

John McMaine

Agricultural and Biosystems Engineering, South Dakota State University

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EDUCATION

Ph.D. 2017 **Oklahoma State University**, Biosystems Engineering
M.S. 2013 **University of Kentucky**, Biosystems and Agricultural Engineering
B.S. 2011 **University of Kentucky**, Biosystems Engineering

PROFESSIONAL EXPERIENCE

7/24-present **Associate Professor**, Biosystems and Agricultural Engineering, University of Kentucky
8/23-6/24 **Associate Professor**, Agricultural and Biosystems Engineering, South Dakota State University
8/22-6/24 **Griffith Chair in Agriculture and Water Resources**, Agricultural and Biosystems Engineering, South Dakota State University
8/22-6/24 **Director**, South Dakota Water Resources Institute, South Dakota State University
8/22-6/24 **Director**, Mesonet at SD State, South Dakota State University
8/17-8/23 **Assistant Professor**, Agricultural and Biosystems Engineering, South Dakota State University
1/14-8/17 **Research/Teaching Assistant**, Biosystems and Agricultural Engineering, Oklahoma State University
8/11-12/13 **Research/Teaching Assistant**, Biosystems and Agricultural Engineering, University of Kentucky
5/11-11/12 **Engineering Assistant**, Bell Engineering

PROFESSIONAL ACTIVITIES

- Eastern South Dakota Water Conference Planning Committee; Co-Chair; 2018 – 2024
- Big Sioux Water Festival; Planning committee member, exhibit hall co-organizer; 2018 – 2024
- North Central Region Water Network; State Point of Contact; 2017 – 2024
- NCERA 217; Multi-state Group - Drainage Design and Management Practices to Improve Water Quality; Member; 2017 – Present
- International Drainage Research Forum; Planning committee member, Program sub-committee co-chair; 2020-2022
- South Dakota Soil and Water Conservation Society; Vice-president, President, Member; 2020-2024
- Conservation Drainage Network; Steering committee; At-large representative; 2022 – 2024
- ASABE NRES 23; Secretary, Vice-Chair, Chair; 2020-2023

SELECTED HONORS & AWARDS

- William Mibra Griffith and Byrne S. Griffith Chair in Agriculture and Water Resources, 2022. Inaugural endowed chair position at South Dakota State University.

- Gamma Sigma Delta – Excellence in Extension Award, 2022, Annually given to one extension faculty or staff at South Dakota State University
- ASABE Extension Blue Ribbon Award (with Cable Hardin), 2022, Conservation Drainage - Storing Water in the Landscape video series
- ASABE Extension Blue Ribbon Award (with Anthony Bly and Keely Moriarty), 2022, Streamlines Podcast - Conservation Drainage Season
- SDSU Extension Award for Excellence in Programing and Outreach for Participation and Leadership with Crop Hour, 2021, webinar series in Winter 2020 through Spring 2021
- Education and Public Service Award, 2019 as active participant of North Central Region Water Network
- US Department of Agriculture - National Excellence in Multistate Research Award, 2018 as active participant of NCERA-217

SELECTED PUBLICATIONS (last 4 years)

1. Gardezi, M., Abuayyash, H., Adler, P., Alvez, J., Anjum, R., Badireddy, A., Brugler, S., Carcamo, P., Clay, D., Dadkhah, A., Emery, M., Faulkner, J., Joshi, B., Joshi, D., Khan, A., Koliba, C., Kumari, S., McMaine, J., Merrill, S., Mitra, S., Musayev, S., Oikonomou, P., Pinder, G., Prutzer, E., Rathore, J., Ricketts, T., Rizzo, D., Ryan, B., Sahraei, M., Schroth, A., Turnbull, S., Zia, A. The role of living labs in cultivating inclusive and responsible innovation in precision agriculture. *Agricultural Systems*. 216. 103908. <https://doi.org/10.1016/j.agsy.2024.103908>. JIF 6.1
2. Saha, A., McMaine, J., Trooien, T., Sexton, P., Graham, C. 2024. Impact of No-till, Crop Rotation, Cover Crop, and Drainage on Soil Physical and Hydraulic Properties. *Soil Science Society of America Journal*. 88 (2), 239-257. WOS: 2022. JIF 2.932.
3. McMaine, J., Thaler, R., Hurst, M., Flory, G., Schmit, A. 2024. Shallow Burial with Carbon for Swine Carcass Disposal. *Journal of ASABE*. In Press
4. Adereti, D., Gardezi, M., McMaine, J., Wang, T., May, C. 2023. Understanding farmers' engagement with intelligent agricultural decision support systems. *Agronomy Journal*. DOI: <https://doi.org/10.1002/agj2.21358>
5. Gardezi, M., Prutzer, E., Rizzo, D., Emery, M., Merrill, S., Ryan, B., Oikonomou, P., Alvez, J., Adereti, D., Almen, K., Anjum, R., Badireddy, A., Bhattarai, D., Brugler, S., Cheney, N., Clay, D., Clay, S., Dadkhah, A., Faulkner, J., Joshi, D., Koliba, C., McMaine, J., Michael, S., Musayev, S., O'Neil-Dunne, J., Pinder, G., Ricketts, T., Schneebeli, S., Schroth, A., Turnbull, S., Zia, A. 2023. Rethinking 'responsibility' in precision agriculture innovation: Lessons from an interdisciplinary research team. *Journal of Responsible Innovation*. pp. 1-24. DOI: <https://doi.org/10.1080/23299460.2023.2202093>
6. Saha, A., McMaine, J. 2023. Impact of soil health practices on field hydrology: How sensitive is the Soil-Plant-Air Water (SPAW) model to changes in soil properties?. *Journal of the ASABE*. 66(4). pp. 809-823. DOI: <https://doi.org/10.13031/ja.15306>
7. Luo, D., Zhang, H., Houborg, R., Ndekelu, L., Maimaitijiang, M., Tran, K., McMaine, J. 2023. Utility of daily 3 m Planet Fusion Surface Reflectance data for tillage practice mapping with deep learning. *Science of Remote Sensing*. 7. pp. 100085. DOI: <https://doi.org/10.1016/j.srs.2023.100085>

8. Tran, K., Zhang, H., McMaine, J., Zhang, X., Luo, D. 2021. 10 m crop type mapping using Sentinel-2 reflectance and 30 m cropland data layer product. *International Journal of Applied Earth Observation and Geoinformation*. 107. pp. 102692. DOI: <https://doi.org/10.1016/j.jag.2022.102692>
9. Bawa, A., MacDowell, R., Bansal, S., McMaine, J., Sexton, P., Kumar, S. 2021. Responses of leached nitrogen concentrations and soil health to winter rye cover crop under no-till corn-soybean rotation in the northern Great Plains. *Journal of Environmental Quality*. 1-12. DOI: 10.1002/jeq2.20294
10. McMaine, J.T., Vogel, J.R., Belden, J.B., Schnelle, M.A., Morrison, S.A., Brown, G.O. 2020. Field studies of pollutant removal from nursery and greenhouse runoff by constructed wetlands. *J. Env. Qual.* 49(1), pp. 106-118. DOI: 10.1002/jeq2.20024
11. Messer, T., Moore, T., Nelson, N., Ahiablame, L., Bean, E., Boles, C., Cook, S., McMaine, J., Schlea, D., Hall, S. 2021. Constructed wetlands for water quality improvement: A synthesis on nutrient reduction from agricultural effluents. *Transactions of ASABE*. 64(2). pp. 625-639. DOI: 10.13031/trans.13976
12. Christianson, L.E., Cooke, R.A., Hay, C.H., Helmers, M.J., Feyereisen, G.W., Ranaivoson, A.Z., McMaine, J.T., McDaniel, R., Rosen, T.R., Puer, W.T., Schipper, L.A., Dougherty, Robinson, R.J., Layden, IA., Irvine-Brown, S.M., Manca, F., Dhaese, K., Nelissen, V., von Ahnen, M. 2020. Effectiveness of denitrifying bioreactors on water pollutant reduction from agricultural areas. *Transactions of ASABE*. 64(2). pp. 641-658. DOI: 10.13031/trans.14011
13. Akhter, F., McMaine, J.T., McLemore, A.J., Hurst, M. 2021. Validation and development of discharge equations for 3D printed flumes for flow monitoring. *Transactions of ASABE*. 64(6). pp. 1921-1928. DOI: 10.13031/trans.14365

SELECTED GRANTS RECEIVED

1. Filling the Pipeline-Preparing the Next Generation of Watershed Management Extension Professionals. (2021) **J. McMaine (PI)**, R. Power, J. Houghman, M. Meehan, X. Jia, R. North, D. Downing, A. Schmidt, J. Benning, T. Trooien, L. Edwards, L. Merrifield. USDA-NIFA. \$499,967
2. FW-HTF-RL: Testing a responsible innovation approach for integrating precision agriculture (PA) technologies with future farm workers and work. (2020) M. Gardezi (PI), **J. McMaine**, S. Clay, M. Emery, D. Clay, S. Michael, A. Zia, D. Rizzo. \$2,996,760
3. Roadmap to Water Resilience – Valuing Water as a Resource for Improved Ag Profitability and Downstream Safety. (2020) **J. McMaine (PI)**, A. Bly, D. Kringen, S. Kumar, D. Kolady, M. Gardezi, K. Blann, L. Fixen, R. Biske. \$877,687
4. Filling the Pipeline – Developing a Regional Undergraduate Watershed Focused Extension Internship Program. (2019) **J. McMaine (PI)**, J. Benning, L. Merrifield, L. Christianson, D. Devlin, S. Missaghi, J. Iles. North Central Region Water Network Seed Funding Grant. \$14,964.
5. Mitigating Impacts of Excess Water Quantity through Improved Soil Health. (2019) **J. McMaine (PI)**, R. McDaniel. USGS 104b. \$24,000.
6. Evaluating and predicting the risk of algal blooms in South Dakota lakes using remote sensing (Year 2). (2019) R. McDaniel (PI), B. Bleakley, J. McMaine. USGS 104b. \$72,381.
7. Cover crops for Water and Nutrient Management in South Dakota. (2018) **J. McMaine (PI)**, J. Guzman, D. Kringen, A. Bly. NRCS Conservation Collaboration Grant. \$419,211.

8. Evaluating and predicting the risk of algal blooms in South Dakota lakes using remote sensing. R. McDaniel (PI), B. Bleakley, **J. McMaine**. (2018) USGS 104b. \$72,441.
9. Engaging citizens in low impact development from design to implementation and beyond. (2017) **J. McMaine (PI)**, D. Kringen, R. McDaniel. EPA 319, Information and Education. \$12,881.