John Cheney

Portland, Oregon

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Education

Master of Science – Bioinformatics and Genomics Track **June 2021 – Dec 2022 (expected)**
University of Oregon *Eugene, Oregon*

Bachelor of Arts – Biology **Aug 2012 – May 2019**
Willamette University *Salem, Oregon*

Technical Skills

Languages: Japanese | Python | Bash | R | LaTeX | R Shiny
Software: VS Code | RStudio | Slurm | GitHub | IGV | blast | Ensembl | PhyML | Velvet | Samtools | Seurat | DESeq2 | ALDEx2 | limma | Snakemake | STAR | BBTools | SPAdes | FastQC | metaphlan | kraken2
Statistics: Probability | Sampling distributions | Data simulation | Generalized linear models | Multivariate analysis | Permutation anova

Research Projects

Microbiota of Esophageal Cancer Progression | *Kraken2, R, Phyloseq* **April 2022 – Dec 2022**

- Constructed a bespoke pipeline that took raw sequence data through quality control and performed high-speed alignment using kraken2's compact hash k-mer tables
- Created a multi-modal data integrative machine learning model to identify patients who may be at higher risk of Esophageal Adenocarcinoma

CITE-seq Data Visualization Rshiny App | *Python, R, Snakemake, Seurat* **Sept 2021 – Dec 2021**

- Developed an interactive R Shiny visualization app to study Acute Myeloid Leukemia using 10x Genomics sequencing data, in collaboration with Oregon Health and Sciences University (OHSU)
- Updated the existing CellRanger/Seurat CITE-seq pipeline to integrate new clustering methodologies, though weekly meetings, code reviews, and version control through a shared GitHub repository

Independent Genomics Research | *Bash, SPAdes, FastQC, BBTools* **Sept 2020 – Feb 2021**

- Created a SPAdes assembly pipeline for bacterial genomes utilizing FastQC tools for quality control
- Solved several Rosalind bioinformatics and programming problem sets: github.com/johncheney/Rosalind-Problems

Experience

Computational Biologist Intern **April 2022 – Present**
CEDAR (Cancer Early Detection Advanced Research) OHSU – Knight Cancer Institute *Portland, Oregon*

- Developed and bench-marked bespoke viral genome detection pipelines
- Leveraged personal network to increase the reach and diversity of sample collection efforts through addressing healthcare inequities in biomedical research
- Applied existing single-cell RNA analysis to Extracellular Vesicle assays on the single-EV level for novel diagnostic biomarker discovery

Graduate Teaching Assistant **Sept 2021 – March 2022**
Graduate Teaching Fellowship – University of Oregon *Eugene, Oregon*

- Instructed weekly chemistry sections totaling 34 students utilizing a scientific inquiry-based pedagogical approach
- Clearly communicated complicated chemical concepts in a concise and understandable manner
- Regularly evaluated and provided constructive written and verbal feedback to students

Coordinator for International Relations **Aug 2019 – June 2021**
JET Programme *Fukuroi, Shizuoka, Japan*

- Served as an emissary and interpreter to Team Ireland for the 2020 Tokyo Olympics, organizing cultural and sport exchange events
- Engaged with English-speaking spectators of the 2019 Rugby World Cup at a variety of cultural exchange events and press conferences
- Selected to interpret at the Regional Social Welfare Council to assist English-speaking minority citizens in receiving government aid due to financial hardship brought on by the COVID-19 pandemic
- Supported English speaking community members by organizing exchange events to grow a larger culture awareness around diversity and acceptance, with the end goal of creating community and inclusion

Awards & Scholarships

Knight Campus Graduate Internship Program **June 2021 – Present**
Inclusion & Diversity Scholarship *University of Oregon*

- Awarded a one-time $8,000 scholarship for experience and passion relating to diversity and inclusion

Suruga Institute **Jan 2020**
Research grant for Coordinators for International Relations

- Awarded a ¥200,000 grant to study regional dialect variation within Shizuoka Prefecture, Japan

Ford Family Foundation **Aug 2012 – May 2019**
Ford Scholar *Willamette University*

- Awarded a scholarship of $25,000 annually based on leadership, Oregon residency, academic merit and financial need

Conferences

BioConductor 2022 **July 2022**
Seattle, Washington *Presenting: CITEViz*

- Networked with computational biologists from: Seattle, Grand Rapids MI, Maryland and Virginia

2022 Early Detection of Cancer Conference **October 2022**
Portland, Oregon *Presenting: Microbiota of Esophageal Cancer Progression*

- Presenting preliminary findings from the MEP Study

2022 AACR Special Conference: Colorectal Cancer **October 2022**
Portland, Oregon *Presenting: Poster*

- Presenting Polyclonality in Liver Metastatic Colorectal Cancer, a small cohort study

Publications

CITE-Viz: Replicating the Interactive Flow Cytometry Workflow in CITE-Seq
Under Review

- https://www.biorxiv.org/content/10.1101/2022.05.15.491411v1