

Laura K. Glastra

Undergraduate Student of Chemistry (B.S.), Physics (B.A.), and Mathematics (Minor)

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Education:

Pacific Lutheran University (Sept. 2015-Present)

- Bachelor of Science in Chemistry with Biochemistry emphasis and American Chemical Society certification
- Bachelor of Arts in Physics
- Minor in Mathematics

Ocean Research College Academy/Everett Community College (Sept. 2013-June 2015)

- Associate of Arts and Sciences degree
- Graduated with high honors

Research Experience:

Research at Pacific Lutheran University (June 2017-Present)

- Heavy metal analysis (Pb, Cd, As, Zn) of mussel tissue via microwave digestion and ICP-MS analysis
- Assessing legacy effects of the American Smelting and Refining Company (ASARCO) in Puget Sound

Ocean Research College Academy (Sept. 2013-May 2015)

- Spatiotemporal analysis of nutrient levels (NO₂, NO₃, NH₄, PO₄) on zooplankton and phytoplankton populations from anthropogenic run-off in the Possession Sound estuary
- Spatiotemporal analysis of heavy metals (As, Pb, Mn, Ni) in Possession Sound

Laboratory Experience:

- Agilent Technologies 7500ce ICP-MS on aqueous samples and solids EPA SW846 and 200 series methodologies
- PerkinElmer NexION 350 ICP-MS on digested samples EPA methods 3051A and 3052
- PerkinElmer Titan MPS Microwave Sample Preparation System EPA methods 3051A and 3052
- Organic Carbon Analyzer by combustion Shimadzu TOC-V_{CSH} for drinking water samples (EPA 415.3)
- YSI-650, Niskin bottle, and sediment grab operation
- UV/Vis Spectrophotometry
- Cold Vapor Analyzer for Hg CETAC Quick Trace M-7600 (EPA 245.1/7470/7471)
- Hach field colorimeter for nutrient (NH₃, NO₂, NO₃) analysis of waste water process
- Color Analysis SM2120B
- Cary 5000 UV/VIS/NIR
- Waters Preparative Liquid Chromatography
- Percent Total Solids, Total Suspended Solids EPA 160 series
- Perkin Elmer FTIR analysis of solid, liquid, and gas phase samples
- Aminco Bowman 2 Spectrofluorometer
- 500 MHz Bruker NMR operation and trouble-shooting
- Changing between Argon tank for ICP-MS utilization
- Analysis of data from aforementioned instruments and ability to independently troubleshoot instrumentation and analytical methods

Software Experience:

Operating Systems: Microsoft Windows XP/Vista/7/8/8.1, Macintosh OS/OS X, Linux

Software and Coding: Microsoft Office 2003-2018/XP, ChemStation/Masshunter Hybrid, ChemDraw, LoggerPro, ACD/NMR Processor Academic Edition, IgorPro, MATLAB, CoCalc/SageMath, CCP4 Molecular Graphics, ApE (A plasmid Editor), Python, LaTeX

Professional Experience:

Teaching Assistantships (Feb. 2016-Present)

- Organic Chemistry Teaching Assistant (Feb. 2016-Present)
- General Chemistry Teaching Assistant (June-July 2018)
- Thermochemistry Teaching Assistant (Sept.-Dec. 2018)

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Stockroom Worker at PLU (Feb. 2016-2018)

- Maintain knowledgeable understanding of chemistry lab techniques and stockroom layout/inventory
- Prepare materials and reagents for general, environmental, nursing, and organic chemistry lab sections (CHEM 115, 116, 104, 105, 333, 334)
- Maintain general safety and organization of stockroom and open laboratory areas
- Management and preparation of chemical waste for proper disposal

Chemistry Intern at Everett Environmental Lab (Mar.-Aug. 2015)

- Data entry into LIMS
- Instrumentation with ICP-MS, organic carbon analyzer, UV/Vis spectrophotometer, cold vapor analyzer for Hg, Hatch field colorimeter for nutrient analysis, color analysis, % total solids
- Instrument tuning, optimization, and trouble-shooting of Agilent 7500CE ICP-MS
- Removal, cleaning, drying, and reassembly of torch assembly, lens set, cone set, and Octopole Reaction System on Agilent 7500CE ICP-MS

Honors, Awards, and Memberships:

- Recipient of Faculty Scholarship from PLU resulting in \$80,000 of academic funding (2015-present)
- Dean's List 4 semesters (Cumulative GPA: 3.51/4.0)
- American Chemical Society (ACS) member (2017-Present)
- Recipient of Community Service Award in 2013 awarded by mayor of Mukilteo (Jennifer Gregerson)

Presentations:

- Expected poster presentation at the American Physical Society Conference for Undergraduate Women in Physics (Jan. 2019)
- Poster presentation at Pacific Lutheran University on Hawking Radiation and particle tunneling at the event horizon of black holes (May 2018)
- Presenter at University of Washington Undergraduate Research Symposium on nutrient levels in estuarine systems (May 2014)
- Speaker at Possession Sound Student Showcase and Talks (PSSST) Conference on nutrient levels in the marine environment (June 2014)

Communications:

- Developed an analytical method to analyze microplastics as a vector for Pb and Cu in estuaries (Analytical Chemistry)
- Review of the structure and function of the 5-HT_{2A} serotonin receptor and its response to lysergic acid diethylamide (Biochemistry 1)
- Wiki Article review of the metabolic pathways and mechanisms involved in hemochromatosis (Biochemistry 2)
- Poster on analysis of NMR spectra to determine what type of three-spin AX₂/AB₂ system they fit based on chemical shifts and coupling constants (Quantum Mechanics/Physical Chemistry 2)
- Poster and review of Hawking Radiation and particle tunneling at event horizons of black holes (Modern Physics)
- Review and presentation on non-homogeneous electromagnetic fields in the nervous system (Electromagnetic Theory)

Activities:

- President of the Scandinavian Club at Pacific Lutheran University (May 2017-present)
- Participant in National Ocean Sciences Bowl competitions (2013- 2015)
- International Project Manager of Hugs for Ghana – a student run 501(c)(3) non-profit organization (2013-2015)
- Chief Creative Officer of Blueout – an application development company (October 2014-2016)
- Math tutor at Everett Community College (October 2014-June 2015)

Service to the Community:

- Volunteer for Islands Oil Spill Association (IOSA) (2015-present)
- Volunteer at Trinity Lutheran Food Pantry (2015-2016)
- Volunteer at Special Olympics Basketball tournament in Tacoma, WA (Feb. 2016)