

## POLY 310

### SUMMARY

Motivated, bilingual problem-solver with excellent time management skills as demonstrated by balancing three majors, extracurricular club activities, research and 20+ hours of employment per week both on and off campus.

### EDUCATION

**Master of Science, Applied Chemistry** (Concentration in Polymers)

**Anticipated Sep 2018**

University of Oregon, Eugene, OR

**Bachelor of Science, Biochemistry** Magna cum Laude, Departmental Honors

**May 2017**

**Bachelor of Arts, Chemistry & German Studies** Magna cum Laude, Departmental Honors

GPA:3.81, recipient of 12 merit-based scholarships providing full tuition including MHTA award

University of Minnesota Duluth (UMD), Duluth, MN

### STEM-RELATED EXPERIENCE

**Undergraduate Researcher | Dr. Sheets | Dept. of Chemistry & Biochemistry, UMD |**

**Oct 2015 - May 2017**

- Quantitated the fluorescence resonance energy transfer (FRET) of a bifluorescent protein crowding sensor in solutions modelling cell conditions to study the effects of macromolecular crowding on protein motion and folding.
- Optimized the induction of an arabinose-induced plasmid to produce fluorescent proteins in a bacterial expression system using sterile techniques to grow the bacteria and nanodrop to analyze the optimal density, and then express in the pBAD plasmid vector in DH-alpha E. coli using competitively secured funding.
- Utilized nickel column affinity chromatography to purify target protein and then SDS-PAGE to analyze the purity and relative yield, uncovering a sequence incompatibility with pBAD.
- Contributed to development of a protocol document to allow other researchers and undergraduates to accurately analyze further anisotropy data in Origin by editing the existing drafts for coherence and detail.
- Presented results of protein production and purification and anisotropy studies at the local undergraduate research program symposium and during the senior symposium respectively.

**Undergraduate Teaching & Chemical Preparation Assistant | UMD Dept. of Chemistry & Biochemistry |**

**Aug 2015 - May 2017**

- Ensured proper application of the scientific method and facilitated student learning by clearly and concisely explaining and modelling key concepts and skills, thereby effectively improving student outcomes and steadily increasing scores on student evaluations each semester.
- Maintained a safe and respectful learning environment by enforcing professional conduct, providing clear expectations and consistent graded learning assessments, resulting in an undergraduate teaching award during first year.
- Assisted five chemical stockroom staff by preparing solutions and unknowns for the 600+ students enrolled in General Chemistry labs. Organized the stockroom inventory according to MSDS sheets and OSHA guidelines.
- Prepared hazardous waste for transport to the disposal center in the Twin Cities by carefully labelling the contents of the waste, testing the pH, and packing the waste according to University and EPA regulations guaranteeing the safety of staff and students.

**Summer Undergrad. Research Program | Dr. Kathryn Schreiner | Large Lakes Observatory, Dept. of Biology, UMD | Jun - Aug 2016**

- Competitive summer research grant, then planned and executed the analysis of 22 soil samples independently within 10-week time limit and presented results poster at the Summer Undergraduate Symposium.
- Characterized nitrogen and carbon content of cultivated and uncultivated soil samples through stable isotope analysis using Elemental Analysis - Isotope Ratio Mass Spectrometry (EA-IRMS), gaining organic carbon data essential for lignin analysis.
- Performed quantitative and qualitative analysis of lignin in soil samples by preparing capsules in a N2-glovebox for thermal oxidation to lignin phenols, then manually liquid-liquid extracting these for final GC-MS analysis, while coordinating with other lab personnel.
- Analyzed and compiled organic carbon and lignin-phenol data using Excel to describe the degradation and origin of the organic carbon for a collaborator researching agricultural soil erosion.

## NON-TECHNICAL EXPERIENCE

### Lead Costume Coordinator, Salesclerk & Soft Goods Pricer | Savers #1142 Duluth, MN |

Aug 2012 - Jun 2017

- Ensured that thrift store maintained a top 5 position in the US for Halloween sales (Aug-Nov) during employment, achieving 1st in the United States and 7th company-wide in 2015 by cataloging corporate-provided inventory, merchandising placement and store layout planning and by providing excellent custom costume services.
- Managed cash and charted hourly sales to track consumer behavior and maintain necessary staff, guaranteeing cost effectiveness, customer service and store upkeep.
- Trained other costume coordinators and cashiers to execute their duties with orientation to detail and uphold high service and performance standards.
- Inspected the sales floor, maintained the displays while providing excellent customer service both in person and over the phone, and cleaned to present customers with a welcoming environment.
- Assessed value of over a 1000 soft goods daily according to strict standards of brand, quality and wear to consistency price assorted used garments and bedding.

### Forging Community Volunteer (80+ hrs.) | Armory Arts and Music Center |

Oct 2013 - Oct 2014

- Converted abandoned restaurant into a blacksmith's workshop after flood damage by removing debris and sanitizing basement, mitigating the high potential for illness.
- Renovated the upstairs, which included removing drywall, studs and old carpet, demolishing an old brick wall, repairing the remaining drywall, filling gaps with mudding and painting the walls to create a communal art gallery and gift shop.
- Installed metal-clad work tables for sparking grinders and hot metal work thus preventing possible fire hazards in accordance with the pertinent building codes.

## ADDITIONAL EXPERIENCE

### German Tutor | Department of Foreign Languages and Literature, UMD |

Nov 2013 - May 2017

- Fostered language skills and cultural understanding on a one-on-one basis and through outreach.

### Chemistry and Biochemistry Club (UMD) Member | University of Minnesota |

Sep 2012 - May 2017

- Organized meetings and events serving twice as an elected officer (Treasurer/Chemical Coordinator).

### Judge for the Northeastern Minnesota Regional Science Fair (18+ hrs.) |

Feb 2016 - Feb 2017

- Judged and provided feedback to participants fostering STEM interests in Minnesotan youth.

### ARC Tutor | America Reads and Counts (Myers-Wilkins Elementary) |

Nov 2013 - May 2016

- Taught under-privileged minority K-5 children mainly arithmetic, reading and writing.

### Translator (German) | St. Franciscan Health Center |

Dec 2015 - Feb 2016

- Improved end of life care for 92-year-old patient by re-establishing communication with staff.

## SAFETY TRAINING & ADDITIONAL SKILLS

- NSC CPR Certified expires Jan 2018
- DEHS Radiation Safety Orientation Training Jan 2016
- DEHS Fire Extinguisher Training Sep 2015 - 2016
- CITI Research Ethics Training Dec 2015
- Implementation of NIH Guidelines Oct 2015
- Blood-borne Pathogens: Introduction Aug 2015
- IBC Biological Safety in the Laboratory Aug 2015
- Waste Management Training Aug 2015
- Bilingual: fluent in English & German, CEFR/ ACTFL: C1- C2 level (superior/native), German driver's license Jun 2010