
Olivia Frary

BIOLOGY PHD STUDENT

UNIVERSITY OF ROCHESTER, ROCHESTER, NY

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GitHub: <https://github.com/olivia-frary>

Education

PhD in Biology

University of Rochester, Rochester, NY

Ecology, Evolution, Genetics, & Genomics

Expected 2030

Bachelor of Science in Bioinformatics

Utah Valley University, Orem, UT

Summa Cum Laude 2025

GPA: 4.0

Research Experience

Independent Researcher

Hjelmen Lab, Utah Valley University

Aug 2023 - May 2025

Advisor: Carl E. Hjelmen, 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

- 2025 *Frary O, Jetton B, Hjelmen CE. (2025). Genome size evolution in Hymenoptera: Phylogenetic insights into social structure and genomic diversity. *Pacific Branch Entomological Society of America 2025, SLC, UT, Mar 30 – Apr 2.*
- 2024 *Frary O, Jetton B, Hjelmen CE. (2024). A phylogenetic analysis of genome size evolution and social structure in Hymenoptera. *Entomology 2024, Phoenix, Nov 10 – Nov 13.*

Poster Presentations

- 2024 *Frary O, Palmeri L, Mulcahy C, Jalinsky J, Logsdon J. (2024). Sex Determination in New Zealand Mud Snails: Identifying Genes & Chromosomal Regions with Sex-limited Features. *REU Summer Undergraduate Research Conference, Iowa City, Jul 26.*
- *Frary O, Hjelman CE. (2024). Do the differences in size between heteromorphic sex chromosomes influence organism longevity? *Utah Conference on Undergraduate Research, Provo, Mar 1.*
- 2023 *Frary O, *Motte R, *Prescott J. (2023). Ancient Genomics: An Overview of the History and Future of the Field. *Fall Biology Department Research Poster Session, Provo, Dec 11.*
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Awards & Honors

Scholarships

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

Awards

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| College of Science Dissemination Grant (\$660) | 2025 |
| 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

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| Outstanding Student Award for Biology, <i>Utah Valley University</i> | 2025 |
| Dean's List, <i>Utah Valley University</i> | 2020 - 2025 |
| 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 a 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

College Biology I Teaching Assistant

Spring 2023

Utah Valley University, Orem, UT

- 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

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| UVU Evolution and Bioinformatics Club (Vice President, 2024-2025) | Aug 2023 - May 2025 |
| UVU Women in Science Affinity Group | Jan 2023 - May 2024 |
| UVU LGBTQ+ in Science Affinity Group | Jan 2023 - May 2024 |
| UVU Agnostics and Atheists in Science Affinity Group | Jan 2023 - May 2024 |
| UVU Chemistry Club | Jan 2023 - May 2025 |
| UVU Women in the Physical Sciences | Aug 2022 - May 2025 |

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
- Data Structures & Algorithms
- Database Theory
- Linux System Administration

Biology

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

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