Emily Bartlett

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Education

- **Master of Science in Biology - Bioinformatics and Genomics Program** Eugene, OR
  The University of Oregon *June 2023 – Present*
  All coursework complete, degree pending internship completion

- **Bachelor in Biology** Boise, ID
  The College of Idaho; GPA: 3.8 *August 2015 – May 2019*
  - **Minor**: Graphic design and Criminal Psychology

Skills

Languages: *Proficient:* R, Python, Bash *Experienced:* SQL

Computational: NumPy, Pandas, AWS, Docker, Linux, Git, GitHub, Jupyter Notebook, STAR, DESeq, CIBERSORTx, slurm, Seraut, Synapse

Laboratory: Immunofluorescence, Flow cytometry, Murine handling, High-throughput qRT-PCR, Next-Generation Sequencing library prep

Experience

- **Graduate Researcher: BEAT Acute Myeloid Leukemia** Eugene, OR
  University of Oregon, in collaboration with OHSU *September 2023 – March 2024*
  Overview: Acute myeloid leukemia's heterogeneity complicates treatment selection. Effective therapy relies on analyzing cell type proportions and drug response data to inform decision making. Data was collected from patients with AML, samples underwent both bulk RNA sequencing and drug sensitivity testing.
  - Deconvoluted 707 bulk tumor cell RNA-seq samples, using CIBERSORTx, to infer leukemic cell types, to investigate the response of tumor cells to combinatorial drug responses.
  - Successful replication of workflows was confirmed by using statistical tests (Pearson correlation) to compare cell type ratios to ground truth.
  - Calculated "area under the curve" (AUC) values for drug sensitivity data by fitting curves using the n-parameter logistic regression (nplr) r package.
  - Reduced dimensionality using principal component analysis (PCA), the second principal component was then correlated with the AUC data allowing visualization on a primitive to mature cell type axis, highlighting which drug combinations were more effective.

- **Molecular Laboratory Medical Technologist** Boise, ID
  Boise VA Medical Center *April 2020 – May 2023*
  Overview: Implementation of a molecular diagnostic lab focusing on COVID-19 testing and genetic sequencing tech, elevating patient care and public health.
  - Extracted and ran up to 35 96-well RNA extraction plates per week on high throughput RT-qPCR platform.
  - Maintained fast turnaround time by developing and optimizing procedures, essential for the laboratory to continue functioning during the pandemic.
  - Coordinated with Illumina to implement COVID-19 and pharmacogenomics sequencing, including securing new laboratory space, setting up an in-house server for analysis, training staff members, and validating the assay for clinical testing.
  - Tracked fund control point usage, ensuring reagents were ordered from appropriate funding sources, supporting efficient reconciliation of finances.

- **Laboratory Research Technician** Boise, ID
  Radke Lab, Boise VA Medical Center, IVREF *September 2019 — May 2020*

  Overview: How the innate immune response differs during infection between virulent adenovirus strain Ad14p1 and the less virulent Ad14, employing Syrian Hamsters as animal models.

  - Investigated differential immune cell infiltration between the adenovirus strains by infecting hundreds of Syrian Hamsters and extracting epithelial macrophage cells using bronchoalveolar lavage.
  - Optimized workflows to analyze immune cell infiltration by staining BAL samples with hundreds of molecular probe and fluorophore combinations to distinguish cell types with flow cytometry.
  - Expedited flow cytometry analysis and created publication quality figures using FlowJo.

- **Biochemistry Lab Manager/Research Assistant** Boise, ID
  Warner Lab, Boise State University *September 2019 – May 2020*
  - Sustained laboratory operations by maintaining two sets of media stock, aliquoting all reagents, and ordering new reagents necessary for projects.
  - Developed efficient and reliable cost-saving protocol for multicasting up to 50 SDS-PAGE gels per week, optimizing lab resources and efficiency.
  - Maintained consistency across the lab by developing dozens of laboratory standard operating procedures.

- **Undergraduate Researcher** Caldwell, ID
  Pirtle Lab, College of Idaho/Idea networks of biomedical excellence (INBRE) *May 2018 – August 2018*
  - Studied the impact of e-cigarette chemicals on bone development using chicken embryos as a model organism.
  - Micro-dissected 100s of leg bones to analyze changes in wet and dry weights to investigate the impact of treatment on development.
  - Collaborated with two peers to present research findings at the INBRE conference in Moscow, Idaho, and the West Coast Biological Sciences Undergraduate Research Conference in San Diego.