

Yushu Zhang

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PROFESSIONAL SKILLS AND ABILITIES

Molecular Biology

- Acquired techniques to extract DNA from salmon and various types of meat dumplings
- Applied course concepts to perform PCR reactions for DNA analysis to identify species using specific targeting sequences in meat dumplings and salmon
- Learned how to prepare agarose gel used for gel electrophoresis

Microbiology

- Gained basic experimental design skills to test the effectiveness of hand sanitizer
- Developed skills to make Tryptic Soy Agar for petri dishes used culture microorganisms
- Utilized basic aseptic techniques for culture preparation
- Applied techniques such as the streak plate method for sample plating
- Determined the percentage of growth of a mix culture of organisms on a petri dish.

Molecular Genetics

- Learned how to interpretate molecular markers from gel electrophoresis and used to map the location of genes
- Acquired knowledge on the mechanism of CRISPR-Cas 9 and how they could be used for gene editing
- Learned knowledge on phylogeny, population genetics and speciation

Statistics

- Learned about R Studio programming for basic statistic analysis
- Acquired Microsoft Excel techniques for creating different types of graphs and data analysis

Chemistry

- Performed recrystallization of various compounds such as 2-butoxynaphthalene and triphenylmethanol
 - Learned chemical analysis methods such as spectrophotometry, potentiometry, and chromatography
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EDUCATION

University of British Columbia, Vancouver, BC

Expected Graduation May 2026

Bachelor of Science – Major in Combined Major in Science (Biology, Chemistry, Statistics)

Queen Margaret's School, Duncan, BC

Sep 2019 – May 2021

LABORATORY EXPERIENCE

Anatomy and Physiology 12, Queen Margaret School

- Self designed an experiment on testing the effectiveness of hand sanitizer on killing bacteria

- The experiment conducts 3 experimental groups: hand wash, hand sanitizer applied and homemade hand sanitizer applied. Control group: no hand sanitizer applied
- Prepared agar plates with guidance from instructor, then used the metal loop to swab hands and streak the agar plate under aseptic environment. Afterwards, bacteria are placed in the incubator
- The number of bacteria growing was counted by dividing the section into small grids and calculated the percentage of bacteria covering the agar plates

BIOL 342 Integrated Biology Laboratory, UBC

Third-year course on field-based and laboratory-based investigation of organisms. Grade: 85

- Course material included the learning of DNA-related laboratory techniques such as DNA isolation, polymerase chain reaction (PCR) and gel electrophoresis
- Confirmed the identity of store-bought salmon through molecular biology techniques. We first separated the DNA from the salmon sample and performed PCR and gel electrophoresis. At the end, we identified the species by visualising the specific band size provided by the teaching team.
- Successfully designed an experiment to identify the ingredients of various dumplings (vegetarian, chicken, lamb, pork, beef + pork, and lamb + pork samples). Performed a scientific experiment using similar laboratory techniques as the salmon identification experiment.
- Wrote a report on the experiment and published by the help of the professor and presented our findings through a poster to the class.

CHEM 355 Chemistry Integrated Laboratory, UBC

Third-year course on chemistry integrating experiments from organic, inorganic, physical and analytical chemistry. Grade: 80

- Course material included the learning of different experimental methods and techniques on organic, inorganic, physical and analytical chemistry
- Performed Williamson ether synthesis, form 2-butoxynaphthalene using recrystallization and verified the purity via thin-layer chromatography (TLC)
- Did qualitative analysis from precipitation with silver nitrate to confirm the ion from unknown salt and quantitative analysis from cation-exchange chromatography and titration to determine the unknown salt.
- Perform Grignard reaction to synthesis triphenylmethanol by recrystallization, verified the purity with TLC and confirmed the product via infrared spectroscopy (IR) spectrum

PUBLICATION

Li, W., Chen, Y., Eyuboglu, M., Zhang, Y. (2025). Meat Contamination in Dumplings. *The Expedition*, Vol. 17(2024).

- The report paper for identifying the ingredient of dumplings experiment for BIOL 342

WORK AND LEADERSHIP EXPERIENCE

Meet Fresh, Richmond, BC

Mar 2023 – Sep 2025

Junior Supervisor

- Coordinated employees to ensure smooth workflow during busy hours.
- Handled unexpected issues and resolved customer or operational problems promptly.
- Trained new employees on store procedures, product preparation, and service standards.