

## Tanner Cook

Ph.D. Student in Interdepartmental Plant Biology  
NSF NRT Fellow in Predictive Plant Phenomics, Iowa State University  
(August 2018 -Present)

### Education

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**Ph.D. Interdepartmental Plant Biology**, Iowa State University, anticipated graduation in 2023.

- Specialization in Predictive Plant Phenomics.

**B.S. Biology**, Buena Vista University, 2018.

**B.S. Environmental Science**, Buena Vista University, 2018.

- Magna cum laude and All-College honors.

### Research

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#### Graduate Research

**January 2019 - Present**

- We are currently developing a bi-fluorescent, molecular breeding tool to test the meiosis induction role in a variety of chemicals and genetic factors using a high-throughput technique.
- Current collaborations include the development of quantitative microfluidic devices with Iowa State University engineers and the testing of a chemical library with Iowa State University metabolomic experts.

#### Rotations

**August 2018 - March 2019**

- Dr. Yanhai Yin- The relationship of brassinosteroids and plant interactions.
- Dr. Justin Walley- A genetic look at pathogenic chromatin remodeling complexes.
- Dr. Thomas Lübberstedt- Double haploid optimization and *in vitro* nursery development.

### Undergraduate Research

**2016-2018 Analysis of Antimicrobial Properties in Abundant Moss and Lichen Species**

**Used in Sub-Antarctic Nest Construction** – Buena Vista University

-Under the guidance of Dr. Melinda Coogan and Dr. Roy MacKenzie

**2016-2018 Effects of Fertilizer on Rhizobia Presence in Legumes** – Buena Vista University

-Under the guidance of Dr. Thomas Bonagura and Dr. Melinda Coogan

**2017-2018 Phytoremediation of Landfill Groundwater with the Utilization of Willow and Poplar Plantings** – USDA Forest Service

-Under the guidance of Dr. Ronald Zalesny

### Work Experience

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**2020-Present Tractor Driver for Lübberstedt Lab**

*Iowa State University- Boone, Iowa*

**2017–2018 National Forest Service Biological Aide**

*Institute of Applied Ecological Studies - Rhinelander, Wisconsin*

**2015 & 2016 Linn County Conservation Aide**

- Morgan Creek Park – Palo, Iowa*
- 2014-2015 Greenhouse Assistant**  
*Buena Vista University, Storm Lake, IA*
- 2014 Earth Team Volunteer/ Intern**  
*Tipton Field Office - Soil and Water Conservation (USDA) - Tipton, Iowa*
- 2019-2021 Reserve Story County Sheriff's Deputy**  
*Story County, IA*

## Leadership Experience

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- 2021–Present** Corteva Agrisciences PSSS Student Advisory Council member (ISU)
- 2021** Led Ph.D. rotation student, Yue Liu, during her rotation (ISU)
- 2020** Session Chair- Phenome2020 (ISU)
- 2020-2021** Co-President-Graduate Student Organization (IPB)(ISU)
- 2019-2020** Speaker Chair- Graduate Student Organization (P3) (ISU)
- 2019-2020** Vice President-Graduate Student Organization (IPB) (ISU)
- 2016-2018** Community Coordinator (BVU)
- 2015-2016** Resident Assistant (BVU)
- 2015-2018** President-Students Concerned About Tomorrow's Environment (BVU)
- 2015-2017** Academic Assistant – Biology (BVU)

## Works

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### Articles

Yanarella, C. F\*., **Cook, T. M\*.**, Panelo, J. S., & Chiteri, K. O. (2021). *Graduate Student Perspective on Organizing PSSS Events During Phenome 2020.*

<https://doi.org/10.17605/OSF.IO/C6MHN>

\*indicates primary authorship

### Presentations

**Aug. 2021** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*-National Association of Plant Breeder's Annual meeting(Graduate Student Presentation), Virtual conference

**Aug. 2021** *Professional Development in a Virtual Environment – Lessons from the Plant Sciences Symposia Series*, presented on behalf of Corteva Agriscience's PSSS Student Advisory Council, National Association of Plant Breeder's Annual meeting(Poster Session), Virtual conference

**Aug. 2021** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*-National Association of Plant Breeder's Annual meeting(Poster Session), Virtual conference

**Jul. 2021** *P3 NRT: Professional Development in Action*- NRT workshop at ASPB Worldwide summit, Zoom Meeting

**Jun. 2021** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*–International Conference on Arabidopsis Research (Poster session), Virtual conference

**Apr. 2021** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*–R.F. Baker Symposium (Poster session), Iowa State University, Webex Meeting

**Jan. 2021-** *Organizing a Student-led Symposium Within a National Conference-* NSF NRT Annual Meeting, Zoom meeting

**May 2020-Present** *In Vitro Nursery (Biological Line Development)*- Quarterly updates to FFAR contributing companies and manager- Zoom (2020 through present)

**Feb. 2020** Introduction and conclusion to the Predictive Plant Phenomics Session as a part of the Corteva Plant Science Symposia Series- Phenome2020, Tucson, AZ.

**Mar. 2020** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*–R.F. Baker Symposium (Poster session), Iowa State University, Ames, IA.

**Nov. 2019** *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis*–Interdepartmental Plant Biology Student Seminar Series, Iowa State University, Ames, IA.

**Oct. 2019** *In Vitro Nursery*- Predictive Plant Phenomic Mini-Symposium at Corteva Agriscience (fire talk), Corteva Agriscience, Johnston, IA.

**Nov. 2018** *ABI5 and FER: The fulcrum between growth and survival* – Interdepartmental Plant Biology Student Seminar Series, Iowa State University, Ames, IA.

**Apr. 2018** *The Culture of Corn: A Homegrown Mexican Migrant* - Scholarly ACES, President's Advisory Council, and Buena Vista University's 14<sup>th</sup> annual Scholar's Day, Storm Lake, IA.

**Apr. 2018** *Inoculum: An Essential for High Legume Yield?* - Buena Vista University's Honor's Committee, Storm Lake, IA

**Apr. 2018** *Antimicrobial Metabolite Analysis of Sub-Antarctic Mosses Found in Bird Nests* – The 130<sup>th</sup> annual Iowa Academy of Science Meeting (Poster Session).

**Jul. 2017** *Magical Mosses* – The United States National Forest Service's International Day of Science, Rhinelander, WI.

**Apr. 2017** *Antimicrobial Metabolite Analysis of Sub-Antarctic Mosses Found in Bird Nests* – 13<sup>th</sup> Annual Buena Vista University's Scholar's Day (Poster Session).

## Training/Certificates

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Biological Risk Assessments for Researchers

Iowa State University EH&S, Valid until 08/03/2024

NIH Guidelines

Iowa State University EH&S, Valid until 08/03/2024

Fire Safety and Fire Extinguisher Training

Iowa State University EH&S, Valid until 05/11/2022

Laboratory Safety: Core Concepts

Iowa State University EH&S, Valid until 08/03/2024

Agricultural Worker Pesticide Safety Training EPA Workers PST 00022

Iowa State University EH&S, Valid until 05/17/2022

Autoclave Safety Training

Iowa State University EH&S, Valid until 01/02/2025

Shop Safety Fundamental

Iowa State EH&S, Valid until

Forklift Operator Safety

Iowa State EH&S, Valid until

Hazard Communication Training

Iowa State EH&S, Valid until

### **Professional Associations/Memberships**

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National Association of Plant Breeders- **Member since 2021**

Gamma Sigma Delta Agricultural Honor Society- **Member since 2020**

Phi Kappa Phi Honor Society- **Member since 2020**

### **Honors & Achievements**

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- 2021** Selected graduate student talk at the NAPB Annual Meeting
- 2021** Graduate student poster presentation award (3<sup>rd</sup> place)
- 2020-2021** Brown fellow
- 2020** Ted Crosbie Bayer Graduate Scholarship in Corn Breeding Recipient
- 2020** Predictive Plant Phenomics Student Leadership Award
- 2020-Present** Gamma Sigma Delta Agricultural Honor Society
- 2020-Present** Phi Kappa Phi Honor Society
- 2020** People's Choice Award for *Establishing a System for High-Throughput Screening of Factors Affecting Meiosis* poster presentation at R.F. Baker Symposium
- 2019-2021** F. Wendell Miller Graduate Student Scholarship Recipient
- 2019** Schuler Award Recipient
- 2019** Story County Sheriff's Office Citizen's Academy graduate
- 2018** National Science Foundation National Research Traineeship Fellow in Predictive Plant Phenomics
  - A competitive fellowship for students pursuing a Ph.D. in data science, plant science, or engineering.
- 2018** USDA Forest Service Certificate of Merit Award
  - For substantial contributions to the broad public interest through research on short rotation woody crops and their use in phytotechnologies.
- 2018** Stine Fellow
  - A competitive travel fellowship that focused on the origin and domestication of corn through an academic and cultural lens.
- 2017** *Who's Who Among Students in American Universities and Colleges* Nominee for Buena Vista University
- 2017** Clifford A. Rae Recipient for Academic Excellence
  - An award presented to students who have achieved high academic excellence in the BVU School of Science and School of Business.

**2016** Global Fellow

- A selected group of scholars that participated in a trip to the southern tip of Chile to study environmentalism and culture.

**2016-Present** Alpha Chi Honor Society

**2014-2018** Buena Vista University Honors Society

**2014-2018** Buena Vista University Dean's Fellow's Program

### **Grants written**

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- **National Science Foundation- Graduate Research Fellowship Program** (Oct 2019)
  - *Establishing a System for High-Throughput Screening of "Factors" Affecting Meiosis.*
  - Potential funding amount: \$184,000
- **National Institute of Food and Agriculture- Agriculture and Food Research Initiative- Education and Workforce Development Program** (August 2020)
  - *Genetic gain through meiosis induction manipulation.*
  - Potential funding amount: \$158,138