

# MICHIGAN STATE UNIVERSITY

April 20, 2022



## Department of Biosystems and Agricultural Engineering

Farrall Agriculture Engineering Hall  
Room 218  
524 S Shaw Lane  
East Lansing, MI 48824

517-899-6680  
dongyoun@msu.edu

Dear Michigan Water Use Advisory Council Co-Chairs,

I am writing this letter to show my interest in serving as a technical advisor for Michigan Water Use Advisory Council. I am an Irrigation Specialist in the Department of Biosystems and Agricultural Engineering (BAE) at Michigan State University (MSU). I have received a B.S., M.S., and Ph. D. in BAE from MSU. I have been involved in research projects including 1) improving irrigation water use efficiency using sensor technology, 2) irrigation system uniformity evaluation, 3) computational modeling of soil-based wastewater treatment systems to understand the fate, transport, and transformation of water and nutrient in soil, 4) food processing wastewater irrigation, 5) phosphorus recovery using iron-coated nanomaterial media, 6) designing on-site wastewater treatment system, and 7) stormwater monitoring.

Since 2020, I have been leading MSU BAE Irrigation program. The irrigation program focuses on developing affordable, easy-to-use, AI-based irrigation sensor technology to improve irrigation water use efficiency. In addition, our program has been closely working with MSU Extension, commodity groups (Michigan Soybean, Michigan Potato, Michigan Blueberry, Michigan Asparagus), Michigan Agricultural Environmental Assurance Program (MAEAP) technicians, USDA Natural Resources Conservation Service (NRCS) staff, and Irrigation dealers. I have given 46 irrigation educational presentations to farmers, agricultural industries, and irrigation dealers regarding how to improve irrigation water use efficiency.

I am extremely interested in Michigan water use issues, especially water conservation and efficiency. I hope to use my experience and expertise to make a significant contribution to Michigan Water Use Advisory Council. Thank you for your time and consideration. I look forward to hearing back from you.

Sincerely,

A handwritten signature in cursive script that reads "Dongyoun".

Younsuk Dong, Ph.D

# Younsuk Dong

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Irrigation Specialist  
Department of Biosystems and Agricultural Engineering  
524 S. Shaw Ln. Rm 218  
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## **Education:**

Ph.D.	Biosystems and Agricultural Engineering, Michigan State University	2018
M.S.	Biosystems and Agricultural Engineering, Michigan State University	2015
B.S.	Biosystems and Agricultural Engineering, Michigan State University	2013

## **Professional Experience:**

2020-present	<b>Irrigation Specialist</b> , Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI
2018-2020	<b>Research Associate</b> , Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI
2013-2018	<b>Graduate Research Assistant</b> , Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI
2011-2013	<b>Undergraduate Research Assistant</b> , Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI
2011	<b>Environmental Intern</b> , Delhi Wastewater Treatment Plant, Holt, MI

## **Areas of Experties:**

- Development of affordable, easy-to-use, AI-based irrigation sensor technology to improve irrigation water use efficiency and disease management.
- Real-time in-field soil and environmental condition monitoring using IoT (Internet of Things).
- Computational modeling to understand the fate, transport, and transformation of water and nutrients in soil.

## **List of Pulications:**

### *Journal Article*

Dong, Y., Miller, S., Kelley, L., (2020). Performance Evaluation of Soil Moisture Sensors in Coarse and Fine Textured Michigan Agricultural Soils. *Agriculture*. 10 (12): 598.

Dong, Y., Safferman, S. I.; Nejadhashemi, A. P. (2019). Land-based Wastewater Treatment System Modeling using Hydrus CW2D to Simulate the Fate, Transport, and Transformation of Contaminants in Soils. *ASCE Journal of Sustainable Water in th Built Environment*, 5(4).

Dong, Y., Safferman S., Nejadhashemi, A.P., (2019) Computational Modeling of Wastewater Land Application Treatment Systems to Determine Strategies to Improve Carbon and Nitrogen Removal. *Journal of Environmental Science and Health, Part A*. 54(7):657-667.

Safferman, S., Jason, S., Dong, Y., Saffron, C., Wallace, J., Binkley, D., Thomas, M., Miller, S., Bissel, E., Booth, J., Lentz, J., (2017). Resources from Wastes: Benefits and Complexity. *Journal of Environmental Engineering*. 60th Anniversary State-of-the-Art Review. 143 (11).

Dong Y, Safferman S, Herold T, Ostahowsk J, Panter R., (2016). Enzyme pretreatment of fats, oil and grease from restaurant waste to prolong septic soil treatment system effectiveness. *Journal of Environmental Science and Health, Part A*. 52 (1).

### ***Conference Proceedings***

Guyen, M., Lee, K., Dong, Y., Lee, W., (2022). Shunt-Connected Solar Microinverter for Induction Motor Soft-Starting and Active and Reactive Power Compensation. 2022 IEEE Energy Conversion Congress and Exposition. EC-1373. Detroit, MI - *submitted*

Katelyn, S., Dong, Y., Adhikari, U., Safferman, S., (2019). Treatment of Michigan Winery Wastewater with Gravel Bed Vertical Flow Constructed Wetlands. Paper presented at National Onsite Wastewater Recycling Association: Loveland, CO.

Miller, S., Srivastava, A., Marquie, S., Dong, Y., Kelly, L., Roberts, C., (2018). A solar-powered Drip Irrigation System for Sustainable Vegetable Production in the Midwest United States. Paper presented at American Society of Agricultural and Biological Engineers International Conference: Detroit, MI. Paper number: 1800461.

Dong, Y., Safferman, S., Miller, S., Hruby, J., Bratt, D., (2017). Effectiveness of food processing wastewater irrigation. Water Environmental Federation's Annual Technical Exhibition and Conference: Chicago, IL.

Daniel, B., Safferman, S., Dong, Y., Reinhold, R., Kline-Robach, R., Miller, S., Bender, R., (2017). Assessing the effectiveness of a constructed wetland in a complex suburban environment. Paper presented at American Society of Agricultural and Biological Engineers International Conference: Spokane, WA. Paper number: 1701255.

Dong, Y., Safferman, S., Tekesin, O., Sengupta, S., Schorr, J., Revur, R., (2016). Removal of nutrients from tile drainage water using nano-engineered porous ceramic media. Paper presented at American Society of Agricultural and Biological Engineers International Conference: Orlando, FL. Paper number: 2460856.

Safferman, S., Dong, Y., Thelen, J., Costantini, L., Saber, L., Schorr, J., Sengupta, S., Revur, R., (2015). Phosphorus removal from domestic wastewater using engineered nano-media. Paper presented at National Onsite Wastewater Recycling Association: Virginia Beach, VA.

Dong, Y., Safferman, S., Herold, T., Ostahowsk, J., Panter, R., (2014). Enzyme pretreatment of fats, oil and grease from restaurant waste to prolong drain field effectiveness. Paper presented at National Onsite Wastewater Recycling Association: Denver, CO.

### ***Extension Bulletins and Articles (Peer-reviewed)***

Isleib, J., Dong, Y., (2022). Upper Peninsula project monitors water conditions on clay soils, MSU Extension Article.

- Mackellar, B., Kelley, L., Dong, Y., Miller, S., (2021). Irrigation an important tool for increasing profits, managing risk and utilizing applied nutrients. MSU Extension Article.
- Dong, Y., Miller, S., Kelley, L., (2020). Improving Irrigation Water Use Efficiency: Using Soil Moisture Sensors. *Michigan State University Extension Bulletin E3445*.
- Dong, Y., Kelley, L., Miller, S., (2020). Efficient Irrigation Management With Center Pivot System. *Michigan State University Extension Bulletin E3439*.
- Rogers, E., Fronczak, S., Tirrell, B., Safferman, S., Dong, Y., Bradford, B., Kirk, D., Harrigan, T., (2020). Supply chain disruptions in the dairy industry. Michigan State University Fact Sheet.
- Kelley, L., Miller, S., Dong, Y., (2019). Adequate Water Supply is the Heart of an Irrigation System. Michigan State University Extension Article.

### ***News Article and Newsletters***

- Dong, Y., Werling, B., (2021). A Look at What can Soil Moisture Sensors Do., Vegetable Grower News, <https://digital.vegetablegrowersnews.com/i/1401796-september-2021/11?>.
- Check, J., Chilvers, M., Willbur, J., Dong, Y., (2021). White mold and Sporecaster research in dry beans, Michigan Bean Commission July Newsletters.
- Dong, Y., (2020). Improving Irrigation Management to Increase Return on Investment. Michiana Irrigation Association Newsletter.
- Dong, Y., (2019). Using Soil Moisture Meters to Compliment Irrigation Scheduling. Michiana Irrigation Association Newsletter.

### ***Manuscripts in Process***

#### **Journal Article**

- Dong, Y., Kelley, L., Anderson, E., Development of Affordable Weighting Lysimeter to Monitor Crop Water Use.
- Dong, Y., Christenson, C., Miller., S., Kelley, L., Trends of Irrigation Water Use in Michigan and Indiana.

#### **Book Chapter**

- Dong, Y., Various Irrigation Scheduling Methods. *Irrigation and Drainage – Recent Advances*.

### **Presentations:**

#### ***Oral Presentations***

- Chilvers, M., Check, J., Byrne, A., Willbur, J., Dong, Y., Bales, S., Fall, M., Webster, R., Smith, D., (2022). Improving Sclerotinia sclerotiorum apothecia risk prediction models for use in irrigated soybean, potato and dry bean fields. BotrySclero 2022 meeting. France - *submitted*
- Dong, Y., Safferman, S., (2019). Modeling of Land-Based Food Processing Wastewater Treatment System to Improve Carbon Degradation and Nitrogen Removal. ASA, CSSA, and SSSA Annual Meeting. San Deigo, TX.

- Skornia, K., Safferman, S., Dong, Y., Adhikari, U., (2019). Treatment of Winery Wastewater with Gravel Bed Vertical Flow Constructed Wetlands. National Onsite Wastewater Recycling Association. Loveland, CO.
- Dong, Y., Safferman, S., (2019). Onsite Wastewater Treatment System: Assessing the Impact of Climate Variability and Climate Change, Michigan State Report. USDA Multistate Project NE 1545 Annual Meeting. San Diego, TX.
- Dong, Y., Safferman, S., (2019). Finite Element Modeling of Domestic and Food Processing Wastewater Land Application Systems. American Society of Agricultural and Biological Engineers International Conference. Detroit, MI.
- Miller, S., Srivastava, A., Marquie, S., Dong, Y., Kelley, L., Roberts, C., (2019). A Solar-Powered Drip Irrigation System for Sustainable Vegetable Production in the Midwest United States. American Society of Agricultural and Biological Engineers International Conference. Detroit, MI.
- Dong, Y., Safferman, S., (2017). Effectiveness of Food Processing Wastewater Irrigation. Michigan State University Engineering Research Symposium. East Lansing, MI
- Dong, Y., Safferman, S., Miller, S., Hraby, J., Bratt, D., (2017). Effectiveness of food processing wastewater irrigation. Water Environmental Federation's Annual Technical Exhibition and Conference. Chicago, IL.
- Dong, Y., Safferman, S., (2016). Removal of Nutrients from Tile Drainage Water using Iron-coated Porous Ceramic Media. American Society of Agricultural and Biological Engineers International Conference. Orlando, FL.
- Dong, Y., Safferman, S., (2015). Fats, Oil and Grease in a Drain field. Michigan Onsite Wastewater Conference. East Lansing, MI.
- Dong, Y., Safferman, S., (2015). Enzyme Pretreatment of Fats, Oil and Grease from Restaurant Waste to Prolong Drain Field Effectiveness. National Onsite Wastewater Recycling Association. Denver, CO.
- Dong, Y., Safferman, S., (2013). Effectiveness of the AGIS Process on Fats, Oil and Grease. Environmental Science & Policy Program Research Symposium. East Lansing, MI.

### **Posters**

- Dong, Y., Kelley, L., Kelley, B., Anderson, E., (2022). Estimating Crop Coefficient of Industrial Hemp. Future Annual Meeting and Professional Improvement Conference at NACAA. – *submitted*.
- Dong, Y., Kelley, B., Kelley, L., Miller, S., Chilvers, M., (2022). Improving Irrigation Water Use efficiency and Disease Management Using Low-cost Sensor Technology. 77<sup>th</sup> Soil and Water Conservation Society Annual Conference. Denver, CO. August 1. 2022. – *accepted*.
- Check, J., Dong, Y., Smith, S., Willbur, J., (2022). Chilvers, M., Improving Sclerotinia sclerotiorum apothecia risk prediction models for use in irrigated soybean, potato and dry bean fields. 2022 American Phytopathological Society Meeting. - *submitted*
- Dong, Y., Safferman, S., (2017). Novel Drain Field Laboratory Simulations to Determine the Effectiveness of Enzymatic Pretreatment of Restaurant Wastewater. Water Environment Federation - Nutrient Symposium. Fort Lauderdale, FL.
- Dong, Y., Safferman, S., (2017). Understanding and Optimization on Food Processing Wastewater Irrigation. Fate of Earth Conference. East Lansing, MI.

- Dong, Y., Safferman, S., (2017). Understand the Land Application of Long-Term Food Processing Wastewater Irrigation. Michigan State University Engineering Research Symposium. East Lansing, MI.
- Dong, Y., Safferman, S., (2017). Enzyme Pretreatment of Fats, Oil and Grease from Restaurant Waste to Prolong Septic Soil Treatment System Effectiveness. Borchardt Conference. Ann Arbor, MI.
- Dong, Y., Safferman, S., (2015). Phosphorus Removal from Wastewater using Nano-enhanced Reactive Iron Media. International Conference on Inverse Problem Solving. East Lansing, MI.
- Dong, Y., Safferman, S., (2014). Effectiveness of AGIS Process on Fats, Oil and Grease using a Septic Drain Field. Michigan State University Engineering Research Symposium. East Lansing, MI.

### ***Exhibits***

- Dong, Y. (2022). LOCOMOS (Low-Cost sensor Monitoring System). 2022 Innovataion Celebration. MSU Innovation Center. East Lansing, MI. (Invited).

### **Outreach Extension Activities:**

- Dong, Y., (2022). Irrigation Expansion Potential. Saginaw Valley Research and Extension Meeting. Saginaw, MI.
- Dong, Y., Kelley, L., (2022). Improving Irrigation Water Use Efficeincy in Irrigated Potato Field. Winter Potato Conference. Grand Rapid, MI.
- Dong, Y., (2022). Improving Irrigation Water Use Efficiency in Irrigated Potato Field. Southwest Michigan Horticultural Days. Benton Harbor, MI.
- Dong, Y., (2022). On-Farm Irrigation Demonstration Research Update. Michiana Irrigated Corn and Soybean Conference. Shipshewana, IN.
- Dong, Y., (2021). Improving irrigation system energy efficiency. Let's Talk Irrigation Webinar Series. Online.
- Dong, Y., (2021). Timing the Last Irrigation. Let's Talk Irrigation Webinar Series. Online.
- Dong, Y., (2022). Irrigation Scheduling Methods: Weather-based and Sensor-based Tools. Irrigation Educational Meeting – Oceana & Mason-Lake Conservation Districts in Partnership with Michigan State University Extension. Hart, MI.
- Dong, Y., (2021). In-Field Sensor Monitoring to Improve Irrigation Water Use Efficiency. Let's Talk Irrigation Webinar Series. Online.
- Dong, Y., Kelley, L., (2022). Chestnut Water Management: Irrigation Scheduling Tools. Midwest Chestnut Producers Council Meeting. Kalamazoo, MI.
- Dong, Y., (2021). Improving Irrigation Water Use Efficiency Using Sensor Technology. Let's Talk Irrigation Webinar Series. Online.
- Dong, Y., Kelley, L., (2022). Irrigation scheduling Methods: Weather-based and Sensor-based. MSU Hop Spring Kickoff Meeting. Online.
- Dong, Y., (2021). Checkbook Irrigation scheduling concepts and tools . Let's Talk Irrigation Webinar Series. Online.

- Dong, Y., (2021). Use Irrigation Scheduling Tools to Improve Irrigation Water Use Efficiency. Michigan Potato Field Day. Lakeview, MI.
- Dong, Y., (2021). In-field Sensor Monitoring to Improve Irrigation Management. Southwest Michigan On-Farm Research Field Day. Centreville, MI.
- Dong, Y., (2021). On-Farm Irrigation Demonstration Study. Soybean Field Day. East Lansing, MI.
- Dong, Y., (2021). Improving Water and Disease Management using Sensor Technology. Oceana Research Field Day. Hart, MI.
- Dong, Y., Kelley, L., (2021). Better Irrigation Management Through Monitoring & Scheduling. Field Crop Virtual Breakfast. Online.
- Dong, Y., Kelley, L., (2021). Blueberry Irrigation. *Blueberry I session*. Great Lake Expo Fruit, Vegetables and Farm Market Expo. Grand Rapid, MI.
- Dong, Y., Kelley, L., (2021). Improving Irrigation Water Use Efficiency using Sensor Technology. *Irrigation session*. Great Lake Expo Fruit, Vegetables and Farm Market Expo. Grand Rapid, MI.
- Dong, Y., (2021). Predicting the Expansion of Irrigation in Michigan and Indiana. Michiana Irrigation Association Winter Workshop. Shipshewana, IN.
- Dong, Y., (2021). Data from Your Field to Better Manage Irrigation and Disease. Michiana Irrigation Association Winter Workshop. Shipshewana, IN.
- Dong, Y., (2021). Michigan Irrigation Update. Integrated Crop and Pest Management Update 2021. East Lansing, MI.
- Dong, Y., (2021). Improving Blueberry Irrigation Management with Sensor Technology. Blueberry Pre-bloom Webinar. Online.
- Dong, Y., (2021). Improving Irrigation Management with Sensor Technology. Michigan Ag Ideas to Grow. Online.
- Dong, Y., (2021). Using the Enviroweather Station Data for Management and Build your Own? Michigan Ag Ideas to Grow. Online.
- Dong, Y., Kelley, L., (2020). Improving Irrigation Water Use Efficiency Using Sensor Technology. Great Lake Expo Fruit, Vegetable, and Farm Market. Online.
- Dong, Y., (2020). Implementation of a Low-Cost Remote Sensor Monitoring System to Improve Irrigation Management. Michigan State University Fall Extension Conference. Online.
- Safferman, S., Smith, J., Dong, Y. (co-presenter), Sotthiyapai, T., (2020). Time to Think About Phosphorus Management – Not One-Size Fits All. Michigan State University Fall Extension Conference. Online.
- Chilvers, M., Checks, J., Dong, Y. (co-presenter), (2020). Using Leaf Wetness Sensor to Detect Crop Disease Potential. Michigan Corn Virtual Field Day. Online.
- Dong, Y., Kelley, L., (2020). Specialty Crop: When to Start Irrigation and How Much to Apply. Southwest Michigan Specialty Crop Irrigation Meeting. Online.
- Dong, Y., (2020). Irrigation Management to Maximize Water Use Efficiency and Minimize Disease. Michiana

Irrigated Corn and Soybean Production Workshop. Shishewana, IN.

Dong, Y., (2020). Budget-Friendly Field Remote Monitoring System for the Future. Michiana Irrigation Association Winter Meeting. Shishewana, IN.

Dong, Y., Miller, S., Kelley, L., (2019). Drip Irrigation Water Distribution Demonstration. Michigan Blueberry Association Meeting. Paw Paw, MI.

Dong, Y., Miller, S., Kelley, L., (2019). Irrigation Scheduling and Soil Moisture Monitoring – Meeting Crop Need and Estimating Water Loss Out of the Root Zone. Michiana Irrigated Corn and Soybean Production Workshop. Shishewana, IN.

Dong, Y., Miller, S., (2019). Comparison of Soil Moisture Sensors. Southwest Michigan Horticultural Days. Benton Harbor, MI.

Dong, Y., Miller, S., Kelley, L., (2018). Comparison of Soil Moisture Sensors Readings and Introduction of Hydrus Model. Great Lake Expo Fruit, Vegetable, and Farm Market. Grand Rapid, MI.

Dong, Y., Miller, S., Kelley, L., (2018). Comparison of Various Soil Moisture Sensors and How to Interpret the Result. Michigan Blueberry Association Meeting. West Olive, MI.

Dong, Y., Miller, S., Kelley, L., (2018). Drip Irrigation and Sensor Technology. Irrigation Field Day. Benton Harbor, MI.

Dong, Y., Miller, S., Kelley, L., (2018). Comparison of Results from Various Soil Moisture Sensors. Michigan State University Agricultural Innovation Day: Focus on Fruit and Vegetable Technology. Benton Harbor, MI.

### **Grants:**

Dong, Y. (**PI**), and Cao, Z., (2022). Optimizing Irrigation Management using Machine Learning, Internet of Things (IoT) and Field Sensors. MSU Project GREEN. Awarded \$80,000.

Dong, Y. (**PI**), Garcia-Salazar, C., Kelley, L., Sloan, C., (2022). Improving Blueberry Irrigation Management Utilizing Irrigation Scheduling Methods. Michigan Blueberry Commission. Awarded \$20,000.

Dong, Y. (**PI**), Willburs, J., Chilvers, M., Cao, Z., Miller, S., (2022). Improving potato water and disease management with IoT-based sensor technology. Michigan Translational Research and Commercialization Innovation Hub for AgBio – Full Grant. Awarded \$100,000.

Dong, Y. (**PI**), and Chilvers, M., (2022). Utilization of sensor technology to improve water and disease management in irrigated soybean fields. Michigan Soybean Commission. Awarded \$29,972.

Dong, Y. (**PI**), and Willburs, J., (2022). Understanding the benefits of sensor-based irrigation scheduling method in irrigated potato fields. Michigan Potato Industry Commission. Awarded \$20,000.

Dong, Y. (**PI**), Hausbeck, M., Werling, B., Mason, K., Andresen, J., (2021). Taking Asparagus Disease Management into the Future with Real-Time, in-Field Sensor Data. MDARD Specialty Crop Block Grant. Awarded \$98,800.

Chilvers, M. and Dong, Y. (**Co-PI**), (2021). Implementation of Low-Cost Remote Sensor Monitoring System to Improve Irrigation Water Use Efficiency and Disease Management. USDA NRCS CIG On-Farm Trial. Awarded \$426,000.



Dong, Y. **(PI)**, and Chilvers, M., (2021). Improving Irrigation Water Use Efficiency and Disease Management Using Low-Cost Sensor Monitoring Unit. Michigan Soybean Commission. Awarded \$26,795.

Dong, Y. **(PI)**, and Willburs, J., (2021). Improvement of Disease Management in Irrigated Potato Fields Using Real-Time Sensor Monitoring Systems. Michigan Potato Industry Commission. Awarded \$25,000.

Dong, Y. **(PI)**, Werling, B., Miller, S., (2021). Improving Water and Disease Management using an Easy-to-Use Smartphone App. Michigan Translational Research and Commercialization Innovation Hub for AgBio – Starter Grant. Awarded \$25,000.

Dong, Y. **(PI)**, Kelley, L., Anderson, E., (2021). Estimation of Crop Coefficient for Industrial Hemp. MSU AABI ProjectGREEN mini-grant. Awarded \$5,000.

Safferman, S., Dong, Y. **(Co-PI)**, Jean, M., (2021). Food Processing Wastewater Irrigation Field Monitoring, Modeling, and Data Analyses. Gerber. Awarded \$135,000.

Woongkul, L. and Dong, Y. **(Collaborator)**, (2021). Retrofitting Solar Microinverter to Irrigation Pump for Improving Water and Energy Use Efficiency. Michigan Translational Research and Commercialization Innovation Hub for AgBio – Starter Grant. Awarded \$25,000.

Wenjing, G., Marynard, L., Dong, Y. **(Collaborator)**, (2021). Improve Drip Irrigation Management for Vegetable and Melon Production in Indiana. Indiana Specialty Crop Block Grant. Awarded \$139,000.

Douches, D., Winkler, J., Long, C., Zhong, S., Dong, Y. **(Collaborator)**, (2021). Increasing the resilience of potato production to combat climate change. MSU Plant Resilience Institute. Awarded \$40,000.

Staton, M., Anderson, E., Dedecker, J., Dong, Y. **(Collaborator)**, Gross, P., Jean, M., Kelley, L., Laurenz, R., Mackellar, B., (2021). 2021 MSU Extension On-Farm Research, Education and Communication Projects. Awarded \$22,216.

Chilvers, M., Kelley, L., Mackellar, B., Miller, S., Dong, Y. **(Collaborator)**, Ines, A., Check, J., (2020). Managing tar spot through improved irrigation timing. MSU Project GREEN. Awarded \$50,000.

Isleib, J., Dong, Y. **(Collaborator)**, Wardynski, F., (2020). Improved volumetric soil moisture measurement on UP demonstration farm. MSU AABI ProjectGREEN mini-grant. Awarded \$5,000.

Miller, S., Dong, Y. **(Collaborator)**, Kelley, L., (2020). Monitoring and Modeling the Transport of Water, Phosphorus, and Nitrogen in Corn Field. MSU AABI ProjectGREEN mini-grant. Awarded \$3,800.

### **Honors:**

*MSU Extension Field Crop Team Award 2nd place* (2022), 2021 Extension Education Community Educational Materials Awards Program, American Society of Agronomy Meeting. Digital communication.

*Exploration Award – MTRAC AgBio Innovation Challenge* (2021). Lee, W., Dong, Y., Retrofitting Solar Microinverter to Irrigation Pump for Improving Water and Energy Use Efficiency.

*Inspiration Award - MTRAC AgBio Innovation Challenge* (2020). Dong, Y., Miller, S., Chilvers, M. Improving Irrigation Water Use Efficiency and Disease Management using Sensor Technology.

Dissertation Completion Fellowship (2018).

Engineering Research Symposium Award - Third place (2018).

Engineering Research Symposium Award - Second place (2017).

### **Activities:**

*Member* - Michigan Water Conservaiton and Efficiency Committee. (2021 – present)

*Member* - Michigan Irrigation Generally Accepted Agricultural and Management Practice. (2020 – present)

*Special Issue Journal Editor* - International Journal of Environmental Research and Public Health. (2020)

*Session Coordinator* – Irrigation Session, Great Lake Fruit, Vegetable and Farm Market. (2021 – present)

*Journal Reviewer*

- Irrigation and Drainage.
- Water Environment Research.
- Journal of Environmental Engineering.
- Agronomy.
- Sustainability.
- Waste Management.
- National Onsite Wastewater Recycling Association.

*Society Member*

- American Society of Agricultural and Biological Engineers.
- Crop and Science Society of America.

HYDRUS Short Course Training Certification (2017).

*Advisor* – International Student Resources (2017).

*President* – International Student Resources (2014).

*Evaluator* – Mid-SURE Symposium (2013-2017).

### **Invention Disclosures:**

Lee, W., Dong, Y., (2021). Reconfigurable Shunt-connected Solar Microinverter (50% contribution).

Dong, Y., Miller, S., Kelley, L., (2019). Low-Cost Remote Sensor Monitoring System to Store and Display the Field Data for Critical Agronomy Decision (60% contribution).

### **Teaching:**

Guest Lecturer. (2022). BE 815 Instrumentation for Biosystems Engineering

Guest Lecturer. (2020). BE 484 Water Resource Recovery Engineering.

Co-Instructor. (2015-2019). BE 230 Engineering Analysis of Biological Systems - Laboratory Option.

### **Media Coverage:**

MSU Innovation. Spartan Irrigation Management Technology Cuts Costs Protects Environment. (July 23. 2021). <https://innovationcenter.msu.edu/spartan-irrigation-management-technology-cuts-costs-protects-environment/>

Purdue Vegetable Hotline article. Collaboration between Purdue University and Michigan State University to Improve Irrigation Management in Indiana Watermelon Production. (October 18. 2021).

<https://vegcropshotline.org/article/collaboration-between-purdue-university-and-michigan-state-university-to-improve-irrigation-management-in-indiana-watermelon-production/>

Vegetable Grower News. (2019). Calibrate Moisture Sensor for Region.

Spartans Will 360 – President’s Report. (2013). Getting my feet wet. Nano-filter capable for removing phosphorus from wastewater.

### **Supervision of Graduate and Undergraduate Students:**

#### ***Ph.D. Dissertation Committee***

Mann, S. (Co-Advisor (co-chair), Department of Biosystems and Agricultural Engineering, Michigan State University), Ph.D. (2022 – present).

Check, J. (Committee member, Department of Plant, Soil and microbial science, Michigan State University), Ph.D. (2022 – present).

#### ***Supervision of Undergraduate Research Assistant***

Kelley, B. (Advisor), Department of Biosystems and Agricultural Engineering, Michigan State University. (2020 – Present).

Christenson, C. (Advisor), Department of Biosystems and Agricultural Engineering, Michigan State University. (2021 – Present).

Gagner, E. (Advisor), Department of Plant, Soil and microbial science, Michigan State University. (2021-2022).

Belloso, E. (Advisor), Northern Illinois University. MSU Summer Research Opportunity Program (2021).

Hassel, L., (Co-advisor), Department of Biosystems and Agricultural Engineering, Michigan State University. (2021).