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 discover the relationships between recombination variation and desirable phenotypes and am driven by their potential to enhance breeding pipeline efficiency and genetic gain. Detail oriented planning and interdisciplinary communication are core pillars of my creative and critical thinking approach to problem solving. 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

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

Relevant Experience

Simulating controlled recombination in allopolyploid genomes

Cornell University

Ph.D. | advisor Dr. Jean-Luc Jannink — *2020 - Present*

- Leveraging simulation and bioinformatics tools to better understand controlled recombination's potential to reveal currently inaccessible genetic diversity and innovate increased 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 seed morphology genes

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 seed morphology genes in wheat, talk video link, peer feedback: **4.8/5**

Breeding value chain engagement

Washington State University

Post-baccalaureate RA | advisor Dr. Stephen Jones — *2016 - 2017*

- Surveyed and engaged supply chain stakeholders when setting objectives for small grains breeding program.
- 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 RA | advisor Dr. Takato Imaizumi — *2015 - 2016*

- 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 RA | 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.

Synapsis, 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 for 18 people across 2 lab groups.
- 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	***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

Taagen, E., Bogdanove, A. J. & Sorrells, M. E. *Counting on Crossovers: Controlled Recombination for Plant Breeding.* **(2020)** Trends in Plant Science

Taagen, E., Bogdanove, A. J. & Sorrells, M. E. *Achieving Controlled Recombination with Targeted Cleavage and Epigenetic Modifiers.* **(2020)** Trends in Plant Science

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

Song, Y.H. *et al. Molecular basis of flowering under natural long-day conditions in Arabidopsis.* **(2018)** Nature Plants