

Erin O’Neil

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EDUCATION

Princeton University <i>Ph.D. student in the Program in Applied & Computational Mathematics (PACM)</i>	Expected June 2030
University of California, Los Angeles (UCLA) <i>B.S. in Applied Mathematics (with Computing), Minor in Atmospheric & Oceanic Sciences</i> • Honors: 3.942/4.000 GPA, Honors College, Latin Honors, Dean’s Honors List	Earned Dec. 2024

EXPERIENCE

XCP Parallel Computing Workshop <i>Student at Los Alamos National Laboratory</i> • Analyzing the efficiency and accuracy of pre-inverting equation of state (SESAME) data under the direction of Jonah Miller, Jeff Peterson, and Christopher Mauney	June–Aug. 2025
UCLA Learning Assistant Program <i>Pre-Calculus Learning Assistant</i> • Assisted students in two weekly discussion sections, completed weekly pedagogy seminars, attended weekly content meetings with the instructor and teaching assistants, and created detailed answer keys	Sept.–Dec. 2024
JIFRESSE Summer Internship Program <i>Intern at NASA’s Jet Propulsion Laboratory (JPL)</i> • Collaborated with UCLA’s Joint Institute for Regional Earth System Science and Engineering (JIFRESSE) and JPL to enhance understanding of global climate change impacts on regional climates • Conducted research under the direction of Dr. Evan Fishbein to understand the effects of sub-pixel heterogeneity on atmospheric sounding	June–Sept. 2024
Queen’s Road Foundation Undergraduate Research Program <i>Researcher at UCLA</i> • Conducted year-round research under the guidance of Dr. Sarah Tymochko to assess heat-related mortality risk using topological data analysis	June 2023–Sept. 2024
Directed Research in Mathematics and Statistics (REU Program) <i>Researcher at North Carolina State University (NCSSU)</i> • Implemented machine learning and statistical strategies such as Super Learner and spatial autocorrelation to investigate the burn severity of California wildland fires between 2019 and 2021	June 2023–Jan. 2024
Cal Teach Math 74XP Internship <i>Teacher’s Assistant</i> • Completed 20 hours of pedagogical training and 25 hours of hands-on fieldwork in K–12 mathematical educational programs including the development and presentation of an original fourth-grade lesson plan	Jan.–March 2023
Applied Mathematics Mentorship Program (AMMP) <i>Mentor at William Jefferson Clinton Middle School</i> • Worked as an undergraduate mentor in collaboration with the UCLA Curtis Center for Mathematics & Teaching, LA Unified School Districts, conservation technologists, the American Institutes for Research, and the Bill & Melinda Gates Foundation (Article Link) • Engaged 7th-grade students in challenging research investigations of urban heat islands via weekly activities such as temperature investigation labs and graphical analysis worksheets	Aug.–Dec. 2022

PAPERS & PREPRINTS

- O’Neil, E., & Tymochko, S. (2024). Evaluating cooling center coverage using persistent homology of a filtered witness complex. [arXiv.org. https://arxiv.org/abs/2410.09067](https://arxiv.org/abs/2410.09067)
- Simafranca, N., Willoughby, B., O’Neil, E., Farr, S., Reich, B., Giertych, N., Johnson, M., Pascolini-Campbell, M. (2024). Modeling wildland fire burn severity in California using a spatial Super Learner approach. *Environ Ecol Stat* 31, 387–408. <https://doi.org/10.1007/s10651-024-00601-1>

AWARDS

NSF Graduate Research Fellowship

Received June 2025

- Selected based on demonstrated potential to become a future leader in STEM

Princeton President's Fellowship

Received Feb 2025

- Awarded to 10% of incoming graduate students based on academic excellence

Daus Award in Mathematics

Received June 2024

- Recognizes the academic accomplishments of top-ranked students in mathematics at the undergraduate level based on GPA, recommendation, and mathematical experiences
- In 2024, the mathematics department recognized 4 students with this award among the 450+ undergraduate students graduating that year ([Link to 2024 Website](#))

UCLA Queen's Road Scholar

Received April 2023

- Recognized as the sole recipient of an annual merit-based scholarship in the UCLA's Department of Mathematics
- Awarded \$15,000 to conduct research under faculty guidance

College Honors

Admitted Aug. 2020

- Selected as a member of this academic program which provided yearly, supplemental interdisciplinary coursework

CONFERENCES

Graduate Research Opportunities Workshop (GROW)

Sept. 2024

Participant

- Chosen as one of 85 undergraduate students nationwide to attend a conference hosted by Columbia University, in collaboration with the Association for Women in Mathematics
- Attended plenary lectures, panels, and workshops hosted by accomplished women in the field of mathematics

Joint Mathematics Meeting 2024

Jan. 2024

Presenter

- Presented my North Carolina State University summer "Research Experience for Undergraduates" (REU) project at the Pi Mu Epsilon Undergraduate Poster Session

PRESENTATION

- NCSU's 2023 Undergraduate Research & Creativity Symposium (on summer REU project)
- Poster presentation at JMM 2024 (on summer REU project)
- Presentation at UCLA's 2024 Undergraduate Research Symposium (on Queen's Road Fellowship project)
- Presentation at UCLA's 2024 Women in Math Meeting (on Queen's Road Fellowship project)

PROFESSIONAL CERTIFICATES

ICME Summer Workshops 2022 — Fundamentals of Data Science

Aug. 2022

Stanford University

- Institute for Computational & Mathematical Engineering (ICME) workshops attended: Intro to Mathematical Optimization, Intro to Machine Learning, Intro to Data Visualization in Tableau, Intro to High Performance Computing, and Data Privacy & Ethics

ACTIVITIES, & INTERESTS

Other Activities: Tutor with the Princeton Prison Teaching Initiative