

# Ella Taagen

QUANTITATIVE GENETICIST · DATA VISUALIZATION EXPERT · USA & EU CITIZEN

240 Emerson Hall, Cornell University, Ithaca, NY, 14853, USA

☎ +1 (206) 830-0328 | ✉ et395@cornell.edu | 🏠 etaagen.github.io | 📷 etaagen | 🌐 ella-taagen | 🐦 @etaagen | 🏷️ nickname Ellie

## Summary

As a quantitative geneticist, I love to explore the relationships between multi-omics data and phenotypic variation and am driven by their potential to enhance plant adaptability and genetic gain. Open-source initiatives and interdisciplinary communication are core pillars of my creative and critical thinking approach to problem solving and team management. I am pursuing a Ph.D. in Plant Genetics at Cornell University with an expected graduation spring 2022, and am drawn to career paths in industry at the intersection of genetics, bioinformatics, and molecular biology.

## Expertise

<b>Quantitative Genetics</b>	genome to phenome modeling, RNA-seq analysis, large genome data management (17 Gb)
<b>Programming</b>	R, Linux command line, LaTeX, skillful data visualization
<b>Bioinformatics</b>	reproducible analyses, Git, multi-omics data analysis
<b>Statistics</b>	experimental design, generalized linear and mixed model, supervised statistical learning
<b>Transferable</b>	interdisciplinary communication, independent learner, creative problem solver, industry professionalism

## Relevant Experience

### Simulating controlled recombination in polyploid genomes

Cornell University

PH.D. | ADVISOR DR. MARK SORRELLS

2017 - Present

- Leveraging simulation and bioinformatics tools to better understand controlled recombination's potential to reveal currently inaccessible genetic diversity and increase control over the inheritance of preferred haplotypes.
- Exploring the biological constraints of meiotic recombination and prediction-based decisions in a plant breeding context.

### Fine-mapping grain morphology gene in wheat

Cornell University

PH.D. | ADVISOR DR. MARK SORRELLS

2017 - Present

- Applying traditional population development strategies, along with cutting-edge tools in genomics and transcriptomics to better understand the landscape of causal variation based breeding decisions.
- Fine-mapping and characterizing temporal expression profile of grain morphology gene, [talk video link](#), peer feedback: **4.8/5**

### Small grains breeding and value chain engagement

Washington State University

POST-BACCALAUREATE | ADVISOR DR. STEPHEN JONES

2016 - 2017

- Surveyed and engaged supply chain stakeholders when setting breeding objectives.
- Delivered lab and field support for graduate student breeding projects sourced from a broad base of genetic diversity.

### Circadian rhythm and mechanism of growth-phase transitions in Arabidopsis

University of Washington

UNDERGRADUATE | ADVISOR DR. TAKATO IMAIZUMI

2016 - 2017

- Assessed mechanistic sequence of genes involved in vegetative to reproductive growth transition and characterized circadian rhythm gene.
- Showcased at undergraduate research symposium.

### Center for Global Infectious Disease Research, tuberculosis

Seattle, WA

UNDERGRADUATE LAB ASSISTANT | DR. DAVID SHERMAN

2013 - 2014

- Supported communication between researchers and maintained solution stocks for the lab.
- Developed a standardized protocol for unique growth media based on experimental design.

## Mentorship & Management

### Corteva and Cornell School of Integrative Plant Science (SIPS) networking

Cornell University

COORDINATOR

2020 - Present

- Built network and relationship pipeline with Corteva Global Academic Relations Manager and Cornell SIPS industry partnerships liaison.
- Developed system for matching 24 graduate students with Corteva scientists based on shared career interests.

### Synopsis, Plant Breeding and Genetics GSA

Cornell University

PRESIDENT

2019-2020

- Executed 2020 graduate student recruitment visitation for 15 students.
- Oversaw communication between current plant breeding and genetics students and faculty.
- Co-authored [survey](#) and visualized results to assess SIPS graduate student satisfaction and concerns with unification of the five sections, career path exploration, mental health resources and inclusion initiatives.

## Plant Breeding and Genetics faculty search committee

Cornell University

COMMITTEE MEMBER, GRADUATE STUDENT REPRESENTATIVE

2019-2020

- Screened and evaluated 54 applicant packages, and conducted full day interviews with top 3 candidates (research /teaching /chalk-talk).
- Facilitated graduate student meetings with top candidates and documented graduate student preferences for clear communication to faculty.

## Jannink/Sorrells lab meetings

Cornell University

COORDINATOR

2018-Present

- Streamlined meeting schedule and presentation rotations with access to centralized Google drive.
- Unified communication across listserv, Slack, and Zoom.

## Graduate student mentor

Cornell University

UNDERGRADUATE RESEARCH ASSISTANTS

2018-2020

- Hired, trained, and mentored three talented undergraduate research assistants and supervised one honors thesis
- Coached one graduate school application and interview process, accepted to five plant sciences PhD programs.

## Bonsai Professional Coaching Service

Virtual

MENTEE

2018-2020

- Partnered with leadership coach Loriana Sekarski to identify and apply personalized Clifton Strengths by Gallup.
- Trained in STEM industry professionalism and charted conflict management strategies.
- Top five strengths: *Learner, Achiever, Focus, Communication, Individualization*.

## Graduate Women in Science

Cornell University

EXECUTIVE OF ONLINE COMMUNICATIONS

2017-2019

- Operated digital outreach and authored biweekly newsletter for >400 listserv members.
- Devised and improved advocacy, educational, and social events based on polled membership interests.

## Awards & Scholarships

2020 **Borlaug Scholar**, National Association of Plant Breeders

USA

2020 **3rd Place**, C7 Plant and Animal Genome conference poster competition

San Diego, CA, USA

2019 **Awardee**, Cornell IARD winter interim travel grant

India

2018 **Awardee**, ASA, CSSA and SSSA Congressional Visit Day travel grant

Washington DC

2018 **Future Leader in Science**, ASA, CSSA and SSSA

USA

## Relevant Workshops

Enrolled **Statistical Learning**, ten-week course

edX Stanford Online

2020 **Collaborative and Reproducible Data Science in R**, Cornell NTRES 6940

Ithaca, NY

2019 **Linux for Biologists**, Cornell University Institute of Biotechnology

Ithaca, NY

2018 **Finding Your Research Voice**, science communications and presentations

Ithaca, NY

2018 **Breeding for Quantitative Traits in Plants**, book club facilitator

Ithaca NY

2017 **Tucson Plant Breeding Institute**, quantitative genetics bootcamp

Ithaca, NY

## Education

### Cornell University

Ithaca, NY, USA

PH.D. IN PLANT GENETICS

2017 - expected 2022

- Minors: Plant Molecular Biology and International Agriculture and Rural Development

### University of Washington

Seattle, WA, USA

B.S. IN MOLECULAR, CELLULAR, DEVELOPMENTAL BIOLOGY

2012 - 2016

- Minor: Nutritional Sciences

## Publications

1. **Taagen, E.**, Bogdanove, A. J. & Sorrells, M. E. *Counting on Crossovers: Controlled Recombination for Plant Breeding*. (2020) Trends in Plant Science
2. **Taagen, E.**, Bogdanove, A. J. & Sorrells, M. E. *Achieving Controlled Recombination with Targeted Cleavage and Epigenetic Modifiers*. (2020) Trends in Plant Science
3. Sweeney, D. W., Sun, J., **Taagen, E.** & Sorrells, M. E. *Genomic Selection in Wheat*. (Woodhead Publishing, (2019) in *Applications of Genetic and Genomic Research in Cereals*, 273-302
4. Song, Y.H. *et al.* *Molecular basis of flowering under natural long-day conditions in Arabidopsis*. (2018) Nature Plants