Collaboration Meeting 2023†
March 2023	NANOGrav Spring Collaboration Meeting 2023†
March 2022	NANOGrav Spring Collaboration Meeting 2022
November 2019/2020	oSTEM National Conference 2019 and 2020 (Virtual)
June 2020	APS-IDEA Virtual Workshop
January 20XX	Conference for Undergraduate Women in Physics 2018, 2019, 2020*†, 2025*

- 2020: Chaired "Bias and Gender Issues" and "Elements of Student Success and Retention" panels

*Member of LOC, †Presented

Committees and Memberships

2025-Present	LISA Consortium Community Member
2023-Present	STARs Co-Lead
2022-2025	NANOGrav Associate Member
2021-2022	K20 Educator
2020-2021	Committee of Inclusion and Community Undergraduate Representative
2019-2020	CUWIP@OU Local Organizing Committee
2017-2021	oSTEM Member
2017-2021	Society of Physics Students Member; President 2018-2021
2017-2020	Lunar Sooners Member; Secretary in 2018

Additional Skills

Software and Hardware:

- Competent in Python and familiar with SQL, Java, HTML, and bash scripting

Personal Development:

- A1 Spanish proficiency