

Sydney Johnston

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EDUCATION

B.S. Microbiology, Iowa State University – **Minor: Emerging Global Diseases (3.73/4.0)** **2020**
Communicable Diseases, Public Health Practicum at the University of Botswana, Gaborone **2019**

EXPERIENCE

Research Scientist Engineer II, University of Washington Northwest Genomics Center **2021-present**

- Conduct research with 3 PIs: **D. Nickerson**, **E. Eichler**, and **G. Jarvik** on diverse research projects focused on the intersection of environmental, lifestyle, and biological factors affecting rare mendelian diseases.
- Work in concert with 5 research facilities to develop the most diverse and wide scope of genomic data for precision medicine, as a part of the largest NIH grant: **All of Us Research Program** (Human Genome Project)
- **Team Lead** of the Library Preparation section, conducting chemistry steps for Illumina and PacBio whole genome sequencing of DNA, RNA, and exomes.
- In charge of **new employee training**, wet lab reorganization, and **writing new SOP** for long-reads
- Control the operation of 5+ robotic liquid handling and automated workstation systems including Perkin Elmer (2) Janus G3, (2) Sciclone, Zephyr, and PacBio Hifi Sequel IIe, simultaneously, in a CLIA-certified lab.

Bacteriology Lab Technician, Iowa State University Veterinary Diagnostic Laboratory **2019-2021**

- Prepared an array of diagnostic tests for postmortem large-mammal tissues aseptically in a BSL-2 laboratory, streaking upwards of 300 plates per day for **isolations and diagnostic identification**.
- **Individually structured** and in charge of “**No-ID Project**”, where I executed **DNA & protein extractions** to manually analyze previously unidentified samples **increasing diagnostic capabilities** by ~4% annually.
- Responsible for accurate record keeping with continuous sample tracking using a Laboratory Information Management System (**LIMS**) software and Excel.
- Perform subculturing on various media to **achieve pure culture** and transfer to cryogenic preservation.

Undergraduate Research Assistant, Iowa State University for Director Head, *Dr. J. Cunnick* **2019**

- Given a broad task to develop a new protocol for use in senior-level Immunology lab course, Micro 475L, I **tested various methods, trouble-shooted, and developed the non-biohazardous method** ultimately used to teach ELISA techniques and quantify oral antibody concentrations.
- Created and measured adequate standard curves for human IgG to corresponding suitable tetanus toxoid dilutions via ELISA to ensure samples would be in detectable range after freeze-thaw cycles.
- Researched and **wrote a literature review** of various collection and filtration methods for saliva samples.

Undergraduate Microbiology Lab T.A., Iowa State University for *Dr. C. Brillhart Micro 302L* **2019**

- **Taught 24 microbiology students various lab techniques**; proper microscope and pipette use, staining methods (Gram, acid fast, endospore, etc.), colony isolation and quantification, PCR, and adaptation effects (oxygen, UV light, pH, temperature, osmolarity).
- Set up 15 weeks of lab experiments, **mentored undergraduates**, graded pre-lab quizzes, and aided students' learning and understanding of content through individual research project development.

SPECIALIZED SKILLS AND LEADERSHIP

- *Skills*: Liquid handling systems, qPCR, PCR, Gel electrophoresis, FA/BA, library construction, Microsoft Office, data presentation, extractions.
- **President and Vice President**, Iowa State University Microbiology Club **2019-2020**
- **NSF Graduate Research Fellowship Program (GRFP)** proposal submission **2020**
- Science Explorations Club: Introducing 3rd-6th grade girls to STEM fields **2018-2020**
- Transfer Admissions Ambassador Program & ISU campus Tour Guide **2018-2020**
- **Dean's List** distinctions at University of Minnesota Duluth & Iowa State University **2017-2020**
- **Captain**, FIRST Robotics Team 3042 Cobalt Catalysts, Worlds Qualifiers **2016-2017**