

Jensina Davis

Lincoln, NE

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Experienced researcher focused on enabling innovation and sustainability in the agriculture industry through data science, quantitative genetics, bioinformatic, and statistical techniques. Skilled in R programming, project management, leadership, and data collection with a strong agronomic background, I bridge the gap between data generation and data analytics to enable new insights into interactions between genotype, environment, and management practices and their impacts.

Skills

Programming	R, Linux command-line, Python, RShiny, Tensorflow, Scikit-learn, AWS
Domain Expertise	Quantitative genetics, statistics, genomics, data wrangling, agronomy, phenotypic plasticity, GxE
Soft Skills	Project management, collaboration with interdisciplinary teams, science communication

Experience

University of Nebraska-Lincoln – Schnable Lab

Lincoln, NE

NSF GRADUATE RESEARCH FELLOW

August 2022 – Present

- Demonstrate lack of tradeoff between linear phenotypic plasticity and overall performance across period of maize hybrid breeding
- Enable efficient analyses and data reuse by curating, documenting, and ensuring integrity of maize field trial dataset of 200,000+ non-missing values across 11 location-years
- Quantify frequency of empirical genotype-by-environment interactions impacting selection decisions based on selection environment in panel of 122 maize hybrids across 34 unique environments
- Demonstrate that 62–100% of genetic variation for grain yield, flowering time, and height within a single environment can be explained by variation in gene expression
- Identify genetic variants associated with overall plasticity of gene expression in maize
- Establish normalization method to de-couple intercept and slope estimates in Finlay-Wilkinson regression stability analyses
- Identify sorghum genetic variants associated with leaf arrangement in horizontal space via high-throughput phenotyping image analysis and genome-wide association studies

Trace Genomics

Ames, IA

SENIOR AGRONOMY INTERN

February 2022 – August 2022

- Transformed research data into actionable conclusions using statistical analyses to guide future research work
- Advanced research objectives by collecting data in lab, growth chamber, greenhouse, and field environments
- Identified, implemented, and fine-tuned microbiological method to enable verification of product claims

Corteva Agriscience

Remote

GLOBAL TECHNICAL EDUCATION INTERN

May 2021 – August 2021

- Authored technical education content including factsheets, e-learning modules, and flashcards to ensure accurate product representations by customer-facing employees
- Enabled integration of cross-functional technical knowledge into training resources by collaborating with relevant stakeholders across business functions
- Supported product launches by translating research data into training resources

Corteva Agriscience

Johnston, IA

SEED SCIENCE RESEARCH INTERN

June 2020 – August 2020

- Managed independent research projects to test phenotyping methods
- Collected data on early season field traits to enable breeding efforts
- Analyzed data from various experiments to produce actionable conclusions

Publications & Presentations

PEER-REVIEWED

Assessing the impact of yield plasticity on hybrid performance in maize

DAVIS, JENSINA M., LISA M. COFFEY, JONATHAN TURKUS, LINA LÓPEZ-CORONA, KYLE LINDERS, CHIDANAND ULLAGADDI, DIPAK K. SANTRA, PATRICK S. SCHNABLE, AND JAMES C. SCHNABLE . *Physiologia Plantarum* (2025)

3D reconstruction enables high-throughput phenotyping and quantitative genetic analysis of phyllotaxy

DAVIS, JENSINA M, MATHIEU GAILLARD, MICHAEL C TROSS, NIKEE SHRESTHA, IAN OSTERMANN, RYLEIGH J GROVE, BOSHENG LI, BEDRICH BENES, AND JAMES C SCHNABLE . *Plant Phenomics* (2025) p. 100023. Elsevier, [URL: 10.1016/j.plaphe.2025.100023](https://doi.org/10.1016/j.plaphe.2025.100023)

Plot-level satellite imagery can substitute for UAVs in assessing maize phenotypes across multistate field trials

SHRESTHA, NIKEE, ANIRUDHA POWADI, **JENSINA DAVIS**, TIMILEHIN T. AYANLADE, HUYU LIU, MICHAEL C. TROSS, RAMESH K. MATHIVANAN, JORDAN BARES, LINA LOPEZ-CORONA, JONATHAN TURKUS, LISA COFFEY, TALUKDER ZAKI JUBERY, YUFENG GE, SOUMIK SARKAR, JAMES C. SCHNABLE, BASKAR GANAPATHYSUBRAMANIAN, AND PATRICK S. SCHNABLE . *Plants, People, Planet* (2025) pp. 1–16. URL: <https://nph.onlinelibrary.wiley.com/doi/abs/10.1002/ppp3.10613>

Population-level gene expression can repeatedly link genes to functions in maize

TORRES-RODRÍGUEZ, J. VLADIMIR, DELIN LI, JONATHAN TURKUS, LINSEY NEWTON, **JENSINA DAVIS**, LINA LOPEZ-CORONA, WAQAR ALI, GUANGCHAO SUN, RAVI V. MURAL, MARCIN W. GRZYBOWSKI, BRADLEY M. ZAMFT, ADDIE M. THOMPSON, AND JAMES C. SCHNABLE . *The Plant Journal* (2024). URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/tpj.16801>

Sorghum segmentation and leaf counting using in silico trained deep neural model

OSTERMANN, IAN, BEDRICH BENES, MATHIEU GAILLARD, BOSHENG LI, **JENSINA DAVIS**, RYLEIGH GROVE, NIKEE SHRESTHA, MICHAEL C. TROSS, AND JAMES C. SCHNABLE . *The Plant Phenome Journal* 7.1 (2024) e70002. URL: <https://acsess.onlinelibrary.wiley.com/doi/abs/10.1002/ppj2.70002>

SELECTED PRESENTATIONS

How much of phenotypic variation across environments is explained by variation in gene expression? [Short talk]

DAVIS, JENSINA M., JONATHAN TURKUS, LINSEY NEWTON, ADDIE THOMPSON, AND JAMES C. SCHNABLE

Center for Plant Science Innovation Research Group Meeting, Lincoln, NE, USA [Short talk]., 2025

A funny thing happened on the way to the data: A case study in wrangling multi-environment field trial data [Short talk]

JENSINA M. DAVIS, LISA COFFEY, JONATHAN TURKUS, LINA LÓPEZ-CORONA, DIPAK K. SANTRA, PATRICK S. SCHNABLE, AND JAMES C. SCHNABLE

Big Data: Manage your data before your data kills you workshop, Plant and Animal Genome 31, San Diego, CA, USA, 2024

Characterizing maize hybrid plasticity for climate resilient agriculture [Short talk]

JENSINA M. DAVIS, LISA COFFEY, JONATHAN TURKUS, LINA LÓPEZ-CORONA, DIPAK K. SANTRA, PATRICK S. SCHNABLE, AND JAMES C. SCHNABLE

Plant Science Symposium, Lincoln, NE, USA, 2023-11-02/2023-11-03

High-throughput phenotyping of phyllotaxy via 3D reconstruction for quantitative genetics analysis of sorghum canopy architecture [Short talk]

JENSINA M. DAVIS, MATHIEU GAILLARD, MICHAEL TROSS, RYLEIGH J. GROVE, NIKEE SHRESTHA, IAN OSTERMANN, BEDRICH BENES, AND JAMES C. SCHNABLE

Fifth International Workshop on Machine Learning for Cyber-Agricultural Systems, Remote, 2023-07-03/2023-07-05

Service

Nebraska Plant Science Symposium Planning Committee

CHAIR

2025

- Led team of 9 peers to organize scientific symposium
- Raised and allocated \$16,500+ in support for scientific symposium from partners internal and external to host institution
- Communicated with stakeholders to ensure quality event

Nebraska Plant Science Symposium Planning Committee

PROGRAM, LOGISTICS, AND WEBINAR SUBCOMMITTEE

2024

- Coordinated logistics with event venue and caterer to ensure smooth event operation

Teaching

LIFE 120L: Fundamentals of Biology Lab I

University of Nebraska-Lincoln

GRADUATE TEACHING ASSISTANT

Spring 2023

- Taught 2 lab sessions of 19 to 24 students weekly
- Graded student assessments

HON 121: First-Year Honors Program Seminar

Iowa State University

FIRST-YEAR HONORS PROGRAM LEADER

Fall 2019

- Designed lesson plans for twice-weekly sessions in a 16-week semester
- Introduced first-year students to the University Honors Program and campus resources
- Co-led twice-weekly course sessions with peer

Education

University of Nebraska-Lincoln

Lincoln, NE

PH.D. CANDIDATE, COMPLEX BIOSYSTEMS - INTEGRATED PLANT BIOLOGY SPECIALIZATION

August 2022 – Present

Advised by Dr. James Schnable

Relevant coursework: *Breeding for Quantitative Traits in Plants, Computational Statistics, Population Genetics, & Introduction to Deep Learning*

Iowa State University

B.S. IN AGRONOMY AND SEED SCIENCE, MINOR IN STATISTICS

Summa cum laude with Honors, 3.90 GPA

Relevant coursework: *Introduction to Time Series*

Ames, IA

August 2018 – May 2022

Honors & Awards

FUNDING RECEIVED – \$211,200 TOTAL

UNL Center for Plant Science Innovation Heuermann Graduate Recognition Award

\$2,500

2025

Agricultural Genome to Phenome Initiative Travel Award

\$750

2024

National Corn Growers Research Ambassador

\$3,250

2023 – 2024

Al Moseman International Fellowship

\$1,200

2023 – 2024

NSF Graduate Research Fellowship

\$147,000 – 3 YEARS OF FUNDING OVER 5-YEAR PERIOD

2022 – 2027

Othmer Fellowship

\$4,000

2022 – 2023

Fred Foreman Scholarship for Growth in Leadership Participation

\$1,000

2021 – 2022

Manjit Misra Award for the Outstanding Senior in Seed Science

\$500

2021

Iowa Seed Association Scholarship Award

\$1,000

2021

David Lambert "Hunger Fighter" Memorial Scholarship

\$1,000

2020

Kemink Family Scholarship

\$3,000

2020 – 2022

Agronomy Academic Fellowship

\$40,000

2018 – 2022

College of Agriculture and Life Sciences Dean's Leadership Scholar

\$6,000

2018 – 2020