

# Kathleen S. McNeary

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## Education

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**Bachelor of Science in Biology, Minor in Environmental Studies** 2017 - Present

Truman State University

Cumulative GPA: 3.95/4.00

Major GPA: 4.00

Projected Graduation: May 2021

## Research Experience

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**Research Assistant** Spring 2019 - Present

Truman State University: Biology Department - Mentor: Dr. Diane Janick-Buckner

- Proposed and currently researching the effects of saline stress on the expression of three phytoene synthase paralogs and select alfin paralogs in *Zea mays* Mo17 and B73 inbred lines
- Funded by the Ronald E. McNair Post-Baccalaureate Achievement Program
- Studied the expression of gene families in different maize root zones
- Experience with kernel sterilization and seedling germination, RNA isolation and purification, cDNA synthesis, UV-vis spectrophotometry, end point PCR, and quantitative PCR

## Academic Conferences

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**Heartland Research Conference** September 2019

Ronald E. McNair Conference

Presented McNair research proposal: Investigation of Root Zone Phytoene Synthase (*PSY*) Expression in Salt-Stressed *Zea mays*; attended academic presentations of my peers.

**Virtual Heartland Research Conference** September 2020

Ronald E. McNair Conference

Presented McNair research: Investigation of Root Zone Phytoene Synthase (*PSY*) and Alfin-like gene (*ALF*) Expression in Salt-Stressed *Zea mays*; attended academic presentations of my peers.

## Work Experience

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**Biology Lab Teaching Assistant** Fall 2018

Truman State University: Biology Department - Supervisor: Professor Anne Bergey

Graded quizzes, tests, laboratory work, and other assignments.

**Greenhouse** Fall 2018 - Present

Truman State University: Biology Department - Supervisor(s): Christina Cross, Ali Reed

- Conducted general greenhouse management and plant care, including germination, watering, re-potting, propagation, fertilizing, and pruning.
- Organized and aided in greenhouse bi-yearly plant sale, providing customer service and handling the register.

### **STEP Academic Trainer**

January 2020 - Present

Truman State University: STEP and MoLSAMP Office - Supervisor(s):

Ryan Miller, Karin Wheeler

- Met with STEP and MoLSAMP scholars to provide supplemental tutoring in biology and chemistry courses, creating instructional activities as needed, and maintaining regularly scheduled meetings and academic check-ins over the semester
- Documented tutoring session and kept student confidentiality
- Adapted for long-distance communication methods and remote learning during the COVID-19 pandemic

### **Biology Lab Teaching Assistant**

February 2020 - Present

Truman State University: Biology Department - Supervisor: Dr.

Stephanie Maiden

- Graded weekly lab notebooks for introductory genetics
- Created grading rubrics and solution criteria
- Provided feedback on journal entries

## **Honors & Awards**

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### **Ronald E. McNair Post-Baccalaureate Achievement Program Scholar** November 2018 - Present

Truman State University

- Designed to prepare underrepresented undergraduate students for graduate school through research involvement. The program has allowed me to develop and execute an original research project as an undergraduate while fostering faculty-mentor relationships to expand my understanding of my chosen field.
- McNair has equipped me with the tools needed to navigate academia in preparation for graduate school.

### **Leadership Alliance Virtual Professional Development Series**

Summer 2020

- Engaged in an eight-week virtual graduate school development course
- Attended weekly lectures by Doctoral Scholars on various aspects of graduate study and preparation
- Participated in virtual discussions on topics relevant to weekly workshops

### **Boyce Thompson Institute REU**

Cancelled Summer 2020

Cornell University

Accepted into Plant Genome REU coordinated by the Boyce Thompson Institute at Cornell University. The program was cancelled due to the COVID-19 pandemic.

### **Evolution, Ecology, & Environment REU**

Cancelled Summer 2020

Harvard University

Accepted into the E3 REU coordinated by the Department of Organismic and Evolutionary Biology at Harvard University through Leadership Alliance Program. The program was cancelled due to the COVID-19 pandemic.

### **Molecular Biology of Cell Signaling REU**

Cancelled Summer 2020

Cornell University

Accepted into the Molecular Biology and Genetics of Cell Signaling REU coordinated by the Department of Molecular Biology and Genetics at Cornell University. The program was cancelled due to the COVID-19 pandemic.

### **Donald Danforth Plant Science Center Summer Internship Program**

Cancelled Summer 2020

Donald Danforth Plant Science Center

Accepted to the Donald Danforth Plant Science Center Summer Internship Program. The program was cancelled due to the COVID-19 pandemic.

### President's List

For achieving a 4.00 GPA during the Fall 2017, Spring 2018, Spring 2019, Fall 2019, and Spring 2020 academic terms.

### Missouri Bright Flight Scholarship

Fall 2017 - Present

Awarded to Missouri residents who scored in either the top 3%, or the top 4th and 5th percentiles of ACT scores. Maintained with yearly full enrollment and a cumulative GPA above 2.5

### President's Honorary Scholarship

Fall 2017 - Present

### Missouri Scholars Academy Scholarship

Fall 2017 - Present

University of Missouri

Awarded for acceptance into the Missouri Scholars Academy at Mizzou during the junior summer in high school.

## Relevant Coursework

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Plant Anatomy\*

Biology Research I\*

Ecology\*

General Chemistry\*

Genetics\*

McNair Research Internship I

Cell Biology\*

Analytic Calculus I

Economic & Medicinal Botany

Physics I & II+

Organic Chemistry I & II\*

Bioinformatics+

Microbiology\*+

Biochemistry+

Expanding Environmental Consciousness+

Coursework with a laboratory component is denoted with an asterisk \*

Upcoming coursework is denoted with a plus +

## Affiliations

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### Phi Sigma Pi

Fall 2018 - Fall 2019

Truman State University

- Elected member of the Scholarship committee; responsible for developing and implementing organization-wide events dedicated to imparting new knowledge on a variety of topics.
- Researched and assembled presentations on selected subjects for fraternity events while keeping to a budget.

## Technical Skills

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### General Laboratory

Experienced with, but not limited to: light microscopy, spectrometers, centrifuges, gel electrophoresis and PCR, gene modeling, chemical preparations, pipette use, chemical filtration, gene cloning with plasmid vectors, and cleaning glassware

## **Data Analysis**

Experienced with: life table construction, statistical tests, raw data processing and organization with Excel/GraphPad, and R programming for statistical analysis