

Research Experience

- **Phases Research Lab, Pennsylvania State University**
NASA Space Technology Research Fellow (Advisor: Zi-Kui Liu)

 - Contributed to pycalphad, a library for computational thermodynamics using the CALPHAD method
 - Contributed to atomate, a computational tool for high-throughput ab-initio materials calculations with VASP
 - Developed NanoGrain, which uses thermodynamic models to predict the stability of nano-sized alloys

University Park, PA
2016 – Present
 - **Solid State Ionics Laboratory, Michigan State University**
Undergraduate Research Assistant (Advisor: Jason D. Nicholas)

 - Fabricated and improved the performance of solid oxide fuel cells
 - Characterized fuel cells with EIS, XRD, and SEM
 - Developed Rp Plotter, a GUI-based Python application for data analysis and visualization
 - Participated in a 10 week professional development course

East Lansing, MI
2015 – 2016
 - **Composite Materials & Structures Center, Michigan State University**
Undergraduate Research Assistant (Advisor: Lawrence T. Drzal)

 - Designed a graphene nanoplatlet-based capacitive deionization cell
 - Characterized graphene nanoplatelet papers using scanning electron microscopy
 - Used Solidworks to create a 3D printed model for the deionization cell apparatus
 - Participated in a 10 week professional development course

East Lansing, MI
2014 – 2015
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Teaching Experience

- **Department of Materials Science and Engineering, Penn State University**
Teaching Assistant

 - MatSE 462: General Properties Laboratory in Materials
 - Independently taught and graded assignments for two lab sections of 5 students
 - Instructed students on using techniques for characterizing mechanical, electrical and optical properties

State College, PA
2017
 - **College of Engineering, Michigan State University**
Undergraduate Lab Mentor

East Lansing, MI
2015 – 2016
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Education

- **Pennsylvania State University**
Ph.D. Materials Science and Engineering; Graduate Minor, Computational Materials

 - 3.86 GPA
 - NASA Space Technology Research Fellow (2018 – Present)
 - Honorable Mention, National Science Foundation Graduate Research Fellowship Program (2018)
 - NSF Research Trainee in the CoMET Program (dftcomet.psu.edu) (2016 – 2018)
 - Helen R. and Van H. Leichter Graduate Fellowship recipient (2016)

University Park, PA
2016 – Present
 - **Michigan State University**
B.S. Materials Science and Engineering

 - 3.56 GPA
 - Dean's List, 5 semesters
 - MSU College of Engineering Endowed Opportunity Fund scholarship recipient (2015 – 2016)

East Lansing, MI
2012 – 2016
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Technical Skills

Software Developed: pycalphad (pycalphad.org), atomate (pythonhosted.org/atomate), NanoGrain, ESPEI

Computational Tools and Software: Python, MATLAB, C++, VASP, Thermo-Calc, MongoDB, Solidworks, \LaTeX

Materials Characterization Techniques: Differential Scanning Calorimetry (DSC), Electrical Impedance Spectroscopy (EIS), Hardness Analysis, Optical Microscopy, Thermal Gravimetric Analysis (TGA), Scanning Electron Microscopy (SEM), X-Ray Powder Diffraction Spectroscopy (XRD), Profilometry