

Olivia Frary

BIOINFORMATICS STUDENT

UTAH VALLEY UNIVERSITY, OREM, UT

Education

Bachelor of Science in Bioinformatics

Utah Valley University

Expected to Graduate Spring 2025

GPA: 4.0

Research Experience

Independent Researcher Hjelmén Lab, Utah Valley University Fall 2023 - Present

Advisor: Carl E. Hjelmén, PhD

Investigating: The relationship between heteromorphic sex chromosome size and organism longevity

- Data mining genome size and lifespan data for several species
- Working to produce a pipeline for large-scale phylogenies in R
- Performing statistical and phylogenetic analyses in R

REU Internship Logsdon Lab, University of Iowa

Summer 2024

Advisor: John M. Logsdon, Jr., PhD

Investigating: Sex determining genes and chromosomal regions in asexual species of snails

- Genome and transcriptome mapping
 - Identification of biallelic sites and sex determining patterns
 - Bash scripting with high-performance computing clusters
 - Data analysis and filtering in R
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Presentations

*Presenting Authors

Oral Presentations

2024 *A phylogenetic analysis of genome size evolution and social structure in Hymenoptera*, *O. Frary, B. Jetton, C. Hjelmén

- Entomology 2024, Entomological Society of America

Poster Presentations

2024 *Sex Determination in New Zealand Mud Snails: Identifying Genes & Chromosomal Regions with Sex-limited Features*, *O. Frary, L. Palmeri, C. Mulcahy, J. Jalinsky, J. Logsdon

- REU Summer Undergraduate Research Conference, University of Iowa

2024 *Do the differences in size between heteromorphic sex chromosomes influence organism longevity?* *O. Frary, C. Hjelmén

- Utah Conference on Undergraduate Research, Utah Valley University

2023 *Ancient Genomics: An Overview on the History and the Future of the Field*, *O. Frary, *R. Motte, *J. Prescott

- Fall Biology Department Research Poster Session, Utah Valley University

Awards & Honors

Scholarships

Presidential Merit Scholarship	2022 - 2026
Utah New Century Scholarship	2022 - 2026

Awards

Scholarly & Creative Activities Dissemination Grant (\$1,343)	2024
Utah Valley University Study Abroad Grant (\$500)	2023
Ohio Rural Letter Carriers Book Grant (\$100)	2023

Honors

Dean's List, <i>Utah Valley University</i>	2020 - 2024
Science Sterling Scholar, <i>Provo High School</i>	2021
Top First Year Chemistry Student, <i>American Chemical Society</i>	2019

Experience

Biology Study Abroad

Summer 2023

Aeolian Islands, Italy

- Immersed in culturally rich environment to learn about the biology and geology of the Aeolian Islands
- Learned how locals and endemic plants and animals coexist with active volcanoes
- Researched and presented on population genetics of the islands

General Biology Teaching Assistant

Spring 2023

Utah Valley University, Orem, UT Bioinformatics Data Skills

- Worked with students to answer questions and provide support
- Reviewed and graded college-level work and provided constructive feedback
- Gave insights into ways to improve class material

Stability Intern

Jan 2022 - Dec 2022

doTERRA Quality Control, Pleasant Grove, UT

- Worked with and maintained lab equipment
 - Regulated various reports through Microsoft Office Suite and Information Management Software
 - Managed numerous studies and samples
 - Increased department efficiency by implementing automated formulas into regular use documents
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Membership

UVU Evolution and Bioinformatics Club (Vice President 2024)	Fall 2023 – Present
UVU Women in Science Affinity Group	Spring 2023 - Present
UVU LGBTQ+ in Science Affinity Group	Spring 2023 - Present
UVU Agnostics and Atheists in Science Affinity Group	Spring 2023 - Present
UVU Chemistry Club	Spring 2023 - Present
UVU Women in the Physical Sciences	Fall 2022-Present

Relevant Courses

Computational

- Fundamentals of Programming
- Object Oriented Programming
- Database Fundamentals
- Calculus I & II
- Principles of Statistics
- Design of Experiment (ANOVA)
- Bioinformatics Data Skills
- Discrete Mathematics

Biology

- Molecular Biology
 - Genetics
 - Genomics
 - Principles of Chemistry I & II
 - Data Analysis for Biologists
 - Intro to Bioinformatics
 - Principles of Evolution
 - Ecology
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Skills

- R for statistics and data analysis
- Python basics
- Bash scripting/Linux
- SQL
- Microsoft Office Suite
- Phylogenetic methods
- Genome & transcriptome mapping methods
- Using and maintaining lab instruments