SEMI 206

EDUCATION

University of Oregon **Anticipated Graduation September 2018**
Master of Science in Chemistry
Semiconductors and Photovoltaics
Willamette University **June 2017**
Bachelor of Arts in Chemistry
Minor in Classical Studies (Latin)

RESEARCH EXPERIENCE

Physical Chemistry Senior Research Project **2016-2017**
Dr. J.C. Williamson, Willamette University

- Investigated a newly discovered liquid-liquid phase transition that could change the current understanding of liquid-liquid critical behavior
- Built an apparatus used to identify phase transitions, designed a temperature control system, aligned lasers, and machined parts
- Published a 40 page paper titled *Progress Towards Extraction and Characterization of Aniline + Cyclohexane Pre-Transition Droplets* in the Willamette University Academic Commons and presented my research to the Willamette University community
- Created and wrote a standard operating procedure for a new GC-MS temperature ramping method used to separate and analyze aniline and cyclohexane
- Troubleshot the GC-MS despite not having access to a user manual and repaired the auto-injector saving time for myself and future researchers

Liberal Arts Research Collaborative, Willamette University **Summer 2016**

- Studied the effect of light pollution on mayflies by building indoor streams, collecting more than 500 mayflies from across Oregon, and measuring the distance traveled by mayflies in artificial streams over the course of 12 hours
- Discovered that mayflies from urban streams travel less distance on average than their rural counterparts suggesting that urban mayflies may be losing their evolutionary instinct to travel only at night when predators are less likely to find them
- Wrote and published articles and recorded podcasts on a research blog which explored the effect of artificial light on various life forms http://larc-streams.weebly.com/

WORK EXPERIENCE

Chemistry Tutor and Teaching Assistant, Willamette University **2014-2017**

- Taught accelerated learning techniques, explained problem solving processes, and provided alternative explanations for concepts such as Diels Alder reactions and atomic structure to individuals and groups taking introductory and organic chemistry courses in order to improve their comprehension of chemistry
- Improved the safety of the lab by quizzing students on emergency procedures and safe chemical disposal as well as the chemical concepts behind reactions being initiated
- Graded laboratory reports and pre-laboratory assignments, monitored work for plagiarism, and gave feedback to 24 students to ensure that they understood the chemical concepts and safety information relevant to the lab

Employee of the Department of Scheduling, Willamette University **2014-2017**
Assistant to the Head of the Department and Summer Conference Assistant

- Improved the department by suggesting beneficial changes that were enacted the following summer, saving the department $4,000 per year
- Provided quality customer service to clients who were hosting camps or conferences on campus by utilizing communication, patience, and problem solving skills as shown by the "infectious spirit award for positive customer service"
- Operated the main university switchboard telephone line and provided callers and visitors with information about events and university departments
- Led meetings with clients and members of 5 university departments during which housing, meals, safety accommodations, building access, and janitorial services were organized so that all camps would be comfortable while on campus

VOLUNTEER EXPERIENCE

Habitat for Humanity, Deer Park, Washington **2011-2013**

- Improved the lives of families in need of affordable housing by working construction for 160 hours

YMCA Camp Reed, Deer Park, Washington **2011-2012**

- Dedicated 168 hours to improving the lives of local youth by supervising campers, serving food, and cleaning public facilities

AFFILIATIONS

Co-Captain of the Willamette University Varsity Basketball Team **2015-2017**

- Dedicated approximately 4 hours per day to practice, weight lifting, injury prevention, film study, shooting, and conditioning
- Recruited high school students by hosting overnight stays, giving tours, discussing team culture, and bringing visitors to class
- Learned leadership skills by working to bring together a group of diverse people to achieve a common goal and mentored future leaders of the program by sharing my leadership philosophy and anecdotes with them
- 2014 and 2016 team most improved player
- 2015-2016 Northwest Conference All-Sportsmanship Team
- Northwest Conference Scholar-Athlete, 4 years

TECHNICAL SKILLS

GC-MS

Developed temperature ramping methods for both split and splitless injections

H-NMR

Ran and processed NMR samples, including DEPT NMR and ^{13}C-NMR

Predicting environmental fate of chemicals

UV-Vis and IR Spectroscopy

Laser alignment and light scattering measurements