

William S. Parker

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EDUCATION

University of Oregon (Benjamin J. McMorran)	Eugene, Oregon
Doctor of Philosophy: Physics	GPA: 3.880
<i>Anticipated Fall 2024</i>	
Chapman University	Orange, California
Bachelor of Science <i>Magna Cum Laude</i> , May 2018	GPA: 3.729
Major: Physics	
Major: Mathematics	
Minor: General Music	

EXPERIENCE

PhD Candidate – Prof. Benjamin McMorran	Eugene, Oregon
University of Oregon	Spring 2020 - present
Study the 3D structure of skyrmions in magnetic multilayer thin films.	
Graduate Research Assistant – Prof. Benjamin McMorran	Eugene, Oregon
University of Oregon	Summer 2018 - Winter 2020
Investigated techniques to measure chirality using the orbital angular momentum of fast electron beams within commercial transmission electron microscopes.	
Graduate Teaching Assistant	University of Oregon
PHYS 152 (Physics of Sound & Music)	Fall 2022
PHYS 201 (General Physics)	Fall 2019
Undergraduate Researcher – Prof. Jerry LaRue	Orange, California
Chapman University	Spring 2017 - Spring 2018
Created vortex optical states using a digital micromirror device for RAMAN spectroscopy applications.	
Undergraduate Researcher (NSF REU) – Prof. Joseph Eberly	Rochester, New York
University of Rochester	Summer 2017
Investigated fundamental limitations to mode-locked lasers, focusing on phase noise, lasing cavity length, and novel frequency distributions.	
Supplemental Instructor	Chapman University
PHYS 102 (General Physics 2)	Fall 2017
PHYS 101 (General Physics 1)	Spring 2017

EXPERTISE

Primary Programming languages	Experience
Python	2014 - present
LaTeX	2014 - present
JavaScript/HTML/CSS	2019 - present
Experimental techniques	
Transmission Electron Microscopy	2018 - present
SEM/FIB Dual Beam sample preparation	2018 - present
Ultra-high vacuum systems	2018 - present

Programming experience

Numerical physics simulation

Lorentz TEM phase reconstructions | Electron Fourier optics |

Micromagnetic simulations (MuMax3)

Image processing

OpenCV | 2D signal processing | FIJI

Python package development, with Git version control

[ltempy](#) - tools for the analysis, simulation, and presentation of LTEM data

[ovf2io](#) - a lightweight I/O package for the OOMMF Vector Field format

SSH | *nix command line | High-Performance Computing

Micromagnetic simulations on University of Oregon's HPC cluster Talapas.

3D modeling and computer graphics

Blender for 3D scientific figures

Web development

[frctl](#) | [frctl \(GitHub\)](#) - An interactive fractal explorer built in Svelte

FEATURED PUBLICATIONS

1. **Parker, W. S.** et. al. *In preparation for Phys Rev Lett.* **2024**.
2. **Parker, W. S.** et. al. *Microscopy and Microanalysis* **2022**, 28 (S1), 2336–2337.
[DOI](#).
3. **Parker, W. S.** et. al. *Microscopy and Microanalysis* **2021**, 27 (S1), 2404–2407.
[DOI](#).

FEATURED HONORS & AWARDS

Best Student Presentation Finalist - Magnetism and Magnetic Materials	October 2023
Honorable Mention - NSF GRFP	April 2020
Graduate First Year Fellow - University of Oregon Graduate School	September 2019
OMQ Director's Fellow - University of Oregon OMQ	September 2019

FEATURED LEADERSHIP

Project Mentor	Eugene, Oregon
McMorran Lab, University of Oregon	2019 - present
<i>Led REU students, ESPRIT scholars, undergraduate researchers, and MASTERIt students on magnetics and electron microscopy projects.</i>	
Activity Coordinator & Student Assistant	Eugene, Oregon
Mad Duck Science Fridays, University of Oregon	Spring 2021
<i>Led middle school students through a variety of STEM activities on days when school was cancelled due to budget restraints.</i>	
Curriculum Design	Orange, California
Physics Bootcamp, Chapman University	Fall 2017
<i>Prepared materials to help incoming physics students learn the mathematics required for physics courses to boost student retention in physics.</i>	