

# RACHEL CALDER

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## PROFESSIONAL SUMMARY

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All my work at the Institute for Systems Biology and the University of Washington has been driven by my wonder of life. I hope to make innovative contributions to human life by deriving concepts from natural phenomena and inspire others to seek answers to their questions as well. I have been developing and teaching computational techniques for over two years and plan to expand these efforts to help diversify the future community of data scientists.

## WORK HISTORY

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**Education Coordinator**, 02/2019 to 08/2021

Institute For Systems Biology, Seattle, WA

**I research and analyze data with ISB scientists, then translate that science into open source high school curriculum with teachers and students.** My data analysis includes R and Python 3. Research topics include: brain cancer, biofuel and algae, antimicrobial resistance, food security and aquaponics, and computational modeling.

**I also organize and analyze student and education program data.**

**Girls Who Code Instructor**, 01/2020 to Current

Girls Who Code, Seattle, WA

I teach high school students the **fundamentals of python and data analysis.**

**Research Assistant**, 09/2017 to 08/2020

University Of Washington Bothell, Bothell, WA

In this position, I conducted molecular biology assays such as sterile sample cultivation and collection, DNA isolation, and PCR amplification.

**I also preform computational analysis on transcriptomic data using Python3 and R to determine differentially expressed genes (DEGs), their function, and whether they are up-regulated or down-regulated.**

**Orientation Coordinator**, 08/2017 to 01/2019

University Of Washington, Bothell, WA

In this position, I plan professional events for the University of Washington Bothell including orientation and academic resource sessions. I individually trained and now oversee a diverse group of 15 Orientation Leaders which has taught me patience and how to manage conflict and anticipate problems before they arise.

## SKILLS

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### Computational Skills:

Python 3, R

RNA-seq data analysis

Data frame manipulation Machine

learning analysis

### Leadership and Technical Skills:

Can break down and teach

complicated concepts Can present

clearly and confidently Can plan

large scale and small scale events

### Lab Skills:

STEM cell tissue culture, BSL-2

sterile technique, anaerobic bacteria

propagation, PCR, gel

electrophoresis, and bacteria

cultivation, isolation, and

identification.

### **Orientation Leader (Husky Camp Pack Lead), 04/2016 to 12/2017**

University Of Washington Bothell, Bothell, WA

In this position, I collaborated with teachers, administrators, and community members to plan large-scale events, including the annual resource fair for students. I also preformed daily presentations to large audiences. I developed the ability to deliver clear communication under high pressure through working on a diverse team.

## **EDUCATION**

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### **Data Science Certificate, 04/2020 to 06/2021**

University of Washington - Seattle, WA

Data Cleaning, Data Visualization, Machine Learning and Deep Learning

### **Bachelor of Science, Biology, 06/2019**

University of Washington - Bothell, WA

Graduated cum laude, Dean's list, minored in chemistry.

Relevant coursework includes: Computational Biology (B BIO 393A,B **Python**), Bioinformatics (B BIO 383, **Python**), Health Statistics (BBHLTH 215, **Statistics**), Molecular Modeling (B CHEM 310, **R**), Ecological Methods (BES 316, **Applied Statistics**), and Plant Microbiology LabB (ESRM 404 **Applied Statistics**).

### **Associate of Arts, Science, 06/2016**

Cascadia Community College - Bothell, WA

Relevant Coursework: Statistical Analysis (Math 246, **Statistics**), Calculus I and II (Math 151 & 152, **Linear Algebra**)

## **ACCOMPLISHMENTS**

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### **Cultivated Meat Modeling Consortium (CMMC) Governance**

**Position** 11/20 to Current

- "Using computational modeling to advance cultivated meat" -CMMC

### **ISB Innovator Award Recipient (2020)**

- Project Title: Exploring Stability and Change in Education Data

### **American Society for Microbiology Hill Day Advocate of Washington**

(2020 and 2021 Cohorts)

- Selected to advocate for policy changes and federal funding for COVID-19 research relief with United States government leaders.

### **Systems Biology of Health and Disease Certificate (2019)**

- Used R to conduct machine learning and statistical analysis for personalized medicine.

### **Mary Gates Scholarship Recipient (2019)**

- Competitive undergraduate research award.

### **Maize Genetics Conference PUI Travel Award (2019)**

- Award for undergraduate students to attend the Maize Genetics Conference, fully funded