

Poly 309

EDUCATION

Master of Science, Chemistry (Emphasis in Polymer Science), University of Oregon, Eugene, OR, Projected September 2018
Bachelor of Science, Chemistry (Math and French minors), University of Puget Sound, Tacoma, WA, May 2016

RESEARCH EXPERIENCE

Undergraduate Research Thesis, Scharrer Lab, University of Puget Sound, Tacoma, WA, May 2015 – May 2016

Synthesis of Asymmetrically Substituted Oxadiazole Liquid Crystals in Aiming to Lower Phase Transition Temperature

- Collaborated with research advisor to plan reactions, then independently conducted organic synthesis and analysis of the liquid crystal compounds and pre-cursor compounds.
- Developed skills in organic synthesis; gained familiarity with instruments and analysis techniques such as NMR, flash and thin-layer chromatography, polarizing light microscopy, and differential scanning calorimetry.
- Wrote and presented thesis work at UPS Undergraduate Research Symposium.

Technical Intern 3, Pacific Northwest National Laboratory, Richland, WA, Summer 2015

- Executed experimental procedure focusing on the ability of nanoparticles to capture three different vivid azo dyes; analyzed the efficiency of nanoparticles to remove azo dyes from solution using UV/vis spectroscopy by creating a calibration curve.
- Synthesized iron oxide nanoparticles utilizing co-precipitation methods for use in capturing azo dyes in solution.
- Identified reagent as potential cause of nanoparticle agglomeration.
- Researched articles related to clearing azo dyes from solution using iron oxide nanoparticles to develop experimental procedure.

Technical Intern 2, Pacific Northwest National Laboratory, Richland, WA, Summer 2014

- Improved laboratory techniques of testing river water for organic pollutants by using ionic liquids and ionic liquid/nanoparticles solutions in dialysis cartridge to develop new protocol.
- Analyzed literature about ionic liquids to determine which would be the most effective in river water.
- Evaluated efficiency of ionic liquid and ionic liquid/nanoparticles solutions abilities to detect organic pollutants in DI water and Columbia River water by gas chromatography (GC) by initiating the creation of a calibration curve.
- Synthesized iron oxide nanoparticles by co-precipitation methods and collected water from the Columbia River to use in experiments.

Technical Intern 1, Pacific Northwest National Laboratory, Richland, WA, Summer 2013

- Designed and executed experimental plan to test the antimicrobial properties of synthesized and commercial nanoparticles (research continued after conclusion of internship).
- Synthesized iron oxide, manganese doped iron oxide, silver, gold, and silver and gold contacted iron oxide and manganese doped iron oxide nanoparticles to formulate the efficiency of the antimicrobial properties of the nanoparticles.

NON-TECHNICAL WORK EXPERIENCE

Editor-in-Chief, *Elements Magazine*, University of Puget Sound, Tacoma, WA, May 2014-May 2015

- Managed and coordinated a staff of seven to produce semi-annual campus science magazine; managed hiring, recruitment, writing, design, production, advertising, and distribution; produced two complete magazines with circulation of 500. Developed and managed annual \$10,000 budget
- Coordinated all campus media, managed resource conflicts, and provided peer leadership support by active participation on eight-person university "Media Board".

Head Layout Editor and Writer, *Elements Magazine*, University of Puget Sound, Tacoma, WA, October 2012-May 2014

- Supervised design and layout staff with primary responsibility for design decisions and magazine layout process to release four complete magazines over two academic years.
- Served on five-person editorial and production team to ensure deadlines were met.
- Published two full-length articles on undergraduate summer research and the Curiosity Rover as well as several comedic articles.

LEADERSHIP EXPERIENCE

Participant, Leadership Development and Engagement Initiative, University of Puget Sound, Tacoma, WA, May 2013-May 2016

- Selected by Dean of Students to participate in leadership cohort fostering leadership growth through reading, discussion, lectures, and student-led projects.

AWARDS AND HONORS

- University of Puget Sound Presidential Scholarship, 2012-2016
 - Merit based scholarship based on academic record and standardized test scores
- University Achievement Award, University of Puget Sound, Spring 2015
 - Recognized for leadership of *Elements Magazine*
- Phi Eta Sigma Honor Society, University of Puget Sound, 2012-2016
 - Invited to join based on freshman GPA
- Deans List, University of Puget Sound, Fall 2012
- Washington Aerospace Scholar, 2012

COMMUNITY INVOLVEMENT

- **Volunteer**, Shelton View Elementary School, May 2016 – June 2017
- **Volunteer Puppy Raiser**, Canine Companions for Independence, May 2016 – June 2017

SKILLS

- In-depth knowledge of wet chemistry and purification methods
- Experience using instrumentation such as NMR, GC-MS, HPLC, UV/Vis, DSC, polarizing microscopy, and Raman spectroscopy.
- Computer competent: Spartan, PhotoShop, InDesign
- Strong communication and leadership skills