Water for Food
DAUGHERTY GLOBAL INSTITUTE
at the University of Nebraska

2017-2018 (FY18) Active Awards

Undergraduate:

Platte Basin Timelapse Project: Production Interns, advised by **Michael Farrell**, Assistant Professor of Practice, UNL Agricultural Leadership, Education & Communication, and **Michael Forsberg**, Assistant Professor of Practice, UNL Agricultural Leadership, Education & Communication.

Round Four (first awarded in 2017)

Eleven awards were given to support graduate student research. The Faculty Fellows secured additional funds on their own to support the students, matching the Water for Food Institute funds one-to-one.
WFI Faculty Fellows were invited to submit applications for student support up to $17,000, with additional student funding secured by the Faculty Fellow. Student support was awarded to:

- **P. Stephen Baenziger**, Professor, UNL Agronomy & Horticulture, for the project: *Genetic Architecture of Male Traits for Hybrid Wheat Seed Production*
  PhD Student: **Nicholas Garst**, for a PhD in Agronomy (Plant Breeding and Genetics Emphasis)
- **Yufeng Ge**, Assistant Professor, UNL Biological Systems Engineering, for the project: *Integrated crop and soil water sensor network to assist UAS and soil water simulation modeling in variable rate irrigation*
  Student: **Jasreman Singh**, for a Ph.D. in Biological Systems Engineering (Soil and Water Resources Engineering Emphasis)
- **James D. Goedert,** Professor, Durham School of Architectural Engineering and Construction, for the project: *Growing Haiti** (student to be recruited)
- **Jesse Korus**, Assistant Professor, UNL School of Natural Resources, for the project: *Improving Groundwater Characterization and Management through Integration of Airborne Electromagnetics (AEM) and Borehole Data*
  Masters Student: **Jaqueline Polashek**, for a M.S. in Natural Resource Sciences
- **Taro Mieno,** Assistant Professor, UNL Agricultural Economics, for the project: *Farmer adaptation to low well yields in high-productivity irrigated agriculture*
  Masters Student: **Paloch Suchato**, for a M.S. in Agricultural Economics
- **Xu Li**, Associate Professor, UNL Civil Engineering, for the project: *Determination of Setback Distance Requirements for Reducing Contaminants in Agricultural Runoff Following the Land Application of Swine Manure Slurry*   Masters Student: **Cecilia Hall**, for a M.S. in Environmental Engineering
- **Yusong Li**, Associate Professor, UNL Civil Engineering, for the project: *Influence of Climate and Agricultural Clustering on Groundwater Contamination by Trace Organics*
  PhD Student: **Chuyang Liu**, for an PhD in Civil Engineering
- **Adam Liska**, Associate Professor, UNL Biological Systems Engineering and Agronomy & Horticulture, for the project: *Livestock Thermodynamics & Agricultural Energy Productivity Gaps in Sub-Saharan Africa*
  Masters Student: **Calvin Harman**, for a M.S. in Agricultural & Biological Systems Engineering
- **James C. Schnable**, Assistant Professor, UNL Agronomy & Horticulture, for the project: *Optimizing the water use efficiency of C4 grain crops using comparative phenomics and crop models to guide breeding targets*   PhD Student: **Daniel Santana de Carvalho**, for a PhD in Agronomy & Horticulture

- **Karina Schoengold,** Associate Professor, UNL Agricultural Economics, for the project: *The Effects of Institutions and Hydrological Conditions on Optimal Management of a Shared Aquifer: a case study of the High Plains*   Masters Student: **Qianyu Zhang**, for a M.S. in Agricultural Economics
- **Karrie Weber**, Associate Professor, UNL School of Biological Sciences, for the project: *Mobilization of Naturally Occurring Uranium into Groundwater*   PhD Student: **Jeffrey Westrop**, for a PhD in Geology

Round Three (first awarded in 2016)

Eleven awards were given to support graduate student research. The Faculty Fellows secured additional funds on their own to support the students, matching the Water for Food Institute funds one-to-one.
WFI Faculty Fellows were invited to submit applications for student support up to $16,500, with additional student funding secured by the Faculty Fellow. Student support was awarded to:

- **P. Stephen Baenziger**, Professor, UNL Agronomy and Horticulture, for the project: *Agronomic and Genomic Evaluation of Winter Wheat for Hybrid Seed Breeding*
  PhD Student: **Amanda Easterly**, for a PhD in Agronomy (Plant Breeding and Genetics Emphasis)
- **Guillermo Baigorria**, Assistant Professor, UNL School of Natural Resources and Agronomy and Horticulture, for the project: *Climate change impacts assessment on water requirements and yields on corn, soybean and wheat in the USA;* PhD Student: **Amit Timilsina**, for a PhD in Natural Resource Sciences (specializing in Climate Assessment and Impacts)
- **Yulie Meneses**, Post-doctoral Research Associate, and **Jayne Stratton**, Research Associate Professor, UNL Food Science and Technology, for the project: *Reconditioning and reuse of processing wastewater. An application for the grain wet milling industry.*
  PhD Student: **Xinjuan Hu**, for a PhD in Food Science and Technology
- **Cory Forbes**, Associate Professor, UNL School of Natural Resources, and Coordinator, Science Literacy Initiative, for the project: *Fostering Undergraduate Students' Disciplinary Learning and Water Literacy*
  Masters Student: **Destini Petitt**, for a M.S. in Natural Resource Sciences
- **Trenton Franz**, Assistant Professor of Hydrogeophysics, UNL School of Natural Resources, for the project: *Observed and modeled quantification of reduced pumping volumes using advanced irrigation technologies in Western Nebraska*   PhD Student: **Justin Gibson**, for a PhD in Natural Resource Sciences (specializing in Bio-Atmospheric Interactions)
- **Troy Gilmore**, Assistant Professor of Groundwater Hydrology, UNL School of Natural Resources, for the project: *Streambed water flux dynamics at coupled groundwater-surface water monitoring stations*
  Masters Students: **Mason Johnson**, for an M.S. in Natural Resource Sciences and **Martin Wells**, for an M.S. in Biological Systems Engineering
- **Christopher Gustafson**, Assistant Professor, UNL Agrcultural Economics, for the project: *Behaviors to Mitigate the Risk of Waterborne Illness: An Analysis of Pastoralist Households in Rural Tanzania*
  PhD Student: **Mazbahul Ahamad**, for a PhD in Natural Resource Sciences
- **Derek Heeren**, Assistant Professor of Irrigation Engineering, UNL Biological Systems Engineering, for the project: *Field Testing Variable Rate Irrigation (VRI) for Managing Spatial Variability in Soils and Evapotranspiration* Masters Student: **Sandeep Bhatti**, for a M.S. in Biological Systems Engineering
- **Alan Kolok**, Director, Center for Environmental Health and Toxicology, UNMC College of Public Health, and Professor, UNO Biology, for the project: *Investigating the Impacts of Agricultural Runoff on Steroid Receptor Gene Expression, Growth and Development in Larval Fish*; PhD Student: **Jonathan Ali**, for a PhD from the UNMC College of Public Health

- **Aaron Mittelstet**, Assistant Professor, UNL Biological Systems Engineering, for a project to improve and test the irrigation routines for both field and watershed-scale hydrological models
- **Daran Rudnick**, Assistant Professor, UNL Biological Systems Engineering, for the project: *Sustaining Agriculture through Adaptive Management Resilient to a Declining Ogallala Aquifer and Changing Climate*
  PhD student: **Tsz Him (Himmy) Lo**, for a PhD in Biological Systems Engineering

Round Two (first awarded in 2015)

Seven awards were given to support graduate student research; six were still active in FY18. The Faculty Fellows secured additional funds on their own to support the students, matching the Water for Food Institute funds one-to-one.

Daugherty Graduate Research Awards – MS and PhD positions

WFI Faculty Fellows were invited to submit applications for student support up to $16,000, with additional student funding secured by the Faculty Fellow. Seven assistantships were awarded to:

- **Shannon Bartelt-Hunt**, Associate Professor, UNL Civil Engineering, for a project to evaluate the direct effects of climate and the indirect effects of climate-induced animal agriculture clustering on the fate of trace organic compounds originating from production agriculture
  PhD Student: **Renys Barrios**, for a PhD in Environmental Engineering
- **Junke Guo**, Associate Professor, UNL Civil Engineering, for the project: *Determinaton of River Ecological Discharge from Navier-Stokes-Forchheimer Equation*
  PhD Student: **Narendra Kumar Patel**, for a PhD in Civil Engineering (specializing in Hydraulics and Water Resources)
- **Patrice McMahon**, Associate Professor, UNL Political Science, for the project: *Transnational Actors and Water Security*
  PhD Student: **Maria Benes**, for a PhD in Political Science (specializing in Comparative Politics and International Relations)
- **Mehmet C. Vuran**, Associate Professor, UNL Computer Science and Engineering, for the project: *Taking Soil to the Cloud: Advanced Wireless Underground Sensor Networks for Real-time Precision Agriculture*
  PhD Student: **Abdul Salam**, for a PhD in Computer Engineering
- **Wayne Woldt**, Associate Professor, UNL Biological Systems Engineering, for the project: *Improving Variable Rate Irrigation Efficience using a Real-time Soil Moisture Adaptive Control Model Informed by Sensors Deployed on Unmanned Aircraft*
  Masters Student: **Mitch Maguire**, for a M.S. in Biological Systems Engineering
- **Haishun Yang**, Associate Professor and Crop Simulation Modeler, UNL Agronomy and Horticulture, for the project: *Determination of field sensor density for real-time crop management*
  Masters Student: **Babak Jafarisamani**, for a M.S. from UNL Computer Science & Engineering