

JEREMY WELSH-KAVAN

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EDUCATION

University of Oregon

Bachelor of Science in Mathematics & Physics, Cum Laude

Sept. 2016 - June 2020

University of Oregon

Pre-PhD Graduate Student in Physics

Master of Science in Physics (Expected June 2022)

Sept. 2020 - Present

TECHNICAL SKILLS

Programming Languages:

Python, Fortran, Bash, R, C/C++, Arduino

Software:

GROMACS, LAMMPS, Mathematica, RStudio,

PyMol, Anaconda, Vim

Other:

Shell scripting, GNU Toolchain for Linux, Monte Carlo simulation,

High Performance Computing (Expanse and Comet at SDSC),

Slurm Workload Manager

RESEARCH EXPERIENCE

The Guenza Lab

Graduate Research Assistant

Sept. 2020 - Present

Projects:

Modeling DNA-Protein Complex Formation with a Coarse-Grained Langevin Equation

- Assisted with the continued development of coarse-grained theoretical models for macromolecules using a Langevin equation.

- Performed and analyzed molecular dynamics simulations using GROMACS on the Comet and Expanse supercomputers at the San Diego Supercomputer Center.

- Created and modified custom Python libraries and Fortran code for simulation trajectory analysis.

WORK EXPERIENCE

University of Oregon

Library Student Assistant at the Mathematics Library and the Allan Price Science Commons & Research Library

Sept. 2017 - Present

- Tutored library patrons in elementary algebra, calculus, differential equations, linear algebra, and partial differential equations.

- Trained library student employees on library systems software and the Library of Congress Classification system.

- Assisted patrons with use of library services and systems.

AWARDS & HONORS

- Departmental Honors in Physics (Undergraduate)

- Phi Beta Kappa Honors Society