

JOSH JOSEPHY-ZACK

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EDUCATION

Princeton University
Ph.D., Plasma Physics.

Princeton, NJ
Jul. 2024 - May 2029 (exp.)

Harvard College
A.B., *cum laude* in Physics and Mathematics. 3.918 GPA.

Cambridge, MA
Aug. 2020 - May 2024

Recommended for High Honors by the Harvard Department of Physics.

RESEARCH EXPERIENCE

Sandia National Laboratories
Research Intern

May 2023 - May 2024
Albuquerque, NM / Remote

- Member of the Science of Extreme Environments Research & Innovation (SEERI) program.
- Earned conversion to year-round remote internship based on summer on-site performance.
- Contributed to construction, simulation, and testing of pulsed power technologies.

Hoffman Lab
Research Assistant

Dec. 2022 - May 2023
Cambridge, MA

- Assisted Harvard PhD candidate Kevin Hauser with his project on synthesizing the topological superconductor tungsten ditelluride (WTe_2).
- Used molecular beam epitaxy to grow single atomic layers of WTe_2 using the organic precursor $\text{W}(\text{CO})_6$.
- Analysis methods: atomic force microscopy, x-ray photoemission spectroscopy, scanning electron microscopy.

Heller Group
Undergraduate Researcher

Jun. - Aug. 2022
Remote

- Worked with Prof. Eric J. Heller and his computational physics group on investigating branched flow in the interstellar medium. Opportunity provided by the Harvard College Research Program.

Harvard Radcliffe Institute
Research Partner

Aug. 2021 - May 2022
Cambridge, MA

- Partnered with astronomers Joan Najita and Arjun Dey on their Radcliffe Institute of Advanced Study fellowship project, “Exploring the Diffuse Milky Way in 3D”, through the Radcliffe Research Partnership program.
- Visually inspected spectra from objects in the Milky Way and the Andromeda Galaxy, using Python and Glue to categorize, organize, and visualize the results.
- Fourth author listed on “DESI Observations of the Andromeda Galaxy: Revealing the Immigration History of our Nearest Neighbor” (The Astrophysical Journal).

TECHNICAL SKILLS

Programming Languages Python, OCaml, C, SQL, HTML/CSS/JavaScript, R

Python Libraries Numpy, Scipy, Matplotlib, Pandas

Other Software \LaTeX , Mathematica, MATLAB, Solidworks, COMSOL, Google Workspace, Microsoft Office

TEACHING EXPERIENCE

Course Assistant

Dec. 2022 - May 2023

Math 112 (Myrto Mavraki): Introductory Real Analysis
Harvard College

- Third semester course for most math students at Harvard.
- Held office hours, led sections, and graded assignments.

Course Assistant

Aug. - Dec. 2022

Physics 15b (Cora Dvorkin): Introductory Electromagnetism
Harvard College

- Second semester course for most physics and engineering students at Harvard.
- Held office hours and graded assignments.

Summer Fellow

Jun. - Aug. 2021

New Haven Reads
Remote

- Recipient of paid 10-week community service summer fellowship with educational non-profit New Haven Reads through Harvard's Center for Public Service and Engaged Scholarship.
- Developed relationships with the New Haven community's students through the remote provision of literacy tutoring and the implementation of enrichment clubs in math and chess.
- Assisted both Executive and Development & Communications directors with financial/technological projects.

LEADERSHIP AND ACTIVITIES

The Harvard Undergraduate Drummers (THUD)

Sep. 2021 - May 2024

Director (2022-23)
Cambridge, MA

- Managed finances, composed music, and arranged logistics for bi-annual concerts and various gigs.

Harvard College Admissions and Financial Aid

Aug. 2022 - Apr. 2024

Tour Guide Coordinator (2023-24)
Cambridge, MA

- Coordinated with admissions officers and student guides to host informational sessions and campus tours, in addition to carrying out tour guide responsibilities.
- Led information sessions about and tours of Harvard's campus for prospective students and their families.
- Worked with the office's Communications Department to film Q&As and other promotional materials.

Model Congress

Sep. 2016 - Feb. 2024

Senior Staffer (2021-24)
Branford, CT/ Cambridge, MA

- Participated in and prepared students for international government simulations, earning 6 awards at 8 conferences as a participant.
- Helped host Harvard Model Congress as both a Junior Staffer (2021) and Senior Staffer (2022-24).

Math Transcriptionist

Sep. 2022 - May 2023

Harvard Assistive Technology Center
Cambridge, MA

- Transcribed calculus textbooks into Braille using L^AT_EX and MathType for students with visual impairments.

HONORS AND AWARDS

Detur Book Prize ◇ Harvard College ◇ Top 100 GPAs in class through three semesters

2022

John Harvard Scholar ◇ Harvard College ◇ Awarded annually to top 5% of class

2021-22

LANGUAGES

English *Native*

Spanish *Advanced*