

## Tanner Cook

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

### Education

- Ph.D. Interdepartmental Plant Biology, Iowa State University, anticipated graduation 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.

### Graduate Research

#### Current Research

**January 2019 - Present**

- We are currently developing a bio-fluorescent, molecular breeding tool to test the meiosis induction role in a variety of chemicals using a high-throughput technique.
  - Our current study is developing and deploying CRISPR/Cas9 vector constructs to create allelic, fluorescent tags used in our high-throughput tool.
  - Current collaborations include the development of fluorescent cell sorters 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.

### Work Experience

#### Reserve Story County Sheriff's Deputy

**August 2019 - Present**

*Story County, IA*

- Volunteer law enforcement officer serving and protecting the residents of Story County.

#### National Forest Service Biological Aide

**May 2017 – August 2018**

*Institute of Applied Ecological Studies - Rhinelander, Wisconsin*

- Worked under the direction of several Forest Service scientists assisting with data collection in the National Forests as well as federally controlled test plots.
- Duties included: basal area measurement, groundcover determination, plot preparation, plot maintenance, plant care, and various data collection.

#### Linn County Conservation Aide

**March - December 2015 & May-August 2016**

*Morgan Creek Park – Palo, Iowa*

- Assisted in the maintenance and operation of five parks.
- Duties included: Mowing, painting, minor landscaping, and operating equipment.

**Earth Team Volunteer/ Intern****January 2014 - May 2014***Tipton Field Office - Soil and Water Conservation (USDA) - Tipton, Iowa*

- Conducted surveys of waterways to help in the prevention of erosion.
- Engaged in collaborative discussion with farmers about soil conservation and sustainable practices.

**Undergraduate Research**

***Analysis of Antimicrobial Properties in Abundant Moss and Lichen Species Used in Sub-Antarctic Nest Construction*** – Buena Vista University, (01/2016 to 01/2018), Dr. Melinda Coogan and Dr. Roy MacKenzie

- An international study specifically interested in the selection of nesting materials by Sub-Antarctic bird species and whether they are selecting for antimicrobial properties or, instead, selecting opportunistically.

***What are the Effects of Fertilizer on Rhizobia Presence in Legumes?*** – Buena Vista University, (08/2016 to 05/2018), Dr. Thomas Bonagura and Dr. Melinda Coogan

- An investigation looking at the specific consequences varying amounts of fertilizer have on *Rhizobia* presence in soil and root nodule formation in *Trifolium repens* plantings.

***Phytoremediation of Landfill Groundwater with the Utilization of Willow and Poplar Plantings*** – USDA Forest Service, (05/2017 to 08/2018), Dr. Ronald Zalesny

An applied federal study, under the direction of Dr. Ron Zalesny, utilizing phreatophytes to remediate landfill groundwater effluent from capped sites around the Green Bay and Milwaukee metropolitan areas.

**Leadership****Session Chair- Phenome2020****February 2020**

- Session chair for a morning session of lightning talks during this international conference.

**Co-President-Graduate Student Organization (IPB)****January 2020 – Present**

- Facilitate guest speakers for the Interdepartmental Plant Biology Symposium.
- Work with organization treasurer to acquire club funding and University recognition.
- Lead organization events and supervise board members to maintain a positive organization in good standing with the University.

**Speaker Chair- Graduate Student Organization (P3)****February 2019- March 2020**

- Co-organized speakers and venue for Corteva Plant Science Symposia Series at Phenome2020.
- Co-led a graduate student-run demo to approximately 100 people at Phenome2020.
- Co-organized October mini-symposium at Corteva with scientists and students.

**Vice President-Graduate Student Organization (IPB)****January 2019 – January 2020**

- Facilitate guest speakers for the Interdepartmental Plant Biology Symposium.

### **Community Coordinator**

**August 2016 – May 2018**

- Co-led a team of 10 resident assistants while serving as a resource to these individuals.
- Provided mentorship and feedback to promote leadership development in fellow residence life staff.
- Facilitated open communication in addressing concerns while enforcing policy.

### **President-Students Concerned About Tomorrow's Environment August 2015 – May 2018**

- Led a club focused on the environmental education and service to the Buena Vista University campus as well as the greater Storm Lake Community.

### **Academic Assistant - Biology**

**August 2015 – December 2017**

- Provided tutor sessions on ecology, animal biology, and plant sciences to underclassmen.
- Set up laboratory activities for lower-level classes.
- Maintain laboratory equipment and test specimens.

### **Presentations**

- **Introduction and conclusion to the Predictive Plant Phenomics Session as a part of the Corteva Plant Science Symposia Series-** Phenome2020, Tucson, AZ (February 2020).
- ***Establishing a System for High-Throughput Screening of Factors Affecting Meiosis***– Interdepartmental Plant Biology Student Seminar Series, Iowa State University, Ames, IA (November 2019). R.F. Baker Symposium (Poster session), Iowa State University, Ames, IA (March 2020)
- ***ABI5 and FER: The fulcrum between growth and survival*** – Interdepartmental Plant Biology Student Seminar Series, Iowa State University, Ames, IA (November 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 (April 2018).
- ***Inoculum: An Essential for High Legume Yield?*** - Buena Vista University's Honor's Committee, Storm Lake, IA (April 2018).
- ***Magical Mosses*** – The United States' National Forest Service's International Day of Science, Rhinelander, WI (July 2017).
- ***Antimicrobial Metabolite Analysis of Sub-Antarctic Mosses Found in Bird Nests*** - The 130<sup>th</sup> annual Iowa Academy of Science Meeting (April 2018)- 13<sup>th</sup> Annual Buena Vista University's Scholar's Day (April 2017).

### **Honors & Achievements**

- Predictive Plant Phenomics Student Leadership Award (May 2020)
- Gamma Sigma Delta Agricultural Honor Society (Active member since 2020)
- Phi Kappa Phi Honor Society (Active member since 2020)
- 2020-2021 Brown fellow
- 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 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.
- Alpha Chi Honor Society (2016 - Present)
- Buena Vista University Honors Society (2014 - 2018)
- Buena Vista University Dean's Fellow's Program (2014 – 2018)