

# Wesley Rosales

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## Academic History

**Master of Science** | Bioinformatics & Genomics Track Expected December 2022  
*University of Oregon*

**Bachelor of Science** | Biology – Molecular & Cellular Emphasis June 2019  
*Western Washington University*

- Minor: Mathematics

**Associate of Science** | Biology August 2017  
*Whatcom Community College*

## Skills & Abilities

### Computational

**Programming languages:** R | Python | Bash | SQL  
**Software & Tools:** Seurat | DESeq2 | STAR |  
Velvet | FastQC | Snakemake | R Shiny |  
BLAST | Git  
**Analyses:** CITE-seq | scRNA-seq | Genome  
Assembly | Multivariate Analyses |  
Differential Expression

### Lab

PCR | mRNA Library Preparation | High Molecular  
Weight DNA Extraction | Human Cell Culture |  
Western Blot | Immunostaining | *Drosophila*  
Husbandry | Gel Electrophoresis | Fluorescence-  
Activated Cell Sorting

## Research Experience

**Graduate Research Project** September 2021 – Present

*University of Oregon; Oregon Health and Science University*

Profile Cell Population in Acute Myeloid Leukemia with CITE-Seq and Develop an Interactive Platform for Data Exploration

- Improved cell clustering of Cellular Indexing of Transcriptomes and Epitopes by Sequencing (CITE-seq) data analysis and visualization pipeline by integrating multiple modalities of data in clustering of cells using the R package ‘Seurat’
- Developed R Shiny application to allow biologists to visualize processed CITE-seq data and subset cells based on visualizations similar to gating in flow-cytometry

**Postbaccalaureate Scholar** August 2019 – August 2020

*Novartis Institutes for Biomedical Research*

- Designed 100,000 guide RNAs targeting 42,000 disease-causing genetic variants using R
- Verified Cas9 expression in transgenic human cell-lines by staining live cells with immunofluorescence and measuring fluorescence with flow cytometry
- Determined relative levels of Cas9 expression in transgenic human cell-lines via western blot

**Undergraduate Research Assistant** January 2018 – July 2019

*Western Washington University, Wang Lab*

- Investigated the effects of rapamycin on lifespan and locomotor function in *Drosophila* models of mitochondrial disease through lifespan and behavioral assays
- Conducted independent research characterizing and confirming lifespan and locomotor phenotypes of novel and previously published mitochondrial disease models through lifespan and behavioral assays
- Performed genetic crosses between *Drosophila* lines
- Compared survival curves and age-related declines in motor function with data visualization

## **Presentations & Awards**

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- **Rosales W**, Mattson-Hughes A, Oliver M, Wang A. (2018) Effects of Rapamycin on Lifespan and Motor Function in Two *Drosophila* Models of Mitochondrial Disease. Annual Biomedical Research Conference for Minority Students (ABRCMS), Indianapolis, IN. (*poster*)
- 2018 Full ABRCMS student travel award
- 2019 finalist, Outstanding Graduating Senior, WWU Department of Biology