



# Dany Waller

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## Research Interests

Magnetospheric Physics

Planetary Geophysics

Mathematical Physics



## Education

Applied Physics (M.S.)  
Johns Hopkins University  
2020-2022

Mathematics (B.S.)  
University of Kentucky  
2014-2019

Physics (B.A.)  
University of Kentucky  
2014-2019



## Awards

APS 5 Sigma Physicist  
2020

UK Physics Advocacy  
Award  
2019

Omicron Delta Kappa  
Student Impact Award  
2019

UK Outstanding Senior on  
"UK at the Half"  
2019

Sigma Pi Sigma Chapter  
Research Award  
2019

## Profile

- I am a graduate student in Applied Physics at Johns Hopkins University, with a background in planetary science.
- After completing my MS, I plan to obtain a PhD in planetary science.
- I enjoy learning about and participating in interdisciplinary science research and fostering an inclusive scientific community.

## Work history

May 2019 – May 2020

Planetarium Director + Earth & Space Science Program Coordinator  
**THE LIVING ARTS & SCIENCE CENTER**

I run two departments and report to the executive director Lori Halligan. My responsibilities include:

- Hosting weekly public planetarium shows.
- Coordinating daily field trips and visitor groups to the planetarium.
- Creating new planetarium content and ensuring scientific accuracy in our products.
- Coordinate workshops and create lesson plans for Earth and space science educators.

June 2018 – May 2019

Junior Software Engineer  
**UNIVERSITY OF KENTUCKY CENTER FOR MUSCLE BIOLOGY**

My supervisor was Dr. Charlotte Peterson. My responsibilities included:

- Maintaining servers and computers in the CMB.
- Planning and implementing software updates based on user feedback.
- Developing a robust machine learning algorithm to improve image analysis.
- Writing documentation and distributing literature for CMB partners.

February 2017 – May 2019

Planetary Science Research Assistant  
**UNIVERSITY OF KENTUCKY DEPARTMENT OF GEOLOGY**

My mentor was Dr. Dhananjay Ravat. My responsibilities included:

- Writing programs in MATLAB and Python to perform data analysis on satellite data, including combining data from multiple spacecraft, removing noise, and creating high resolution global maps for further scientific studies.
- Modeling crustal magnetic anomalies in great detail using Fortran and GMT.
- Understanding magnetospheric physics and implications of results and models.
- Mentoring two undergraduate students who joined the lab during my senior year.

February 2018 – May 2018

Undergraduate Physics Lab Assistant  
**UNIVERSITY OF KENTUCKY DEPARTMENT OF PHYSICS & ASTRONOMY**

My mentor was Dr. Joseph Straley. My responsibilities included:

UK Oswald Research & Creativity Competition 2018

UK High Scholarship in Physics 2017, 2018



### Professional Societies

American Geophysical Union

American Physical Society

Sigma Pi Sigma ( $\Sigma\Pi\Sigma$ )



### Highlighted Coursework

Planetary Science

Computational Physics

Numerical Analysis



### Volunteer Work

APS Physics Policy Advocate

NASA Solar System Ambassador

500 Women Scientists

University of Kentucky Math Visualization Lab

- Updating and organizing the Physics Petting Zoo for outreach events.
- Reorganizing undergraduate physics labs and cleaning stockrooms.
- Assisting in the transition of upper level physics labs to new classrooms.
- Cataloguing historic lab equipment and department documents and transferring them to the historic preservation department and Special Collections library at UK.

### Skills

- Highly skilled with Unix, MATLAB, Python, Fortran, C/C++, and GitHub.
- Experience in machine learning and data management.
- Strong written and verbal communication skills.
- Experience in grant writing and administrative management.
- Good attention to detail with a high level of accuracy.
- Excellent teamwork skills and mentorship experience.
- Knowledge of image and data analysis methods.
- Proficient in science policy advocacy and science communication.

### Research presentations

- LPSC Early Career Planetary Science Event (May 2020, virtual due to COVID-19) [[abstract](#)] [[video](#)]
- Undergraduate Research Showcase (April 2019, UK)
- Sigma Pi Sigma Zone 8 Meeting (March 2019, UTK)
- 18<sup>th</sup> annual Kentucky Posters at The Capitol (February 2019) [[abstract](#)]
- CUWiP Poster Session (January 2019, Michigan State University)
- 85<sup>th</sup> annual SESAPS meeting (November 2018, UTK) [[abstract](#)]
- Kentucky SkyTalk at the MacAdam Student Observatory (April 2018)
- Sigma Pi Sigma Zone 8 Meeting (February 2018, UIUC)
- CUWiP Poster Session (January 2018, University of Virginia)
- University of Kentucky Astronomy seminar (December 2017)

### Hobbies and interests

When I'm not at work, I love rock climbing and recreational swimming. I regularly lifeguard for competitive swimming events.

I also love creating art and often combine my science pursuits with my artistic creations.

### References

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