Josh D. Wolfgang

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Education:

2016 – Present **Graduate Student in Polymer Chemistry**

The Virginia Polytechnic and State University – Blacksburg, VA, USA
- Research Advisor: Dr. Timothy E. Long

2012 – 2016 **Bachelor of Science in Chemistry**

Shippensburg University – Shippensburg, PA, USA
- Recipient of Board of Governors Salutatorian Scholarship
- Scored in the 78th percentile on the CLA+ senior exam
- Cumulative GPA, 3.56/4.00 – *Cum Laude*

Research Experience:

- **Graduate Research:** *Polymer Synthesis and Characterization*
  - Advisor: Dr. Timothy E. Long

- **Undergraduate Research:** *Inorganic and Organic Small Molecule Synthesis*
  - Organic Chemistry: Aza-Diels-Alder Reactions
    - Research was conducted from summer 2015 through spring 2016 under the organic professor Dr. Dan Predecki.
    - I was responsible for using a Rotavap, JEOL NMR, and TLC for sample analysis during and after reactions.
    - An imine was synthesized from an aldehyde and methylamine. The imine then acted as the dienophile in an aza-Diels-Alder reaction with Danishefsky's Diene.
    - Three products were isolated through the course of the research, two of which were novel compounds.
    - The structures of the products were confirmed through 1 and 2-D NMR.
    - Research results were presented at the spring 2016 National ACS conference in San Diego as well as at the Shippensburg Minds@Work Conference on April 19th, 2016.
  - Inorganic Chemistry: Metallacrown/Single Molecule Magnet Synthesis
    - Recipient of a 2015 Summer Undergraduate Research Experience (SURE) Grant for 100 hours of paid research under the inorganic professor Dr. Curtis Zaleski.

- Worked with lanthanide series metals, and various bridging ligands, in an effort to synthesize Single Molecule Magnets, SMMs, in a Metallacrown 'Sandwich.'
- The focus of the project was attempting to link two 12-MC-4 molecules, using 1,2,4-Triazole and different solvents.
- There were no novel SMMs synthesized over the course of the research.

- Inorganic Chemistry: Metallacrowns and Antibacterial Activity
  - Over the course of the 2016 spring semester, a lab mate and I attempted to synthesize MCs that showed antibacterial inhibition.
  - I focused on synthesizing novel Mn 12-MC-4 complexes with various bridging ligands and solvent systems.
  - The MC crystals that were successfully synthesized were tested with *E. coli* bacteria.

Teaching Experience:

Graduate Teaching Assistant: August 2016 – May 2016

Virginia Tech Chemistry Department – Blacksburg, VA

- Lab Supervisor - Clair Santos
- Courses included organic chemistry lab, 1st and 2nd semester
- Responsibilities included lecturing students on lab-specific information and general fundamentals, encouraging a safe and productive laboratory experience, grading students' reports, and providing helpful feedback to better their understanding of the material

Chemistry Tutor: September 2015 – April 2015

Shippensburg University Chemistry Department – Shippensburg, PA

- Duties included assisting students in understanding general chemistry and organic chemistry coursework, exams/graded assignments, and laboratories

Employment and Relevant Experience:

1. 2016 – Present: Graduate Teaching Assistant at Virginia Tech
   Outlined in Teaching Experience

2. Summer 2015: Research Assistant at Shippensburg University
   Responsibilities:

   - Working under the inorganic professor Dr. Curtis Zaleski at Shippensburg University of Pennsylvania.
   - *Research outlined in Research and Laboratory Experience section.*

Professional Activities:

- ACS Certified through Shippensburg University of Pennsylvania

Honors and Awards:

Undergraduate:

- Board of Governors Salutatorian Scholarship Award from Shippensburg University
- Dean's List for 5 of 8 semesters
- Ready to Succeed Scholarship Award from Shippensburg University

Presentations:

- Success Now Exposition (SNExpo) at Shippensburg University – August 21st 2015
    - Poster presentation for the SURE Grant for the Inorganic Metallacrown Research that took place over the summer of 2015
- Undergraduate presenter at the 2016 National ACS conference in San Diego
- Research presenter at the 2016 Minds@Work Conference at Shippensburg University

Proposals:

1. 2015 SURE Grant Application: *Received*
    a. Dr. Zaleski and I co-wrote a proposal in order to cover the cost of materials, as well as receive personal compensation for the hours worked.
2. UGR, Undergraduate Research Program 2015-2016: *Received*
    a. The research proposal was written to obtain financial aid to cover materials and travel expenses for the 2016 ACS conference in San Diego.
3. Dr. and Mrs. Beres Student/Faculty Research Endowment 2015-2016: *Grant not received*
    a. The research proposal was written to obtain financial aid to cover materials and travel expenses for the 2016 ACS conference in San Diego.