

Hannah Woodward

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EDUCATION

University of Virginia

- ❖ Class of 2022
- ❖ Astronomy-Physics major

RESEARCH EXPERIENCE

Mu2e, High Energy Physics Lab at the University of Virginia

- ❖ Summer 2018 - Spring 2020, Prof. Craig Group
- ❖ Fabrication of the Cosmic Ray Veto (CRV) for the muon-to-electron conversion (Mu2e) experiment run by Fermilab. This includes the physical construction of scintillator counters, as well as using programs for quality analysis.
- ❖ Presented a poster on the fabrication of the CRV at the 2019 Division of Particles & Fields (DPF) meeting at Northeastern University.
 - > [proceedings](#) for the DPF poster.
- ❖ [UVA Today article](#) on CRV fabrication at UVA

University of Wisconsin-Madison Astrophysics REU

- ❖ Summer 2020 (virtual due to COVID-19), mentors Dr. Paolo Desiati and Dr. Juan Carlos Díaz Vélez
- ❖ Studied cosmic ray anisotropy with the IceCube Neutrino Observatory. IceCube was designed to detect astrophysical neutrinos, but cosmic rays produce the same secondary particles (muons) as neutrinos, so they are a large background. It turns out that cosmic rays are not arriving uniformly from every region of the sky—an anisotropy is observed—and possible sources can be studied by looking in different reference frames.
- ❖ Will present this work virtually as a poster at the January 2021 AAS meeting

Satellites Around Galactic Analogs (SAGA), University of Virginia

- ❖ Fall 2020 - present, Prof. Nitya Kallivayalil
- ❖ Working with the SAGA team to characterize Milky Way-like galaxies that are hosts to satellite galaxies. This includes finding ways to calculate metallicities of the hosts. SAGA has found that the satellites of nearby, Milky Way-like galaxies are much more likely to be star-forming than the satellites of the Milky Way itself. We are studying properties of the host galaxies in order to investigate.

COMPUTER EXPERIENCE

- ❖ **Linux, C, C++** learned in Fundamentals of Scientific Computing class at UVA
- ❖ **Linux, Python** learned for UW-Madison REU
- ❖ **Capstone, Excel** used heavily in Physics Elementary Lab at UVA