

# POLY 312

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## EDUCATION

*University of Oregon*  
Masters of Science in Chemistry  
Focus in Polymer Science  
Expected graduation: September 2018

*Sonoma State University*  
Bachelors of Science in Chemistry  
Graduation: May 2017

## SKILLS

- Proficient in  $^1\text{H}$  NMR, IR, GC, Pasco Wireless Spectrometer, inert gas lines and syringes, circuit boards, oscilloscope, multimeter, virtual labbench.

## TECHNICAL EXPERIENCE

### **Undergraduate Research, Sonoma State University, Rohnert Park California**

*Advisor: Dr. Jon Fukuto and Dr. Steven Farmer. January 2017-May 2017*

“Synthesis of Membrane-bound Liver Enzyme Mimic”

- Synthesized a mimic of an enzyme following a procedure previously published involving proficiency in inert gas line techniques and handling air sensitive chemicals such as n-butyllithium.
- Increased the previously reported yield from 47% to 97% by discovering and correcting errors in mole values within the paper.
- Identified and confirmed desired product through NMR spectroscopy by analyzing starting products and utilizing a process of elimination.
- Monitored catalytic conversion of styrene to styrene oxide using GC analysis by running standards and testing samples periodically throughout the catalysis.
- Managed project by writing a proposal that included establishing milestones, ordering chemicals, developing a budget, and maintaining a timeline.

*Advisor: Dr. Bogdan Negru. December 2016-May 2017*

“Generation of a General Chemistry Lab Using Morpho Butterflies”

- Recreated and adapted the concept of changing Morpho butterfly wings from blue to green to implement as a new general chemistry laboratory experience.
- Aided in the generation of a general chemistry lab procedure with the intention of sparking visual interest in color change and chemistry in future non major students and executed a trial run with 85 students.
- Analyzed feedback received from the students that demonstrated they had a better understanding of the concepts taught after the lab experience and that there was a preference in comparison to other labs.
- Submitted a manuscript to the Journal of Chemical Education detailing the procedure and learning objectives contained in the official lab with the intention of publishing.

### **Senior Laboratory Experience, Sonoma State University**

*August 2016-May 2017*

Performed seven senior-level experiments on a wide variety of topics over the course of a semester with minimal instruction.

- Demonstrated problem solving skills through each of the experiments by conducting extensive literature research on foreign topics and troubleshooting when road blocks were encountered.
- Gained recognition from the course instructor by exhibiting rapid learning of new material such as reading schematics, working with a circuit board to build a photometer, analyzing enzyme kinetics in the browning of apples, using computational analysis to visualize molecular orbitals, and using HPLC to determine the concentration of capsaicin in hot sauce.
- Improved time management by creating a schedule each day and thoroughly researching each topic in the time outside of class.

## **WORK EXPERIENCE**

### **Math Tutor, Sonoma State University**

*August 2016-December 2016*

Offered tutoring for all levels of math up through Multivariable Calculus

- Clarified difficult concepts in mathematics by walking students through example problems and then having them apply what they learned to their homework under guidance.
- Displayed organizational and management skills by preparing students for midterms and improving their overall study habits.
- Set individualized goals for weekly mentees yielding significant improvement in student understanding and performance.

### **Summer Bridge Assistant, Sonoma State University, Rohnert Park California**

*Summer 2015 and 2016*

Cleaned and organized numerous rooms each day, held a front desk position

- Ensured each room was cleaned efficiently and in a timely manner by prioritizing tasks, developing routines, and following guidelines.
- Demonstrated excellent customer service through efficient management skills by supplying 12 customers with rooms otherwise unavailable.
- Interfaced directly with customers and maintained a positive company image by providing friendly service and prioritizing their needs.

### **Waitress at Kaede Japanese Restaurant, Santa Rosa California**

*June 2015-November 2015*

- Exhibited time management and multitasking skills by balancing waitressing, bussing tables, answering the phone, taking to go orders, managing payments, and seating customers.
- Provided excellent customer service by ensuring every customer was helped in a timely fashion and treated with respect.

### **Sales Associate, Gap Outlet, Petaluma California**

*November 2013-July 2014*

- Maintained a positive store image by organizing displays, keeping the store clean, greeting customers, and making sure customer satisfaction was achieved.
- Exceeded store expectations and maximized profits by opening 26 credit card accounts on Black Friday, achieving top employee in the store and the 6<sup>th</sup> in the district of 100 stores.

## **PUBLICATIONS**

Bober, B.; Martinez, V.; Ogata J.; Hallinan, J.; Leach, T.; Negru, B\*. Nanoscopic Structures for Solvation and Coloration: A Butterfly Experiment (submitted manuscript)

## **SEMINARS AND PRESENTATIONS**

- Poster entitled "Diffraction: A Butterfly Experiment." Presented at the American Chemical Society National Meeting and Exposition. San Francisco, CA, April 2017.
- Seminar entitled "A Butterfly Experiment: Nanoscopic Structures for Solvation and Coloration". Presented at Sonoma State University. Rohnert Park, CA, April 2017.
- Poster entitled "Synthesis of a Cytochrome P450 Mimetic". Presented at the Science Symposium at Sonoma State University. Rohnert Park, CA, May 2017.
- Poster entitled "Automation and Observation of Lab Signals with a VirtualBench". Presented at the Science Symposium at Sonoma State University. Rohnert Park, CA, May 2017.

## **AWARDS**

Black belt in Taekwondo