

Isabel Smalley

320-304-7228 • small304@d.umn.edu • 1110 E 10th St Duluth, MN

EDUCATION

University of Minnesota Duluth

Bachelor of Science and Art, 2025

Majors: Biology and Computer Science

Relevant Coursework: Eukaryotic Genomic Analysis, Genetics, Cell Biology, Artificial Intelligence, Software Engineering, Quantitative Analysis

Alexandria Technical and Community College

Associates of Liberal Arts, 2020

RESEARCH EXPERIENCE

Grusz Lab, University of Minnesota Duluth, *Research Assistant*

April 2022-Present

- Participated in five separate research projects across various plant species.
- Extracted DNA from 96 plant specimens across the land plant phylogeny.
- Collected and analyzed spores from more than 100 Smithsonian herbarium specimens to find drought relation to spore size.

Boyce Thompson Institute, Cornell University, *Intern*

June-August 2023

- Cultured and sampled hornwort species of 5 different genera for DNA and RNA extraction to identify genes responsible for switch from monoicy to dioicy.
- Leveraged UNIX and Python to examine genomic data and identified 3 hornwort species sex chromosomes from the data.
- Presented sex chromosome findings to a symposium of peers and experts in the field.

OTHER EXPERIENCE

Olga Lakela Herbarium, University of Minnesota Duluth, *Student Worker*

April 2022-Present

- Digitize and file hundreds of herbarium specimens.
- Collaborate with faculty to digitize and process data.
- Understand metadata basics and its utility in herbariums.

Biology Department, University of Minnesota Duluth, *Teaching Assistant*

January-May 2023

- Assisted with teaching Trees of Life: Assembly and Applications
- Helped students learn R.
- Held office hours to better help students learn to code.

Math Department, Alexandria Technical and Community College, *Tutor*

February-May 2020

- Mentored several students in college algebra and trigonometry courses.
- Administered evaluation tools to grade homework assignments for 2 mathematical courses.

SKILLS

Technology: C++, Unix, Java, JavaScript, JavaFX, CSS, HTML, Assembly, Python, R, Basic AI Algorithms, Microsoft Office Suite, Google Office Suite, Android Studio, Flutter, Dart

Laboratory: PCR, Gel Electrophoresis, CTAB Extraction, Nanodrop, Differential Expression, Microscopy, Illumina Sequencing, GoFlag Sequencing