



Networking and exchanging innovative ideas
around how to move science forward to improve
nitrogen use efficiency in agricultural systems.

2022 NITROGEN USE EFFICIENCY WORKSHOP

August 1-3

Nebraska East Union and Nebraska Innovation Campus



AGRONOMY AND HORTICULTURE

Institute of Agriculture and Natural Resources

**Demystifying Water and Nitrogen
Management with Dynamic Solutions**

AUGUST 1 **REGISTRATION AND WELCOME RECEPTION**

THE MILL COFFEE & BISTRO, NEBRASKA INNOVATION CAMPUS

- 5:00 pm:** Registration, Drinks and Appetizers
- 5:30 pm:** **WELCOMING REMARKS** from Dan Duncan, NIC's Executive Director
- 6:00 pm:** Tours of Innovation Campus Greenhouse – Dr. James Schnable, Associate Professor, Dr. Charles O. Gardner Professor of Agronomy, Agronomy and Horticulture; and Dr. Yufeng Ge, Associate Professor, Eberhard Professor of Agriculture, Biological Systems Engineering, University of Nebraska–Lincoln
- 6:30 pm:** BBQ Dinner and Reception with Welcoming Remarks from Dr. Ron Yoder, IANR Senior Associate Vice Chancellor, University of Nebraska–Lincoln
- 7:30 pm:** Friendly Robotics Social – Dr. Santosh Pitla, Associate Professor, Biological Systems Engineering, University of Nebraska–Lincoln
- 8:30 pm:** **ADJOURN**

AUGUST 2 **ORAL AND POSTER SESSIONS**

GREAT PLAINS ROOM, NEBRASKA EAST UNION

OPENING SESSION

- 7:00 am:** Registration, Breakfast Pastries/Coffee, and Poster Set Up
- 8:00 am:** **WELCOME** – Dr. Laila Puntel, Assistant Professor, Agronomy and Horticulture; Dr. John Lindquist, Agronomy and Horticulture Associate Department Head and Professor; and Dr. Archie Clutter, Dean of ARD, University of Nebraska–Lincoln
- 8:20 am:** The History of the NUE Workshop and Memories of Dr. Bill Raun – Dr. James Schepers, Emeritus Professor, University of Nebraska–Lincoln, and Dr. Newell Kitchen, Research Soil Scientist, USDA-ARS
- 8:45 am:** Keynote Opening Speaker – Dr. Ken Cassman, Emeritus Robert B. Daugherty Professor of Agronomy, University of Nebraska–Lincoln
- 9:40–10:30 am:** **SESSION 1: USING CROP MODELING TO DEMYSTIFY THE N CYCLE**
Moderator: Dr. Laila Puntel
- 9:40 am:** Dr. Rafael M. Fera, Crop Modeling and Data Scientist, Pivot Bio – “Simulating the Impact of Diazotrophic Fixation on Corn Growth and Fertilizer Use Efficiency”
- 10:05 am:** Dr. Harold Van Es, Professor, School of Integrative Plant Science Soil and Crop Sciences Section, University of Cornell – “Understanding the Approach and Value of Model Simulation-based N Recommendations”
- 10:30 am:** Matt Sweeney, Yara & Adapt-N
- 10:35 am:** Dr. Bob Gunzenhauser, Corteva
- 10:40–10:50 am:** Break

AUGUST 2 **ORAL AND POSTER SESSIONS**

GREAT PLAINS ROOM, NEBRASKA EAST UNION

**10:50–11:50 am: GRADUATE STUDENTS DATA HACKATHON
COMPETITION – SPONSORED BY CORTEVA**

Moderator: Dr. Bob Gunzenhauser

10:50 am: Presenting the Competition

11:00 am: Hackers of The Pampas – Kansas State
University

11:10 am: Solver – University of Nebraska–Lincoln

11:20 am: Jack’s Hack – South Dakota State University

11:30 am: Fighting Illini DEZ – University of Illinois

11:40 am: Closing Competition

11:50–Noon: Group Picture at the Entrance of the Nebraska
East Union

Noon–1:30 pm: Lunch at Nebraska East Union

**1:30–2:40 pm: SESSION 2: SOIL HEALTH, NUE INDICATORS
AND BIOLOGICALS: HOW DO WE MANAGE
N IN A C-CENTRIC ERA?**

Moderator: Dr. Andrea Basche

1:30 pm: Dr. Hanna Poffenbarger, Assistant Professor,
University of Kentucky – “Finding Synergy in
the Cycles: Managing Carbon and Nitrogen for
Precision Sustainable Agriculture”

1:55 pm: Dr. Liz Rieke, Soil Scientist, and Dr. Cristine
Morgan, Chief Scientific Officer, Soil Health
Institute – “Nitrogen Indicators of Soil Health —
State of the Science”

2:20 pm: Dr. Tim Laatsch, Koch

2:25 pm: Keira Havens, Pivot Bio

2:30 pm: Matt Rellaforde, Agoro

2:35 pm: Mike Zwingman, Verdesian

2:40–2:55 pm: Break

AUGUST 2 **ORAL AND POSTER SESSIONS**

GREAT PLAINS ROOM, NEBRASKA EAST UNION

**2:55–5:00 pm: GRADUATE STUDENTS POSTER SESSION –
SPONSORED BY BAYER**

Moderator: Dr. Guillermo Balboa

2:55 pm: Poster Flash Talks: One Slide and One Minute
to Introduce Each Poster

3:20 pm: Authors Present at Posters

5:00 pm: ADJOURN

7:00 pm: Dinner: Lazlo’s Brewery & Grill, Haymarket

AUGUST 3 **ORAL SESSIONS**

GREAT PLAINS ROOM, NEBRASKA EAST UNION

7:30 am: Registration, Breakfast Pastries/Coffee

**8:00–10:40 am: SESSION 3: USING WEATHER UNCERTAINTY TO
PROMOTE MORE IN-SEASON N APPLICATIONS**

Moderator: Dr. Brian Arnall

8:00 am: Dr. Yuxin Miao, Associate Professor, Soil, Water,
and Climate, University of Minnesota – “Big Data
or Small Data? — Two Strategies to Improve
Crop Sensing-based In-season Nitrogen
Management of Corn”

8:25 am: Jackson Stansell, PhD Student and CEO
of Sentinel Fertigation – “Bridging the
Gap: Delivering In-season Application
Recommendations Designed for Operational
Action”

8:50 am: Kyle King, PhD Student, Iowa State University –
“Plant Density and Nitrogen Rate Interaction on
Key Agronomic Traits Among Maize Hybrids”

9:15 am: Break

AUGUST 3 ORAL SESSIONS

GREAT PLAINS ROOM, NEBRASKA EAST UNION

9:25 am: Dr. Ignacio Ciampitti, Professor, and Dr. Adrian Correndo, Postdoc, Agronomy, Kansas State University – “Re-thinking Effective Use of Nitrogen (N) in Major Field Crops, Integrating Breeding and Management”

9:50 am: Natural Resources Districts: Russ Callan, Lower Loup NRD Manager – “Nitrate Modeling”; Lyndon Vogt, Central Platte NRD Manager – “Producer NUE(T) Dashboard”

10:15 am: Discussion

10:40–10:55 am: Break

10:55–Noon: **SESSION 4: INNOVATIONS FOR N MANAGEMENT: A PUSH OUT OF THE BOX – MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE**

Moderator: Dr. Laila Puntel

10:55 am: Dr. Spyros Mourtzinis, AgStat, Greece and Dr. Shawn Conley, Professor, Agronomy, University of Wisconsin-Madison – “Corn Management Recommendations Using Machine Learning Algorithms” [via Zoom]

11:20 am: Dr. Nicolas Martin, Assistant Professor, Crop Sciences, University of Illinois Urbana-Champaign – “Frontiers in Prediction: How Well Can We Potentially Predict Nitrogen Needs”

11:45 am: Jason French, Crop Metrics

11:50 am: Aaron Bereuter, Bayer

Noon: **ADJOURN AND CONCLUDING REMARKS**

12:15 am: Future Meetings: Selection of New Chair NUE Workshop 2023

12:20 pm: Presentation of Graduate Student Awards

12:35 pm: Lunch to Go

THANK YOU TO OUR SPONSORS!

