Jon Wick

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Summary

I am an undergraduate researcher at Western Washington University (WWU) interested in combining my understanding of biology and computer science to advance the body of knowledge of biological phenomena. Currently, I am a member of the Lee lab at WWU using computational biology to investigate the role of small RNAs in maintaining genome integrity within the model organism *Tetrahymena thermophila*. Once I graduate, I plan on continuing a career in molecular biology research.

Education

B.S. Molecular and Cellular Biology, Computer Science minor — September 2023-present
Western Washington University – Bellingham, WA — Expected June 2026

- **GPA**: 3.73/4.0
- **Upper Division Coursework:** Advanced Cell and Molec Lab, Genomic Data Analysis, Cellular and Molecular Biology, Biochemistry, Microbiology, Biostatistics, Cell and Molec Lab, Genetics, Organic Chemistry series, Evolution.

Tacoma Community College – Concurrent Enrollment — September 2021-June 2023

Research Experience

Undergraduate Researcher, Lee Lab, WWU – Bellingham, WA — June 2024 - present

- Investigate roles of sRNAs in an RNAi pathway responsible for maintaining genome integrity in *Tetrahymena thermophila* using computational biology and genomic sequence analysis.
- Develop new tools and apply existing tools using R, Python, Bash, C, and C++.
- Prepared presentations for round tables, lab meetings, and journal clubs.
- Participated full-time in the WWU Biology Summer Undergraduate Research Program (SURP).
- Performed Western Blots, maintained *Tetrahymena* cells, and performed literature reviews to progress the goals of the lab.

Computing Education Research, Sushil K. Oswal, UW – Tacoma, WA — February 2023 - May 2024

- Wrote and published a paper for the *ACM Special Interest Group Computer Science Education* conference about education and mentorship structure in an extracurricular robotics team.
- Performed a qualitative analysis on interviews and survey responses to extract useful data.
- Formulated research questions for interviews and surveys.

Biotech Research Intern, Rain Incubator – Tacoma, WA — May 2022 - July 2023

- Collaborated with researchers to define novel methods for tracking European Green Crab migration in Puget Sound.
- Learned the research process of defining a hypothesis, performed literature review, and planned experiments.
- Performed pilot experiments using PCR to define future directions.

Research-based Courses

Advanced Molecullar and cell w/lab – BIOL 487, WWU — Spring 2025

- Investigated the role of *ubc-6*, an E2 ubiquitin ligase, in maintaining endoplasmic reticulum (ER) homeostasis in *C. elegans*, in collaboration with other students.
- Wrote an unpublished micropublication on research results and presented a poster at Northwest Worm Meeting in collaboration with fellow students.
- Performed Western Blots, Reverse Transcriptase PCR, and PCR to analyze the accumulation of misfolded proteins in *ubc-6* knockouts.
- Reviewed literature and built molecular models.
- Maintained electronic lab notebook using Benchling.

Genomic Data Analysis – BIOL 477, WWU — Winter 2025

- Collaborated with another student in analyzing mRNA differential expression in *Tetrahymena thermophila*.
- Used Bash and python over secure shell (SSH) for evaluating genomic features.
- Wrote a course paper and presented independent analysis of mRNA differential expression.
- Presented relevant research articles to the class to facilitate discussion.

Publications

Understanding the Leadership Structure and Mentoring Model of an Extracurricular Robotics Team: Key Findings from a Case Study March 2024

SIGCSE 2024: Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 2
Hitender Oswal, ***Jon Wick***, Seth Tandon, Ashley Brewster, Sushil K Oswal

DOI: 10.1145/3626253.3635603

Additional Experience

Club Lead, Molecular Bioscience Club, WWU – Bellingham, WA August 2025 - present

- Organize events to build community and provide information about programs, research oportunites, and professional development to students of all course standings.
- Assisted students in getting into research labs.
- Collaborated with faculty within and outside of WWU on events.

Programming Lead, SOTAbots FIRST Team 2557 – Tacoma, WA September 2019 - June 2023

- Developed Code used in the semi-finals of the 2022 World Championship of FIRST Robotics Competition and 2023 district championship.
- Taught students to program in Java using industry-standard design patterns.
- Coordinated with other leads on the team to develop a robot, build community, perform local outreach, and obtain funding.

Posters

Re-identification of the genomic origins of small RNAs in the model organism *Tetrahymena thermophila* and characterization of those dependent on genome protective *RDN2*
2025 SURP poster session, October 2025.
Jon Wick, Noah Haight, Hannah Thorp, Dan Pollard, and Suzanne R. Lee

The Role of E2 Ligases ubc-6 and 7 in ERAD in C. elegans
Northwest Worm Meeting, June 2025.
Summer Simpson, Abby Mellin, Dylan Wilding, Natalie Patch, **Jon Wick**, Bree Nelson, Hannah Thorp, Caelin Sickler, and Lina Dahlberg

Remapping previously sequenced 23-24 nucleotide sRNAs to the 2020 Tetrahymena thermophila Genome
WWU SURP poster session, September 2024.
Jon Wick, Noah Haight, Suzanne Lee, Dan Pollard

Leadership Structure and Mentoring Model of an Extracurricular Robotics Team
ACM Special Interest Group Computer Science Education conference, March 2024.
Hitender Oswal, **Jon Wick**, Seth Tandon, Ashley Brewster, Sushil K. Oswal

Awards

Declan Barron Memorial Scholarship 2025
Western Washington University, Dept of Biology
WWU Biology Summer Undergraduate Research Program award 2025
Western Washington University, Dept of Biology

Technologies

Molecular Techniques: Genomic Data Analysis, Western Blot, PCR, Reverse Transcriptase PCR

Programming Languages: Python, Java, Nix, C++, C, R, JavaScript

Software: Command Line Interface, Benchling, Microsoft Office/Libre Office, Jupyter Notebook, Linux, NixOS, ImageJ, React, bun, Secure Shell (SSH), NeoVim