

ROBERT ‘BOB’ CADDY

📍 100 Allen Hall, University of Pittsburgh, 3941 O’Hara St, Pittsburgh, PA 📞 (765)-586-8882

✉ r.caddy@pitt.edu 🖥 robertcaddy.com 🌐 github.com/bcaddy 📺 [robertcaddy1](https://www.linkedin.com/in/robertcaddy1) 🆔 0000-0002-4475-3181

EDUCATION

University of Pittsburgh, PA <i>Ph.D. Physics</i>	<i>2018 - Present</i>
Bowling Green State University, OH <i>M.S. Physics</i>	<i>2016 - 2018</i>
Purdue University, IN <i>B.S. Honors Physics Major, Astronomy Minor</i>	<i>2012 - 2016</i>

TECHNICAL & PROFESSIONAL SKILLS

Programming Languages:	C++, Python, Fortran, Bash
Packages & APIs:	MPI, CUDA, HIP, OpenMP, GoogleTest, Numpy, Pandas, Scipy, Matplotlib, Astropy
Software Tools:	git, GitHub Actions, Jenkins, Clang Tools, Make, HDF5, HSI, Slurm, Doxygen, Docker, \LaTeX
HPC Systems Used:	OLCF: Summit & Frontier, ALCF: Theta, University Clusters
Communication Skills:	7+ years of experience as a teaching assistant, talks at professional conferences and seminars

EXPERIENCE

Ph.D. Candidate <i>University of Pittsburgh, Pittsburgh, PA</i>	<i>2018 - Present</i>
<ul style="list-style-type: none">– Expand Cholla, a massively parallel GPU-accelerated code for simulating astrophysical fluid dynamics to include magnetic fields (magnetohydrodynamics/MHD) using state of the art methods.– Collaborate with the Frontier Center for Accelerated Application Readiness (CAAR) program to optimize Cholla to run on exascale supercomputers, namely Frontier.– Established and executed a robust testing framework for Cholla, employing GoogleTest with custom extensions to ensure software reliability and quality.– Led multiple initiatives to promote scientific software best practices within the Cholla development team, fostering excellence in software engineering standards.	
Masters Student <i>Bowling Green State University, Bowling Green, OH</i>	<i>2016 - 2018</i>
<ul style="list-style-type: none">– Conducted original thesis research into the properties of symbiotic star V1835 Aql with Professor Andrew Layden as advisor.– Determined the general properties and causes of variability of a symbiotic star system through image and data analysis in Python.	
Undergraduate Research Assistant <i>Purdue University, West Lafayette, IN</i>	<i>2015 - 2016</i>
<ul style="list-style-type: none">– Built an experimental optics system to observe the effect of various chemotherapy drugs on cancer tumors.– Reduced experimental data analysis and archiving time from ~ 10 hours to ~ 30 minutes.	
President, Purdue Society of Physics Students (SPS) <i>Purdue University, West Lafayette, IN</i>	<i>2015 - 2016</i>
<ul style="list-style-type: none">– Tripled the number of active members and increased profits of the club store by $\sim 5x$.– Coordinated biweekly events and activities such as designing and constructing a weather balloon payload with SPS National funding, inviting guest speakers for special colloquia, and visiting Argonne National Lab.	

PUBLICATIONS

- *Optical Time-series Photometry of the Symbiotic Nova V1835 Aquilae*
Caddy et al. 2022. Publications of the Astronomical Society of the Pacific, Volume 134, Number 1039
DOI: [10.1088/1538-3873/ac8f6f](https://doi.org/10.1088/1538-3873/ac8f6f), arXiv:[2209.11251](https://arxiv.org/abs/2209.11251)

CONTINUING EDUCATION

- **Argonne Training Program for Extreme Scale Computing (ATPESC)** 2022
- **International High Performance Computing Summer School (IHPCSS)** 2022, Second place in the programming challenge

HONORS & AWARDS

- **Learning Beyond the Classroom Certificate**, Purdue University, 2016.
 - Required work experience, volunteer time, career training, and one significant activity – bicycling across the U.S. with Bike & Build to raise money and awareness for affordable housing.
- **Presidential Scholarship**, Purdue University, 2012.
- **Ascarelli Fellow**, Purdue University Department of Physics and Astronomy, 2012.
- **Eagle Scout**, 2012.