Brandon Bocklund

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Experience

- **Dr. Zi-Kui Liu Research Group, Penn State University** **State College, PA**
  Graduate Research Trainee *2016 – Present*

  - Developed computational tools for high-throughput ab-initio materials calculations
  - Used VASP to make first principles predictions for metallic alloys
  - Created phase diagrams from ab-initio and experimental data using the CALPHAD method

- **Dr. Jason D. Nicholas Research Group, Michigan State University** **East Lansing, MI**
  Undergraduate Research Assistant *2015 – 2016*

  - Fabricated and tested Solid Oxide Fuel Cells
  - Characterized fuel cells with EIS, XRD, and SEM
  - Developed a Python application for data analysis and visualization using Matplotlib and Tkinter
  - Participated in a 10 week professional development course

- **College of Engineering, Michigan State University** **East Lansing, MI**
  Undergraduate Lab Mentor *2015 – 2016*

  - Mentored 3 classes, interacting with over 250 students
  - Responsible for grading assignments and quizzes, promoting learning, and proctoring exams
    - EGR 100 - Introduction to Engineering Design
    - EGR 102 - Introduction to Engineering Modeling
    - EGR 291 - Spatial Visualization

- **Dr. Lawrence T. Drzal Research Group, Michigan State University** **East Lansing, MI**
  Undergraduate Research Assistant *2014 – 2015*

  - 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

Education

- **Pennsylvania State University** **State College, PA**
  Ph.D. Materials Science and Engineering; Graduate Minor, Computational Materials *2016 – Present*

  - NSF National Research Trainee in the CoMET Program (`http://dftcomet.psu.edu`)

- **Michigan State University** **East Lansing, MI**
  B.S. Materials Science and Engineering *2012 – 2016*

  - 3.56 GPA
  - Dean's List, 5 semesters
  - MSU College of Engineering Endowed Opportunity Fund scholarship recipient (2015 – 2016)
  - Webmaster for the Materials Science and Engineering Society (`http://egr.msu.edu/msesoc`) (2015 – 2016)

Technical Skills

Computational Tools: Python, MATLAB, C++, VASP, Thermo-Calc, Solidworks, VESTA, 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