KAITLIN HILL 832.928.6834 KAITLINHILL@TAMU.EDU

Department of Biology

Office: 105A BSBW

Texas A&M University

College Station, TX 77843

Education

Fall 2020 – Fall 2022

B.S., Cell and Molecular Biology

Texas A&M University, College Station, TX

Research Assistant in the Griffing Lab (Spring 2022)

Fall 2023 – Current

PhD, Biology

Texas A&M University, College Station, TX

Independent Researcher in the Griffing Lab (Fall 2023-Current)

Scientific Interests

Mammalian Cellular Biology, Plant Cellular Biology, Inter/Intracellular Interactions, Light Microscopy, Fluorescence Microscopy, Gravitropic Response Pathways, Calcium Signaling Pathways, Generalized Molecular Signaling Pathways, Light Response Pathways

Experience

Undergraduate Research Assistant — Griffing Lab

- Study the photostimulation response of Arabidopsis thaliana seedlings as a team with an undergraduate thesis candidate
- Investigate how water refracts and changes the power of light that is absorbed by the chloroplast and compare it to air and borosilicate gel
- Observe the change in a seedling's calcium wave response by manipulating the wavelength of light and duration of exposure
- Experiment with seedlings using fluorescent confocal and light microscopy
- Creation of graphs and spreadsheets using ImageJ and Excel that demonstrate the calcium wave response following photostimulation at differing wavelengths of light
- Analyzing video and images of single cells and their organelles to gather useful data and display it for presentation

Post-Graduate Researcher — Griffing Lab

- Work independently on calcium wave project
- Collaborate with others in my lab to develop research plans, finalize journal articles, and study the nature of the calcium wave seen in *Arabidopsis thaliana*
- Design and create plots, graphs, figures, etc. using programs like RStudio for presentations and articles to be published
- Participate in group discussions over recently published articles in areas of personal scientific interest and beyond
- Mentor and guide undergraduates on their own experiments and teach them proper lab protocol

- Foster a successful learning environment and promote an interest in research among undergraduate researchers across the department
- Think independently on how to best accomplish my goals to complete my thesis and associated experiments, as well as gain the advice of my own mentors based on their own experiences and past challenges in a similar field of study

Teaching Assistantship — Fall 2023 – Current

- Three lab sections for BIOL 111 (**Introductory Biology I**) at Texas A&M University
    - Introduction to biology and experimental lab setting for undergraduate studies
- Five lab sections for BIOL 430 (**Biological Imaging**) at Texas A&M University
    - Explanation of microscopy and imaging techniques in the setting of biology
- Four lab sections for BIOL 320 (**Anatomy and Physiology II**) at Texas A&M University
    - In-depth lab course on internal systems of anatomy and physiology
- Two lab sections for BIOL 423 (**Cell Biology**) at Texas A&M University
    - Lab course focused on cellular systems and experimental design

Workshops/Conferences

- IMARIS Workshop: 3D/4D Visualization and Analysis - Texas A&M University
- Student Postdoctoral Research Conference - Texas A&M University
- Gordon Research Conference - Portland, Maine

Skills and Abilities

Microscopy

- Certified and practiced user for the Zeiss Lightsheet Z.1 Microscope
    - 85+ total usage hours
- Certified and practiced user for the Nikon AXR Laser Scanning Confocal Microscope
    - 120+ total usage hours
- Certified and practiced user for the Olympus FV1000 Confocal Microscope
- Experience using the Zeiss Axioplan
- Highly experienced in conducting standard widefield, fluorescence, dark field, and phase contrast microscopy

Light Power Measurement

- Experience using several pieces of ThorLabs equipment including:
    - Handheld Optical Power and Energy Meter Console
    - Microscope Slide Power Sensor
- Experience using the StellarNet Spectroradiometer

Data Analysis

- Proficient in Fiji/ImageJ
- Practiced user of RStudio
- Practiced user of Blender
- Practiced user of IMARIS for Zeiss
- Practiced user of JupyterLabs/Python

Presentation of Research

Student/Postdoc Research Conference (SPRC) (Spring 2024)

Gave a ten-minute talk to Texas A&M Department of Biology faculty, staff, and post-graduate students about the nature of the calcium wave and how the Griffing Lab intends to pursue the question in the future.

Gordon Research Conference (GRC) (Summer 2025)

Speaker at the Single-Cell Approaches in Plant Biology Gordon Research Conference. Discussing radial wave patterns in cotyledons of *Arabidopsis thaliana*.

References

Dr. Sara Maynard

Mentor/PhD student graduated from the Griffing Lab

Phone: (281) 455-8518

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Dr. Lawrence Griffing

PI/Mentor

Phone: (979) 676-3990

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Dr. Holly Gibbs

Master's Committee Member/Associate Research Scientist

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Cerrina Rodriguez

Coworker in the Griffing Lab

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