Brandon Bocklund

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Experience

- **Dr. Jason D. Nicholas Research Group, Michigan State University** **East Lansing, MI**
  Undergraduate Research Assistant *2015 – Present*
  - Second year in the Michigan State University Engineering Summer Undergraduate Research Experience (EnSURE) program
  - Fabricated and tested Solid Oxide Fuel Cells using Electrochemical Impedance Spectroscopy
  - Examined infiltrated nanoparticle size using Scanning Electron Microscopy
  - Characterized nanoparticle powders using X-Ray Powder Diffraction
  - Developed a Python application for data analysis and visualization using Matplotlib and Tkinter
  - Presented research at MidSURE 2015
  - Participated in a weekly professional development seminar for the duration of the program
  - Continued research for credit during the school year
- **Michigan State University** **East Lansing, MI**
  Undergraduate Lab Mentor *2015 – Present*
  - EGR 100 - Introduction to Engineering Design
    - Mentored one lab section with approximately 45 students
    - Aided students as they completed team projects and professional development activities
    - Responsible for grading projects and assignments
  - EGR 291 - Spatial Visualization
    - Mentored four lab sections with approximately 140 students
    - Promoted learning by helping students learn to visualize and transform three-dimensional objects
    - Responsible for grading assignments and quizzes
- **Dr. Lawrence T. Drzal Research Group, Michigan State University** **East Lansing, MI**
  Undergraduate Research Assistant *2014 – 2015*
  - First year in the Michigan State University EnSURE program
  - Investigated and designed a graphene nanoplatlet capacitive deionization cell
  - Characterized graphene nanoplatelet papers using Scanning Electron Microscopy
  - Used Solidworks to create a 3D printed model for the deionization cell apparatus
  - Presented research at MidSURE 2014
  - Participated in a weekly professional development seminar for the duration of the program
  - Continued research during the school year
- **Residence Education and Housing Services, Michigan State University** **East Lansing, MI**
  Resident Assistant *2013 – 2014*
  - Coordinated logistics and performed administrative duties for my floor community
  - Responded to and reported incidents in the residence hall while on duty, about two nights per week
  - Planned and executed programs that promote resident support, academic success, intercultural engagement, and health and wellness
  - Assisted and supported residents in their learning, multicultural development, character building, community development, and well-being

Education

- **Michigan State University** **East Lansing, MI**
  B.S. Materials Science and Engineering *2012 – 2016*
  - 3.51 GPA
  - Dean's List, 4 semesters
  - Michigan State University College of Engineering Endowed Opportunity Fund scholarship recipient (2015 – 2016)
  - Webmaster for the Materials Science and Engineering Society (MSES) (2015 – 2016)
  - Redesigned the MSES website (`http://egr.msu.edu/msesoc`) using HTML and CSS, conformed with MSU Brand Standards (2015)

Publications

- "Performance of A-site deficient ($La_{0.6-x}Sr_{0.4}Co_{0.8}Fe_{0.2}O_{3-\delta}, x = 0.02, 0.1, 0.25$) infiltrated nanoparticles as MIEC materials for SOFC cathodes" (2015)
- "Graphene Membranes for Desalination of Seawater by Capacitive Deizonization" (2014)
- "Determining Iron Content of Water: How iOS Devices Can Indicate Water Quality" (2012)
- "Comparison of Protein Powders Using the Kjeldahl Method" (2011)

Technical Skills

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)

Programming Languages Cocoa, C++, CSS, HTML, Java, JavaScript, LaTeX, MATLAB, Objective-C, Python, Solidworks