Frances Stark

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EDUCATION

The University of California, Berkeley, Berkeley, CA — Expected 2024 graduation
PhD Program in Microbiology

The University of Texas at Austin, Austin, TX — 2015- 2019
BS in Biochemistry, High Honors,
Special Departmental Honors

EXPERIENCE

Kraseliva Lab, Berkeley, CA — 2020
Graduate researcher

Barrick Lab, Austin, TX — 2017-2019
Undergraduate researcher (40hrs/week summers) (20hrs/week semesters)

- Skills obtained
  - Viral Infection of plants
  - Quantitative PCR
  - Cloning techniques

Hawkes Lab, Austin, TX — 2016- 2018
Undergraduate researcher (40hrs/week summers) (10hrs/week semesters)

- Skills Obtained
  - Isolation and extraction of fungal endophytes from plant tissue
  - Fungal Genomic DNA extraction and species characterization
  - Secondary metabolite extraction, antibiotic assays and HPLC metabolomics

Undergraduate Teaching Assistant, Austin, TX — 2018-2019
For Genetics bio325 under Janice Fischer, UT Austin (5hrs/week semesters)

- Lead Discussion Sections weekly

Research mentor- Hawkes Lab, Austin, TX — 2016- 2018
Peer mentor (10hrs/week semesters)

- Train and teach lab protocols to incoming undergraduate researchers
- Conduct independent project

PLUS- Peer-Led Undergraduate Studying, Austin, TX — 2017
Peer Facilitator

- Appointed position
- Lead study sessions for Biochemistry BCH339F at UT, Austin

PROJECTS

Research: Bioprospecting, Hawkes Lab

- Examined distribution patterns of fungal endophytes within C4 grasses in a drought manipulation experiment, with the goal of pairing metabolite data of certain fungal species to the reoccurrence of the varying species. Resulted in Identifying that seasonal differences significantly impact the fungal species variation within *Aristida purprea*.

Research: Barrick Lab

- Examined within a team the introduction of viral genetic therapy in agriculture as a possible addition to conventional crop protection with the goal of bioengineering native endosymbiosis relationships to benefit important-agricultural crops. Resulted in narrowing down how we deliver viral cargos using reporter genes and continue to pursue the implementation of pathogen protection genes into these therapeutic viruses.
- **Individual Thesis Project:** Characterizing plant defensins in common bean with a goal of viral horizontal delivery of the Protective peptides as a fungal-pathogen protection method.

PUBLICATIONS IN ADVANCE PREPARATION FOR SUBMISSION (available upon request)

2020

- Monika S. Fischer, **Frances Grace Stark**, Matthew F. Traxler "Pyrolyzed substrates induce aromatic compound metabolism gene expression in *Pyronema domesticum*"
- Austin W. Cole, Randall A. Hughes, Simon Vinvent D'alton, **Frances Grace Stark**, Gregory Pogue, James Bull, Jeffrey E. Barrick, And Andrew D. Ellington "A pipeline for the de novo design and synthesis of single-stranded RNA plant viruses with synthetic transgene cargoes"

ACTIVITIES & LEADERSHIP

University of California, Berkeley Botanical Garden Volunteer
2020-current

- Propagation of garden plants

National Society of collegiate scholars, Austin, TX
2016

Past member

Alpha Lambda Delta Honor Society, Austin, TX
2016

Past member

- Various volunteer opportunities around community
- Austin pets alive (Austin, TX) care of animals.

Phi Eta Sigma Honor Society, Austin, TX
2016

Past member

- Various volunteer opportunities around community
- Volunteer at Elizabeth Ney Museum

Longhorn Band member, Austin, TX
2015-2017

Past member

- Marching band
- Practices six hours/week during fall semesters
- Performed at all university football games

SKILLS

Certified Pharmacy Technician
2015-current

- Took relevant coursework

- Took the Pharmacy technician Certification Board (PTCB) and received certification

HONORS AND AWARDS

Chancellors Fellowship, UC Berkeley 2019- 2021

FRI Summer research fellowship May-August 2016

- Bioprospecting research stream at the University of Texas at Austin

Advanced National Youth Leadership Forum on Medicine, Baltimore, MD July 2014

National Youth Leadership Forum on Medicine, Houston, TX July 2013

CONFERENCES AND SYMPOSIUMS

Undergraduate Research Forum- University of Texas at Austin 2016

- Poster presentation, Hawkes lab project

Undergraduate Research Forum- University of Texas at Austin 2017

- Poster presentation, Hawkes lab project

The Capital of Texas Undergraduate Research Conference - University of Texas at Austin 2018

- Oral presentation, Barrick lab project

Fall Undergraduate Research Symposium- University of Texas at Austin 2018

- Oral presentation, Barrick lab project