Academic Statement of Purpose

Department of Physics and Astronomy at Michigan State University

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In graduate school, I'd like to explore a few subfields of interest: condensed matter/solid state physics, quantum chromodynamics, particle physics, and quantum information science. I'm interested in both theoretical and experimental research, but lean towards theoretical work because I can't see myself *not* working with computers. I have computational research experience and found it incredibly enjoyable, but I find myself missing the hands-on, more tangible processes involved in collecting data, although my experience with that has been limited to lab courses taken for credit.

By far my most extensive research experience at WMU was my research work with semiconductors with Dr. O'Hara of the Physics Department, which, at the time of writing, is being run on my account on MSU's computer cluster through the ICER program. The end goal of this research is to calculate formation energies, model structural distortions, and calculate the band gap in Ga and Al rich AlGaAs with a tellurium defect. This research has familiarized me with the deep acceptor defect in semiconductors, DFT, VASP, and different functionals like PBE, HSE, and VCA. I've also learned countless things about how to interface with computer clusters, how to move files around, and how to analyze data. I've attached a digital poster I presented at the Lee Honors College at WMU as part of a 2024 summer scholarship.

TALK ABOUT KORISTA WORK HERE.

TALK ABOUT HOW THIS RESEARCH INFLUENCED ME TO APPLY TO MSU. TALK ABOUT WHICH RESEARCH AT MSU I'M INTERESTED IN. WHICH FACULTY AM I INTERESTED IN?

TALK ABOUT OVERALL ACADEMIC RECORD — HIGHLIGHT ACCOMPLISHMENTS AND AWARDS, EXPLANATIONS OF ACADEMIC RECORD.