

Ryan Orvedahl, Ph.D.

phone: (508) 361-7229 e-mail: ryanorvedahl@gmail.com web: <https://orvedahl.bitbucket.io/>

OBJECTIVE Apply my computational fluid dynamics skills and high performance computing skills to a wide array of problems, especially those involving multiple disciplines.

EDUCATION Ph.D. in Astrophysical & Planetary Sciences
University of Colorado Boulder, requirements completed Dec 2020, conferral May 2021
Certificate in College Teaching, University of Colorado Boulder, May 2021
M.S. in Astrophysical & Planetary Sciences
University of Colorado Boulder, Dec 2016
B.S. in Physics (Honors) and Astronomy (Honors), Summa Cum Laude
Minor: Mathematics
SUNY Stony Brook, May 2013

SKILLS & SELECT COURSES *Languages & Software:* Fortran, Python, Shell Scripting, L^AT_EX, C/C++, VBA/Excel
Operating Systems: Unix/Linux, Windows
Skills: Git, OpenMP, MPI, High Performance Computing, MS Office
Courses: Fluid dynamics, E&M, Mechanics, Numerical analysis, Statistics, Thermo, advanced math courses beyond ODEs/PDEs, other advanced physics and astrophysics

WORK HISTORY

Postdoctoral Researcher (Mar 2021 - present) UC Davis: Work independently and on a team in the field of magnetized fluid dynamics to develop software. Specifically integrating external libraries, optimizing the underlying algorithms, and leveraging GPUs. Managing multiple projects simultaneously. Publishing via peer-reviewed journals. Presented invited talks.

Graduate Research Assistant (May 2014 - Dec 2020) CU Boulder: Worked as part of a team to develop research codes in fluid dynamics with and without the added complexity of magnetic fields. Independently conceived of and built visualization and analysis tools. Determined future research directions. Used multiple open source software codes to study a wide range of problems. Worked on several projects simultaneously from start to completion. Helped manage undergraduate researchers in our group. Problem-solved multiple obstacles in my projects. Published via peer-reviewed journals and conference presentations.

Teaching Assistant (Aug 2013 - May 2020) CU Boulder: Prepared and taught new material in recitations and ran review sessions. Held office hours in Astronomy Help Room, where I taught fundamental problem solving skills and clearly communicated complex ideas. Tutored students from wide variety of math, physics, and astronomy courses ranging from freshman to second year graduate level.

Undergraduate Research (Feb 2011 - Aug 2013) Stony Brook University: Used and contributed to custom software in studying thermonuclear flames. Published via peer-reviewed journals and conferences.

Harvard-Smithsonian Center for Astrophysics REU (Summer 2011): Fundamental research into the coronal heating problem by searching for Alfvén waves in the Solar Dynamics Observatory data.

Siemens Healthcare Diagnostics Internship (Summer 2010): Mathematically predicted the steady state signal response of a carbon dioxide sensor using early rate data.

HONORS & AWARDS George Ellery Hale Graduate Fellowship, 2014-2016
Excellence in Teaching Award, 2014
SPD Studentship Award for AAS/SPD meeting, 2014
Sigma Pi Sigma physics honor society, 2012

SERVICE ACTIVITIES Co-Organizer/Presenter at workshop to teach and develop Rayleigh research code, 2018
Faculty Representative Committee, 2018 - 2019
Graduate Admissions Committee, 2016 - 2018
Faculty Search Committee, 2015
Astronomy Help Room Volunteer, 2014 - 2020
Academic Support Assistance Program Tutor, 2014 - 2015
Fiske Planetarium Presenter, 2014 - 2019
Graduate Student Concerns Committee, 2013 - 2014

INTERESTS Baseball, Golf, Hiking, Camping, Boating, Woodworking, Guitar

Publications, Presentations, and References available upon request