

Zach Gillis

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EDUCATION

University of Chicago

Bachelor of Arts in Physics, Bachelor of Science in Mathematics

- GPA: 3.8
- Dean's List 2021-2022

Chicago, IL
Sep. 2021 – June 2025

Walter Payton College Preparatory High School

High School Diploma

- GPA: 5.4 (weighted), 4.0 (unweighted)
- SAT: 1580

Chicago, IL
Sep. 2017 – June 2021

EXPERIENCE

Research Assistant

ATLAS Group - University of Chicago / CERN

- Working in UChicago's arm of the ATLAS experiment at CERN
- Developing computing framework to analyze cubic and quartic Higgs self-interaction

July 2023 – Present
Chicago, IL

Research Assistant

Zhong Lab – University of Chicago, Pritzker School of Molecular Engineering

- Working in lab focused on quantum engineering, specifically quantum networks and optics
- Designed a loop-gap resonator for microwave to optical transduction to transmit quantum states through fiber-optic cables using HFSS simulations
- Using resonator in an electron spin resonance spectroscopy setup to examine erbium-doped ceramics

Oct. 2022 – Present
Chicago, IL

Math Teacher and Curriculum Planner

Math Circles of Chicago

- Responsible for teaching math and statistics classes for high school students
- Working with teaching assistants and administrators to streamline current curriculum

Feb. 2022 – Present
Chicago, IL

Research Assistant

National Radio Astronomy Observatory (NSF REU Site)

- Selected to competitive internship focused on radio astronomy, astrophysics, and programming for data science applications, and attended seminars on radio interferometry, new findings in astrophysics and astrochemistry, and data visualization
- Completed project examining baseline-dependent averaging (BDA) to reduce the computational requirements of the Next Generation Very Large Array (ngVLA)
- Helped create Python package for BDA and author the ngVLA computation whitepaper

June 2022 – Aug. 2022
Charlottesville, VA

Research Intern

Northwestern University, Lurie Cancer Center (through ResearchHStart)

- Selected to competitive research internship program focused on cancer research and bioinformatics
- Completed a project using R on exercise-induced gene expression and the pathways perturbed by those changes
- Presented project at research symposium and awarded best poster among 27 ResearchHStart participants

June 2021 – Aug. 2021
Chicago, IL

PROJECTS & PRESENTATIONS

“Time Averaging Limits and Baseline Dependent Averaging for the ngVLA.”

Next Generation Very Large Array Memo Series, Computing Memo 8

May 2023

“Designing a Microwave Cavity to Enable Magneto-Optic Transduction in Quantum Networking.”

University of Chicago Undergraduate Research Symposium

April 2023

“Utilizing Baseline-Dependent Averaging in the ngVLA.”

National Radio Astronomy Observatory Summer Assistantship

September 2022

“Post-Exercise Regulation of the AP-1 Transcriptional Program.”

ResearchHStart at the Robert H. Lurie Comprehensive Cancer Center of Northwestern University

August 2021

ACTIVITIES

UChicago Robotics | Team Member

- Member of selective team competing in national robotics competitions

Oct. 2022 – Present

UChicago Science Olympiad | Community Outreach Director, formerly Technology Coordinator

- Organizes community outreach workshops, coordinates with local public schools, plans events for visiting teams

Sep. 2021 – Present

Dougan-Niklason House Council | Wellness Coordinator

- Works with UChicago Student Wellness to promote wellbeing initiatives in campus housing to 140 housemates

Sep. 2021 – June 2023