Heather Sky Harrington

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Education

Sep. 2019 – Present **University of Washington** , Seattle, WA
Department of Physics and Astronomy
PhD Candidate
Advisor: Alejandro Garcia

Aug. 2015 – May 2019 **Yale University**, New Haven, CT
Bachelor of Science
Major: Physics

Research

Aug. 2019 – Present **^{6}He-CRES Experiment – Research Assistant**
Center for Experimental Nuclear Physics and Astrophysics (CENPA), Seattle, WA. Search for chirality-flipping in the weak interaction via high precision study of nuclear beta decay using the novel technique of Cyclotron Radiation Emission Spectroscopy.

Aug. 2018 – May 2019 **Mu2e Experiment Fermilab - Demers Lab - Yale University**
Senior thesis: Charged Lepton Flavor Violation and Developing a High Energy Photon Trigger for the Mu2e Experiment

Summer 2018 **Visiting Scientist at AEgIS Collaboration - CERN**
Simulations of nonlinear optics of sum frequency generation in the noncolinear regime.

Jan 2016 – May 2018 **Batista Lab - Yale University**
Undergraduate Research Assistant in computational Chemistry
Quantum mechanics/molecular mechanics (QM/MM) simulations to investigate the conductivity of Geobacter pili, S-state transitions of the Oxygen Evolving Complex (OEC) in Photosystem II, and herbicide docking in the QB site of Photosystem II.

Conferences and Workshops

Conference Abstracts

Sep. 2022, *Searching for Chirality Flipping Interactions via Microwaves, 14th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2022), invited talk.*
Oct. 2021, *Report of First Data from the 6He-CRES Experiment and Future Outlook,* 2021 Fall Meeting of the APS Division of Nuclear Physics

Summer Schools

June 2022, Exotic Beam Summer School (EBSS 2022) hosted by the Nuclear Science Laboratory at the University of Notre Dame

Posters

April 2017, *Designing synthetic acceptor ligands to enhance electron transfer efficiency in Photosystem II,* Eastern Regional Photosynthesis Conference (ERPC)

Mentorship and Outreach

Member of CUWiP23 Local Organizing Committee and co-chair of communication subcommittee. (Jan. 2023)

Presenter at the Seattle Snowmass 2022: Physics Slam.

Research Guide for Directed Reading in Physics (DriP)
Spring 2021: Particle Detectors and Signal Processing.
Spring 2022: An Experimental History of CP Violation.

UW Clean Energy Institute Torrance Science Policy Analyst. (2021-2022)
Preparing technical policy briefings and white papers in collaboration with Washington State Academy of Sciences (WSAS) staff to provide non-advocacy science analysis to inform policy decisions across the state of Washington. Ongoing work on Small Modular Reactors.

TA for Nuclear Physics: Sources, Detectors, and Safety (Spring 2022)
Course for students in a Professional Evening Master of Physics program. Some of these students work during the day, but are seeking to improve their skill portfolio.

Mentorship of undergraduate and masters students on the He6-CRES Experiment.

Awards and Fellowships

- Dehmelt Prize for outstanding achievements in the area of “table-top” experimental physics (Department of Physics, University of Washington, 2022)
- Torrance Fellowship (Clean Energy Institute University of Washington 2022)
- Richter Summer Fellowship (Ezra Stiles College, Yale University Summer 2018)
- ORLO - The Best Writing of English 120 at Yale (Fall 2017)

Skills

Programming:
C++, Python, MATLAB, R, Bash, Java, OpenCV, Tcl, Mathematica, SQL
Software:
ROOT, Katydid**,** SNLO, VMD, NAMD, Ambertools, Gaussian, Schrodinger Maestro, PyMOL, LaTeX, EndNote, Solid Works, SketchUp, Adobe Photoshop, InDesign, Illustrator, MS Word, PowerPoint, Excel
Laboratory:
Cryogenics, gas supply systems for radioisotopes, scintillation detectors, photomultiplier tubes, semiconductor detectors, vacuum systems, superconducting magnets, NMR, magnetic field mapping and shimming, data acquisition system design, laser cooling and trapping of neutral atoms, infrared (IR) spectroscopy, mass spectroscopy, non-linear optics, soldering, and use of standard laboratory equipment.
Language:
English, Conversational French