



# G2F Initiative Overview

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March 2017

[www.Genomes2Fields.org](http://www.Genomes2Fields.org)

Computer scientist

Engineers

Mathematicians

Plant Scientists

Statisticians

Biologists

Crop Modelers

Bioinformaticians

Soil Scientists

Environmentpers

# GENOMES TO FIELDS (G2F)

[www.genomes2fields.org](http://www.genomes2fields.org)

Modeling and  
analytical  
tools

HT phenotyping  
tools

Database  
development

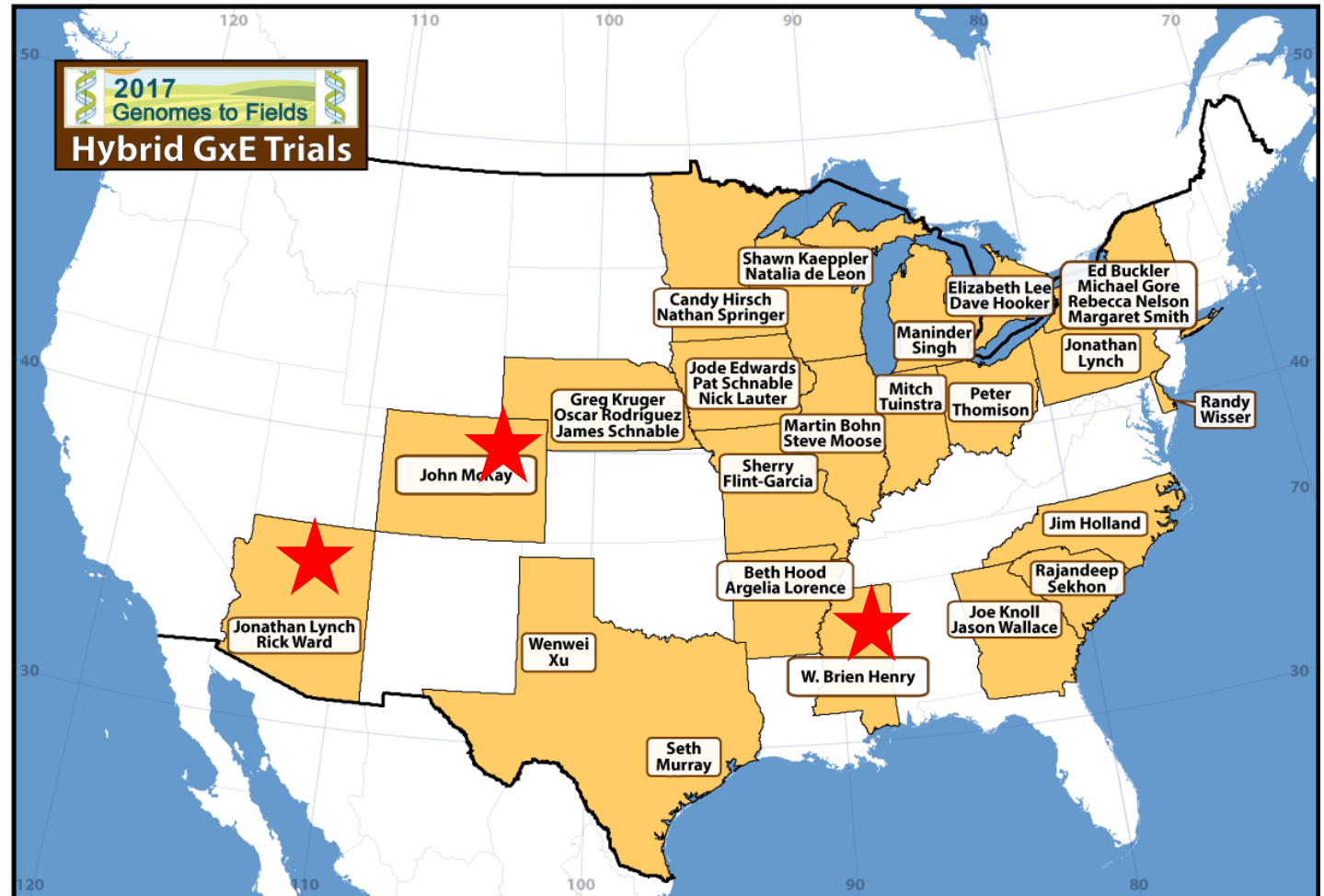
G X E  
Project

Student Training

Slide from N de Leon

# GxE Trial 2017

- 21 States and Ontario
- 31 locations
- 32 scientists
- Colorado, Mississippi and Arizona added in 2017



# Funding: NIFA Matching Program

- ICPB, along with Nebraska & Illinois Corn provided \$250,000 in matching funds for a phenotyping grant with USDA-NIFA
- NIFA provided a \$250,000 match for \$500K grant on phenotyping
- 5 proposals submitted, all were deemed acceptable but three were ranked Outstanding and were funded
  - These three were all ranked in top 8 out of 62 overall proposals
- NIFA asked us to choose 1 to fund
  - We selected the ISU proposal
- NIFA funded the other two with their regular program funds
- A total of \$1.5 million went to corn phenotyping projects as a result of this commodity board program



# Funding: DOE ROOTS Grants

- Not directly grants to G2F but to G2F collaborators
- DOE mentioned leverage with G2F link was considered in awarding these grants
- \$30 million grants program to fund root phenotyping
- \$7 million awarded to Jonathan Lynch, Natalia de Leon and Shawn Kaeppler to study root architecture
- \$6 million awarded to Pat Schnable and John McKay (new Colorado G2F cooperator)
- \$1 million awarded to Liang Dong (ISU) to study soil nitrate sensors



# Federal Lobbying Effort

- G2F Government Relations group formed
  - Led by Iowa State, includes Wisconsin, Penn State, Minnesota, Cornell
  - Maize ask will be \$25 million per year
- NCGA working with 10 other commodity groups to build a lobbying coalition for phenotyping funding at federal level
  - Total ask will be \$90 million per year
- Reconciling efforts of these two groups and making plans for lobbying



# Federal Lobbying Effort

- Submitting Program and Report Language into House and Senate 2018 budget
- In 2017 senate version, were successful in getting language included:

**FY17 Senate Appropriations-** Genomes to Fields. The Committee encourages ARS to expand the Germplasm Enhancement of Maize [GEM] project and has provided \$1,250,000 to complement the existing USDA maize germplasm programs and support the emerging large-scale public sector effort to investigate the interaction of maize genome variation and environments, known as the Genomes to Fields project.



# Phenome 2017 Conference in February

- 240 attendees from academia, government and industry
- Several talks given by G2F collaborators, and several showed results from G2F research\*
  - Natalia de Leon\*, Nathan Miller\*, Edgar Spalding\* – U Wisc
  - Pat Schnable\* – Iowa State
  - James Schnable\* – U Nebraska
  - Jonathan Lynch – Penn State
  - Seth Murray\* – Texas A&M
  - Nathan Springer – U Minn
  - John McKay – Colorado State



[ABOUT](#)

[ATTEND](#)

[PROGRAM](#)

[EXHIBIT AND SPONSOR](#)

[ABSTRACTS](#)



# GxE Trial Technology Development Projects

- J Schnable – Nebraska – time lapse imaging of plants in field
- E Spalding, N de Leon, S Kaeppler – U Wisc – UAV imaging, root and seed phenotyping
- M Gore – Cornell – UAV imaging
- J Edwards – ARS/ISU - Airplane imaging
- S Murrery – T A&M - UAV imaging
- S Moose – U Ill – Nitrogen studies
- J Lynch – Penn State – root phenotyping
- P Schnable – ISU – in-field imaging
- L Dong – ISU – nitrate sensors
- I Baxter – Danforth - Ionomics
- Others??



# GxE Consortium: Data Usage Disclaimer

*This presentation includes data analysis and interpretation conducted by the presenter and does not necessarily reflect the observations and conclusions of the GxE Consortium.*

