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

- **Jetech, Inc.** — **Battle Creek, MI**
  Fabrication Assistant — *Summer 2013*

- **Lakeview Youth Association** — **Battle Creek, MI**
  Little League Baseball Umpire — *Summer 2013, 2014*

- **Irish Pub** — **Battle Creek, MI**
  Dishwasher — *2011 – 2012*

Education

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

    - 3.53 GPA
    - Dean's List, 4 semesters
    - MSU 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 and Presentations

- "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