Sierra Simmerman

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SUMMARY – Passionate and dedicated researcher with expertise in molecular genetics, medical genomics using the *Drosophila* model system. Seeking a role in a research laboratory that uses genetic and molecular biology techniques and a basic science perspective to understand disease states.

EDUCATION

University of Colorado, Anschutz Medical Campus **2024-Current**
Doctoral Degree: Molecular Biology (Ph.D.)

Tulane School of Medicine **2022-2023**
Master's Degree: Medical Genetics and Genomics (M.S.)

University of Washington, Seattle, WA **2015-2019**
Bachelor's Degree: Molecular, Cellular, and Developmental Biology (B.S.)
Minor: Art History

Bali International School, Sanur, Bali, ID **2011-2015**
IB Diploma

RESARCH EXPERIENCE

Research Technician 2 – Malik Lab **Nov 2023 – June 2024**
Fred Hutch Cancer Center

- Investigates the evolution and molecular functions of *Abo*, a histone repressor gene in *Drosophila* with PhD student Risa Takenaka.
- Plans, executes, and analyzes molecular biology experiments using techniques including CUT&Tag and ChIP-Seq.
- Maintains transgenic *Drosophila* lines while investigating fertility and viability.

Medical Genetics and Genomics Student **Aug 2022 – May 2023**
Hayward Genetics Center - Tulane School of Medicine

- Completed an immersive education in molecular genetics, cytogenetics, biochemical genetics, and medical genomics including work with patients.
- Conducted rotations at the Hayward Genetics Clinic to gain expertise in clinical genetics, patient counseling and appropriate treatment and testing for rare genetic disorders.
- Gained experience in CAP-accredited and CLIA-licensed molecular genetics laboratory, cytogenetics laboratory and biochemical laboratory. This included execution of appropriate testing and analysis if NGS sequence and variant classification.
- Completed thesis work on the use of precision medicine in cancer including comprehensive review of current medical literature.

Research Technician – Malik Lab **Aug 2020 – Jul 2022**
Fred Hutch Cancer Center (Howard Hughes Medical Institute)

- Researched genetic and evolutionary arms races in *Drosophila* species.
- Discovered and characterized novel histone variants. Two publications forthcoming.
- Gained extensive experience in experimental design, molecular biology and genetic manipulation wet lab techniques, genomic and phylogenetic analyses, and microscopy.
- Refined laboratory management strategies as senior lab technician.
- Presented posters at the Fred Hutchinson Basic Science Meeting in 2020 and 2021
- Attended the GSA Annual *Drosophila* Research Conference in 2021 and 2022.

Lab Aide – Malik Lab **Nov 2019 – Aug 2020**
Fred Hutch Cancer Research Center

- Fly stock maintenance
- Screening for transgenic markers to maintain engineered lines
- Set up *Drosophila* crosses
- General lab duties

Undergraduate Neuroethics Researcher **Dec 2015 – June 2019**
Center for Neurotechnology

- Investigated the effect of deep brain stimulation and brain computer interfaces regarding medical and ethical implications.
- Orchestrated focus group interviews and literature review for data collection
- Analyzed and processed data via AtlasTi coding strategies
- Participated in weekly lab meetings and ethics roundtables
- Nominated and selected as a UW Fellow at the CNT National Science Foundation 2017
- Presented a research poster at the International Neuroethics Society Annual Meeting 2017, Washington DC

Undergraduate Research
Autumn 2018
Experiments in Molecular Biology – University of Washington

- Completed an independent student research project studying SOS1 expression in *hac1* mutants in response to salt stress using *Arabidopsis thaliana*
- This student led project included genotyping, RT-PCR and target gene analysis. This included emphasis on lab techniques such as: PCR, RT-PCR, gel electrophoresis, sterile techniques, pipetting, plant husbandry and teamwork.

AWARDS

2017	National Science Foundation UW Fellow
2017	Husky Leadership Certificate
2015-2018	University of Washington Purple and Gold Scholarship
2014	EARCOS Academic Scholarship
2014	Clements Worldwide Expat Youth Scholarship

PROFESSIONAL EXPERIENCE AND SERVICE

Concierge Patient Services **June 2018 – June 2019**
Seattle Cancer Care Alliance Proton Therapy Center

- Executed patient intake using Mosaiq and facilitated Center orientations.
- Provided patient care coordination and care team support for cancer patients.
- Organized patient graduation, tours, patient transport, and housing accommodations.

Campus Tour Guide and Team Leads **Jan 2017 – June 2019**
University of Washington Office of Admissions

- Cultivated a welcoming and diverse environment for prospective students.
- Trained and empowered a group of five new student tour guides with information and confidence to provide knowledgeable presentations and offer superb customer service.

Administrative Director **June 2017 – June 2019**
WOOF3D – 3D Printing

- Acted as Club Officer, Team Lead and Project Coordinator
- Organized 5 interdisciplinary engineering projects and identified engineering and biomedical problems with 3D printed solutions.

Curator. **June 2017 – June 2018**
TEDxUofW

- Acted as Curator in 2017 and Production Manager in 2016, organizing two successful TEDx conferences for the greater Seattle community.
- Managed teams of 30 students, 15 external vendors, 12 sponsors and 4 performers.

PUBLICATIONS AND PRESENTATIONS

Publications:

Takenaka, R., Simmerman, S. M., Schmidt, C. A., Albanese, E. H., Rieder, L. E., & Malik, H. S., 2024. *The drosophila maternal-effect gene abnormal oocyte (AO) does not repress histone gene expression*. bioRxiv. https://doi.org/10.1101/2024.09.17.613536

Tubig, P. and Simmerman, S., 2019. *Cognitive Enhancement and Metaphor Choice as Moral Choice*. AJOB Neuroscience, 10(1), pp.50-51.

Simmerman, S., 2018. *A Technology Unlike Any Other: BCIs and the Analogies Used to Understand Its Ethical Implications*. Penn Bioethics Journal, [online] 14(1), pp.11-14.

Presentations:

Simmerman S. *Chromatin Innovation by Histone Variant Diversification in Drosophila*. Poster presented at: Fred Hutch Basic Sciences Retreat; Sept, 2021; Seattle WA.

Simmerman S. *Stepwise evolution of essential centromere function in a Drosophila neogene*. Poster presented at: Fred Hutch Basic Sciences Retreat; Sept, 2020; Seattle WA.

Simmerman S. *A Technology Unlike Any Other*. Poster presented at: UW Undergraduate Symposium; May, 2018; Seattle WA and The International Neuroethics Society Annual Meeting; Nov, 2017; Washington, DC.

Simmerman, S. *A Pacemaker for the Brain*. Oral presentation at: Center for Neurotechnology National Science Foundation Summer Program; Aug, 2017; Seattle, WA.