

Matthew J. Helmers
Professor
Department of Agricultural and Biosystems Engineering
Iowa State University

Education:

- Ph.D. University of Nebraska-Lincoln, Agricultural and Biological Systems Engineering, 2003
M.S. Virginia Polytechnic Institute and State University, Civil Eng., 1997
B.S. Iowa State University, Civil Engineering, 1995

Professional Experience:

- 9/18 – present Director of the Iowa Nutrient Research Center
8/14 – present Professor, Agricultural and Biosystems Engineering Department, Iowa State University
7/13 – present Dean’s Professor in the College of Agriculture and Life Sciences, Iowa State University
8/13 – 2018 Associate Chair for Research and Extension, Agricultural and Biosystems Engineering Department
7/09 – 7/14 Associate Professor, Agricultural and Biosystems Engineering Department, Iowa State University
8/03 – 6/09 Assistant Professor, Agricultural and Biosystems Engineering Department, Iowa State University
7/99 – 7/03 USDA National Needs Graduate Fellow, Agricultural and Biological Systems Engineering Department, University of Nebraska-Lincoln
8/97 – 6/99 Staff Engineer, URS Greiner Woodward-Clyde, Santa Ana, CA, and Denver, CO
8/95 – 6/97 Eisenhower Graduate Research Fellow, Civil Engineering Department, Virginia Polytechnic Institute and State University

Research and Extension Interests:

- Water management and water quality with respect to subsurface drainage
- Overland flow and sediment transport
- Watershed hydrology
- Non-point source pollution from agriculture
- Impact of land use changes on water resources
- Vegetative filter systems to reduce pollutant transport

Honors and Awards:

- ISU College of Agricultural and Life Sciences Outstanding Achievement in Extension Award, 2018
- ISU College of Agricultural and Life Sciences Dean Lee R. Kolmer Award for Excellence in Applied Research, 2017

- ASABE Blue Ribbon Award (2017) in the Educational Aids Competition for publication “Ten Ways to Reduce Nitrogen Loads from Drained Cropland in the Midwest”
- ASABE G.B. Gunlogson Countryside Engineering Award, 2014
- Member of Team that received 2013 College of Agriculture and Life Sciences Dean’s Citation for Extraordinary Contributions
- ASABE Blue Ribbon Award (2013) in the Educational Aids Competition for Electronic Delivery “Rock Your Watershed! A Game of Choice and Chance”
- Member of Team that received Iowa State University Extension Team Award – Organizational, 2009
- ASABE Nolan Mitchell Young Extension Worker Award, 2009
- Iowa State University Early Achievement in Extension, 2007
- College of Agriculture Early Achievement in Extension, 2007
- ASABE Blue Ribbon Award (2007) in the Educational Aids Competition for publication “Drainage Water Management for the Midwest”
- ASA Educational Materials Award (2007) for publication “Agricultural Nitrogen for Water Protection in the Midwest”
- ASABE Iowa Section – Newcomer Engineer of the Year, 2006
- ASAE Mid-Central Region Graduate Student of the Year, 2002
- Milton Mohr Fellowship Recipient, 2000–2002
- USDA National Needs Fellowship Recipient, 1999–2002
- Eisenhower Graduate Fellowship Recipient, 1995–1997
- Tau Beta Pi, Engineering Honorary
- Chi Epsilon, Civil Engineering Honorary

Professional Affiliations:

- ASABE – The Society for Engineering in Agricultural, Food, and Biological Systems
- Soil and Water Conservation Society
- Soil Science Society of America

Professional Registration:

- Engineer in Training Certification (1995)

Professional Service:

American Society of Agricultural and Biological Engineers (ASABE):

- ASABE Committees
 - Program Committee Chair 2015
 - Member of Hancor Award Selection Committee 2016-present
 - Member of Gunlogson Award Selection Committee 2015-present
 - Member of Young Extension Worker Award Selection Committee 2015-present
 - Member SW-02 (Steering) elected Secretary in 2013 2011-present
 - Member SW-04 (Program) 2011-present
 - Member SW-21 (Hydrology) 2009-present
 - Member SW-06 (Paper Awards) 2009-2016

- Member Nomenclature Committee (SW-07) 2007-2015
 - Member ED-208 (Extension) (Secretary in 2007, Vice-chair in 2008, Chair – 2009) 2004-present
 - Member SW-23 (Drainage) (Vice-Chair in 2009-2011, Chair 2011-present) 2003-present
 - Member ED-01 (Executive/Steering) 2009-2010
 - Member SW-09 (Nomenclature) 2009-2010
 - ASABE Iowa State Section Nominating Committee 2007-2009
 - ASABE Iowa State Section Nominating Committee 2005-2006
 - Member SW-224 (Pollution by Sediment) 2001-2004
 - Associate Editor for Transactions of ASABE and Applied Engineering in Agriculture. 2008-2018
 - Associate Editor for Special Collection of Manuscripts from the International Drainage Symposium. 2017
 - Conference Chair for ASABE Mid-Central Meeting 2009
 - Program Chair for ASABE Mid-Central Meeting 2008
 - Awards Chair for ASABE Mid-Central Meeting 2007
 - Judge of paper competition at the 2006 ASAE Mid-Central Meeting 2006
 - Coordinating Judge for the ASABE Blue Ribbon Educational Aids Competition 2006-2007, 2010
 - Organizer and Moderator of Rap Session at 2010 ASABE Annual Meeting (Future of Extension Programming through eXtension 2010
 - Moderator of Session at 2005 ASAE Mid-Central Meeting 2005
 - Moderator of Session at Eighth International Drainage Symposium 2004
 - Moderator of Session at 2004 ASAE International Meeting 2004
 - Moderator of Session at 2004 ASAE Mid-Central Meeting 2004
 - Judge of paper competition at the 2004 ASAE Mid-Central Meeting 2004
- Other Professional Service:
- Planning Committee for the Building Science Assessments for State-Level Nutrient Reduction Strategies Workshop 2012
 - Co-organizer of mini-symposium “Ecohydrology of Managed Landscapes” at EcoSummit 2007 2007

Departmental Service:

- ABE Research Council (Chair 2016 – 2018) 2016-present
- ABE Awards Committee (Chair 2010 – 2017) 2008-present
- Agricultural Systems Technology Club Faculty Advisor 2005-2014
- ABE Social Committee 2004-2014
- ABE Research Farms Committee 2004-2018
- ABE faculty search committee chair for position in Water Quality and Nutrient Management 2010-2011
- ABE DEO search committee 2010-2011
- ABE Promotion and Tenure Committee 2007-2008
- ABE faculty search committee for position in Agricultural Water

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| Quality | 2006-2007 |
| • ABE Awards Committee | 2005-2007 |
| • ABE Promotion and Tenure Committee | 2005-2006,
2014-present |
| • Professional and Scientific search committee for MWPS Marketing Specialist | 2005 |
| • ABE Graduate Programs Committee | 2003-2006 |
| • ABE Biological Systems Engineering Curriculum Committee | 2003-2004 |
| • ABE faculty search committee for position in Agricultural Waste Management | 2003-2004 |

College and University Service:

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| • Member of Vice-President for Extension and Outreach Search Committee | 2017-2018 |
| • Member of SERA-46 Framework for Nutrient Reduction Strategy Collaboration: the Role for Land Grant Universities, elected co-chair in 2015 | 2014-present |
| • Member of State Nutrient Reduction Strategy Team-Lead of the Nitrogen Team | 2010-present |
| • Member of NCR-207 (Now NCERA 217) regional research committee (secretary in 2005, and committee chair in 2006) | 2004-present |
| • Member of search committee for Director of the Leopold Center for Sustainable Agriculture | 2011 |
| • Member of Agriculture and Natural Resources Extension Crops Core Team | 2011-2012 |
| • ISU Representative on IA-MS Farmer to Farmer Exchange | May 2010 |
| • Member of review committee for Iowa Water Center | 2010 |
| • Member of search committee for Program Director for Agricultural and Natural Resources Extension and Associate Dean of the College of Agriculture and Life Sciences | 2009 |
| • Agronomy faculty search committee for position in Environmental Soil Science | 2008-2009 |
| • Member of College of Agriculture ad-hoc committee reviewing EPA Science Advisory Board Hypoxia Report | 2007 |
| • Member of eXtension Institutional Team | 2006-2010 |
| • Point of contact and executive committee member of Natural Resources and Environment Plan of Work, Ag and Natural Resources Extension | 2005-2012 |
| • Co-leader of watershed design team for Agricultural Systems Management and Performance Initiative | 2004-2007 |
| • Environmental Science supervisory committee member | 2004-2008 |
| • Environmental Science – Water Resources specialization curriculum committee | 2005-2006 |
| • Graduate Program in Sustainable Agriculture coordinating committee member | 2003-2005 |

Service to State Government, Commodity Groups, Industries or other Stakeholders

- Appointed to Serve on EPA Science Advisory Board – Agricultural Science Committee 2016-2018
- Prometheus Award Judge 2016
- Member of The George Bley Water Prize Team Advisory Committee 2016-present
- Member of Tulane University Nitrogen Reduction Grand Challenge Advisory Committee 2016-present
- Member of planning committee for 10th International Drainage Symposium 2015-2016
- Member of planning committee for Nutrient Management and Edge-of-Field Monitoring Conference 2015
- Ag BMP Database Technical Committee 2014-present
- Member of University of Nebraska Department of Biological Systems Engineering External Advisory Committee 2013-present
- Member of the Source Water Protection Partnership Group 2013-2017
- Member of North American Fertilizer Industry 4R Research Fund Technical Advisory Group 2013-present
- Member of Cedar River Watershed Technical Team 2011-2017
- Member of HUD Watershed Demonstration Pilot Project Advisory Committee 2011-2016
- Member of 4-Mile Creek Watershed Technical Team 2011-present
- Iowa Nutrient Strategy Committee, Nitrogen Science lead 2010-present
- Member and participant in the Agricultural Drainage Management Systems (ADMS) Task Force 2004-present
- Member of Raccoon River Basin Water Quality Master Plan Expert Panel 2010-2011
- Member of Iowa Dept. of Ag. and Land Stewardship Cedar River TMDL working group 2007-2011
- Member of Raccoon River TMDL working group – College of Agriculture Representative 2006-2008
- Invited participant in meeting on Drainage Modeling Sponsored by U.S. Army Corps of Engineers 2006
- Member of USDA-NRCS ad-hoc committee on Vegetative Treatment Systems for Open Lot Runoff 2004

Technical Reviewer:**No. of****Reviews**

Journals:

- Transactions of ASABE 17
- Applied Engineering in Agriculture 5
- Journal of Hydrology 5
- Journal of Irrigation and Drainage Engineering, ASCE 5

• Soil Science Society of America	3
• Soil Science	1
• Journal of Soil and Water Conservation	4
• Pedosphere	1
• Journal of Environmental Management	2
• Paleolimnology	1
• Journal of Environmental Quality	14
• Special Issue of Asian Association of Agricultural Engineering Journal (2005)	1
• Journal of the American Water Resources Association	4
• Agricultural Water Management	4
• Ecohydrology	1
• Environmental Modeling and Software	2
• Agriculture Ecosystems and Environment	2
• Hydrological Processes	1
• Agronomy Journal	3
• Ecological Engineering	4
• Canadian Journal of Soil Science	1
• Water, Air, and Soil Pollution	2
• Water Resources Research	2
• Earth Surface Processes and Landforms	1
• Vadose Zone Journal	1
• Water Environment Research	1
• PLOS One	1
• Special Drainage Collection for ASABE	2
• Science of the Total Environment	1
• Water	1

Others:

• Reviewer of Paper by Union of Concerned Scientists	1
• Reviewer for National Research Council Report “Clean Water Act Implementation across the Mississippi River Basin	1
• ASAE Drainage Symposium IX (2010)	2
• USDA-ARS Peer Review	2
• ASAE Drainage Symposium VIII (2004)	3

Proposal Reviewer:

• Illinois Nutrient Research and Education Council	9
• Lake Champlain Sea Grant	1
• Agriculture and Agri-Food Canada	2
• South Dakota Nutrient Research and Education Council	1
• 4R Research Fund	20
• Wisconsin Water Resources Research Institute Proposal	1
• Iowa Water Center	2

- Minnesota Water Resources Research Institute (December 2016) 2
- Natural Sciences and Engineering Research Council of Canada 1
- USDA – National Institute of Food and Agriculture, Pre and Post Doctoral Review Panel - 2012
- Natural Sciences and Engineering Research Council of Canada 2
- USDA – National Institute of Food and Agriculture, Small Business Innovation Program 1
- Oklahoma Water Resources Research Institute 1
- Mississippi-Alabama Sea Grant Consortium 1
- United States-Israel Binational Science Foundation 1
- Egypt Science and Technology Program 1
- ISU College of Agriculture Experiment Station Project Review 4
- University of Minnesota College of Agriculture Experiment Station Project Review 1
- Minnesota Water Resources Research Institute (December 2006) 1
- Reviewer of SPRIG proposal for Iowa State University, College of Agriculture 1
- Reviewer of URG proposal for Iowa State University, College of Agriculture 1
- Minnesota Water Resources Research Institute (December 2005) 1

Educational Aids Reviewer:

- ASABE Blue Ribbon Educational Aids Competition (2015) 8
- ASABE Blue Ribbon Educational Aids Competition (2013) 5
- ASABE Blue Ribbon Educational Aids Competition (2011) 5
- ASABE Blue Ribbon Educational Aids Competition (2010) 9
- ASABE Blue Ribbon Educational Aids Competition (2008) 3
- ASABE Blue Ribbon Educational Aids Competition (2008) 6
- ASABE Blue Ribbon Educational Aids Competition (2007) 1
- ASABE Blue Ribbon Educational Aids Competition (2006) 2
- ASAE Blue Ribbon Educational Aids Competition (2005) 2

External Reviewer:

- External review of promotion materials for North Carolina State University (2018)
- External review of promotion and tenure materials for Purdue (2017)
- External review of promotion and tenure materials for University of Nebraska-Lincoln (2017)
- External review of promotion and tenure materials for Texas A&M (2016)
- External review of promotion and tenure materials for Texas A&M AgriLife Research (2015)
- External review of promotion and tenure materials for Virginia Tech Department of Biological Systems Engineering (2015)
- External review of promotion and tenure materials for North Carolina State University Department of Biological and Agricultural Engineering (2011)

International Experience:*Visitors in the U.S.*

- Hosting visiting professor from Latvia-Dr. Arvydas Povilaitis 11/2014
- Hosting visiting scholar from China-Qiang Zhang 3/2014-present
5/2014-
- Hosting visiting PhD student from China-Yi Gong 11/2014
- Hosting visiting student from India, Konduri Venkata Shashank 5/2013-6/2013
- Hosted visiting PhD student from China – Xuan Du 10/2012-
10/2014
- Hosted visiting PhD student from China-Li Lian 9/2013-10/14
- Hosted visiting scientist from China – Dr. Junzeng Xu 9/2012-9/2013
10/2011-
- Hosted visiting scientist from China – Dr. Wenquan Niu 4/2012
10/2011-
- Hosted visiting scientist from China – Dr. Xining Zhao 4/2012
- Hosted visiting scientist from Uruguay – Dr. Mario Perez-Bidegain Spring 2011

Visits outside the U.S.

- Invited to participate in a project and workshop on Nitrogen Attenuation in New Zealand in May 2018 at Massey University May 2018
- Invited to present a paper at the International Symposium on Soil Quality and Management of World Mollisols July 2010
- Invited to co-author and present a paper at the 2nd International Salinity Forum in Adelaide, Australia March 2008
- Invited and agreed to participate on research team from China on project “Water Saving Agriculture in Dryland Areas of China” June 2007
- Co-organizer of mini-symposium “Ecohydrology of Managed Landscapes” at EcoSummit 2007 in Beijing, China May 2007

Scholarly Activities**Research Related Scholarly Activities****Peer-reviewed Journal Articles (122):**

*MS, Ph.D., Post Doc, or Research Associate supervised by Helmers

1. Brendel C.E., M.L. Soupir, L.A.M. Long, **M.J. Helmers**, C.D. Ikenberry, and A.L. Kaleita. 2019. Catchment-scale phosphorus export through surface and drainage pathways. *Journal of Environmental Quality* 48:117-126. DOI: 10.2134/jeq2018.07.0265.
2. Chen B., W.F. Krajewski, **M.J. Helmers**, and Z.D. Zhang. 2019. Spatial variability and temporal persistence of event runoff coefficients for cropland hillslopes. *Water Resources Research* 55:1583-1597. DOI: 10.1029/2018wr023576.
3. **Helmers M.J.**, T.D. Youngquist, and N. Grudens-Schuck. 2019. Novel use of conceptual change framework improves video on challenging science topic. *Journal of Extension* 57.
4. Malone R.W., S. Herbstritt, L. Ma, T.L. Richard, R. Cibin, P.W. Gassman, H.H. Zhang, D.L. Karlen, J.L. Hatfield, J.F. Obrycki, **M.J. Helmers**, D.B. Jaynes, T.C. Kaspar, T.B.

- Parkin, and Q.X Fang. 2019. Corn stover harvest N and energy budgets in central Iowa. *Science of the Total Environment* 663:776-792. DOI: 10.1016/j.scitotenv.2019.01.328.
5. Maxwell B.M., F. Birgand, L.A. Schipper, L.E. Christianson, S.Y. Tian, **M.J. Helmers**, D.J. Williams, G.M. Chescheir, M.A. Youssef. 2019. Drying-Rewetting cycles affect nitrate removal rates in woodchip bioreactors. *Journal of Environmental Quality* 48:93-101. DOI: 10.2134/jeq2018.05.0199.
 6. Wang Z.J., C.Y. Luo, T.J. Sauer, **M.J. Helmers**, L.K. Xu, and R. Horton R. 2018. Canopy chamber measurements of carbon dioxide fluxes in corn and soybean fields. *Vadose Zone Journal* 17. DOI: 10.2136/vzj2018.07.0130.
 7. Smith, W., B. Grant, Q. Zhiming, H. Wentian, A. VanderZaag, C. Drury, X. Verge, B., Hambaliou, R. Gordon, and **M. Helmers**. 2019. Assessing the impacts of climate variability on fertilizer management decisions for reducing N losses from corn silage production. *Journal of Environmental Quality*. doi: 10.2134/jeq2018.12.0433.
 8. Ordonez R.A., M.J. Castellano, J.L. Hatfield, **M.J. Helmers**, M.A. Licht, M. Liebman, R. Dietzel, R. Martinez-Feria, J. Iqbal, L.A. Puntel, S.C. Cordova, K. Togliatti, E.E. Wright, and S.V. Archontoulis. 2018. Maize and soybean root front velocity and maximum depth in Iowa, USA. *Field Crops Research* 215:122-131. DOI: 10.1016/j.fcr.2017.09.003.
 9. Strock J.S., C.H. Hay, **M.J. Helmers**, K.A. Nelson, G.R. Sands, R.W. Skaggs, and K.R. Douglas-Mankin. 2018. Advances in Drainage: Selected Works from the Tenth International Drainage Symposium. *Transactions of the ASABE* 61:161-168. DOI: 10.13031/trans.12668.
 10. Martinez-Feria, R.A., M.J. Castellano, R.N. Dietzel, **M.J. Helmers**, M. Liebman, I. Huber, and S.V. Archontoulis. 2018. Linking crop- and soil-based approaches to evaluate system nitrogen-use efficiency and tradeoffs. *Agriculture Ecosystems & Environment* 256:131-143. DOI: 10.1016/j.agee.2018.01.002.
 11. Cibin R., I. Chaubey, **M.J. Helmers**, K.P. Sudheer, M.J. White, and J.G. Arnold. 2018. An Improved Representation of Vegetative Filter Strips in SWAT. *Trans. ASABE* 61:1017-1024. DOI: 10.13031/trans.12661.
 12. Webber, D. F., M. Bansal, S.K. Mickelson, **M.J. Helmers**, K. Arora, K., B.K. Gelder, and C.J. Judge. 2018. Assessing surface flowpath interception by vegetative buffers using ArcGIS hydrologic modeling and geospatial analysis for Rock Creek watershed, central Iowa. *Trans. ASABE* 61:273-283. DOI: 10.13031/trans.12350.
 13. Craft, K.*, **M.J. Helmers**, R.W. Malone, C.H. Pederson, and L.R. Schott. 2018. Effects of subsurface drainage systems on water and nitrogen footprints simulated with RZWQM2. *Trans. ASABE* 61:245-261. DOI: 10.13031/trans.12300.
 14. Daigh, A.L.M., W.A. Dick, **M.J. Helmers**, R. Lal, J.G. Lauer, E. Nafziger, C.H. Pederson, J. Strock, M. Villamil, A. Mukherjee, and R. Cruse. 2018. Yields and yield stability of no-till and chisel-plow fields in the Midwestern U.S. Corn Belt. *Field Crops Research* 218:243-253. DOI: 10.1016/j.fcr.2017.04.002.
 15. Christianson, R., L. Christianson, C. Wong, **M.J. Helmers**, G. McIsaac, D. Mulla, and M. McDonald. 2018. Beyond the nutrient strategies: Common ground to accelerate agricultural water quality improvement in the Upper Midwest. *Journal of Environmental Management* 206:1072-1080. DOI: 10.1016/j.jenvman.2017.11.051.

16. Luo, C., Z. Wang, T. Sauer, **M.J. Helmers**, and R. Horton. 2018. Portable canopy chamber measurements of evapotranspiration in corn, soybean, and reconstructed prairie. *Agricultural Water Management* 198:1-9. DOI: 10.1016/j.agwat.2017.11.024.
17. Schulte, L., J. Niemi, **M.J. Helmers**, M. Liebman, J. Arbuckle, D. James, R. Kolka, M. O'Neal, M. Tomer, J. Tyndall, H. Asbjornsen, P. Drobney, J. Neal, G. Van Ryswyk, and C. Witte. 2017. Prairie strips improve biodiversity and the delivery multiple ecosystem services from corn-soybean croplands. *Proceedings of the National Academy of Sciences of the United States of America* 114:11247-11252. DOI: 10.1073/pnas.1620229114.
18. Ikenberry, C.D., M.L. Soupir, **M.J. Helmers**, W.G. Crumpton, J.G. Arnold, and P.W. Gassman. 2017. Simulation of daily flow pathways, tile-drain nitrate concentrations, and soil-nitrogen dynamics using SWAT. *Journal of the American Water Resources Association*. DOI: 10.1111/1752-1688.12569.
19. Baffaut, C., N. O. Nelson, J. A. Lory, G.M.M.M. A. Senaviratne, A. B. Bhandari, R. P. Udawatta, D. W. Sweeney, **M. J. Helmers**, M. W. Van Liew, A. P. Mallarino, and C. S. Wortmann. 2017. Multisite Evaluation of APEX for Water Quality: I. Best Professional Judgment Parameterization. *J. Environ. Qual.* 0. doi:10.2134/jeq2016.06.0226
20. Nelson, N. O., C. Baffaut, J. A. Lory, G.M.M.M. Anomaa Senaviratne, A. B. Bhandari, R. P. Udawatta, D. W. Sweeney, **M. J. Helmers**, M. W. Van Liew, A. P. Mallarino, and C. S. Wortmann. 2017. Multisite Evaluation of APEX for Water Quality: II. Regional Parameterization. *J. Environ. Qual.* 0. doi:10.2134/jeq2016.07.0254
21. Anwar, U., L.A. Schulte, **M.J. Helmers**, and R.K. Kolka. 2017. The effect of five biomass cropping systems on soil saturated hydraulic conductivity across a topographic gradient. *Bioenergy Research* DOI 10.1007/s12155-017-9843-6.
22. da Silva G.A., R.K. Leonel, G. Han, T. Kaspar, M. Helmers, D.S. Mueller, and L.F.S. Leandro. 2017. Impact of winter rye cover crop on soybean root disease and productivity. *Phytopathology* 107:166-167.
23. Schott, L.*, A. Lagzdins, A.L.M. Daigh, C. Pederson, G. Brenneman, and **M.J. Helmers**. 2017. Impact of drainage water management on the planting date of corn in Southeast Iowa. *Journal of Soil and Water Conservation* 72:564-574. DOI: 10.2489/jswc.72.6.564.
24. Grudens-Schuck, N., **M.J. Helmers**, T.D. Youngquist, and M.S. Johnson. 2017. Prairie strips for sediment and nutrient control and biodiversity. *Journal of Extension* 55(1) Article 1TOT6. Available at: <https://www.joe.org/joe/2017february/tt6.php>
25. Dziubanski, D.J., K.J. Franz, and **M.J. Helmers**. 2017. Effects of spatial orientation of prairie vegetation in an agricultural landscape on curve number values. *Journal of the American Water Resources Association* 53:365-381. DOI: 10.1111/1752-1688.12510.
26. Schott, L.*, A. Lagzdins, A.L.M. Daigh, K. Craft, C. Pederson, G. Brenneman, and **M.J. Helmers**. 2017. Effects of drainage water management on yield, drainage, water table, and volumetric water content in Southeast Iowa. *Journal of Soil and Water Conservation* 72(3): 251-259.
27. Hladik, M.L., S. Bradbury, L.A. Schulte, **M.J. Helmers**, C. Witte, D.W. Kolpin, J.D. Garrett, and M. Harris. 2017. Neonicotinoid insecticide removal by prairie strips in row-cropped watersheds with historical seed coating use. *Agriculture Ecosystems & Environment* 241:160-167. DOI: 10.1016/j.agee.2017.03.015.

28. Poffenbarger H.J., D.W. Barker, **M.J. Helmers**, F.E. Miguez, D.C. Olk, J.E. Sawyer, J. Six, M.J. Castellano. 2017. Maximum soil organic carbon storage in Midwest US cropping systems when crops are optimally nitrogen-fertilized. *Plos One* 12. DOI: 10.1371/journal.pone.0172293.
29. Han, G., Y.R. Kandel, L.F.S. Leandro, **M.J. Helmers**, L.R. Schott*, and D.S. Mueller. 2017. Influence of drainage on soybean seedling health. *Journal of Soil and Water Conservation* 72(3): 266-271.
30. Du, X. H. Feng, **M.J. Helmers**, and Z. Qi. 2017. Comparing simulated nitrate-nitrogen concentration in subsurface drainage using DRAINMOD N-II and RZWQM2. *Irrigation and Drainage* 66(2):238-251. DOI: 10.1002/ird.2093.
31. Araldi-Da-Silva G., T. Kaspar, **M. Helmers**, D. Mueller, and L. Leandro. 2016. Study of the influence of winter rye on soybean seedling and root rot diseases. *Phytopathology* 106:78-78.
32. Martinez-Feria R.A., R. Dietzel, M Liebman, **M.J. Helmers**, S.V. Archontoulis. 2016. Rye cover crop effects on maize: A system-level analysis. *Field Crops Research* 196:145-159. DOI: 10.1016/j.fcr.2016.06.016.
33. Dietzel, R., M. Liebman, R. Ewing, **M. Helmers**, R. Horton, M. Jarchow, and S. Archontoulis. 2016. How efficiently do corn- and soybean-based cropping systems use water? A systems modeling analysis. *Global Change Biology* 22(2): 666-681.
34. Schulte, L., A.L. MacDonald, J.B. Niemi, and **M.J. Helmers**. 2016. Prairie strips as a mechanism to promote land sharing by birds in industrial agricultural systems. *Agriculture, Ecosystems, and Environment* 220:55-63.
35. Doudna, J., M.E. O'Neal, J.C. Tyndall, and **M.J. Helmers**. 2015. Perspectives of Extension agents and farmers toward multifunctional agriculture in the United States corn belt. *Journal of Extension* 53(6): 6RIB5.
36. Tomer M.D., S.A. Porter, K.M.B. Boomer, D.E. James, J.A. Kostel, **M.J. Helmers**, T.M. Isenhardt, and E. McLellan. 2015. Agricultural Conservation Planning Framework: 1. Developing multipractice watershed planning scenarios and assessing nutrient reduction potential. *Journal of Environmental Quality* 44:754-767.
37. Dosskey M.G., S. Neelakantan, T.G. Mueller, T. Kellerman, **M.J. Helmers**, and E. Rienzi. 2015. AgBufferBuilder: A geographic information system (GIS) tool for precision design and performance assessment of filter strips. *Journal of Soil and Water Conservation* 70:209-217.
38. Andersen, D.S., **M.J. Helmers**, and R.T. Burns. 2015. Phosphorus sorption capacity of six Iowa soils before and after five years of use as vegetative treatment areas. *Applied Engineering in Agriculture* 31(4): 611-620.
39. Goeken, R.*, X. Zhou*, and **M.J. Helmers**. 2015. Comparison of timing and volume of subsurface drainage under perennial forage and row crops in a tile-drained field in Iowa. *Trans. ASABE* 58(5): 1193-1200.
40. Daigh, A.L., X. Zhou, **M. Helmers**, C. Pederson, R. Horton, M. Jarchow, and M. Liebman. 2015. Subsurface drainage nitrate and total reactive phosphorus losses in bioenergy-based prairies and corn systems. *Journal of Environmental Quality* 44(5): 1638-1646.
41. Qi, Z.*, R. Singh*, **M.J. Helmers**, and X. Zhou*. 2015. Evaluating the performance of DRAINMOD using soil hydraulic parameters derived by various methods. *Agricultural Water Management* 155: 48-52.

42. Chen, B., W.F. Krajewski, X. Zhou, and **M.J. Helmers**. 2015. Organized variability of surface runoff processes across neighboring hillslopes in Iowa. *Journal of Hydrology* 523: 1-13.
43. Wang, Z., Z. Qi, L. Xue, M. Bukovsky, and **M. Helmers**. 2015. Modeling the impacts of climate change on nitrogen losses and crop yield in a subsurface drained field. *Climatic Change* 129(1-2): 323-335.
44. Iqbal, J., M. Castellano, **M.J. Helmers**, T. Parkin, and X. Zhou. 2015. Denitrification and N₂O emissions in annual croplands, perennial grass buffers and restored perennial grasslands. *Soil Science Society of America Journal* 79:239-250.
45. Mitchell, D., X. Zhou*, T. Parkin, **M.J. Helmers**, and M. Castellano. 2015. Comparing nitrate sink strength in perennial filter strips at toeslope of cropland watersheds. *Journal of Environmental Quality* 44 (1): 191-199.
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9. **Helmers, M. J.**, S. Melvin, and D. Lemke. 2009. Drainage main rehabilitation in Iowa. *In: Proceedings of the EWRI Congress, ASCE*. [Oral Presentation - Helmers]

10. Ridley, A., **M.J. Helmers**, and I. Fillery. 2008. The adoptability of perennial-based farming systems for hydrologic and salinity control in dryland farming systems in Australia and the United States. *In: Proceedings of the 2nd International Salinity Forum* (March 30 – April 3, 2008, Adelaide, Australia). [Oral presentation - Helmers]
11. Khanijo, I., R. Burns, L. Moody, **M. Helmers**, J. Lawrence, C. Pederson, and D. Anderson. 2007. Vegetated treatment system models: modeled vs. measured performance. *In: Proceedings of the International Symposium on Air Quality and Waste Management for Agriculture* (September 16-19, 2007, Broomfield, Colorado) ASABE Publication Number 701P0907cd.
12. Singh, R.* and **M.J. Helmers**. 2006. Subsurface drainage and its management in the upper Midwest tile landscape. *In: Proceedings of the EWRI Congress, ASCE*. [Oral Presentation - Helmers]
13. Tomer, M. D., M. G. Dosskey, M. R. Burkart, D. E. James, and **M.J. Helmers**, D. E. Eisenhauer. 2005. Placement of riparian forest buffers to improve water quality. *In: Proceedings of the Ninth North American Agroforestry Conference*. Rochester, MN, 12-15 June, 2005. [Oral Presentation - Tomer]
14. Baker, J. L., S. W. Melvin, D. W. Lemke, P. A. Lawler, W. G. Crumpton, and **M.J. Helmers**. 2004. Subsurface drainage in Iowa and the water quality benefits and problem. *In: Drainage VIII*, edited by Richard Cooke, *Proceedings of the Eight International Symposium*. ASAE Publication Number 701P0304, St. Joseph, MI: ASAE. pp. 39-50. [Oral Presentation - Baker]
15. Melvin, S.W., J. L. Baker, D.W. Lemke, **M.J. Helmers**, and P.A. Lawlor. 2004. Subsurface drainage water quality as impacted by agricultural cultural practices. *In: Proceedings of the International Conference on Hydro-Science and Engineering* (May 30-June 4, Brisbane, Australia), pp. 53-54. [Oral Presentation - Melvin]
16. Dosskey, M. G., **M.J. Helmers**, D. E. Eisenhauer, T. G. Franti and K. D. Hoagland. 2003. Hydrologic routing of farm runoff and implications for riparian buffers. *In: Agricultural Hydrology and Water Quality*, edited by Dana Kolpin and John D. Williams. *AWRA's 2003 Spring Specialty Conference Proceedings*. TPS-03-1, CD-ROM. Middleburg, VA: American Water Resources Association. [Oral Presentation - Dosskey]

Professional Society Papers without Review (26):

*MS, Ph.D., Post Doc, or Research Associate supervised by Helmers

1. Gali, R., M. Soupir, and **M.J. Helmers**. 2012. Electrical conductivity as a tool to estimate chemical properties of drainage water quality in the Des Moines, Lobe, IA. American Society of Agricultural and Biological Engineers (ASABE) 2012 Annual International Meeting. Dallas, Texas. July 29 – August 1, 2012. Paper No. 121338083
2. Andersen, D.S*, **M.J. Helmers**, and R.T. Burns. 2011. Phosphorus sorption capacity of six Iowa soils before and after five years of use as vegetative treatment areas. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting. Louisville, Kentucky. 7-10 August 2011. Paper No. 1111708
3. Andersen, D.S.*, **M.J. Helmers**, and R.T. Burns. 2011. Phosphorus retention, accumulation, and movement in six feedlot vegetative treatment areas. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting. Louisville, Kentucky. 7-10 August 2011. Paper No. 1111701.

4. Lockett, D.*, X. Zhou, and **M.J. Helmers**. 2011. Impacts of incorporating prairie vegetation within row crop production on soil hydraulic properties. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting. Louisville, Kentucky. 7-10 August 2011. Paper No. 1111508.
5. Christianson, L.*, N. Hoover, A. Bhandari, and **M.J. Helmers**. 2011. The Potential of Municipal Yard Waste to be Denitrification Bioreactor Fill. American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting. Louisville, Kentucky. 7-10 August 2011. Paper No. 1111036.
6. Bond, B.J., R.T. Burns C.G. Henry, T.P. Trooien, S.H. Pohl, L.B. Moody, **M.J. Helmers**, and J.D. Lawrence. 2010. Evaluating the performance of vegetative treatment systems on open beef feedlots in the Midwestern United States. XVIIth World Congress of the International Commission of Agricultural Engineering. Quebec City, Canada, June 13-17, 2010.
7. Bond, B.*, R. T. Burns, T. P. Trooien, S. H. Pohl, C. G. Henry, L. B. Moody, **M.J. Helmers**, and J. Lawrence. 2009. Comparison of construction costs for vegetated treatment systems in the Midwest. ASABE Meeting Paper No. 09-6524. St. Joseph, MI: ASABE. [Oral Presentation – Bond]
8. Andersen, D., R. T. Burns, L. B. Moody, I. Khanijo, **M.J. Helmers**, C. Pederson, and J. Lawrence. 2009. Performance of six vegetative treatment systems for controlling runoff from open beef feedlots in Iowa. ASABE Meeting Paper No. 09-7054. St. Joseph, MI: ASABE. [Oral Presentation – Andersen]
9. Christianson, R.*, **M.J. Helmers**, P. Lawlor, and D. Lemke. 2009. Impact of fertilizer timing on drainage nitrate levels. ASABE Meeting Paper No. 09-6246. St. Joseph, MI: ASABE. [Oral Presentation – Christianson]
10. Qi, Z.*, and **M.J. Helmers**. 2008. Field calibration of a multisensor capacitance probe for Des Moines Lobe soils. ASABE Meeting Paper No. 08-4811. St. Joseph, MI: ASABE. [Poster Presentation – Qi]
11. Singh, R.* and **M.J. Helmers**. 2008. Improving crop growth simulation in the hydrologic model DRAINMOD to simulate corn yields in subsurface drained landscapes. ASABE Meeting Paper No. 08-3571. St. Joseph, MI: ASABE. [Oral Presentation – Helmers]
12. Qi, Z.*, **M.J. Helmers**, and P. Lawlor. 2008. Effect of different land covers on nitrate-nitrogen leaching and nitrogen uptake in Iowa. ASABE Meeting Paper No. 08-4806. St. Joseph, MI: ASABE. [Oral Presentation – Qi]
13. Mickelson, S. K., **M.J. Helmers**, K. Arora, M. Bansal. 2006. Vegetative filter education and assessment in the state of Iowa. ASAE Meeting Paper No. 0622175 St. Joseph, Mich.: ASAE. [Oral Presentation - Bansal]
14. Qi, Z.*, **M. Helmers**, and R. Singh. 2006. Evaluating a drainage model using soil hydraulic parameters derived from various methods. ASAE Meeting Paper No. 062318. St. Joseph, Mich.: ASAE. [Oral Presentation - Qi]
15. Lawlor, P. A.*, **M.J. Helmers**, J. L. Baker, S. W. Melvin, and D. W. Lemke. 2005. Nitrogen application rate effects on corn yield and nitrate-nitrogen concentration and loss in subsurface drainage. ASAE Meeting Paper No. 05-2025. St. Joseph, MI: ASAE. [Oral Presentation - Lawlor]
16. **M.J. Helmers**, P. A. Lawlor*, J. L. Baker, S. W. Melvin, and D. W. Lemke. 2005. Temporal subsurface flow patterns from fifteen years in north-central Iowa. ASAE Meeting Paper No. 05-2234. St. Joseph, MI: ASAE. [Oral Presentation - Helmers]

17. Esteve-Agelet, L.*, **M.J. Helmers**, and A. Kaleita. 2005. Leaching of a veterinary antibiotic through soil columns. Presented at the 2005 Mid-Central ASAE Conference, St. Joseph, MO, April 1-2, 2005. ASAE Meeting Paper No. MC05-303. [Oral Presentation - Esteve-Agelet]
18. Stahr, L. M., D. E. Eisenhauer, **M.J. Helmers**, M. G. Dosskey, and T. G. Franti. 2004. Green-Ampt infiltration parameters in riparian buffers. ASAE Meeting Paper No. 04-2223. St. Joseph, MI: ASAE. [Oral Presentation - Stahr]
19. Lawlor, P. A.*, J. L. Baker, S. W. Melvin, and **M.J. Helmers**. 2004. Nitrification inhibitor and nitrogen application timing effects on yields and nitrate-nitrogen concentrations in subsurface drainage from a corn-soybean rotation. ASAE Meeting Paper No. 04-2273. St. Joseph, MI: ASAE. [Oral Presentation - Lawlor]
20. **Helmers, M. J.**, D. E. Eisenhauer, T. G. Franti, and M. G. Dosskey. 2003. Modeling sediment trapping in a vegetative filter accounting for two-dimensional overland flow. ASAE Meeting Paper No. 03-2309. St. Joseph, MI: ASAE. [Oral Presentation - Helmers]
21. **Helmers, M. J.**, D. E. Eisenhauer, T. G. Franti, and M. G. Dosskey. 2003. Two-dimensional overland flow and sediment trapping in a vegetative filter. Presented at the 2003 Mid-Central ASAE Conference, St. Joseph, MO, April 4-5, 2003. ASAE Meeting Paper No. MC03-304. [Oral Presentation - Helmers]
22. **Helmers, M. J.**, D. E. Eisenhauer, T. G. Franti, and M. G. Dosskey. 2002. Modeling of two-dimensional overland flow in a vegetative filter. ASAE-CIGR Meeting Paper No. 02-2165. St. Joseph, MI: ASAE. [Poster Presentation - Helmers]
23. Eisenhauer, D., **M.J. Helmers**, J. Brothers, M. Dosskey, T. Franti, A. Boldt, and B. Strahm. 2002. An overland flow sampler for use in vegetative filters. ASAE-CIGR Meeting Paper No. 02-2050. St. Joseph, MI: ASAE. [Oral Presentation - Eisenhauer]
24. **Helmers, M. J.**, D. E. Eisenhauer, M. G. Dosskey, and T. G. Franti. 2002. Modeling vegetative filter performance with VFSSMOD. Presented at the 2002 Mid-Central ASAE Conference, St. Joseph, MO, April 12-13, 2002. ASAE Meeting Paper No. MC02-308. [Oral Presentation - Helmers]
25. **Helmers, M. J.**, D. E. Eisenhauer, J. Brothers, M. G. Dosskey, and T. G. Franti. 2001. Direction and concentration of surface water flow in a vegetative filter system. ASAE Meeting Paper No. 01-2070. St. Joseph, MI: ASAE. [Oral Presentation - Helmers]
26. Brothers, J., D. E. Eisenhauer, **M.J. Helmers**, M. G. Dosskey, and T. G. Franti. 2001. Modeling vegetative buffer performance considering topographic data accuracy. ASAE Meeting Paper No. 01-2125. St. Joseph, MI: ASAE. [Poster Presentation - Helmers]

Conference Abstracts without Review (81):

*MS, Ph.D., Post Doc, or Research Associate supervised by Helmers

1. **Helmers, M.J.** 2016. Tile drainage and nutrient management. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 6-9, 2016, Phoenix, AZ.
2. **Helmers, M.J.** and W. Crumpton. 2016. Extending field scale 4R nutrient management to watershed scale outcomes. Oral Presentation at 10th International Drainage Symposium in Minneapolis, MN [Oral presentation – Waring]
3. Craft, K.*, R. Malone, and **M.J. Helmers**. 2016. Simulating effects of subsurface drainage systems on water and nitrogen footprints with RZWQM2. Oral Presentation

- at 10th International Drainage Symposium in Minneapolis, MN [Oral presentation – Craft]
4. Lagzdins, A., E. Waring, C. Pederson, and **M.J. Helmers**. 2016. Impact of nitrogen application timing and source on nitrate leaching and crop yield. Oral Presentation at 10th International Drainage Symposium in Minneapolis, MN [Oral presentation – Lagzdins]
 5. Waring, E.* , A. Lagzdins, C. Pederson, and **M.J. Helmers**. 2016. Quantifying the Impacts of Tillage and Cover Crops on Nitrate-N Concentration in Leachate. Oral Presentation at 10th International Drainage Symposium in Minneapolis, MN [Oral presentation – Waring]
 6. Waring, E.* , A. Lagzdins, C. Pederson, and **M.J. Helmers**. 2016. Quantifying the Impacts of Tillage and Cover Crops on Nitrate-N Concentration in Leachate. Oral Presentation at 2016 ASABE Annual International Meeting. Orlando, FL. [Oral presentation – Waring]
 7. Craft, K.* , **M.J. Helmers**, R. Roberts, and M. Castellano. 2016. Quantifying the impacts of a Cereal Rye cover crop on soil water content and temperature in Central Iowa. Poster Presentation at 2016 ASABE Annual International Meeting. Orlando, FL.
 8. **Helmers, M.J.** 2016. Effectiveness of Nitrate-N reduction best management practices in the Upper Midwest. Oral Presentation at 2016 ASABE Annual International Meeting. Orlando, FL. [Oral presentation – Helmers]
 9. **Helmers, M.J.** 2015. Iowa Nutrient Reduction Strategy. American Society of Agricultural and Biological Engineers (ASABE) 2015 Annual International Meeting. New Orleans, LA. July 26-29, 2015. [Invited Oral presentation - Helmers]
 10. Qi, Z., Z. Wang, L. Xue, M. Bukovsky, and **M.J. Helmers**. 2015. Simulating climate change impacts on crop production and nitrogen loss through subsurface drainage systems. American Society of Agricultural and Biological Engineers (ASABE) 2015 Annual International Meeting. New Orleans, LA. July 26-29, 2015. [Oral presentation - Qi]
 11. Schott, L.* , C. Pederson* , and **M.J. Helmers**. 2015. Effects of drainage water management on crop yield, drainage volume, nitrate loss, and planting date in Southeastern Iowa. American Society of Agricultural and Biological Engineers (ASABE) 2015 Annual International Meeting. New Orleans, LA. July 26-29, 2015. [Oral presentation - Schott]
 12. Lagzdins, A.* , **M.J. Helmers**, C. Pederson* , and L. Schott* . 2015. Effects of nitrogen application timing, tillage systems and winter cereal rye cover crop on corn and soybean yields and nitrate-nitrogen concentration from a tile drained field in Iowa. American Society of Agricultural and Biological Engineers (ASABE) 2015 Annual International Meeting. New Orleans, LA. July 26-29, 2015. [Oral presentation - Lagzdins]
 13. Craft, K.* , L. Schott* , C. Pederson* , and **M.J. Helmers**. 2015. Simulating effects of drainage water management on water and nitrogen footprints with RZWQM2. American Society of Agricultural and Biological Engineers (ASABE) 2015 Annual International Meeting. New Orleans, LA. July 26-29, 2015. [Poster presentation - Craft]

14. **Helmers, M.J.** 2015. Plot-scale monitoring to determine effectiveness of individual water quality practices. *In:* Nutrient Management and Edge-of-Field Monitoring: From Great Lakes to the Gulf. December 1-3, 2015, Memphis, TN.
15. Mallarino, A., M. Haq, and **M.J. Helmers.** 2015. Dissolved and particulate runoff phosphorus loss as affected by tillage and fertilizer or swine manure sources in corn and soybean. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN.
16. Iqbal, J. M. Castellano, **M.J. Helmers,** and T. Parkin. 2015. Nitrous oxide emissions as affected by drainage design and management in corn based cropping systems. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN.
17. Roberts, R.A., K. Craft, C. Pederson, **M.J. Helmers,** and M. Castellano. 2015. Spring timing and method of cereal rye termination influence soil nitrate. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN.
18. Wang, Z., C. Luo, B.D. Carr, T.J. Sauer, **M.J. Helmers,** and R. Horton. 2015. Evapotranspiration and carbon dioxide exchange rates in a corn-soybean rotation system and a reconstructed prairie using a portable canopy chamber. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN.
19. **Helmers, M.J.,** L. Schott, E. Waring, K. Craft, A. Lagzdinis, and C. Pederson. 2015. Nutrient management, cover crops, and drainage water management for reducing nitrate-N losses in Iowa. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN. [Oral Presentation - Helmers]
20. Dietzel, R., M. Liebman, R.P. Ewing, **M.J. Helmers,** and S.V. Archontoulis. 2015. How efficiently do corn- and soybean-based cropping systems use water? A systems modeling analysis. *In:* ASA-CSSA-SSSA Annual Meeting Abstracts. Nov. 15-18, 2015, Minneapolis, MN. [Oral Presentation - Dietzel]
21. Harris, M.A., L.A. Schulte, **M.J. Helmers,** J.G. Arbuckle, P. Drobney, R. Kolka, M. Liebman, M.E. O’Neal, and J.C. Tyndall. 2013. Bridging the conservation lands – working lands divide with a cost-effective strategy to enhance ecosystem services. Presented August 8th at the 98th annual meeting of the Ecological Society of America, Minneapolis, Minnesota. [Oral presentation – Harris]
22. Schulte, L.A., **M.J. Helmers,** J.G. Arbuckle, P. Drobney, M.A. Harris, R. Kolka, M. Liebman, M.E. O’Neal, and J.C. Tyndall. 2013. Ecosystem complementarity through STRIPs. Presented August 6th at the 98th annual meeting of the Ecological Society of America, Minneapolis, Minnesota. [Oral presentation – Schulte]
23. Andersen, D.S., **M.J. Helmers,** C. Pederson, and S. Melvin. 2013. Evaluating the economic and environmental consequences of swine manure application to soybeans. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting. Kansas City, MO. July 21-24, 2013. [Poster presentation – Andersen]
24. **Helmers, M.J.,** X. Zhou, and C. Pederson. 2013. Use and benefits of perennials and cover crops in agricultural production systems. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting. Kansas City, MO. July 21-24, 2013. [Oral presentation – Helmers]
25. Xiao, L., M. Soupir, T. Moorman, L. Jarboe, and **M.J. Helmers.** 2013. Investigation of bacteria transport and implications for water quality from subsurface drainage system in Iowa. American Society of Agricultural and Biological Engineers (ASABE) 2013

- Annual International Meeting. Kansas City, MO. July 21-24, 2013. [Poster presentation – Xiao]
26. Ikenberry, C., M. Soupir, **M.J. Helmers**, P. Gassman, C. Jones. 2013. Sensitivity of tile-drain catchment hydrology to tile and pothole parameterization. American Society of Agricultural and Biological Engineers (ASABE) 2013 Annual International Meeting. Kansas City, MO. July 21-24, 2013. [Oral presentation - Ikenberry]
 27. Zhou, X.*, **M.J. Helmers**, C. Pederson*, and J. Xu. 2013. Impacts of drainage water management on soil moisture and subsurface drainage volume. 2013 AWRA Spring Specialty Conference: Agricultural hydrology and water quality II. March 25-27, 2013. St. Louis, MO.
 28. **Helmers, M.J.**, X. Zhou*, A. Daigh, R. Horton, T. Isenhardt, R. Kolka, A. Mallarino, C. Pederson*, and Lisa Schulte-Moore. 2012. Impact of biomass production strategies on nitrate-nitrogen concentrations and fluxes in Iowa. *In*: ASA-CSSA-SSSA Annual Meeting Abstracts. Oct. 21-24, 2012, Cincinnati, OH. [Invited Oral Presentation - Helmers]
 29. **Helmers, M.J.**, X. Zhou*, C. Pederson*, R. Kanwar, A. Mallarino, and M. Soupir. 2012. Impact of rye cover crop on nitrate-nitrogen concentrations in subsurface drainage in Iowa. *In*: ASA-CSSA-SSSA Annual Meeting Abstracts. Oct. 21-24, 2012, Cincinnati, OH. [Poster Presentation - Helmers]
 30. Frana, A.*, X. Zhou*, and **M.J. Helmers**. 2012. Applicability of MIKE SHE in modeling hydrology in heavily tile drained lands and effects of changing drainage characteristics on hydrology. American Society of Agricultural and Biological Engineers (ASABE) 2012 Annual International Meeting. Dallas, Texas. July 29 – August 1, 2012 [Oral Presentation – Helmers]
 31. Salvato, L.*, X. Zhou*, and **M.J. Helmers**. 2012. The impacts of ephemeral gully erosion at Neal Smith National Wildlife Refuge. Presented at Geological Society of America Annual Conference in Charlotte, NC. [Poster presentation – Salvato]
 32. Schulte, L., C. Cambardella, T. Gunther, R. Hall, A. Hallam, S. Hargreaves, W. Headlee, E. Heaton, **M.J. Helmers**, K. Hofmockel, T. Isenhardt, R. Kolka, R. Manatt, K. Moore, T. Ontl, W. Welsh*, and R. Williams. 2012. The Landscape Biomass Project: Field tests of ecological and economic tradeoffs associated with five biomass cropping systems. Presented at the Ecological Society of America Annual Conference in Portland, OR.
 33. Doudna, J., **M.J. Helmers**, M. O’Neal, and J. Tyndall. 2012. Stakeholder perspectives on conservation program implementation in agricultural landscapes. Presented at the Ecological Society of America Annual Conference in Portland, OR. [Oral presentation – Doudna]
 34. Mitchell, D., M. Castellano, T. Parkin, and **M.J. Helmers**. 2012. Biogeochemical processes of nitrate removal by prairie buffers in Iowa agricultural watersheds. Presented at the Ecological Society of America Annual Conference in Portland, OR.
 35. MacDonald, A., L. Schulte, **M.J. Helmers**, and J. Niemi. 2012. Testing a new conservation practice for agricultural landscape: Bird response to prairie strips in row-cropped landscapes. Presented at the Ecological Society of America Annual Conference in Portland, OR.
 36. Liebman, M., C. Chase, R. Dietzel, S. Hirsh, **M.J. Helmers**, M. Jarchow, and L. Schulte. 2012. Using biodiversity to link agricultural productivity and profitability with

- environmental quality: Results from three field experiments in Iowa. Presented at the Ecological Society of America Annual Conference in Portland, OR.
37. **Helmers, M.J.**, X. Zhou, Z. Qi, R. Christianson, and C. Pederson. 2011. Opportunities for reducing nitrate export from drainage systems through in-field nitrogen management, cropping practices, and drainage design and management. Presented December 8th at the American Geophysical Union Fall Meeting, San Francisco, California. [Invited Oral Presentation - Helmers]
 38. Zhou, X.*, **M.J. Helmers**, H. Asbjornsen, R. Kolka, and M. Tomer. 2011. Nitrogen losses in runoff from row-cropped watershed: Environmental benefits of native prairie filter strips. Presented December 6th at the American Geophysical Union Fall Meeting, San Francisco, California. [Oral Presentation - Helmers]
 39. Welsh, W.*, X. Zhou, **M.J. Helmers**, L. Schulte-Moore, T. Isenhardt, and R. Kolka. 2011. Evaluating root zone water quality impacts associated with various biomass production systems across landscape positions. Presented December 5th at the American Geophysical Union Fall Meeting, San Francisco, California. [Poster presentation – Welsh]
 40. **Helmers, M.J.**, H. Asbjornsen, X. Zhou*, R. Kolka, M. Tomer, and R. Cruse. 2011. Field monitoring of water quality in agricultural landscapes: Environmental benefits of vegetative filter strips. *In*: ASA-CSSA-SSSA Annual Meeting Abstracts. Oct. 16-19, 2011, San Antonio, TX. [Oral Presentation - Helmers]
 41. Christianson, L.*, and **M.J. Helmers**. 2011. Denitrification bioreactors for agricultural drainage: Internal hydraulics and dynamics. Eastern South Dakota Water Conference Water Management in Extreme Conditions. Brookings, SD. October 13, 2011. [Oral presentation – Christianson]
 42. Christianson, L.*, **M.J. Helmers**, R. Kanwar, and R. Christianson. 2011. A path to a nitrate solution: Enhanced denitrification treatment in a global context. Water for Food: Paths to Solutions. Lincoln, Nebraska. 1-4 May 2011. [Poster presentation – Christianson]
 43. Christianson, L.*, **M.J. Helmers**, and A. Bhandari. 2011. Reducing nitrate in tile drainage: Denitrification bioreactors. Iowa Water Conference. Ames, Iowa. 7-8 March 2011.
 44. Schulte Moore, L., E. Bach, C. Cambardella, S. Hargreaves, **M. Helmers**, K. Hofmockel, T. Isenhardt, R. Kolka, T. Ontl, W. Walsh, and R. Williams. 2010. Soil, Water, and Greenhouse-gas Impacts of Alternative Biomass Cropping Systems. Presented December 14th at the American Geophysical Union Fall Meeting, San Francisco, California.
 45. Hernandez-Santana, V, X. Zhou*, **M.J. Helmers**, H. Asbjornsen, and R. Kolka. 2010. Perennial strips reduce runoff and contaminant export in annual cropping systems in the corn belt region, USA. Presented December 14th at the American Geophysical Union Fall Meeting, San Francisco, California. [Poster presentation - Hernandez-Santana]
 46. Daigh, A.L., **M. Helmers**, and H. Horton. 2010. Field water budget and tile-drainage effluent loads as affected by lignocellulosic-feedstock production systems. ASA, CSSA, and SSSA 2010 International Annual Meetings, Long Beach, CA (31 October – 4 November). [Poster presentation – Daigh]

47. **Helmers, M.**, H. Asbjornsen, X. Zhou*, R. Kolka, M. Tomer and R. Cruse. 2010. Integration of perennials in rowcrop agriculture for enhancing water quality in central Iowa. ASA, CSSA, and SSSA 2010 International Annual Meetings, Long Beach, CA (31 October – 4 November). [Poster presentation – Zhou]
48. Bhandari, A., N.L. Hoover, L. Christianson*, **M.J. Helmers**, and M. Soupir. 2010. Denitrification ‘Woodchip’ Bioreactors for Agricultural Drainage Water Treatment. Poster Presentation. KS Water Conference. October 26, 2010, Topeka, KS.
49. Bhandari, A*, L. Christianson, and M. Helmers. 2010 Denitrification Bioreactors for Treatment of Agricultural Drainage. ISU Sustainability Symposium, Ames, Iowa. [Poster presentation – Bhandari]
50. Bhandari, A., L. Christianson*, N. Hoover, and **M.J. Helmers**. 2010. Carbon Losses in Denitrifying Drainage Bioreactors. ASABE Annual International Meeting, Pittsburgh, Pennsylvania. [Oral presentation – Bhandari]
51. Crumpton, W., G. A. Stenback, B. A. Miller, **Helmers, M. J.**, and D. Green 2009. Potential impact of targeted wetland restoration on nitrate loads to Mississippi River subbasins: Performance forecast modeling of loads and load reductions. *In: Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico*. December 9-11, 2009, Des Moines, IA. [Poster Presentation – Crumpton]
52. Dosskey, M., **Helmers, M. J.**, and D. Eisenhauer. 2009. A design aid for determining width of filter strips. *In: Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico*. December 9-11, 2009, Des Moines, IA. [Poster Presentation – Dosskey]
53. Christianson, L., A. Bhandari, and **Helmers, M. J.** 2009. Advances in denitrification bioreactor design. *In: Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico*. December 9-11, 2009, Des Moines, IA. [Poster Presentation – Christianson]
54. **Helmers, M. J.** 2009. Reducing nutrient loads from agriculture in the Upper Mississippi River Basin – modeling considerations. *In: Proceedings of the 2009 USDA-CSREES National Water Conference*. February 8-12, 2009, St. Louis, MO. [Invited Oral Presentation – Helmers]
55. **Helmers, M. J.** 2009. Riverine nutrient export in Iowa watersheds and relations to landscape properties and agricultural land use. *In: Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico*. December 9-11, 2009, Des Moines, IA. [Invited Oral Presentation – Helmers]
56. **Helmers, M. J.** and Z. Xhou. 2009. Sediment loading and control in crop and livestock agriculture in the Midwest. *In: From Dust Bowl to Mud Bowl: Sedimentation, Conservation Measures and the Future of Reservoirs*. September 14-16, 2009, Kansas City, MO. [Invited Oral Presentation – Helmers]
57. Dosskey, M., **M.J. Helmers**, and D.E. Eisenhauer. 2008. A design aid for determining width for filter strips. *In: Soil and Water Conservation Society Annual Conference* (July 26-30, 2008, Tucson, AZ). [Poster Presentation - Dosskey]
58. **Helmers, M.J.**, W. Crumpton, D. Lemke, and S. Richmond. 2008. Integrated drainage, cropping, and wetland systems for reducing nitrate loads from tile drained watershed. *In: EPA 2008 Wetlands and Watersheds Conference*. April 7-11, 2008, Kansas City, MO. [Oral Presentation – Helmers]
59. Pederson, C.* and **M.J. Helmers**. 2007. Impacts of liquid swine manure application on water quality. *In: ASABE International Meeting*. June 17-20, 2007, Minneapolis, MN. [Poster Presentation - Pederson]

60. Qi, Z.* and **M.J. Helmers**. 2007. Soil moisture and subsurface drainage with winter rye cover crop in Iowa. *In: ASABE International Meeting*. June 17-20, 2007, Minneapolis, MN. [Oral Presentation - Qi]
61. Asbjornsen, H., M. Liebman, L. Schulte, T. Crow, and **M. Helmers**. 2007. Strategic placement of perennial plants for enhancing ecosystem services in row-crop dominated agricultural landscapes in the Midwestern U.S. *In: Ecosummit 2007*. May 22-27, 2007, Beijing, China. [Oral Presentation - Asbjornsen]
62. **Helmers, M.**, H. Asbjornsen, R. Kolka, and M. Tomer. 2007. Water cycling under contrasting annual-perennial plant systems in agricultural landscapes in the Midwestern U.S. *In: Ecosummit 2007*. May 22-27, 2007, Beijing, China. [Oral Presentation - Helmers]
63. Singh, R.* and **M.J. Helmers**. 2006. Shallow and controlled drainage systems in Iowa's tile landscapes. *In: ASA-CSSA-SSSA Annual Meeting Abstracts*. Nov. 12-16, 2006, Indianapolis, IN. [Poster Presentation - Singh]
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65. Lemke, D.W., R. L. Cooney, S.L. Richmond, W.G. Crumpton, and **M.J. Helmers**. 2006. A new vision for federal policy to facilitate restoration and development of wetlands as off-field nitrogen sinks for cropped landscapes. *In: ASA-CSSA-SSSA Annual Meeting Abstracts*. Nov. 12-16, 2006, Indianapolis, IN. [Oral Presentation - Lemke]
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69. Asbjornsen, H., **M. Helmers**, M. Liebman, L. Schulte, R. Kolka, M. Tomer, C. Cambardella, K. Schilling, R. Cruse, J. Opsomer, P. Drobney, and M. Nosschi. 2005. Ecosystem function and biodiversity in watersheds with contrasting annual-perennial plant community configurations *In: Proceedings of the Ninth North American Agroforestry Conference*. Rochester, MN, 12-15 June, 2005. [Poster Presentation – Asbjornsen]
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 73. Dosskey, M. G., **M.J. Helmers**, and D. E. Eisenhauer. 2005. Land capability for water quality protection using buffers. *In: Proceedings of the Ninth North American Agroforestry Conference. Rochester, MN, 12-15 June, 2005.* [Poster Presentation - Dosskey]
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2. **Helmers, M.J.** and W. Crumpton. 2013. Water and nutrient research: In-field and offsite strategies – 2012 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship.
3. **Helmers, M.J.** and W. Crumpton. 2012. Water and nutrient research: In-field and offsite strategies – 2011 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship.
4. Christianson, L., M. Castellano, and **M. Helmers**. 2012. Nitrogen and phosphorus balances in Iowa cropping systems: Sustaining Iowa's soil resources. Final report prepared for the Watershed Improvement Review Board and the Iowa Department of Agricultural and Land Stewardship. 57p.
5. Crumpton, W., **M. Helmers**, G. Stenback, D. Lemke, and S. Richmond. 2012. Integrated drainage-wetland systems for reducing nitrate loads from Des Moines Lobe watersheds. Final Report for EPA Targeted Watersheds Grant. 102p.
6. **Helmers, M.J.**, Andersen, D.S.*, B. Bond, R.T. Burns, C. Henry, T. Trooien, S. Pohl, C. Powers, and D. Gangwish. 2011. Multi-state vegetative treatment system technology implementation and performance – final report. Final Report to USDA-NRCS.
7. **Helmers, M.J.** and W. Crumpton. 2011. Water and nutrient research: In-field and offsite strategies – 2010 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship.
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9. **Helmers, M.J.** and W. Crumpton. 2010. Water and nutrient research: In-field and offsite strategies – 2009 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship.
10. Crumpton, W., **M.J. Helmers**, G. Stenback, and R. Singh. 2008. Targeted Watershed Project – 2007 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship and the EPA. 8p.
11. **Helmers, M.J.**, W. Crumpton, P. Lawlor, C. Pederson, G. Stenback, and R. Christianson. 2008. Water and nutrient research: In-field and offsite strategies – 2008 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship. 48p.

12. Crumpton, W., G. Stenback, B. Miller, and **M. Helmers**. 2007. Potential benefits of wetland filters for tile drainage systems: Impact on nitrate loads to Mississippi River Subbasins. Washington, DC: USDA.
13. Crumpton, W., **M.J. Helmers**, G. Stenback, and R. Singh. 2007. Targeted Watershed Project – 2007 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship and the EPA. 20p.
14. **Helmers, M.J.**, W. Crumpton, P. Lawlor, C. Pederson, and G. Stenback. 2007. Water and nutrient research: In-field and offsite strategies – 2007 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship. 35p.
15. Crumpton, W., **M.J. Helmers**, G. Stenback, and R. Singh. 2006. Targeted Watershed Project – 2006 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship and the EPA. 7p.
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19. Duncan, J. M., **M.J. Helmers**, and R. L. Mokwa. 1997. Design method for drilled shaft sound wall foundations. Report of Research Performed Under Sponsorship of the Virginia Transportation Research Council and the Virginia Department of Transportation, The Charles E. Via, Jr. Department of Civil Engineering, Virginia Tech, Blacksburg, VA, 24061-0105, 36p.
20. **Helmers, M. J.**, J. M. Duncan, and G. M. Filz. 1997. Use of ultimate load theories for design of drilled shaft sound wall foundations. Report of Research Performed Under Sponsorship of the Virginia Transportation Research Council and the Virginia Department of Transportation, The Charles E. Via, Jr. Department of Civil Engineering, Virginia Tech, Blacksburg, VA, 24061-0105, 101p.

Theses and Dissertation:

1. **Helmers, M.J.** 2003. Two-dimensional overland flow and sediment trapping in a vegetative filter. Ph.D. Dissertation. Interdepartmental Area of Engineering (Agricultural and Biosystems Engineering), University of Nebraska-Lincoln, Lincoln, NE. 445p.
2. **Helmers, M.J.** 1997. Use of ultimate load theories for design of drilled shaft sound wall foundations. M.S Thesis. Civil Engineering Department, Virginia Polytechnic Institute and State University, Blacksburg, VA. 103p.

Off-Campus Invited Oral Research Presentations (16):

1. **Helmers, M.J.** 2016. Iowa Nutrient Reduction Strategy. Big 12 Water Conference. (September 23, 2016)
2. **Helmers, M.J.** 2016. Nitrate Reduction of 4R Nitrogen Management. 4R Summit. (June 15, 2016)
3. **Helmers, M.J.** 2016. Monitoring Nutrient Reduction. National Water Monitoring Conference. (May 14, 2016)
4. **Helmers, M.J.** 2015. Nitrate Reduction with Nitrogen Management. 4R Summit. (May 12, 2015)
5. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. Eastern South Dakota Water Conference. (October 29, 2014)
6. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. Soil and Water Conservation Society Fellows Forum. (July 27, 2014)
7. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. University of Minnesota Water Resources Seminar. (March 11, 2014)
8. **Helmers, M.J.** 2013. Managing to reduce sediment and nutrient movement to river and stream systems in the Upper Mississippi River Basin. Soil and Water Distinguished Lecture Series at the ASABE Annual meeting in Kansas City, MO.
9. **Helmers, M.J.** 2013. Watershed-scale nutrient reduction strategies. Presented at Agree workshop in Washington, D.C. (March 21, 2013)
10. **Helmers, M.J.** 2012. Iowa nutrient reduction nitrogen science assessment. Presented at the Building Science Assessments for State-Level Nutrient Reduction Strategies Workshop (November 14, 2012)
11. **Helmers, M.J.** 2012. Impact of biomass production strategies on nitrate-nitrogen concentrations and fluxes in Iowa. Presented at the ASA-CSSA-SSSA Annual Meeting (October 23, 2012)
12. **Helmers, M.J.** 2011. Opportunities for reducing nitrate export from drainage systems through in-field nitrogen management, cropping practices, and drainage design and management. Presented at the American Geophysical Union Fall Meeting (December 8, 2011)
13. **Helmers, M.J.** 2010. Evaluating and modeling the influence of converging or diverging flow on vegetative filter strip performance. Presented at the ASABE Annual Meeting. (June 21, 2010)
14. **Helmers, M.J.** 2009. Riverine nutrient export in Iowa watersheds and relations to landscape properties and agricultural land use. Presented at Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico Workshop (December 10, 2009)
15. **Helmers, M.J.** 2008. Current science of nutrient flows and conservation actions in Iowa: Guiding principles. Presented at the Hypoxia in the Gulf of Mexico: Implications and Strategies for Iowa. (October 16, 2008)
16. **Helmers, M. J.** 2005. Buffers and vegetative filter strips. Presented at Gulf Hypoxia and Local Water Quality Concerns Workshop. (September 26-28, 2005)
17. **Helmers, M. J.** 2003. Performance of riparian grass buffers considering converging overland flow, Field and Storm Characteristics. Presented at Riparian Symposium: Water Quality Aspects of Buffers, 64th Midwest Fish and Wildlife Conference, Kansas City, MO.

Extension Related Scholarly Activities**Extension Publications (9):**

1. Frankenberger, J. B. Reinhart, K. Nelson, L. Bowling, C. Hay, M. Youssef, J. Strock, X. Jia, **M. Helmers**, and B. Allred. 2017. [Questions and Answers About Drainage Water Recycling in the Midwest](#). Purdue University Extension. West Lafayette, IN.
2. Christianson, L., J. Frankenberger, C. Hay, **M.J. Helmers**, and G. Sands. 2016. Ten ways to reduce nitrogen loads from drained cropland in the Midwest. Pub. C1400, University of Illinois Extension.
3. Christianson, L. and **M.J. Helmers**. 2011. Woodchip bioreactors for nitrate in agricultural drainage. Iowa State University Extension Publication. PMR 1008. Available at: <https://store.extension.iastate.edu/ItemDetail.aspx?ProductID=13691> [Peer-reviewed by ISU Extension and Outreach Personnel]
4. Lammers, P., M. Honeyman, J. Kliebenstein, J. Harmon, and **M. Helmers**. 2010. Optimizing energy use in pig production: an examination of Iowa systems. ASL-R2543. Animal Industry Report AS-656, ISU Ext. Serv., Ames, IA.
5. Schulte, L.A., H. Asbjornsen, R. Atwell, C. Hart, **M. Helmers**, T. Isenhardt, R. Kolka, M. Liebman, J. Neal, M. O'Neal, S. Secchi, R. Schultz, J. Thompson, M. Tomer, and J. Tyndall. 2008. A targeted conservation approach for improving environmental quality: Multiple benefits and expanded opportunities. PMR 1002 Iowa State University Extension.
6. Wortmann, C. S., **M.J. Helmers**, B. Gelder, L. Wright Morton, D. Devlin, C. Barden, S. Anderson, R. Broz, T. Franti, T. Regassa, P. Shea, M. Tomer, L. Frees, and D. Griffith. 2008. Targeting of watershed management practices for water quality protection. Heartland Regional Water Coordination Initiative. Iowa State University Extension. [Reviewed by co-authors that contributed to other sections of the publication]
7. Frankenberger, J., E. Kladvko, G. Sands, D.B. Jaynes, N.R. Fausey, **M.J. Helmers**, R. Cooke, J. Strock, K. Nelson, and L. Brown. 2006. Drainage Water Management for the Midwest. Purdue Extension, Knowledge to Go. WQ-44. [Peer-reviewed by outside drainage experts]
8. Wortmann, C. S., M. Al-Kaisi, **M.J. Helmers**, J. Sawyer, D. Devlin, C. Barden, P. Scharf, R. Ferguson, W. Kranz, C. Shapiro, R. Spalding, D. Tarkalson, J. Holz, D. Francis, and J. Schepers. 2006. Agricultural nitrogen management and water quality protection in the Midwest. RP189 Heartland Regional Water Coordination Initiative. Iowa State University Extension. [Reviewed by co-authors that contributed to other sections of the publication]
9. Wortmann, C. S., **M.J. Helmers**, A. Mallarino, C. Barden, D. Devlin, G. Pierzynski, J. Lory, R. Massey, J. Holz, C. Shapiro, and J. Kovar. 2005. Agricultural phosphorus management and water quality protection in the Midwest. RP187 Heartland Regional Water Coordination Initiative. Iowa State University Extension. [Reviewed by co-authors that contributed to other sections of the publication]

Extension Conference Proceedings without Review (28):

1. **Helmers, M.J.**, J. Sawyer, and C. Pederson. 2018. Impacts of 4R nitrogen management on nitrate-N loss in subsurface drainage. *In: Proceedings of the 30th Annual Integrated Crop Management Conference* (November 28-29, 2018, Iowa State University, Ames, IA), pp. 127-134. [Oral Presentation – Helmers]
2. **Helmers, M.J.** 2017. Impacts of 4R nitrogen management on drainage water quality. *In: Proceedings of the 29th Annual Integrated Crop Management Conference* (November 29-30, 2017 Iowa State University, Ames, IA), pp. 181-184. [Oral Presentation – Helmers]
3. **Helmers, M.J.** 2016. Extending field scale 4R nutrient management and wetland performance to watershed scale outcomes. *In: Proceedings of the 28th Annual Integrated Crop Management Conference* (November 30 – December 1, 2016, Iowa State University, Ames, IA), pp. 185-198. [Oral Presentation – Helmers and Brenneman]
4. **Helmers, M.J.** and G. Brenneman. 2016. Drainage design for improved profits and water quality. *In: Proceedings of the 28th Annual Integrated Crop Management Conference* (November 30 – December 1, 2016, Iowa State University, Ames, IA), pp. 189-192. [Oral Presentation – Helmers and Brenneman]
5. **Helmers, M.J.** 2016. Nitrate-N loss reduction: Scale of in-field and edge-of-field practice implementation to reach water quality goals. *North Central Soil Fertility Conference Proceedings.*
6. Lagzdins, A. and **Helmers, M.J.** 2015. Effects of nitrogen application timing and source on nitrate-nitrogen leaching and crop yields. *In: Proceedings of the 27rd Annual Integrated Crop Management Conference* (December 2-3, 2015, Iowa State University, Ames, IA), pp. 167-176. [Oral Presentation - Helmers]
7. **Helmers, M.J.** 2014. Cover crops, bioreactors, and wetlands for nitrate reduction. *In: Proceedings of the 26rd Annual Integrated Crop Management Conference* (December 3-4, 2014, Iowa State University, Ames, IA), pp. 163-166. [Oral Presentation - Helmers]
8. **Helmers, M.J.** 2013. Nutrient reduction strategy: One farm, many practice. *In: Proceedings of the 25rd Annual Integrated Crop Management Conference* (December 4-5, 2013, Iowa State University, Ames, IA), pp. 153-158. [Oral Presentation - Helmers]
9. Hanna, M. and **M.J. Helmers.** 2012. Balancing tillage, soil loss, and profitability. *In: Proceedings of the 24rd Annual Integrated Crop Management Conference* (November 28-29, 2012, Iowa State University, Ames, IA), pp. 169-174. [Oral Presentation - Helmers]
10. **Helmers, M.J.**, X. Zhou, H. Asbjornsen, R. Kolka, and M. Tomer. 2011. Water quality benefits of perennial filter strips in row cropped watersheds. *In: Proceedings of the 23rd Annual Integrated Crop Management Conference* (November 30 and December 1, Iowa State University, Ames, IA), pp. 139-144. [Oral Presentation - Helmers]
11. **Helmers, M.J.**, R. Christianson, and J. Sawyer. 2011. Nitrate loss in subsurface drainage as affected by nitrogen application rate and timing under a corn-soybean rotation system. *In: Proceedings of the 23rd Annual Integrated Crop Management Conference* (November 30 and December 1, Iowa State University, Ames, IA), pp. 123-128. [Oral Presentation - Helmers]

12. Dounda, J., **M.J. Helmers**, and M. O'Neal. 2011. Can conservation complement agriculture? *In: Proceedings of the 23rd Annual Integrated Crop Management Conference* (November 30 and December 1, Iowa State University, Ames, IA), pp. 129-130.
13. **Helmers, M.J.** 2010. Drainage Management and nitrogen loss. North Central Extension-Industry Conference Proceedings. Des Moines, IA
14. **Helmers, M. J.** 2010. Nitrogen loss through tile lines. p. 22. *In: 2010 Proceedings Crop Advantage Series. AEP 0200.* Iowa State Univ., Ames, IA. [Oral Presentation - Helmers]
15. **Helmers, M.J.**, and J.L. Baker. 2010. Strategies for nitrate reduction: The Cedar River case study. *In: Proceedings of the 22st Annual Integrated Crop Management Conference* (December 1 and 2, Iowa State University, Ames, IA), pp. 195-199. [Oral Presentation - Helmers]
16. **Helmers, M.J.**, A. Mallarino, C. Pederson, and M. Haq. 2010. Impacts of crop, biomass harvest systems, and nutrient management on field and subsurface drainage water quality. *In: Proceedings of the 22st Annual Integrated Crop Management Conference* (December 1 and 2, Iowa State University, Ames, IA), pp. 191-194. [Oral Presentation - Helmers]
17. **Helmers, M. J.** and R. Christianson. 2009. Impact of application rate and timing on nitrate-nitrogen loss through subsurface drainage systems. *In: Proceedings of the 21st Annual Integrated Crop Management Conference* (December 2 and 3, Iowa State University, Ames, IA), pp. 133-138. [Oral Presentation - Helmers]
18. Zhou, X.* and **M.J. Helmers**. 2009. Effectiveness of variable-width buffer design for sediment reduction. *In: Proceedings of the 21st Annual Integrated Crop Management Conference* (December 2 and 3, Iowa State University, Ames, IA), pp. 145-150. [Oral Presentation - Helmers]
19. **Helmers, M. J.** 2009. Water quality research in northern Iowa. p. 27. *In: 2009 Proceedings Crop Advantage Series. AEP 0200.* Iowa State Univ., Ames, IA. [Oral Presentation - Helmers]
20. Qi. Z. and **M.J. Helmers**. 2008. Effect of cover crops in reducing nitrate-nitrogen leaching in Iowa. *In: Proceedings of the 20th Annual Integrated Crop Management Conference* (December 10 and 11, Iowa State University, Ames, IA), pp. 283-294. [Oral Presentation - Helmers]
21. Zhou, X. and **M.J. Helmers**. 2008. Impacts of extreme precipitation events on performance of conservation practices. *In: Proceedings of the 19th Annual Integrated Crop Management Conference* (December 10 and 11, Iowa State University, Ames, IA), pp. 275-282. [Oral Presentation - Helmers]
22. **Helmers, M.** 2008. Nitrates and subsurface drainage for southern Iowa. p. 25. *In: 2008 Proceedings Crop Advantage Series. AEP 0200.* Iowa State Univ., Ames, IA. [Oral Presentation - Helmers]
23. **Helmers, M.** 2007. Drainage water quality: Implications of continuous corn. p. 28. *In: 2007 Proceedings Crop Advantage Series. AEP 0200f.* Iowa State Univ., Ames, IA. [Oral Presentation - Helmers]
24. **Helmers, M.** 2007. Conservation systems for non-point source pollution. p. 30. *In: 2007 Proceedings Crop Advantage Series. AEP 0200f.* Iowa State Univ., Ames, IA. [Oral Presentation - Helmers]

25. **Helmers, M. J.** and P. Lawlor. 2007. Comparison of nitrate-nitrogen in subsurface drainage from continuous corn and corn-soybean rotation. *In: Proceedings of the 19th Annual Integrated Crop Management Conference* (November 29 and 30, 2007, Iowa State University, Ames, IA), pp. 265-277. [Oral Presentation - Helmers]
26. **Helmers, M. J.** and X. Zhou. 2007. Conservation systems and water quality: Estimating the impact of in-field management practices on surface water quality using the WEPP model. *In: Proceedings of the 19th Annual Integrated Crop Management Conference* (November 29 and 30, 2007, Iowa State University, Ames, IA), pp. 261-264. [Oral Presentation - Helmers]
27. **Helmers, M. J.** and R. Singh. 2006. Economic and environmental considerations for drainage design. *In: Proceedings of the 18th Annual Integrated Crop Management Conference* (November 29 and 30, 2006, Iowa State University, Ames, IA), pp. 239-244. [Oral Presentation - Helmers]
28. **Helmers, M. J.** and P. A. Lawlor. 2005. Conservation systems: Effects of manure application on drainage water quality. *In: Proceedings of the 17th Annual Integrated Crop Management Conference* (November 30 and December 1, 2005, Iowa State University, Ames, IA), pp. 177-188. [Oral Presentation - Helmers]
29. **Helmers, M. J.** and D. E. Eisenhauer. 2003. Performance of vegetative filters considering conservation practices, field slope, and storm characteristics. *In: Proceedings of the 15th Annual Integrated Crop Management Conference* (December 3-4, 2003, Iowa State University, Ames, IA), pp. 187-196. [Oral Presentation - Helmers]

Extension Reports (8):

1. Pederson, C., **M.J. Helmers**, M. Soupir, R. Kanwar, and A. Mallarino. 2016. Impacts of liquid swine manure application and cover crops on subsurface drainage water. RFR-A1596. Iowa State University, Northeast Research and Demonstration Farm Annual Report ISRF 15-13.
2. Licht, M., L. Juchems, J. Comito, **M.J. Helmers**, and S. Carlson. 2016. Demonstrating cover crop mixtures and Iowa farmland: Management, soil health, and water quality benefits. RFR-A1590. Iowa State University, Northeast Research and Demonstration Farm Annual Report ISRF15-13.
3. **Helmers, M.J.**, X. Zhou, C. Pederson, and G. Brenneman. 2012. Impact of drainage water management on crop yield. RFR-A1287. Iowa State University, Southeast Research and Demonstration Farm Annual Report ISRF12-34. Pages 5-6.
4. Pederson, C., R. Kanwar, **M.J. Helmers**, and A. Mallarino. 2011. Impacts of liquid swine manure application and cover crops on ground water quality RFR-A10111. Iowa State University, Northeast Research and Demonstration Farm Annual Report ISRF10-13. Pages 11-12.
5. Christianson, L., **M.J. Helmers**, and C. Pederson. 2011. Denitrification bioreactor in northeast Iowa RFR-A1099. Iowa State University, Northeast Research and Demonstration Farm Annual Report ISRF10-13. Pages 56-57.
6. Lammers, P., M. Honeyman, J. Kliebenstein, J. Harmon, and **M. Helmers**. 2010. Optimizing energy use in pig production: an examination of Iowa systems. ASL-R2543. Animal Industry Report AS-656, ISU Ext. Serv., Ames, IA.
7. **Helmers, M.**, C. Pederson, A. Staudt, and A. Mallarino. 2009. Impacts of crop, biomass

harvest systems, and nutrient management on yield and subsurface drainage water quality. ISRF09-16. Ag Engineering/Agronomy and Central Iowa Research Farms Progress Report, Ames, IA.

8. Mallarino, A., M. Haq, **M. Helmers**, and R. Rusk. 2009. Crop yields and phosphorus loss with surface runoff as affected by tillage systems and phosphorus sources. ISRF09-29. Northwest Research Farm and Allee Demonstration Farm Progress Report, Ames, IA.

Other publications (2):

1. Arbuckle, J.G., **M. Helmers**, M. Liebman, L. Schulte. 2008. From vulnerability to resiliency: Iowa agriculture in the age of biorenewables. White paper prepared at the request of the Office of Biorenewable Programs and College of Agriculture and Life Science at Iowa State University. 7 pp.
2. **Helmers, M.J.**, L.B. Moody, and R. Burns. 2008. Literature review: Utilization of manure nutrients for soybean crop production. White Paper for the National Pork Board. (Draft submitted in 2007)

Website (1):

1. **Helmers, M.J.** 2008. Manure application to soybeans. eXtension website (www.extension.org/pages/Manure_Application_to_Soybeans) (verified February 29, 2008). Peer-reviewed website as part of the Livestock and Poultry Environmental Learning Center (Prepared November 2007).

Extension Newsletters (4):

1. Al Kaisi, M. and **M.J. Helmers**. 2008. Heavy rain, soil erosion and nutrient losses. In *Integrated Crop Management News*. Published by Iowa State University Extension on 6/5/2008.
2. Sawyer, J. and **M.J. Helmers**. 2008. Surface waters: Ammonium is not ammonia – Part Three. In *Integrated Crop Management News*. Published by Iowa State University Extension on 5/21/2008.
3. Helmers, M. J. 2006. Landuse changes for improved water quality. In *Iowa Learning Farms Newsletter*. Fall 2006.
4. Helmers, M. J. 2006. Buffers and grassed waterways. In *Iowa Learning Farms Newsletter*. Winter 2006.

Extension Fact Sheets (19):

*MS, Ph.D., Post Doc, or Research Associate supervised by Helmers

1. **Helmers, M.J.** 2017. Agricultural Drainage Research and Demonstration Site – Gilmore City – AE 3614.
2. **Helmers, M.J.** 2017. Comparison of Biofuel Systems Site – AE 3615
3. **Helmers, M.J.** 2017. Northeast Research and Demonstration Farm – AE 3616
4. **Helmers, M.J.** 2017. Northwest Research and Demonstration Farm – AE 3617
5. **Helmers, M.J.** 2017. Southeast Research and Demonstration Farm – AE 3618
6. Zhou, X.* and **M.J. Helmers** 2009. Water quality and conservation practices. Published by the Iowa Learning Farm Project.
7. Zhou, X.* and **M.J. Helmers** 2009. Northwest Loess Hills: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.

8. Zhou, X.* and **M.J. Helmers** 2009. Deep Loess Hills: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
9. Zhou, X.* and **M.J. Helmers** 2009. Des Moines Lobe Till Plain: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
10. Zhou, X.* and **M.J. Helmers** 2009. Western Deep Loess and Drift: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
11. Zhou, X.* and **M.J. Helmers** 2009. Eastern Deep Loess and Drift: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
12. Zhou, X.* and **M.J. Helmers** 2009. Eastern Till Prairies: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
13. Zhou, X.* and **M.J. Helmers** 2009. Northern Mississippi Valley Loess Hills: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
14. Zhou, X.* and **M.J. Helmers** 2009. Southern Thin Loess and Till Plain: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
15. Zhou, X.*, **M.J. Helmers**, and H.M. Hanna. 2008. Impact of conservation practices on soil erosion in Central Iowa (Des Moines Lobe). Published by the Iowa Learning Farm Project.
16. Zhou, X.*, **M.J. Helmers**, and H.M. Hanna. 2008. Impact of conservation practices on soil erosion in Southern Iowa Plains. Published by the Iowa Learning Farm Project.
17. Zhou, X.*, **M.J. Helmers**, and H.M. Hanna. 2008. Impact of conservation practices on soil erosion in Loess Hills. Published by the Iowa Learning Farm Project.
18. Zhou, X.*, **M.J. Helmers**, and H.M. Hanna. 2008. Impact of conservation practices on soil erosion in Northeast Iowa. Published by the Iowa Learning Farm Project.
19. Zhou, X.*, **M.J. Helmers**, and H.M. Hanna. 2008. Impact of conservation practices on soil erosion in Northwest Iowa. Published by the Iowa Learning Farm Project.

Extension Essay (1):

1. **Helmers, M.J.** 2008. Physical environment: The importance of living and working within nature's cycle. Essay for the Iowa Master Conservationist Program.

Popular Press Articles (2):

1. **Helmers, M. J.** 2006. Drainage design process and selecting a drain depth. *Drainage Contractor* 33: 10-12.
2. **Helmers, M. J.**, and S. Melvin. 2008. Drainage main capacity and future design may balance crop production and water quality concerns. *Drainage Contractor* 35: 9, 10-11.

Grants and Contracts:**Projects Funded (Total \$59,163,913 as PI or Co-PI; \$13,135,055 on projects as PI):**

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Estimating the effect of conservation research program contour strips on nutrient retention, water quality, grassland birds, soil health and farm finances	USDA-FSA	L. Schulte Moore et al. including M.J. Helmers	08/01/18 – 07/31/21	Co-PI	\$699,958
Spreading prairie strips to Iowa farms for improved water quality, soil conservation and biodiversity	Walton Family Foundation	M. Liebman et al. including M.J. Helmers	08/01/18 – 01/31/21	Co-PI	\$418,033
Edge-of-field practice location, performance and feasibility analysis: Strategically located wetlands	IDALS	W. Crumpton and M.J. Helmers	09/19/18 – 06/30/20	Co-PI	\$180,000
Installation of drainage monitoring infrastructure on Iowa State University Research and Demonstration Farms	Iowa Nutrient Research Center	M. Castellano, S. Archontoulis, and M.J. Helmers	04/01/18 – 03/31/21	Co-PI	\$180,000
Redefining the field edge	NCR-SARE	M. Licht et al. including M.J. Helmers	10/01/18 – 09/30/21	Co-PI	\$199,352
Transforming drainage demonstration project	IDALS	M.J. Helmers , W. Crumpton, T. Isenhardt, and C. Hay	07/01/18 – 12/31/21	PI	\$624,346
Effect of an experimental nitrification inhibitor (KAS_771G77) on nitrate leaching and corn production in Iowa	Koch Agronomic Service	M.J. Helmers and John Sawyer	01/01/18 – 02/28/19	PI	\$46,769
Drainage water recycling: Evaluation of crop production and water	Iowa Nutrient Research	M.J. Helmers and Chris Hay	01/01/18 – 12/31/20	PI	\$241,870

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
quality benefits	Center				
Stripping Antibiotic Resistance with Strips: Evaluating Prairie Buffer Strips to Mitigate Resistance Gene Dissemination from Manure-Amended Fields	USDA-NIFA	M. Soupir et al. including M.J. Helmers	01/01/18 - 12/31/21	Co-PI	\$1,200,000
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/18 - 12/31/22	PI	\$3,165,104
Coordinated Site Network for Studying the Impacts of 4R Nutrient Management on Crop Production and Nutrient Loss	Foundation for Agronomic Research	M.J. Helmers and J. Sawyer	10/01/17 - 09/30/20	PI	\$147,076
Assessing Weather Impact on Nitrate Loss with Subsurface Drainage Under a Range of Management Practices	Iowa Nutrient Research and Education Council	M.J. Helmers and R. Christianson	11/01/17 - 08/31/18	PI	\$23,412
Improving the Capacity to Detect Load Reduction	Iowa Nutrient Research Center	M. Castellano et al. including M.J. Helmers	09/01/17 - 08/31/18	Co-PI	\$79,659
Impacts of Cover Crops on Phosphorus and Nitrogen Loss with Surface Runoff	Iowa Nutrient Research Center	Mallarino, J. Sawyer, and M.J. Helmers	07/01/17 - 06/30/19	Co-PI	\$120,200
Water Quality Evaluation of Prairie Strips in Iowa	Iowa Nutrient Research Center	M.J. Helmers , M. Liebman, and L. Schulte-Moore	07/01/17 - 06/30/19	PI	\$51,261

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Does Quantity and Quality of Tile Drainage Water Impact IN-Stream Eutrophication Potential? Evidence From a Long-Term Biofuel Cropping Systems Experiment	Iowa Nutrient Research Center	M. McDaniel, M. Thompson, M. Liebman, and M.J. Helmers	07/01/17 - 06/30/19	Co-PI	\$90,736
Delivery-Scale Evaluation and Modeling of Nutrient Reduction Practices	Iowa Nutrient Research Center	C. Lu, W. Crumpton, and M.J. Helmers	08/01/17 - 07/31/19	Co-PI	\$63,752
Conservation Learning Lab (CLL): Implementation, Demonstration, and Monitoring at the Watershed Scale in Iowa (Phase II)	IDALS	J. Comito, M.J. Helmers , and M. Licht	10/01/17 - 09/30/19	Co-PI	\$77,856
Iowa Learning Farms: On-the-Edge	IDALS	J. Comito, M.J. Helmers , and M. Licht	01/01/18 - 12/31/19	Co-PI	\$122,504
Integrated Environmental Assessment of Cropped and Restored Wetlands in Agricultural Catchments with Varying Drainage Intensity	USEPA	S. Hall, W. Crumpton, and M.J. Helmers	10/01/17 - 09/30/19	Co-PI	\$150,754
Edge-of-Field Practice Location, Performance and Feasibility Analysis: Strategically Located Wetlands	IDALS	W. Crumpton and M.J. Helmers	03/01/17 - 12/31/18	Co-PI	\$150,000
Prairie Strips as a Sustainable Mitigation Strategy to Retain Antimicrobial Resistant Organisms	University of Iowa	A. Howe, M. Soupir, L. Schulte Moore, and M.J. Helmers	07/01/17 - 06/30/18	Co-PI	\$35,000

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Prairie Strips for Retaining Antimicrobial Resistant Organisms	Iowa State University	A. Howe, M. Soupir, L. Schulte Moore, and M.J. Helmers	08/01/17 – 07/31/18	Co-PI	\$24,017
Evaluation of Measurement Methods as Surrogates for Tile-Flow Nitrate-N Concentrations	Iowa Nutrient Research Center	J. Sawyer, and M. J. Helmers	07/01/17 - 06/30/18	Co-PI	\$69,966
Assessment of Historic Adoption of Ag Nonpoint Source Practices which Reduce Nutrient Transport to Water Resources	Iowa Nutrient Research and Education Council	M.J. Helmers , T. Isenhardt, and J. Lawrence	09/01/16 - 06/30/17	PI	\$23,512
Evaluation of Measurement Methods as Surrogates for Tile-Flow Nitrate-N Concentrations	Iowa Nutrient Research and Education Council	J. Sawyer, and M. J. Helmers	12/01/16 - 11/30/18	Co-PI	\$98,462
Iowa Learning Farms: Building a Culture of Conservation Farmer to Farmer: Iowan to Iowan	IDALS	J. Comito, M.J. Helmers , and M. Licht	01/01/17 - 12/31/17	Co-PI	\$158,500
Evaluation of Water Quality Benefits of Prairie Strips in Iowa	USDA-FSA	M.J. Helmers , M. Liebman, and L. Schulte-Moore	09/22/16 - 09/21/18	PI	\$122,558
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/17 - 12/31/17	PI	\$490,259
Service Order No. 26	Monsanto Company	S. Archontoulis, M. Castellano, and M.J. Helmers	6/1/2016 – 5/31/17	Co-PI	\$172,500
Spreading Prairie Strips to Iowa Farms for Improved Water Quality, Soil Conservation, and Biodiversity	Walton Family Foundation	M. Liebman, L. Schulte-Moore, and M.J. Helmers	8/1/2016 – 7/31/18	Co-PI	\$308,922

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Effect of an Experimental Nitrification Inhibitor (KAS_771G77) on Nitrate Leaching and Corn Production in Iowa	Koch Agronomic Services	M.J. Helmers and J. Sawyer	1/1/2016 - 12/31/17	PI	\$66,724
Transforming Denitrifying Bioreactor Research and Applications: Unveiling the Inside of the Black Box	North Carolina State University	F. Birgard, C. Chescheir, L. Christianson, M.J. Helmers , L. Schipper, M Youssef	1/1/2016 - 12/31/17	PI	\$5,200
Conservation Learning Lab: Implementation, Demonstration and Monitoring at the Watershed Scale in Iowa	IDALS	J. Comito, A. Staudt, and M.J. Helmers	10/01/15 - 09/30/19	Co-PI	\$159,083
Drainage Water Quality Impacts of Agricultural Management Practices: Timing of Manure Application and Use of Winter Cereal Rye Cover Crops	National Pork Board	Helmers , Mallarino, Andersen, Sawyer, Soupir	01/1/17 - 12/31/17	PI	\$57,995
Partnership of Iowans for conservation tillage systems	IDALS	J. Comito, and M.J. Helmers	01/01/15 - 03/31/17	Co-PI	\$578,332
Drainage Water Quality Impacts of Agricultural Management Practices: Timing of Manure Application and Use of Winter Cereal Rye Cover Crops	National Pork Board	Helmers , Mallarino, Andersen, Sawyer, Soupir	01/1/16 - 12/31/16	PI	\$57,266
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/16 - 12/31/16	PI	\$444,271
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/15 - 12/31/15	PI	\$464,414

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Managing Water for Increased Resiliency of Drained Agricultural Landscapes	USDA-NIFA	Frankenberger, et all, including Helmers	12/01/14 - 11/30/19	Co-PI	\$5,000,000
The Value of Water Quantity versus Quality	USDA-NIFA	Keiser, Helmers	09/01/14 - 08/31/17	Co-PI	\$660,000
Prairie Strips as an Innovative Agroecosystem Practice to Enhance Ecosystem Services from Farmers' Fields	USDA-NIFA	Schulte-Moore, Helmers , Harris, Liebman, Tyndall, Kolka, Westra, Tomer	01/01/15 - 12/31/17	Co-PI	\$498,966
Evaluation of Water Quality Benefits of Prairie Strips in Iowa	USDA-FSA	M.J. Helmers	09/19/14 - 08/31/16	PI	\$124,957
Extending Field Scale 4R Nutrient Management to Watershed Scale Outcomes	USDA-NRCS	M.J. Helmers , Crumpton	09/17/14 - 12/31/17	PI	\$74,865
Prairie Strips in Iowa: Water Quality Evaluation	IDALS	M.J. Helmers , Schulte-Moore, Harris, Liebman	09/01/14 - 08/31/17	PI	\$74,997
Impacts of 4R Nitrogen Management on Crop Production and Nitrate-Nitrogen Loss in Tile Drainage	Fertilizer Institute-4R Nutrient Stewardship	M.J. Helmers , Sawyer	01/01/15 - 12/31/17	PI	\$167,546
Soil and Water Quality Benefits from Integrating Prairie Strips into Corn-Soybean Production Acres	McKnight Foundation	M.J. Helmers , Liebman, Schulte-Moore	07/01/14 - 06/30/17	PI	\$69,580
Nutrient use and land management: A component of the Iowa landscape systems initiative	Iowa Corn Promotion Board	M.J. Helmers and W. Crumpton	01/01/14 - 12/31/14	PI	\$36,657

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Partnership of Iowans for conservation tillage systems	IDALS	M.J. Helmers , J. Comito, M. Hanna, R. Cruse, and M. Duffy	01/01/14 - 12/31/14	PI	\$318,866
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/14 - 12/31/14	PI	\$528,520
Evaluation of current USDA contour buffer and filter designs as resources for pollinators and for meeting water quality improvement goals in Iowa	USDA-Farm Services Agency	M. Harris, L. Schulte-Moore, and M.J. Helmers	10/01/13 - 09/30/14	Co-PI	\$69,491
Combining Integrated Pest Management with Climate Change, Mitigation, and Adaptation in Soybean-Corn Cropping Systems	United Soybean Board	D. Mueller, M. Castellano, L. Abendroth, L. Leonor, A. Robertson, G. Tylka, A. Gassmann, M. O'Neal, M.J. Helmers , and L. Morton	01/01/14 - 12/31/15	Co-PI	\$225,000
Spreading prairie strips to Iowa farms for improved water quality, soil conservation, and biodiversity	Walton Family Foundation	M. Liebman, L. Schulte-Moore, and M.J. Helmers	01/01/14 - 12/31/15	Co-PI	\$239,293
Drainage water quality from manure-treated soybean crops: Assessment of woodchip bioreactors for edge-of-field treatment	Iowa Soybean Association	M. Soupir, N. Hoover, and M.J. Helmers	10/01/13 - 09/30/14	Co-PI	\$66,757
Evaluating Planting Techniques for the Successful Establishment of Cover Crop Mixtures and Single Species in Iowa	USDA-NRCS	J. Comito, M.J. Helmers , and J. Benning	01/01/14 - 12/31/16	Co-PI	\$485,850

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
A meta-analysis of best practices for management and land application of swine manure in the Midwestern United States	Iowa Pork Board	D. Andersen, M. Castellano, and M.J. Helmers	05/01/13 - 04/30/14	Co-PI	\$21,978
Facilitation of STRIPS adoption by Iowa farmers	Iowa Dept. of Ag and Land Stewardship (IDALS)	M. Harris and M.J. Helmers	01/01/13 - 09/30/14	Co-PI	\$52,511
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/13 - 12/31/13	PI	\$559,867
Integrating project knowledge and models: The next step in developing a Payment for Ecosystems Services scheme for the Big Creek watershed	Leopold Center for Sust. Ag.	L. Schulte, J. Tyndall, J. Arbuckle, K. Franz, E. Heaton, M.J. Helmers , T. Isenhardt, and M. Liebman	01/01/13 - 12/31/13	Co-PI	\$35,000
Partnership of Iowans for conservation tillage systems	IDALS	M.J. Helmers , J. Comito, M. Hanna, R. Cruse, and M. Duffy	01/01/13 - 12/31/13	PI	\$366,222
Demonstration of the impacts of mixed annual-perennial agroecosystems on water quality	IDALS	M.J. Helmers	10/31/12 - 09/30/13	PI	\$42,643
Nutrient use and land management: A component of the Iowa landscape systems initiative	Iowa Corn Promotion Board	M.J. Helmers and W. Crumpton	10/31/12 - 09/30/13	PI	\$19,840

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Validate, improve and regionalize phosphorus indices to reduce phosphorus loss across the Heartland region	USDA-NRCS	J. Lory, C. Baffaut, R. Udawatta, A. Mallarino, C. Wortmann, N. Nelson, M.J. Helmers , M. Van Liew	09/01/12 - 08/31/15	Co-PI	\$531,662
Impacts of cover crops, nitrogen timing, and nitrogen source on nitrate-nitrogen export	Farm Pilot Project	M.J. Helmers , D. Andersen, and X. Zhou	07/01/12 - 12/31/14	PI	\$87,907
Demonstration of the impacts of mixed annual-perennial agroecosystems on surface water	University of Iowa	M.J. Helmers	07/01/12 - 06/30/13	PI	\$19,997
Landscape influences on water use and quality across biomass cropping systems	USDA-Forest Service	L. Schulte and M.J. Helmers	06/01/12 - 05/31/13	Co-PI	\$7,500
Occurrence and movement of antibiotics, antibiotic resistant bacteria and resistance genes in tile-drained agricultural fields receiving swine manure	Iowa Pork Board	M. Soupir, T. Moorman, M.J. Helmers	03/01/12 - 02/28/13	Co-PI	\$54,265
Evaluating nutrient export with subsurface drainage water from manure applied sub-watersheds planted to soybeans	Iowa Pork Board	K. Arora, R. Kanwar, C. Pederson, and M.J. Helmers	03/01/12 - 02/28/13	Co-PI	\$73,900
Quantifying field water balance components as affected by shifts in land-use patterns: Implications for minimizing agricultural impacts on water quality in Iowa	Iowa Water Center	R. Horton, T. Sauer, M.J. Helmers	03/01/12 - 02/28/14	Co-PI	\$17,868

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Investigation of bacteria transport and resistance mechanisms and implications for water quality from confinement swine and beef grazing production systems in Iowa	Leopold Center for Sust. Ag.	M. Soupir, M. Thompson, L. Jarboe, and M.J. Helmers	03/01/12 - 02/28/15	Co-PI	\$162,100
Impacts of cropping, tillage, and phosphorus management on soil and phosphorus loss with surface runoff	IDALS	A. Mallarino and M.J. Helmers	01/01/12 - 06/30/18	Co-PI	\$220,819
Community assessments: key components of successful community-based watershed improvement projects	Iowa Department of Natural Resources (IDNR)	J. Comito, A. Staudt, M.J. Helmers	01/01/12 - 06/30/13	Co-PI	\$22,500
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/12 - 12/31/12	PI	\$492,058
Partnership of Iowans for conservation tillage systems	IDALS	L. Wright Morton, M.J. Helmers , M. Hanna, R. Cruse, and M. Duffy	01/01/12 - 12/31/12	Co-PI	\$411,283
Water Rocks!	IDNR	J. Comito, A. Staudt, R. Cruse, and M.J. Helmers	01/01/12 - 09/30/13	Co-PI	\$160,815
Nitrogen and greenhouse gas balances in constructed wetlands in agricultural watersheds within the Upper Mississippi River Basin	USDA-AFRI	W. Crumpton and M.J. Helmers	01/01/12 - 12/31/14	Co-PI	\$599,521
Demonstration of the impacts of mixed annual-perennial agroecosystems on water quality	IDALS	M.J. Helmers	10/31/11 - 09/30/12	PI	\$47,707

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Soil nutrient mass balance study	IDALS	M. Castellano and M.J. Helmers	10/11/11 - 12/31/12	Co-PI	\$49,734
Hickory Grove Lake watershed planning grant	IDNR	M. Soupir and M.J. Helmers	07/01/11 - 12/31/12	Co-PI	\$45,327
Farmer Perspectives on Ecosystem Service Management, Land-Use Targeting and the Future of Cornbelt Agriculture	Leopold Center for Sustainable Agriculture	J. Tyndall, T. Knoot, M.J. Helmers , D. Larsen, and J. Arbuckle	03/01/11 - 03/01/13	Co-PI	\$80,745
Drainage water quality impacts of current and future agricultural management practices	Leopold Center for Sustainable Agriculture	M.J. Helmers , R. Kanwar, and A. Mallarino	02/15/11 - 01/31/12	PI	\$18,898
Climate change, mitigation, and adaptation in corn-based cropping systems	USDA-NIFA-AFRI-CAP	L.W. Morton et al. including M.J. Helmers	02/01/11 - 12/31/16	Co-PI	\$19,992,144
Hydrologic impacts of drainage systems	Iowa Dept. of Economic Dev.	R. Cruse, B. Simpkins, K. Franz, and M.J. Helmers	01/01/11 - 12/31/13	Co-PI	\$299,532
Biofuel cropping systems for feedstock production and greenhouse gas mitigation	NASA and USDA-NIFA-AFRI	M. Thompson, R. Anex, R. Cruse, M.J. Helmers , K. Hofmockel, R. Horton, M. Liebman,, and F. Miguez	01/01/11 - 12/31/13	Co-PI	\$726,508
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/11 - 12/31/11	PI	\$472,058
Partnership of Iowans for conservation tillage systems	IDALS	L. Wright Morton, M. Hanna, M.J. Helmers , R. Cruse, and M. Duffy	01/01/11 - 12/31/11	Co-PI	\$463,846

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Improving a watershed scale model to integrate wetlands into watershed planning	U.S. EPA	M. Soupir, W. Crumpton, P. Gassman, and M.J. Helmers	10/01/10 - 04/01/14	Co-PI	\$225,999
Improving secondary agriculture and science students' understanding of watersheds and water quality issues	USDA-CSREES	L. W. Morton, J. Benning, J. Comito, and M.J. Helmers	07/01/10 - 12/31/11	Co-PI	\$33,539
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/10 - 12/31/10	PI	\$410,842
Partnership of Iowans for conservation tillage systems	IDALS	J. Dewitt, M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and P. Lasley	01/01/10 - 12/31/10	Co-PI	\$448,921
Influence of alternative biomass cropping systems on short-term ecosystems processes	USDA-AFRI	T. Isenhardt, L. Schulte-Moore, R. Hall, A. Hallem, E. Heaton, M.J. Helmers , K. Hofmockel, and K. Moore	01/01/10 - 12/31/12	Co-PI	\$498,512
Learning and teaching with experimental watersheds: Evaluation of ecosystem services in mixed annual-perennial agroecosystems	USDA-AFRI	M.J. Helmers , H. Asbjornsen, M. O'Neal, M. Liebman, L. Schulte, J. Tyndall, J. Arbuckle, N. Grudens-Schuck, and M. Harris	01/01/10 - 12/31/12	PI	\$499,996
Lignocellulosic feedstock production systems: Environmental impacts of contrasting cropping systems	Conoco-Phillips	R. Horton, M.L. Thompson, R.J. Cruse, and M.J. Helmers	01/01/10 - 12/31/10	Co-PI	\$135,654

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Hickory Grove water quality	IDNR	M. Soupir, A. Bhandari and M.J. Helmers	12/01/09 - 12/31/11	Co-PI	\$148,718
Mixing reconstructed prairie with cropland to balance food and biofuel production with environmental quality	NCR-SARE	M.J. Helmers , H. Asbjornsen, M. O'Neal, M. Liebman, and L. Schulte	10/01/09 - 09/30/12	PI	\$174,819
Integration of water, nutrient and carbon cycling under diverse annual-perennial plant community systems in agricultural landscapes	Leopold Center for Sust. Ag.	H. Asbjornsen, M.J. Helmers , R. Kolka, M. Liebman, L. Schulte, and M. O'Neal	07/01/09 - 06/30/14	PI	\$250,000
Resiliency comparison of three farms: annual cropping, continuous grazing and managed rotational grazing	ISU College of Ag. On-Farm Res.	S. Carlson, F. Thicke, M.J. Helmers , and S. Bernhard	04/01/09 - 06/30/10	Co-PI	\$6,500
Evaluating denitrifying bioreactors for edge-of-field nitrogen management in Iowa's tile-drained landscapes	Leopold Center for Sust. Ag.	A. Bhandari and M.J. Helmers	04/01/09 - 03/31/11	Co-PI	\$55,000
Partnership of Iowans for conservation tillage systems	IDALS	J. Dewitt, M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and P. Lasley	01/01/09 - 12/31/09	Co-PI	\$474,973
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/09 - 12/31/09	PI	\$314,601
Impacts of mixed annual-perennial configurations on water quality in the Midwestern corn belt region of central Iowa	USDA-Forest Service	M.J. Helmers and H. Asbjornsen	11/28/08 - 12/31/11	PI	\$31,943

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Developing local leadership and extension capacity for performance-driven agricultural environmental management	CSREES	L.W. Morton, G. A. Miller, J. R. DeWitt, and M.J. Helmers	10/01/08 - 09/30/11	PI	\$230,000
Agronomic, environmental, and economic performance of alternative biomass cropping systems	Leopold Center for Sust. Ag.	L. Schulte, K. Moore, R. Hall, A. Hallem, and M.J. Helmers	08/01/08 - 07/31/11	Co-PI	\$91,153
Demonstration of the impacts of mixed annual-perennial agroecosystems on water quality	IDALS	M.J. Helmers and H. Asbjornsen	07/01/08 - 09/30/11	PI	\$156,271
Improving water quality by managing subsurface drainage	ISU College of Ag. On-Farm Res.	M.J. Helmers and K. Kohl	04/01/08 - 06/30/09	Co-PI	\$4,920
Biomass harvest and nutrient management systems impacts on water quality	Iowa Water Center	A. Mallarino and M.J. Helmers	03/01/08 - 02/28/09	Co-PI	\$30,000
Lignocellulosic feedstock production systems: Environmental impacts of contrasting cropping systems	Conoco-Phillips	R. Horton, M.L. Thompson, R.J. Cruse, and M.J. Helmers	01/01/08 - 12/31/09	Co-PI	\$235,636
Impacts of crop, biomass harvest systems and nutrient management on yield and subsurface drainage water quality	IDALS	M.J. Helmers , A. Mallarino, and J. Sawyer	01/01/08 - 12/31/12	PI	\$97,400
Nitrogen fertilization of corn grown with cover crops	IDALS	J. Sawyer, A. Mallarino, and M.J. Helmers	01/01/08 - 06/30/09	Co-PI	\$111,257

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Partnership of Iowans for conservation tillage systems	IDALS	J. Dewitt, M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and P. Lasley	01/01/08 - 12/31/08	Co-PI	\$445,301
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/08 - 12/31/08	PI	\$305,701
Multi-state vegetative treatment system technology implementation	USDA-NRCS-CIG	R. Burns, L. Moody, J. Lawrence, and M.J. Helmers	01/01/08 - 12/31/09	Co-PI	\$899,616
Impact of liquid swine manure on water quality	National Pork Board	R. Kanswar, M.J. Helmers , and A. Mallarino	12/01/07 - 12/31/09	Co-PI	\$40,000
Stewardship in the bioeconomy: An Iowa market-based model	USDA-NRCS-CIG	J. Dewitt, M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and P. Lasley	09/01/07 - 08/31/10	Co-PI	\$500,000
Beef feedlot runoff control	IDALS	R. Burns, L. Moody, J. Lawrence, and M.J. Helmers	07/01/07 - 06/30/08	Co-PI	\$50,000
Impacts of crop, biomass harvest systems and nutrient management on soil and phosphorus loss with surface runoff project	IDALS	A. Mallarino and M.J. Helmers	07/01/07 - 12/31/10	Co-PI	\$119,456
White paper: Utilization of manure nutrients for soybean crop production	National Pork Board	R. Burns, L. Moody, and M.J. Helmers	05/01/07 - 07/31/07	Co-PI	\$8,060
Soil moisture dynamics and transpiration under contrasting annual-perennial cover types	Leopold Center for Sust. Ag.	M.J. Helmers , H. Asbjornsen, and A. Kaleita	04/01/07 - 06/30/09	PI	\$77,770

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Partnership of Iowans for conservation tillage systems	IDALS	J. Dewitt, M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and P. Lasley	04/01/07 - 12/31/07	Co-PI	\$325,874
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers and W. Crumpton	01/01/07 - 12/31/07	PI	\$302,714
Alternative practices study	IDALS	M.J. Helmers and W. Crumpton	01/01/07 - 12/31/09	Co-PI	\$122,861
A field study to evaluate phytoremediation and best management practices for removal of atrazine from agricultural runoff in the Vandalia Lake Watershed, Pike County, Missouri	US EPA Region 7	J. Coats and M.J. Helmers	10/10/06 - 09/30/08	Co-PI	\$95,023
Drainage water management for Midwestern row crop agriculture	USDA-NRCS-CIG	Tade Sullivan et. al (including M.J. Helmers at ISU)	09/01/06 - 04/01/10	Co-PI	\$718,707
Identification of relationships between soil phosphorus and phosphorus loss through tile drainage to improve the subsurface drainage component of the Iowa Phosphorus Index	ISWRRRI	A. Mallarino, R. Kanwar, and M.J. Helmers	07/01/05 - 06/30/06	Co-PI	\$18,500
Partnership of Iowans for conservation tillage systems	IDALS	M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and S. Padgitt	04/01/06 - 03/31/07	Co-PI	\$311,463

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Identification of relationships between soil phosphorus and phosphorus loss through tile drainage to improve the subsurface drainage component of the Iowa Phosphorus Index	ISWRRI	R. Kanwar, M.J. Helmers , and A. Bakhsh	03/01/06 - 02/28/07	Co-PI	\$27,738
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers , W. Crumpton, J. L. Baker, and S. Melvin	01/01/06 - 12/31/06	PI	\$295,204
Reducing nitrate losses through modified drainage systems and a constructed wetland	USDA-NRCS-Iowa	G. Brenneman and M.J. Helmers	10/01/05 - 09/30/08	Co-PI	\$88,115
Belowground water dynamics under contrasting annual and perennial plant communities in an agriculturally dominated landscape	ISU – Univ. Res. Grant	G. Mora, H. Asbjornsen, and M.J. Helmers	07/01/05 - 06/30/06	Co-PI	\$15,825
Hydrolic modeling of subsurface drainage for predicting drainage outflow	ISWRRI	M.J. Helmers	07/01/05 - 06/30/06	PI	\$16,605
Vegetative filter education and assessment in Iowa	ISWRRI	S. Mickelson, K. Arora, M.J. Helmers	07/01/05 - 06/30/06	Co-PI	\$20,000
BioComplexity of integrated perennial-annual agro-ecosystems	NSF	Heidi Asbjornsen et al. (including M.J. Helmers)	06/01/05 - 05/31/07	Co-PI	\$99,998
Non-basin technologies for open feedlot runoff: Demonstration, implementation, and modeling	Iowa Cattlemen Assoc.	R.T. Burns, J.D. Lawrence, L. B. Moody, and M.J. Helmers	05/01/05 - 11/01/08	Co-PI	\$632,367

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Water and nutrient research: In-field and offsite strategies	IDALS	M.J. Helmers , W. Crumpton, J. L. Baker, and S. Melvin	01/01/05 - 12/31/05	PI	\$287,938
Integrated drainage-wetland systems for reducing nitrate loads from Des Moines, Lobe watersheds	US EPA	W. Crumpton, M.J. Helmers , J. L. Baker, and S. Melvin	01/01/05 - 09/30/11	Co-PI	\$983,607
Economic and water quality effects of multiple conservation practices in three Midwest watersheds	USDA-CSREES	C. Kling, P. Gassman, T. Isenhardt, K. Schilling, W. Simpkins, M. Al-Kaisi, and M.J. Helmers	10/01/04 - 09/30/08	Co-PI	\$660,000
Partnership of Iowans for conservation tillage systems	IDALS	M. Al-Kaisi, M. Hanna, M.J. Helmers , M. Duffy, and S. Padgitt	10/01/04 - 03/31/06	Co-PI	\$216,670
Watershed design impacts on water quality	ISU College of Ag	M.J. Helmers , H. Asbjornsen, M. Liebman, R. Cruse, J. Opsomer, K. Schilling, M. Tomer, and C. Cambardella	10/01/04 - 09/30/07	PI	\$110,999
Integration of water, nutrient and carbon cycling under diverse annual-perennial plant community systems in agricultural landscapes	Leopold Center for Sust. Ag.	Participants: H. Asbjornsen, M.J. Helmers , C. Cambardella, M. Dosskey, P. Drobney, R. Kolka, M.	07/01/04 - 06/30/09	Co-PI	\$125,000

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Hydrologic modeling of subsurface drainage for predicting drainage outflow	ISWRRI	M.J. Helmers	07/01/04 – 06/30/05	PI	\$17,000
Vegetative filter education and assessment in Iowa	ISWRRI	S. Mickelson, K. Arora, and M.J. Helmers	07/01/04 – 06/30/05	Co-PI	\$18,500
Agricultural drainage well studies	IDALS	J. L. Baker, W. Crumpton, M.J. Helmers , and S. Melvin	01/01/04 - 12/31/04	Co-PI	\$272,894
Potential benefits of wetland filters for tile drainage systems: Impact on nitrate loads to the Mississippi River subbasins	USDA	W. Crumpton, J. L. Baker, M.J. Helmers , and S. W. Melvin	12/01/03 - 03/01/05	Co-PI	\$100,000

Projects Pending:

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Biogeochemical consequences of updating an aging agricultural infrastructure	USDA-NIFA	M. Castellano et al. including M.J. Helmers	07/01/19 – 06/30/22	Co-PI	\$498,768
The Nutrinet knowledgebase	USDA-NIFA	S. Brouder et al. including M.J. Helmers	04/01/19 – 03/31/23	Co-PI	\$118,571
Prairie strips for healthy soils and thriving farms	FFAR	Cruse et al. including M.J. Helmers	03/01/19 – 02/28/22	Co-PI	\$1,492,408

Projects Not-Funded

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Drainage Water Recycling Systems: Sustainably Securing and Managing Water in Agricultural Production	USDA-NIFA	M.J. Helmers et al.	01/01/18 – 12/31/22	PI	\$5,200,000
Filling the Pipeline: Transforming Agricultural Drainage Education to Meet 21 st Century Water Management Needs	Purdue	A. Kalieta-Forbes and M.J. Helmers	10/02/17 – 10/01/20	Co-PI	\$91,148
Cover Crop Optimization to Maximize Ecosystem Services	USDA-NIFA	M. Castellano, S. Archontoulis, and M.J. Helmers	01/01/18 – 12/31/20	Co-PI	\$476,665
Demonstrating how Cover Crops and Manure Make Sense for Soil Health, Water Quality, and Profitability	USDA-NRCS	J. Comito, D. Andersen, J. Benning, M. Licht, and M.J. Helmers	05/01/17 – 04/30/20	Co-PI	\$658,517
INFEWS/T3: Perennials and Pigs: A Market-Based Approach for Affordable Food, Clean Energy, and Clean Water	NSF	Schulte Moore et al. including M.J. Helmers	10/01/17 – 09/30/20	Co-PI	\$2,499,400
An Alternative Cover Crop System: Winter Wheat, Soybean Relay Intercropping	IDALS	M. Licht, J. Comito, and M.J. Helmers	07/01/17 – 06/30/20	Co-PI	\$36,227

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Demonstration and evaluation of prairie strips as and innovative conservation practices on farmers' fields	USDA-NRCS	M.J. Helmers , L. Schulte, M. Liebman, M. Harris, M. O'Neal, and J. Tyndall	10/01/16 - 09/30/19	PI	\$401,027
Capturing Excess Early Season Water to Meet Late Season Crop Demand	University of Minnesota	M.J. Helmers	03/01/17 - 02/28/22	PI	335,413
Managing Decision-Scale Heterogeneity at Field and Sub-Field Levels: Improving Crop Nitrogen Use Efficiency While Decreasing Loss	USDA-NIFA	S. Hall, C. Lu, W. Crumpton, and M.J. Helmers	01/01/17 - 12/31/19	Co-PI	\$498,657
Cover Crop Optimization to Maximize Ecosystem Services	USDA-NIFA	M. Castellano, S. Archontoulis, and M.J. Helmers	03/01/17 - 02/29/20	Co-PI	\$500,000
Cover Crop Decision Support Tools for Soybean Growers	United Soybean Board	M. Castellano, S. Archontoulis, and M.J. Helmers	10/01/16 - 09/30/19	Co-PI	\$121,585
Refining Phosphorus Indices and Apex as Conservation Assessment Tools	University of Missouri	A. Mallarino and M.J. Helmers	10/1/16 - 09/30/17	Co-PI	\$252,425

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
INFEWS/T3/From Decision to Delivery Scale: Analyzing Spatial Scale-Emergent Processes at the Corn Belt Food-Energy Water Nexus	NSF	M.J. Helmers , W. Crumpton, C. Lu, S. Hall, and R. Anex	01/1/17 - 12/31/20	PI	\$2,723,618
Pigs, Prairie, and Perennials: Developing a Landscape for Power Production and Environmental Enhancement	USDA-NIFA	M.J. Helmers ,	6/1/16 - 5/31/19	Co-PI	\$499,214
10/10 Approach for Protecting America's Waters	Univ. of Wisconsin	K. Erb, Sands, M.J. Helmers , Hay, Christianson	5/1/16 - 4/30/21	Co-PI	\$5,500
Optimizing Cover Crops to Maximize Environmental and Production Performance	USDA-NIFA	M. Castellano, S. Archontoulis, and M.J. Helmers	1/1/16 - 2/31/18	Co-PI	499,459
Addressing a Grand Challenge Centered on Food and Water	University of Iowa	L. Weber et al. including M.J. Helmers	9/1/15 - 8/31/20	PI	\$958,507
Improving Water Security of Vulnerable Alluvial Aquifers in the Tri-State Region of Iowa, Minnesota, & South Dakota	USDA – NIFA	Schilling, et al, including M.J. Helmers	06/01/15 - 05/31/20	Co-PI	\$4.7M

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
An Integrated Assessment and Extension Toolkit for Sustainable Agricultural Water Use in the Upper Midwest	USDA - NIFA	Bolstad, et al, including M.J. Helmers	03/01/15 - 02/31/20	Co-PI	\$4.9M
Cybersees: Type 2: Cyberinfrastructure framework for integration and modeling of nutrient transport in river networks across temporal and spatial scales	NSF	L. Weber et al. including M.J. Helmers	1/1/0215 - 12/31/2018	Co-PI	\$231,616
Demonstration and evaluation of prairie strips for improving water quality and biodiversity	USDA-NRCS	M.J. Helmers , L. Schulte, M. Liebman, M. Harris, M. O'Neal, and J. Tyndall	01/01/14 - 12/31/16	PI	\$373,514
Water Rocks!	USEPA	J. Comito, A. Staudt, and M.J. Helmers	10/31/13 - 09/30/14	PI	\$215,928
Effects of Liquid Swine Manure on Soil Organic Matter and Crop Yield	Iowa Soybean Association	M. Castellano, D. Andersen, and M.J. Helmers	05/01/13 - 04/30/14	Co-PI	\$76,336
Building healthier soils for drought and flood resilience	Farm Pilot Project Coordination	D. Andersen and M.J. Helmers	05/01/13 - 05/01/15	Co-PI	\$127,852

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Depressional storage in hydric soils and its hydrological impacts on downstream flow	NSF	A. Kaleita, M. Soupir, M.J. Helmers , B. Gelder, and S. Logsdon	01/01/13 - 12/31/15	Co-PI	\$295,477
Environmental implications of land use change resulting from biofuels feedstock production	USDA-AFRI	M. Thompson, R. Anex, R. Cruse, M.J. Helmers , K. Hofmockel, R. Horton, M. Liebman,, and F. Miguez	01/01/13 - 12/31/14	Co-PI	\$499,742
Increasing cover crop adoption through enhanced farmer networks	USDA-NRCS	J. Comito and M.J. Helmers	10/01/12 - 09/30/15	Co-PI	\$480,058
Nitrogen fertilization of corn grown with cover crops	Iowa Department of Agriculture and Land Stewardship	J. Sawyer, A. Mallarino, and M.J. Helmers	07/01/12 - 06/30/13	Co-PI	\$22,476
Advanced systems for sustainable grain and cellulosic biofuel production	USDA-Biomass Research and Development Initiative	D. Laird et. al. including M.J. Helmers	07/01/12 - 06/30/16	Co-PI	\$6,241,605
Pathogen impairments in agricultural watersheds: Predicting: preventing, and educating	USDA-AFRI	M. Soupir, M.J. Helmers , and J. Tyndall	05/01/12 - 04/30/15	Co-PI	\$599,629
Modeling the impacts of depressional storage (potholes) on downstream hydrology under extreme climatic events	Iowa Water Center	A. Kaleita, M. Soupir, M.J. Helmers	03/01/12 - 02/28/13	Co-PI	\$30,040

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Water Rocks!	USDA-AFRI	J. Comito, A. Staudt, M.J. Helmers , R. Anderson, and C. Cervato	01/01/12 - 12/31/15	Co-PI	\$2,499,019
Depressional storage in hydric soils and its hydrological impacts on downstream flow	NSF	A. Kaleita, M. Soupir, M.J. Helmers , B. Gelder, and S. Logsdon	01/01/12 - 12/31/14	Co-PI	\$191,839
Monitoring watershed characteristics in managed ecosystems	NASA	B. Gelder, M.J. Helmers , W. Crumpton, A. Van Der Valk, and J. Tyndall	01/01/12 - 12/31/14	Co-PI	\$560,277
Balancing agricultural productivity and ecological resilience through coupled annual-perennial systems	NSF	M. Liebman, M.J. Helmers , J. Arbuckle, M. Oneal, L. Schulte-Moore, and J. Tyndall	01/01/12 - 12/31/15	Co-PI	\$1,495,433
Integrated drainage-wetland landscape systems: A watershed scale strategy to provide environmental and crop production benefits	USDA-NRCS-CIG Program	M.J. Helmers and W. Crumpton	09/01/11 - 08/31/14	Co-PI	\$626,033
Comparison of biofuels systems -Productivity and environmental impacts	DOE-Sun Grant Initiative	M. Thompson, R. Horton, R. Cruse, M.J. Helmers , K. Hofmockel, R. Horton, M. Liebman, S. Secchi, and F. Miguez	07/01/11 - 06/30/13	Co-PI	\$635,732
Landscape influences on the agronomic, economic, and environmental performance of biomass cropping systems	DOE-Sun Grant Initiative	L. Schulte, R. Hall, J. A. Hallam, M.J. Helmers , and K. Moore	04/01/11 - 03/31/13	Co-PI	\$689,901

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Determining the sustainability of nitrate retention removal performed by perennial vegetation buffers	Iowa Water Center	M. Castellano, D. Mitchell, and M.J. Helmers	03/01/11 - 02/28/12	Co-PI	\$27,804
Modeling the impacts of depressional storage (potholes) on downstream hydrology under extreme climatic events	Iowa Water Center	A. Kaleita, M. Soupir, and M.J. Helmers	03/01/11 - 02/28/12	Co-PI	\$29,961
Targeted wetlands restoration to reduce nutrient loads and enhance ecosystem services in tile drained landscape	USDA-NRCS-CIG Program	M.J. Helmers and W. Crumpton	10/01/10 - 09/30/13	Co-PI	\$989,430
Community-based approaches to improving Iowa's Watersheds' health and productivity	USDA-NRCS-CIG Program	L. Wright Morton, M.J. Helmers , J. Comito	10/01/10 - 09/30/13	Co-PI	\$947,343
Agronomic and environmental performance of alternative biomass cropping systems	North Central Region SARE	L. Schulte Moore, M.J. Helmers , K. Moore, and R. Hall	10/01/10 - 09/30/13	Co-PI	\$174,986
Managing agroecosystems for resilience to extreme climatic events: Droughts, deluges, and water use strategies of native perennial and annual crop species	Leopold Center for Sustainable Agriculture	V. Mateos Remigio, H. Asbjornsen, and M.J. Helmers	03/15/10 - 03/14/13	Co-PI	\$115,314
A comparison of SWAT model performance using LiDAR and DEMs	Iowa Water Center	M. Soupir, A. Bhandari, and M.J. Helmers	01/15/10 - 01/14/11	Co-PI	\$29,820

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Use of switchgrass buffer strips to improve water quality in the Vandalia Lake Watershed, Pike County, Missouri	North Central Region SARE	J. Coats, J. Anderson, and M.J. Helmers	10/01/09 - 09/30/12	Co-PI	\$174,016
Biocomplexity of enhancing ecosystem services from integrated perennial-annual agroecosystems in the Midwestern U.S.	NSF-BioComplexity	H. Asbjornsen, M.J. Helmers , M. Liebman, J. Tyndall, L. Schulte, M. O'Neal, J. Arbuckle, N. Grudens-Schuck, and others	08/01/09 - 07/31/14	Co-PI	\$1,491,997
Transport of antibiotic-resistant bacteria in tile-drainage from agricultural fields with routine swine-waste application	National Pork Board	A. Bhandari, M.J. Helmers , S.K. Ong, and M. Soupир	07/01/09 - 06/30/10	Co-PI	\$40,000
Transport of E. coli and nutrients from swine-manure and sewage-sludge amended agricultural plots	National Pork Board	A. Bhandari, M. Soupир, and M.J. Helmers	05/01/09 - 04/30/10	Co-PI	\$56,223
Use of switchgrass buffer strips to improve water quality in the Vandalia Lake Watershed, Pike County, Missouri	Royal Bank of Canada Blue Water Project	J. Coats, J. Anderson, and M.J. Helmers	10/01/08 - 09/30/10	Co-PI	\$82,973
Identifying and addressing agricultural source contributions of ammonia and fecal coliform into Brushy Creek: A targeted effort to improve water quality	CSREES, National Integrated Water Quality Program	R. Burns, T. Isenhardt, J. Lawrence, L. Moody, M.J. Helmers , S. Shouse, D. Molitor, K. Kohl, and J. Lally	10/01/08 - 09/30/11	Co-PI	\$656,717

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
N-Index tool for conservation planning in tile drained agriculture	CSREES, National Integrated Water Quality Program	R. Kanwar, P. Heilman, R. Malone, M.J. Helmers , P. Kalita, R. Cooke, and E. Kladivko	10/01/08 - 09/30/11	Co-PI	\$658,175
Learning and teaching with experimental watersheds: Evaluation of ecosystem services in mixed annual-perennial agroecosystems	USDA-NRI Competitive Grants Program	M.J. Helmers , H. Asbjornsen, M. O'Neal, M. Liebman, L. Schulte, S. Secchi, C. Kling, N. Grudens-Schuck, and G. Takle	09/01/08 - 08/31/11	PI	\$499,996
Agronomic, environmental, and economic performance of alternative biomass cropping systems	USDA and USDOE Biomass Research & Development Initiative	L. Schulte, K. Moore, R. Hall, A. Hallem, and M.J. Helmers	08/01/08 - 07/31/11	Co-PI	\$527,416
Resilience of complex (native prairie) and simplified (annual crop) systems to altered rainfall amount in the Midwestern U.S. corn belt region	DOE National Institute for Climate Change Research	H. Asbjornsen, M.J. Helmers , R. Kolka, and T. Sauer	01/01/08 - 12/31/10	Co-PI	\$374,526
Demonstration of the impacts of mixed annual-perennial agroecosystems on water quality	Iowa DNR 319 Program	M.J. Helmers , H. Asbjornsen, R. Kolka, and R. Cruse	01/01/08 - 12/31/10	PI	\$400,945
Demonstrating economic and environmental benefits of a cover crop for Iowa's corn soybean production system	Leopold Center for Sustainable Agriculture	R. Kanwar, M.J. Helmers , A. Mallarino, J. Sawyer, A. Hallem	10/15/07 - 12/31/10	Co-PI	\$87,480

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Impacts of crop, biomass harvest systems and nutrient management on yield and subsurface drainage water quality	Leopold Center for Sustainable Agriculture	A. Mallarino and M.J. Helmers	10/15/07 - 12/31/10	Co-PI	\$93,000
Learning and teaching with experimental watersheds: Evaluation of ecosystem services in mixed annual-perennial agroecosystems	USDA-NRI Competitive Grants Program	M.J. Helmers , H. Asbjornsen, M. O'Neal, M. Liebman, L. Schulte, S. Secchi, C. Kling, N. Grudens-Schuck, and G. Takle	10/01/07 - 09/30/10	PI	\$499,895
Utilization of crop growth models for developing assessment tools of agriculture management practices' impacts on soil carbon stocks	USDA-NRI Competitive Grants Program	A. Kaleita, M. Al-Kaisi, and M.J. Helmers	07/01/07 - 06/30/10	Co-PI	\$473,025
Subsurface drainage system design guidelines for Iowa's tile drained landscapes	Iowa Water Center	M.J. Helmers and R. Singh	06/01/07 - 05/31/08	PI	\$23,720
Iowa's corn and soybean production system under swine manure applications and its effects on water quality and sustainability	Leopold Center for Sustainable Agriculture	R. Kanwar, J. Sawyer, A. Mallarino, and M.J. Helmers	04/01/07 - 03/31/10	Co-PI	\$40,740
Nutrient and sediment loss with surface runoff as affected by cropping and phosphorus management systems	Iowa Water Center	A. Mallarino and M.J. Helmers	03/01/07 - 02/28/09	Co-PI	\$60,000

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Implementation, demonstration, and education of nutrient management practices that improve water quality in Iowa	Iowa DNR 319 Program	A. Mallarino and M.J. Helmers	01/01/07 - 12/31/09	Co-PI	\$436,237
Impact of perennial vegetation placement on water quality	Iowa DNR 319 Program	M.J. Helmers , H. Asbjornsen, R. Kolka, and R. Cruse	01/01/07 - 12/31/10	PI	\$231,977
Resource conservation and water quality curriculum development – A pilot project	Iowa REAP Program	K. Arora, S. Mickelson, M.J. Helmers , and D. Brown	10/01/06 - 09/30/07	Co-PI	\$13,766
Utilization of crop growth models for developing assessment tools of agriculture management practices' impacts on soil carbon stocks	USDA-NRI Competitive Grants Program	A. Kaleita, M. Al-Kaisi, and M.J. Helmers	07/01/06 - 06/30/09	Co-PI	\$475,222
Drainage management practices and their role in improving water quality in the Upper Midwest	USDA-NRI Competitive Grants Program	M.J. Helmers and A. Kaleita	10/01/05 - 09/30/08	PI	\$347,907
Evaluation of corn biomass removal for bioeconomical use impacts on soil, water and air resources	ISU Agronomy Endowment	A. Mallarino, M. Al-Kaisi, J. Sawyer, J. Russell, and M.J. Helmers	09/01/05 - 08/31/08	Co-PI	\$407,865
Vegetative filter education and assessment in Iowa	USDA-CSREES, Integrated Research Education and Extension	S. Mickelson, M.J. Helmers , and K. Arora	01/01/05 - 12/31/08	Co-PI	\$464,161

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Education and assessment of vegetative filters in the Rock Creek Lake Watershed	USDA-NRCS, REAP Proposal	K. Arora, S. Mickelson, and M.J. Helmers	07/01/04 - 06/30/05	Co-PI	\$18,306
Subsurface drainage modifications primarily for reducing nitrate leaching	Leopold Center for Sustainable Agriculture	M.J. Helmers , J.L. Baker, G. Brennehan, W. Crumpton, and S. Melvin	04/01/04 - 03/31/07	PI	\$60,000
Fate of veterinary antibiotics applied to soil in a manure slurry: Evaluation of movement to surface and ground waters	Leopold Center for Sustainable Agriculture	J. Coats, A. Kaleita, and M.J. Helmers	03/01/04 - 02/28/06	Co-PI	\$49,000
Movement of a veterinary antibiotic to surface and ground water: Influence of grasses in laboratory and field studies	Iowa State Water Resources Research Institute	J. Coats, A. Kaleita, and M.J. Helmers	03/01/04 - 02/28/06	Co-PI	\$36,892
Integration of water nutrient, and carbon cycling under diverse annual-perennial plant community systems in agricultural landscapes	US Forest Service	H. Asbjornsen, M.J. Helmers , C. Cambardella, M. Dosskey, P. Drobney, R. Kolka, M. Liebman, D. Lytle, B. Palik, T. Richard, K. Schilling, L. Schulte, and B. Wight	01/01/04 - 12/31/06	Co-PI	\$131,200
Movement of veterinary antibiotics through soil columns: Impacts of various soil types management strategies for balancing	ISU - University Research Grant	A. Kaleita and M.J. Helmers	01/01/04 - 12/31/04	Co-PI	\$13,870
Agricultural production with ecosystem sustainability under changing climate	USDA-NRI	G. Takle, W. Batchelor, Z. Pan, M.J. Helmers , R. Kanwar, and J. Baker	01/01/04 - 12/31/07	Co-PI	\$658,462

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Web-based software to demonstrate yield and environmental consequences of different nitrogen management strategies	IDALS, IFLM Program	B. Batchelor, J. Paz, J. Lizaso, and M.J. Helmers	01/01/04 – 12/31/05	Co-PI	\$65,570

Extension Activities**Extension Meetings and Events Organized (49 total events, approximate number of individuals impacted – 3427):**

1. 18th Annual IA-MN Drainage Research Forum
November 13, 2018 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from the Iowa Soybean Association the forum in Owatonna, MN. There were 65 attendees consisting of producers, contractors, and agency
2. Iowa Drainage School
August 21-23, 2018 – Coordinated with Kapil Arora and Greg Brenneman. There were 35 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
3. 17th Annual IA-MN Drainage Research Forum
November 15, 2017 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from the Iowa Soybean Association the forum in Ames, IA. There were 85 attendees consisting of producers, contractors, and agency
4. Drainage Water Quality Field Tour
September 5, 2017 – Organized a field tour at the Gilmore City Drainage Research and Demonstration project site and wetlands in Pocahontas and Palo Alto County for NRCS and FSA staff. There were 15 attendees.
5. Drainage Water Quality Field Day
August 30, 2017 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 45 attendees consisting of producers and agency representatives.
6. Iowa Drainage School
August 22-24, 2017 – Coordinated with Kapil Arora and Greg Brenneman. There were 35 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
7. Drainage Engineers Meeting
January 27, 2017 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 75 attendees consisting of drainage engineers
8. Iowa Drainage School
August 23-25, 2016 – Coordinated with Kapil Arora and Greg Brenneman. There were 45 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
9. 16th Annual IA-MN-SD Drainage Research Forum
November 24, 2015 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Owatonna, MN. There were 85 attendees consisting of producers, contractors, and agency
10. Drainage Water Quality Field Day

- August 27, 2015 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 95 attendees consisting of producers and agency representatives.
11. Iowa Drainage School
August 25-27, 2015 – Coordinated with Kapil Arora and Greg Brenneman. There were 45 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
 12. Drainage Water Management Webinars
July through December 2015 – Organized a series of six webinars that featured a research and implementer presentation. There were a total of ~544 live attendees.
 13. Drainage Water Quality Field Day
August 27, 2015 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were ~85 attendees consisting of producers and agency representatives.
 14. Drainage Engineers Meeting
February 12, 2015 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 75 attendees consisting of drainage engineers
 15. 15th Annual IA-MN-SD Drainage Research Forum
November 18, 2014 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from South Dakota State University the forum in Ames, IA. There were 115 attendees consisting of producers, contractors, and agency
 16. Iowa Drainage School
August 19-21, 2014 – Coordinated with Kapil Arora and Greg Brenneman. There were 45 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
 17. 14th Annual IA-MN-SD Drainage Research Forum
November 24, 2013 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from South Dakota State University the forum in Waseca, MN. There were 75 attendees consisting of producers, contractors, and agency
 18. Drainage Water Quality Field Day
September 10, 2013 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 25 attendees consisting of producers and agency representatives.
 19. Iowa Drainage School
August 20-22, 2013 – Coordinated with Kapil Arora and Greg Brenneman. There were 45 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
 20. Iowa Water Conference
March 4, 2013 – Coordinated a session at the Iowa Water Conference titled “STRIPs project at Neal Smith.” There were 55 attendees.
 21. Drainage Engineers Meeting

- January 31, 2013 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 65 attendees consisting of drainage engineers
22. 13th Annual IA-MN Drainage Research Forum
November 20, 2012 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from South Dakota State University the forum in Waseca, MN. There were 85 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 23. Iowa Drainage School
August 21-23, 2012 – Coordinated with Kapil Arora and Greg Brenneman. There were 45 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
 24. Drainage Engineers Meeting
January 26, 2012 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 55 attendees consisting of drainage engineers
 25. 12th Annual IA-MN Drainage Research Forum
November 22, 2011 – Coordinated with Dr. Gary Sands from the University of Minnesota and Chris Hay from South Dakota State University the forum in Spirit Lake, IA. There were 95 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 26. Drainage Water Quality Field Day
September 1, 2011 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 35 attendees consisting of producers and agency representatives.
 27. Iowa Drainage School
August 23-25, 2011 – Coordinated with Kapil Arora and Greg Brenneman. There were 40 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa, South Dakota, North Dakota, Wisconsin, and Minnesota.
 28. Drainage Engineers Meeting
January 28, 2011 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 50 attendees consisting of drainage engineers
 29. 11th Annual IA-MN Drainage Research Forum
November 23, 2010 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Owatonna, MN. There were 85 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 30. Iowa Drainage School
July 27-30, 2010 – Coordinated with Kapil Arora and Greg Brenneman. There were 35 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa and Minnesota.
 31. Drainage Engineers Meeting

- January 14, 2010 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 25 attendees consisting of drainage engineers.
32. 10th Annual IA-MN Drainage Research Forum
November 10, 2009 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Ames, IA. There were 80 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 33. Drainage Water Management Field Day
August 28, 2009 – Coordinated Drainage Water Management Field Day with the Agricultural Drainage Management Coalition at the Southeast Iowa Research and Demonstration Farm near Crawfordsville, IA. There were 25 attendees consisting of producers and contractors from Iowa, Minnesota, and Illinois.
 34. Iowa Drainage School
August 25-27, 2009 – Coordinated with Kapil Arora and Greg Brenneman. There were 25 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa and Minnesota.
 35. Drainage Water Management Training Workshop
July 14-15, 2009 – Coordinated with Craig Schrader and Drs. Jeff Strock and Gary Sands from the University of Minnesota and the Agricultural Drainage Management Coalition a drainage water management workshop in Des Moines, IA. There were 30 specially invited contractors at this meeting.
 36. Drainage Engineers Meeting
December 4, 2008 – Coordinated with Iowa Department of Agriculture and Land Stewardship and the Iowa Drainage District Association in Fort Dodge, IA. There were 15 attendees consisting of drainage engineers.
 37. 9th Annual IA-MN Drainage Research Forum
December 2, 2008 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Owatonna, MN. There were 95 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 38. Drainage Water Quality Field Day
August 18, 2008 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 80 attendees consisting of producers and agency representatives.
 39. Iowa Drainage School
September 9-11, 2008 – Coordinated with Kapil Arora and Greg Brenneman. There were 25 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa and Minnesota.
 40. Drainage Water Management Workshop
August 13-14, 2008 – Coordinated with Craig Schrader and Drs. Jeff Strock and Gary Sands from the University of Minnesota a drainage water management workshop in Lamberton, MN. There were 16 specially invited contractors at this meeting.
 41. Drainage Design Workshop
February 29 and March 7 and 18, 2008 – Coordinated with the Agricultural Engineering Field Specialists a series of one-day drainage design workshops. There were 102 attendees consisting of producers, contractors, and agency personnel.
 42. 8th Annual IA-MN Drainage Research Forum

- November 29, 2007 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Ames, IA. There were 75 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
43. Drainage Tour
October 23, 2007 – Coordinated a tour of drainage research sites for Secretary of Agriculture Bill Northey and Iowa DNR Director Rich Leopold. There were 8 attendees.
 44. Iowa Drainage School
September 11-13, 2007 – Coordinated with Kapil Arora and Greg. There were 24 attendees consisting of drainage contractors, drainage sales people, and county agency representatives from Iowa and South Dakota.
 45. Drainage Design Workshop
March 13, 2007 – Coordinated with the Agricultural Engineering Field Specialist – Kris Kohl - a one-day drainage design workshop in West Bend, IA (30 attendees).
 46. 7th Annual IA-MN Drainage Research Forum
November 28, 2006 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Owatonna, MN. There were 85 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 47. Drainage Design Workshop
March 13-17, 2006 – Coordinated with the Agricultural Engineering Field Specialists a series of one-day drainage design workshops. There were 213 attendees consisting of producers, contractors, and agency personnel.
 48. 6th Annual IA-MN Drainage Research Forum
November 2, 2005 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Dows, IA. There were 80 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota.
 49. Drainage Water Quality Field Day
June 30, 2005 – Organized a field day at the Gilmore City Drainage Research and Demonstration project site. There were 75 attendees consisting of producers and agency representatives.
 50. 5th Annual IA-MN Drainage Research Forum
September 16, 2004 – Coordinated with Dr. Gary Sands from the University of Minnesota the forum in Owatonna, MN. There were 110 attendees consisting of producers, contractors, and agency representatives from Iowa, Minnesota, and Canada.
 51. Alternative Technologies for Open Feedlots Engineering Design Workshop
December 15, 2003 – Coordinated with Dr. Jeff Lorimor the workshop at the Gateway Center in Ames, IA (35 attendees).

Extension Presentations:**Iowa (522 total presentations, approximate number of individuals impacted – 32,175):**

1. February 21, 2019 – Presentation on “Drainage update” at Drainage Engineers meeting in Fort Dodge, IA (65 attendees)
2. February 20, 2019 – Presentation on “Iowa Nutrient Reduction Strategy: Local and Regional Water Quality Benefits” at Iowa Rural Water Conference in Des Moines, IA (65 attendees)

3. February 7, 2019 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and Opportunities” at Crooked Creek Watershed meeting in Fairfield, IA (25 attendees)
4. January 29, 2019 – Presentation on “Drainage research update” at Crop Advantage Series Meeting in Iowa City, IA (55 attendees)
5. January 8, 2019 – Presentation on “Drainage research update” at Crop Advantage Series Meeting in Storm Lake, IA (20 attendees)
6. December 11, 2018 – Presentation on “Bioreactor design” at Drainage Design Workshop near Fort Dodge, IA (15 attendees)
7. December 5, 2018 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and Opportunities” at Farm News Ag Show in Fort Dodge, IA (25 attendees)
8. November 28, 2018 – Presentation on “Impacts of 4R nitrogen management on nitrate-N loss in subsurface drainage” at Integrated Crop Management Conference in Ames, IA (310 attendees)
9. November 14, 2018 – Presentation on “Conservation Learning Labs” as part of Iowa Learning Farms Webinar Series (25 live attendees)
10. November 1, 2018 – Presentation on “Water quality evaluation of prairie strips in Iowa” at State Soil Conservation Committee meeting in Des Moines, IA (15 attendees)
11. October 18, 2018 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and Opportunities” to Farm Operations Club at Iowa State University (35 attendees)
12. September 5, 2018 – Presentation on “Edge of field practices for nitrate reduction” at Iowa Learning Farms Field Day near Sioux Center, IA (150 attendees)
13. August 23, 2018 – Presentation on “Design for controlled drainage” at Iowa Drainage School near Nashua, IA (35 attendees)
14. August 9, 2018 – Presentation on “Edge of field practices for nitrate reduction” at Iowa Learning Farms Field Day near Spirit Lake, IA (55 attendees)
15. June 30, 2018 – Presentation on “Edge of field practices for nitrate reduction” at Iowa LICA Summer meeting in Melbourne, IA (25 attendees)
16. July 18, 2018 – Presentation on “Edge of field practices for nitrate reduction” at Borlaug Ag. Institute Field Day near Cresco, IA (25 attendees)
17. June 20, 2018 – Presentation on “Water quality, soil health, and nutrient transport: An Iowa perspective” at the Water Rocks Teacher Summit in Ames (45 attendees)
18. June 8, 2018 – Presentation on “Edge of field practices for nitrate reduction” at ISU Extension and Outreach Landowner meeting in Altoona, IA (75 attendees)
19. March 29, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” as Iowa Farm Bureau Federation webinar (18 live attendees)
20. March 9, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at Farmers Coop Elevator in Sioux Center, IA (15 attendees)
21. March 3, 2018 – Presentation on “Role of Land Improvement Contracts in the Iowa Nutrient Reduction Strategy” at Hands-on Excavating Field Day near Radcliffe, IA (65 attendees)
22. February 19, 2018 – Presentation on “Iowa Nutrient Reduction Strategy and a Resilient Iowa” at Iowa Poultry Association annual meeting (55 attendees)
23. February 13, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at AAI Showcase in Des Moines, IA (45 attendees)
24. February 10, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at Beginning Farmer Network Conference in Ames, IA (65 attendees)

25. February 8, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at Growmark meeting in Des Moines, IA (75 attendees)
26. February 7, 2018 – Presentation on “Drainage water recycling” at the Iowa Soybean Association Research Conference in Des Moines, IA (35 attendees)
27. January 26, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at Crop Advantage Series meeting in Davenport, IA (45 attendees)
28. January 25, 2018 – Presentation on “Manure and cover crops” at Crop Advantage Series meeting in Denison, IA (45 attendees)
29. January 24, 2018 – Presentation on “Manure and cover crops” at Pork Congress in Des Moines, IA (45 attendees)
30. January 10, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality” at Crop Advantage Series meeting in Ames, IA (45 attendees)
31. January 9, 2018 – Presentation on “Impacts of integrated in-field management on drainage water quality” at Crop Advantage Series meeting in Storm Lake, IA (50 attendees)
32. January 5, 2018 – Presentation on “Impacts of 4R nitrogen management on drainage water quality: at Crop Advantage Series meeting in Burlington, IA (45 attendees)
33. January 4, 2018 – Presentation on “Impacts of integrated in-field management on drainage water quality” at Crop Advantage Series meeting in Okoboji, IA (35 attendees)
34. January 2, 2018 – Presentation on “Prairie strips in tiled fields” at North Central Crop Clinic in Iowa Falls, IA (35 attendees)
35. December 15, 2017 – Presentation on “Bioreactor design” at Drainage Design Workshop near Fort Dodge, IA (35 attendees)
36. December 11, 2017 – Presentation on “Water quality, soil health, and nutrient transport: An Iowa perspective” at the Water Rocks Summit in Ames (15 attendees)
37. December 6, 2017 – Presentation on “Challenges and opportunities of the Iowa Nutrient Reduction Strategy” at the Farm News meeting in Fort Dodge, IA (45 attendees)
38. December 1, 2017 – Presentation on “Past and future research on drainage in Iowa” at the Iowa Drainage District Association Annual meeting in Fort Dodge, IA (85 attendees)
39. November 30, 2017 – Presentation on “Practices to consider for the Iowa Nutrient Reduction Strategy” at Iowa Learning Farms Field Day in Roland, IA (25 attendees)
40. November 29, 2017 – Presentation on “Impacts of 4R Nitrogen Management on drainage water quality” at Integrated Crop Management Conference in Ames, IA (225 attendees)
41. November 16, 2017 – Presentation on “Practices to consider for the Iowa Nutrient Reduction Strategy” at Iowa Learning Farms Field Day in Floyd, IA (40 attendees)
42. November 2, 2017 – Presentation on “Financial aspects of prairie strips” at Prairie Strips Consultant Training near Ankeny, IA (20 attendees)
43. November 2, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation needed” at Iowa Association of Extension Agriculture Annual meeting in Altoona, IA (25 attendees)
44. November 1, 2017 – Presentation on “Drainage Water Quality studies at Iowa State University” as part of 4R Plus meeting in Des Moines, IA (35 attendees)
45. October 23, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation needed” at ISU Agriculture Think Tank in Ames, IA (12 attendees)

46. September 21, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation needed” at Iowa Ideas Conference in Cedar Rapids, IA (25 attendees)
47. September 20, 2017 – Presentation “Edge-of-field practices: What is needed and what will it take” as part of Iowa Learning Farms Webinar Series (25 on-line live attendees)
48. September 11, 2017 – Presentation on “Financial aspects of prairie strips” at Prairie Strips Consultant Training in Dubuque, IA (20 attendees)
49. August 3, 2017 – Presentation on “Research results of prairie strips” at Prairie Strips Consultant Training near Calmar, IA (25 attendees)
50. August 1, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation needed” at local meeting organized by state senator near Dewitt, IA (45 attendees)
51. July 26, 2017 – Presentation on “Water quality practices” as part of Agronomy Distance Education Program near Ames, IA (25 attendees)
52. July 12, 2017 – Presentation on “Research results of prairie strips” at Prairie Strips Consultant Training near Armstrong, IA (20 attendees)
53. June 29, 2017 – Presentation on “Cover crops and nitrogen loss” at Beginning Farmer meeting near Washington, IA (15 attendees)
54. June 29, 2017 – Presentation on “Drainage Water Quality studies at Iowa State University” as part of N week in Crawfordsville, IA (35 attendees)
55. June 27, 2017 – Presentation on “Drainage Water Quality studies at Iowa State University” as part of N week in Ames, IA (35 attendees)
56. June 22, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation needed” at Southeast Research Farm CCA meeting in Crawfordsville, IA (35 attendees)
57. June 21, 2017 – Presentation on “Water quality, soil health, and nutrient transport: An Iowa perspective” at the Water Rocks Teacher Summit in Ames (25 attendees)
58. June 15, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and opportunities” at Iowa Farm Business Association Annual Meeting in Des Moines, IA (155 attendees)
59. June 9, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and opportunities” at Rotary Club Meeting in West Des Moines, IA (225 attendees)
60. June 6, 2017 – Presentation on “Water quality in Iowa” at Agronomy in the Field near Ames (12 attendees)
61. April 21, 2017 – Presentation on “Prairie Strips and the Iowa Nutrient Reduction Strategy” at the Iowa Academy of Sciences in Cedar Falls, IA (25 attendees)
62. April 6, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Challenges and opportunities” at ASCE Annual Meeting in Cedar Rapids, IA (45 attendees)
63. March 23, 2017 – Presentation on “Water quality summary of prairie strips research” at Prairie Strips training event in conjunction with the Iowa Water Conference in Ames, IA (25 attendees)
64. March 5, 2017 – Workshop on Iowa Nutrient Reduction Strategy with Iowa Learning Farms for GrowMark (45 attendees)
65. March 3, 2017 – Presentation on “Long-term benefits of tiling” at Drainage Workshop near Eddyville, IA (45 attendees)
66. February 22, 23, and 28, 2017 – Workshops on Iowa Nutrient Reduction Strategy with Iowa Learning Farms (65 attendees)

67. February 17, 2017 – Presentation on “Practices to improve soil health and water quality” at Soil Health Conference in Ames, IA (55 attendees)
68. February 15, 2017 – Presentation on “Bioreactors for nitrate reduction” at AAI Showcase in Des Moines, IA (35 attendees)
69. February 9, 2017 – Presentation on “Iowa Nutrient Reduction Strategy” at Watershed Conference in Dubuque, IA (75 attendees)
70. January 19, 2017 – Presentation on “Iowa Cover Crop Working Group research updates and recommendations” presentation at Crop Advantage Series meeting in Waterloo, IA (~75 attendees)
71. January 13, 2017 – Presentation on “Potential for field-scale 4R nutrient management and wetlands to reduce nitrate export” presentation at Crop Advantage Series meeting in Mason City, IA (~25 attendees)
72. January 10, 2017 – Presentation on “Potential for field-scale 4R nutrient management and wetlands to reduce nitrate export” presentation at Crop Advantage Series meeting in Storm Lake, IA (~25 attendees)
73. January 5, 2017 – Presentation on “Potential for field-scale 4R nutrient management and wetlands to reduce nitrate export” presentation at Crop Advantage Series meeting in Okoboji, IA (~35 attendees)
74. January 4, 2017 – Presentation on “Evaluation of prairie strips for water quality improvement” at State Soil Conservation Committee meeting in Des Moines, IA (15 attendees)
75. December 15, 2016 – Presentation on “Bioreactor design” at Drainage Design Workshop near Fort Dodge, IA (35 attendees)
76. December 9, 2016 – Presentation on “Extending field-scale 4R nutrient management and wetland performance to watershed scale outcomes” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (85 attendees)
77. December 1, 2016 – Presentation on “Drainage design for improved profits and water quality” at the Integrated Crop Management Conference in Ames, IA (155 attendees)
78. November 30, 2016 – Presentation on “Extending field-scale 4R nutrient management and wetland performance to watershed scale outcomes” at the Integrated Crop Management Conference in Ames, IA (145 attendees)
79. November 3, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at North Central Soil Fertility Conference Ames, IA (135 attendees)
80. November 1, 2016 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Multi-state Summit in Ames, IA (60 attendees)
81. October 19, 2016 – Presentation on “Myths and misconceptions of drainage” Iowa Learning Farm webinar (40 live attendees)
82. August 26, 2016 – Presentation on “Practices for nitrate-N reduction” at Northeast Research and Demonstration Farm 40th Anniversary Field Day near Nashua, IA (85 attendees)
83. August 15, 2016 – Presentation on “Nutrient reduction of perennial biomass crops” to Biofuels group near Ames, IA (20 attendees)
84. August 8, 2016 – Presentation on “Practices for nitrate-N reduction” at Agribusiness Association of Iowa summer field day near Ames, IA (45 attendees)

85. July 29, 2016 – Rainfall simulator demonstration for Ragbrai near Washington, IA (50 attendees)
86. July 28, 2016 – Presentation on “Scale of implementation for Iowa Nutrient Reduction Strategy” at Iowa Learning Farm Field Day near Fort Dodge, IA (35 attendees)
87. July 26, 2016 – Presentation on “Nitrate-N reduction practices” to Agronomy Distance Masters Program (35 attendees)
88. July 14, 2016 – Presentation on “In-field nitrogen management” at ISG Group Drainage Water Quality Workshop in Clear Lake, IA (25 attendees)
89. July 13, 2016 – Presentation on “Practices for nitrate-N reduction” at Northwest Research and Demonstration Farm Summer Field Day near Sutherland, IA (75 attendees)
90. June 29, 2016 – Presentation on “Practices for nitrate-N reduction” at Northeast Research and Demonstration Farm Legislature Tour near Nashua, IA (35 attendees)
91. June 28, 2016 – Presentation on “Practices for nitrate-N reduction” at Northeast Research and Demonstration Farm summer field day near Nashua, IA (85 attendees)
92. June 24, 2016 – Presentation on “Prairie strips for water quality protection” to Heartland Cooperative Young Leaders in Prairie City, IA (25 attendees)
93. June 14 and 21, 2016 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Teacher Summit in Ames, IA (60 attendees)
94. June 14, 2016 – Presentation on “Nitrate-N reduction practices in the drained landscape” at the Ag Credit School in Ames, IA (55 attendees)
95. June 8, 2016 – Presentation on “Scale of implementation for Iowa Nutrient Reduction Strategy” at Iowa Learning Farm Field Day in Gilmore City, IA (35 attendees)
96. May 17, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at McClure Engineering meetings in Sheldon and Sioux City, IA (25 attendees)
97. April 17, 2016 – Presentation on “Nutrient Reduction in Iowa” at League of Women’s Voters meeting in Sioux City, IA (20 attendees)
98. March 16, 2016 – Presentation on “Long-term benefits of tiling and practices for nitrate-N reduction” at Drainage Workshop in Storm Lake, IA (15 attendees)
99. March 15, 2016 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Pocahontas, IA (10 attendees)
100. March 11, 2016 – Presentation on “Long-term benefits of tiling” at Drainage Workshop near Osage, IA (35 attendees)
101. March 9, 2016 – Presentation on “Nitrate-N reduction practices” at Northeast Research and Demonstration Farm winter meeting near Nashua, IA (85 attendees)
102. February 25, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Minnesota Valley Testing Laboratory meeting in Ames, IA (45 attendees)
103. February 23, 2016 – Presentation on “Iowa Nutrient Reduction Strategy” at ASCE section meeting in Muscatine, IA (35 attendees)
104. February 20, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Agribusiness Club meeting in Ames, IA (85 attendees)
105. February 10, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Pioneer Cooperators meeting in Pocahontas, IA (35 attendees)

106. February 4, 2016 – Presentation on “Iowa Nutrient Reduction Strategy” at farmer leader meeting in Fort Dodge, IA (10 attendees)
107. January 29, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Moline, IL (45 attendees)
108. January 28, 2016 – Presentation on “Practices to reduce nitrate-N reduction” at Iowa Pork Congress in Des Moines, IA (75 attendees)
109. January 22, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Iowa City, IA (85 attendees)
110. January 15, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Mason City, IA (75 attendees)
111. January 14, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Moravia, IA (65 attendees)
112. January 12, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Howard County Ag meeting in Cresco, IA (65 attendees)
113. January 11, 2016 – Presentation on “Contractor opportunities for nitrate-N reduction” at Land Improvement Contractors Association annual meeting in Des Moines, IA (65 attendees)
114. January 8, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Burlington, IA (55 attendees)
115. January 6, 2016 – Presentation on “Reducing nitrate loss: Scale of practice implementation needed” at Crop Advantage Series meeting in Okoboji, IA (65 attendees)
116. December 15, 2015 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (45 attendees)
117. December 11, 2015 – Presentation on “Drainage and the Iowa Nutrient Reduction Strategy Science Assessment” at Worth and Cerro Gordo county regional extension meetings (85 attendees)
118. December 10, 2015 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop near Altoona, IA (75 attendees)
119. December 10, 2015 – Presentation on “Long-term benefits of tiling” at Drainage Workshop near Altoona, IA (75 attendees)
120. December 4, 2015 – Presentation on “25 Years of Drainage Water Quality Data from Gilmore City” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (85 attendees)
121. December 3, 2015 – Presentation on “Effects of nitrogen application timing and source on nitrate-nitrogen leaching and crop yields” at the Integrated Crop Management Conference in Ames, IA (455 attendees)
122. November 19, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Iowa Learning Farms field day near Plainfield, IA (105 attendees)

123. October 27, 2015 – Presentation on “Iowa Nutrient Reduction Strategy” to Association of Department of Agriculture Communicators at the LICA Farm near Melbourne, IA (55 attendees)
124. October 15, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Squaw Creek Watershed Management Authority meeting in Ames, IA (10 attendees)
125. October 2, 2015 – Presentation on prairie strips to Osher Lifelong Learning Institute near Prairie City, IA (35 attendees)
126. September 17, 2015 – Presentation on prairie strips to Ag. Engineering Field Specialists (10 attendees)
127. September 16, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Iowa State University Extension and Outreach Crops Extension Professional Development (35 attendees)
128. September 2, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Iowa Learning Farms field day near Otho, IA (55 attendees)
129. August 17-18, 2015– Presentation on “Impact of tillage on runoff and soil loss” Soil Health Workshop in Johnston, IA (55 attendees)
130. July 23, 2015 – Presentation on “Nutrient Reduction” at Iowa Learning Farms Field Day near Eddyville, IA (57 attendees)
131. July 7, 2015 – Presentation on prairie strips project to IDALS technical committee (15 attendees)
132. June 30, 2015 – Presentation on “Results from 25 Years of drainage water quality research” at the Water Resources Coordinating Council (25 attendees)
133. June 25, 2015 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Teacher Summit in Ames, IA (35 attendees)
134. June 24, 2015 – Presentation on “Drainage and nitrate reduction” at the Northeast Iowa Summer Field Day (95 attendees)
135. June 23, 2015 – Presentation on “Drainage Water Management and nitrate reduction” at the Southeast Iowa Summer Field Day (75 attendees)
136. June 23, 2015 – Presentation on “Iowa Nutrient Reduction Strategy: How do we reach our goals?” at the Southeast Iowa Summer Field Day (45 attendees)
137. June 16, 2015 – Presentation on “Impact of top soil on runoff” to Iowa Environmental Protection Commission (15 attendees)
138. June 10-11, 2015 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Teacher Summit in Ames, IA (35 attendees)
139. June 9, 2015 – Presentation on “Nutrient reduction in the Loess Hills” at Workshop in Southwest Iowa (15 attendees)
140. May 20, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Soil and Land Valuation Conference in Ames, IA (150 attendees)
141. March 25, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Iowa Learning Farms field day near Washington, IA (75 attendees)
142. March 12, 2015 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Estherville, IA (25 attendees)

143. March 11, 2015 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Sac City, IA (25 attendees)
144. March 5, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at Iowa Learning Farms field day in Newton, IA (55 attendees)
145. March 5, 2015 – Presentation on “Prairie Strips for Water Quality Improvement” at Armstrong Farm field day near Lewis, IA (35 attendees)
146. February 12, 2015 – Presentation on “Nitrates and Row Cropping” at the Drainage Engineers meeting in Fort Dodge, IA (75 attendees)
147. February 10, 11, and 16, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at West Central Cooperative meetings (150 attendees)
148. February 6, 2015 – Presentation on “Iowa Nutrient Reduction Strategy” at teacher training near Guthrie Center, IA (75 attendees)
149. February 3, 2015 – Presentation on “Nutrient cycling” to Senate Environmental Committee in Des Moines, IA (15 attendees)
150. January 28, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at the Crop Advantage Series meeting in Iowa City, IA (45 attendees)
151. January 22, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at the Crop Advantage Series meeting in Waterloo, IA (65 attendees)
152. January 15, 2015 – Presentation on “Use of prairie strips for reducing sediment and nutrient loss” at the Crop Advantage Series meeting in Moravia, IA (18 attendees)
153. January 13, 2015 – Presentation on “Iowa Nutrient Reduction Strategy: Opportunities for drainage contractors” at the Land Improvement Contractors Annual meeting in Des Moines, IA (70 attendees)
154. January 9, 2015 – Presentation on “Field to stream nitrate reduction: Nutrient management, cover crops, bioreactors, and wetlands” at the Crop Advantage Series meeting in Burlington, IA (25 attendees)
155. January 7, 2015 – Presentation on “Iowa Nutrient Reduction Strategy: Opportunities for local watershed improvement” at the Crop Advantage Series meeting in Okoboji, IA (25 attendees)
156. December 18, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
157. December 11, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Stanhope, IA (75 attendees)
158. December 11, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Stanhope, IA (75 attendees)
159. December 5, 2014 – Presentation on “Landuse Impacts on Drainage” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (85 attendees)
160. December 4, 2014 – Presentation on “Cover Crops, Bioreactors, and Wetlands for Nitrate Reduction” at the Integrated Crop Management Conference in Ames, IA (405 attendees)

161. November 20, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Cover Crops and Bioreactors” at the Iowa Learning Farms workshop near Washington, IA (45 attendees)
162. November 6, 2014 – Presentation on “Practices to Reduce Nutrient Loss from Agricultural Lands” to Leadership Iowa group (45 attendees)
163. November 5, 2014 – Presentation on “Practices to Reduce Nutrient Loss from Agricultural Lands” to Ames High School Environmental Science class (205 attendees)
164. October 21, 2014 – Training for Ag Leader on Drainage Design (20 attendees)
165. October 1, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
166. September 24, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
167. September 12, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Cover Crops and Prairie Strips” at the Iowa Learning Farms workshop near Williams, IA (55 attendees)
168. September 9, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Iowa Learning Farms field day near Bedford, IA (15 attendees)
169. September 3, 2014 – Presentation on “New Conservation Practices: Prairie Strips and Saturated Buffers” at the Conservation Districts of Iowa annual meeting in Des Moines, IA (55 attendees)
170. September 3, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
171. June 24, 2014 – Field tour of Neal Smith Prairie Strips site with SERA-17 group (45 attendees)
172. June 23, 2014 – Presentation on “Iowa Nutrient Reduction Strategy” at the SERA-17 annual meeting in Des Moines, IA (75 attendees)
173. June 23, 2014 – Field tour of Neal Smith Prairie Strips site with Bioeconomy group (25 attendees)
174. June 26, 2014 – Presentation on “Drainage Water Management” at the Southeast Iowa Summer Field Day (95 attendees)
175. June 26, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Southeast Iowa Summer Field Day (55 attendees)
176. June 19, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Iowa Learning Farms field day in Elkadar, IA (15 attendees)
177. June 11-12, 2014 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Teacher Summit in Ames, IA (35 attendees)
178. April 9, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Cover Crops and Prairie Strips” at the Iowa Learning Farms workshop in Oakland, IA (15 attendees)
179. April 3, 2014 – Presentation on “Drainage Redesign” at the ASCE annual meeting in Ames, IA (55 attendees)
180. April 3, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Drainage Considerations” at the ASCE annual meeting in Ames, IA (55 attendees)
181. March 25, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Cover Crops and Prairie Strips” at the Iowa Learning Farms workshop in Osage, IA (45 attendees)
182. March 20, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Rockwell City, IA (25 attendees)

183. March 20, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Rockwell City, IA (25 attendees)
184. March 19, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Spencer, IA (15 attendees)
185. March 19, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Spencer, IA (15 attendees)
186. March 18, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Bancroft, IA (25 attendees)
187. March 18, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Bancroft, IA (25 attendees)
188. March 13, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Northern Research Farm annual meeting (75 attendees)
189. March 6, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Southeast Research Farm annual meeting (65 attendees)
190. February 13, 2014 – Presentation on “Iowa Nutrient Reduction Strategy” at the Northwest Iowa Farm Alliance meeting in Sioux Center, IA (75 attendees)
191. February 11, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Agribusiness Association of Iowa Showcase in Des Moines, IA (125 attendees)
192. February 7, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Western Iowa No-till meeting (25 attendees)
193. January 24, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Practical Farmers of Iowa annual meeting in Ames, IA (65 attendees)
194. January 23, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Waterloo, IA (55 attendees)
195. January 22, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Pioneer Agronomist meeting in Altoona, IA (65 attendees)
196. January 16, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Moravia, IA (55 attendees)
197. January 15, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Storm Lake, IA (45 attendees)
198. January 14, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Ames, IA (55 attendees)
199. January 14, 2014 – Presentation on “Drainage and Nitrate Reduction” at Iowa Land Improvement Contractors annual meeting in Des Moines, IA (95 attendees)
200. January 10, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Burlington, IA (85 attendees)
201. January 8, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Okoboji, IA (65 attendees)
202. January 8, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Max Yield Growers meeting in Algona, IA (45 attendees)
203. January 7, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Max Yield Growers meeting in Spencer, IA (50 attendees)
204. January 6, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Sheldon, IA (75 attendees)

205. December 13, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at Worth and Cerro Gordo county regional extension meetings (105 attendees)
206. December 11, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at Farmers Coop Society Elite Crop regional meeting in Sioux City, IA (85 attendees)
207. December 10, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at Golden Furrow regional meeting in Fairfield, IA (55 attendees)
208. December 6, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment: One Farm Many Practices” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (85 attendees)
209. December 5, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment: One Farm Many Practices” at the Integrated Crop Management Conference in Ames, IA (375 attendees)
210. December 4, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Farm News Expo in Fort Dodge, IA (85 attendees)
211. December 3, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop in Osage, IA (20 attendees)
212. December 2, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop in Grundy Center, IA (20 attendees)
213. November 12, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Learning Farms Field Day near Plainfield, IA (65 attendees)
214. October 1, 2013 – Presentation on “Water quality benefits of prairie strips” at the DNR/IDALS Watershed Coordinators meeting near Coon Rapids, IA (20 attendees)
215. September 27, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Nature Conservancy and John Deere meeting in Fort Dodge, IA (20 attendees)
216. September 25, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the NRCS Regional Training near Greenfield, IA (40 attendees)
217. September 24, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the NRCS Regional Training near Armstrong, IA (45 attendees)
218. September 12, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Lake Rathbun Watershed Association Annual Meeting (150 attendees)
219. September 5, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment: One Farm Many Practices” at the Conservation Districts of Iowa Annual Meeting in West Des Moines, IA (45 attendees)
220. August 15, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop near Chariton, IA (15 attendees)
221. August 13, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Premier Crop Services Annual Meeting in West Des Moines, IA (125 attendees)
222. July 17, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Learning Farms Field Day near Otho, IA (55 attendees)

223. July 9, 2013 – Presentation on “Water quality benefits of prairie strips” to Land Stewardship Project members from Minnesota at the Neal Smith National Wildlife Refuge (10 attendees)
224. June 25, 2013 – Presentation on “Drainage water quality” at the Northern Research Farm Spring field day in Kanawha, IA (75 attendees)
225. June 11, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Western Iowa No-Till Field Day (85 attendees)
226. April 22, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Northeast Iowa NRCS Nutrient Management training in West Union, IA (45 attendees)
227. April 2, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Cover Crop field day near Ames, IA (45 attendees)
228. April 1, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Cover Crop Iowa Learning Farms field day near Sioux Center, IA (55 attendees)
229. March 20, 2013 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Storm Lake, IA (25 attendees)
230. March 14, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Northern Research Farm Winter meeting in Kanawha, IA (75 attendees)
231. February 12, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Agribusiness Association of Iowa Expo in Des Moines, IA (75 attendees)
232. January 24, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Waterloo, IA (125 attendees)
233. January 22, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Carroll, IA (125 attendees)
234. January 17, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Atlantic, IA (125 attendees)
235. January 16, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Environmental Protection Commission meeting in Des Moines, IA (15 attendees)
236. January 15, 2013 – Presentation on “Drainage design: sizing and spacing” at the Iowa Land Improvement Contractors Annual Conference in Des Moines, IA (95 attendees)
237. January 11, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Practical Farmers of Iowa Annual Conference in Ames, IA (35 attendees)
238. January 10, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Mason City, IA (125 attendees)
239. January 9, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Okoboji, IA (65 attendees)
240. January 8, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series at Honey Creek Resort in Southern Iowa (95 attendees)
241. January 3, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Sheldon, IA (115 attendees)
242. December 12, 2012 – Drainage presentations in Brooklyn, IA (45 attendees)

243. December 11, 2012 – Presentation on “Water quality benefits of prairie buffers” to Jasper County Soil and Water Conservation District in Newton, IA (8 attendees)
244. December 7, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (75 attendees)
245. December 6, 2012 – Presentation on “Gilmore City drainage water quality studies” to the Iowa State Soil Conservation Committee in Des Moines, IA (15 attendees)
246. December 6, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Ag Chem Update in Ames, IA (125 attendees)
247. December 5, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Ag Chem Update in Iowa City, IA (120 attendees)
248. December 4, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” at the Iowa Farm Bureau Annual Meeting in Des Moines, IA (120 attendees)
249. November 29, 2012 – Presentation on “Impacts of tillage on profitability and soil loss” at the Integrated Crop Management Conference in Ames, IA (250 attendees)
250. November 28, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Integrated Crop Management Conference in Ames, IA (300 attendees)
251. November 27, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” to Extension Agricultural Engineering and Agronomy Field Specialists at Nevada, IA (20 attendees)
252. November 6, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” for Manure Applicator Certification Training (video recording)
253. October 30, 2012 – Presentation on “Surface runoff impacts of cover crops” at Iowa Learning Farms near Emerson, IA (30 attendees)
254. October 16, 2012 – Presentation “Manure application to soybeans: Water quality impacts” to the Environmental Protection Commission (35 attendees)
255. October 8, 2012 – Presentation on “Water quality benefits of prairie buffers” at Iowa Learning Farm field day near Jefferson, IA (30 attendees)
256. October 2, 2012 – Presentation on “Phosphorus transport from agricultural fields” at Northeast Iowa Watershed coordinators meeting (30 attendees)
257. September 4, 2012 – Presentation on “Water quality impacts of drainage water management” at Subirrigation Field Day near Paullina, IA (25 attendees)
258. July 25, 2012 – Presentation on “Water quality impacts of prairie vegetation” to Masters of Agronomy Distance students (35 attendees)
259. July 10, 2012 – Presentation on “Benefits of Iowa CREP wetlands” near Colo, IA (12 attendees)
260. June 27, 2012 – Presentation on “Impacts of conservation practices on water quality” at Iowa Learning Farm field day near Sumner, IA (45 attendees)
261. June 26, 2012 – Presentation on “Impacts of drainage design on water quality and crop production” at Northern Iowa Research Farm Field Day near Kanawha, IA (120 attendees)
262. June 22, 2012 – Presentation on “Strategic placement of native prairie systems” to NSF-REU students at the Neal Smith National Wildlife Refuge (12 attendees)
263. June 21, 2012 – Presentation on “Benefits of strategic placement of perennial systems” at the Southeast Research Farm Certified Crop Advisor Training near Crawfordsville, IA (45 attendees)

264. June 20, 2012 – Presentation on “Nutrient reduction strategy science assessment” to the Water Resources Coordinating Council in Des Moines, IA (30 attendees)
265. June 8, 2012 – Presentation on “Subsurface drainage bioreactors” at Hewitt Creek field day near New Virginia, IA (25 attendees)
266. May 22, 2012 – Presentation on “Impacts of conservation practices on water quality” at Iowa Learning Farms event at Cedar Rapids Jefferson High School (120 attendees)
267. May 16, 2012 – Presentation on “Strategic placement of prairie strips for water quality benefits” for the Iowa Learning Farms Conservation Webinar series (27 live views, 63 archived views)
268. March 15, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in LeMars, IA (25 attendees)
269. March 15, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in LeMars, IA (25 attendees)
270. March 14, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in Algona, IA (35 attendees)
271. March 14, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Algona, IA (35 attendees)
272. March 13, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in Mason City, IA (15 attendees)
273. March 13, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Mason City, IA (15 attendees)
274. March 7, 2012 – Presentation on “Iowa Nutrient Reduction Science Assessment: Practice Performance, Scenarios, and Economics” at the Iowa Water Conference in Ames, IA (75 attendees)
275. January 30, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in New Hampton, IA (65 attendees)
276. January 30, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in New Hampton, IA (65 attendees)
277. January 18, 2012 – Presentation on “Water Quality Benefits of Perennial Filter Strips in Row-Cropped Watersheds” at Crop Advantage Series meeting in Atlantic, IA (105 attendees)
278. January 9, 2012 – Presentation on “Subsurface drainage design” at the Iowa Land Improvement Contractors Annual Meeting in Des Moines, IA (125 attendees)
279. December 20, 2011 – Presentation on “Water Quality Benefits of Perennial Filter Strips in Row-Cropped Watersheds” at New Approaches to Soil and Water Management Workshop in Carroll, IA (12 attendees)
280. December 15, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Iowa Falls, IA (55 attendees)
281. December 15, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Iowa Falls, IA (55 attendees)
282. December 2, 2011 – Presentation on “Biomass Production Impacts on Water Flow and Nitrate Loss” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees)
283. December 1, 2011 – Presentation on “Environmental benefits of perennial filter strips in row-cropped watersheds” at the Integrated Crop Management Conference in Ames, IA (300 attendees)

284. November 30, 2011 – Presentation on “Nitrate loss in subsurface drainage as affected by nitrogen application rate and timing under a corn-soybean rotation system” at the Integrated Crop Management Conference in Ames, IA (250 attendees)
285. September 16, 2011 – Presentation on “Use of conservation systems for water quality benefits” at the 3rd Grade Outdoor Classroom and Conservation Night in Sibley, IA (200 attendees)
286. September 16, 2011 – Presentation on “Use of conservation systems for water quality benefits” at the Norman Borlaug Harvest Fest near Cresco, IA (200 attendees)
287. September 6, 2011 – Presentation on “Water quality impacts of targeted perennial placement” at Field Day near Prairie City, IA (20 attendees)
288. July 27, 2011 – Presentation on “Water quality impacts of targeted perennial placement” at Field Day near Greenfield, IA (55 attendees)
289. July 18, 2011 – Presentation on “Subsurface drainage design and targeting of perennials” to regional agronomists in Sioux Center, IA (45 attendees)
290. July 13, 2011 – Presentation on “Water infiltration and nutrient cycling in both ag and urban environments” in Linn County, IA (35 attendees)
291. June 29, 2011 – Presentation on “Tile and field drainage issues” at the Northeast Iowa Research and Demonstration Farm Field Day (135 attendees)
292. June 22, 2011 – Presentation on “Water quality impacts of land use” at the Ag-Based Renewable Energy Workshop near Ames, IA (35 attendees)
293. June 14, 2011 – Presentation on “Targeting of perennials” to the Iowa State Soil Conservation Committee near Prairie City, IA (25 attendees)
294. June 4, 2011 – Presentation on “Impacts of conservation practices” at Celebrate the Lake at Don Williams Park near Boone, IA (115 attendees)
295. June 3, 2011 – Presentation on “Drainage design” to Ukraine visitors near Ames, IA (12 attendees)
296. May 6, 2011 – Presentation on “Impacts of conservation practices” at Palo Alto 5th Grade Conservation day near Ruthven, IA (125 attendees)
297. April 20, 2011 – Presentation on “Nitrogen management and water quality” as part of the Iowa Learning Farms conservation webinar (209 views of the webinar)
298. March 17, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Pomeroy, IA (35 attendees)
299. March 17, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Pomeroy, IA (35 attendees)
300. March 16, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Garner, IA (40 attendees)
301. March 16, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Garner, IA (40 attendees)
302. March 10, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Paullina, IA (15 attendees)
303. March 10, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Paullina, IA (15 attendees)
304. March 2, 2011 – Presentation on “Enhancing environmental stewardship: A whole farm approach” at the Iowa Water Conference in Ames, IA (60 attendees)

305. February 11, 2011 – Presentation on “Farmland drainage issues and system layouts” at the North Central Iowa Crop and Land Stewardship Clinic in Iowa Falls, IA (75 attendees)
306. February 8, 2011 – Presentation on “Impacts of subsurface drainage in crop production” at the Pioneer North America Production Agronomy Conference in Johnston, IA (150 attendees)
307. February 8, 2011 – Presentation on “Subsurface drainage design considering crop production and the environment” at the Agribusiness Association of Iowa Annual Conference in Des Moines, IA (50 attendees)
308. January 25, 2011 – Presentation on “Arguments for and against drainage” at Crop Advantage Series Meeting in Carroll, IA (65 attendees)
309. January 18, 2011 – Presentation on “Drainage research results” at Crop Advantage Series Meeting in Storm Lake, IA (40 attendees)
310. January 12, 2011 – Presentation on “Farm drainage research” at Crop Advantage Series Meeting in Mason City, IA (125 attendees)
311. December 10, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Calmar, IA (30 attendees)
312. December 10, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Calmar, IA (30 attendees)
313. December 8, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Jefferson, IA (55 attendees)
314. December 8, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Jefferson, IA (55 attendees)
315. December 7, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Pella, IA (30 attendees)
316. December 7, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Pella, IA (30 attendees)
317. December 3, 2010 – Presentation on “Trends in Iowa runoff” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees)
318. December 1, 2010 – Presentation on “Strategies for nitrate reduction: The Cedar River case study” at the Integrated Crop Management Conference in Ames, IA (300 attendees)
319. December 1, 2010 – Presentation on “Impacts of crop, biomass harvest systems, and nutrient management on field and subsurface drainage water quality” at the Integrated Crop Management Conference in Ames, IA (200 attendees)
320. October 19, 2010 – Presentation on “Water quality in Iowa” at the Iowa Pork Industry Center In-service (15 attendees)
321. September 28, 2010 – Presentation on “Bioreactor for water quality benefits” at local NRCS meeting in Webster City, IA (35 attendees)
322. September 24, 2010 – Presentation on “Use of conservation systems for water quality benefits” at the Norman Borlaug Harvest Fest near Cresco, IA (200 attendees)
323. September 23, 2010 – Presentation on “Impacts of native prairie buffers on water quality” at the Integrated Roadside Vegetation Management conference in Ames, IA (120 attendees)

324. August 27, 2010 – Presentation “Benefits of vegetative buffers” at a field day near Cosgrove, IA (30 attendees)
325. August 25, 2010 – Presentation on “Impacts of conservation practices for improved water quality” at an Iowa Learning Farms field day at the Western Research Farm near Castana, IA (80 attendees)
326. August 3, 2010 – Presentation on “Water quality impacts of strategic native prairie placement in row-crop systems” at the Neal Smith Wildlife Refuge near Prairie City, IA during the North American Prairie Conference tour (40 attendees)
327. July 7, 2010 – Presentation on “Impacts of land management practices on water quality” at the Walnut Creek watershed meeting near Red Oak, IA (80 people)
328. July 1, 2010 – Presentation on “Impacts of land management practices on water quality” at the Black Hawk Lake watershed meeting near Lake View, IA (20 people)
329. June 30, 2010 – Presentation on “An update on ag land drainage” at the Northwest Research Farm Field Day near Calumet, IA (250 people)
330. June 24, 2010 – Presentation on “Soil drainage research” at the Spring Field Day at the Southeast Research and Demonstration Farm near Crawfordsville, IA (160 attendees)
331. June 24, 2010 – Presentation on “Subsurface drainage design and management” at Certified Crop Advisors meeting at the Southeast Research and Demonstration Farm near Crawfordsville, IA (40 attendees)
332. June 23, 2010 – Presentation on “Impacts of conservation practices on surface water quality” at Hickory Grove watershed meeting near Nevada, IA (25 attendees)
333. March 30, 2010 – Presentation on “Drainage design and water quality impacts of drainage” at Pioneers Growers meeting in Reinbeck, IA (45 attendees)
334. March 25, 2010 – Presentation on “Conservation practices and education” at State County Conservationists meeting in Des Moines, IA (35 attendees)
335. March 24, 2010 – Presentation on “Strategic placement of prairie vegetation for water quality benefits” at Tallgrass Prairie Center in Cedar Falls, IA (35 attendees)
336. March 23, 2010 – Presentation on “Economics of Tiling” at Farm Real Estate and Appraisers conference in Ames, IA (125 attendees)
337. March 17, 2010 – Presentation on “Benefits of Drainage” at Drainage Workshop in Dyersville, IA (15 attendees)
338. March 17, 2010 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Dyersville, IA (15 attendees)
339. March 16, 2010 – Presentation on “Drainage design” at Drainage Workshop in Grundy Center, IA (40 attendees)
340. March 9, 2010 – Presentation “Cedar River case study” at the Iowa Water Conference in Ames, IA (130 attendees)
341. March 9, 2010 – Presentation “Landscape scale nutrient reduction from nonpoint sources” at the Iowa Water Conference in Ames, IA (75 attendees)
342. February 18, 2010 – Presentation on “Tile drainage and water quality in Iowa” at Northeast Iowa Project Coordinators meeting in Independence, IA (40 attendees)
343. February 11, 2010 – Presentation on “Infiltration under various land management systems” at the Practical Farmers of Iowa conference in Ames, IA with Sarah Carlson of PFI (30 attendees)
344. February 4, 2010 – Presentation on “Nitrogen loss through tile lines” at Crop Advantage Series meeting in Fort Dodge, IA (30 attendees)

345. January 19, 2010 – Presentation on “Bioreactors and grassed waterways” to Hewitt Creek watershed meeting (10 attendees)
346. January 14, 2010 – Presentation on “Hydrologic analysis of improved drainage and culvert sizing” at the ISU-IDALS Drainage Engineers meeting in Fort Dodge, IA (25 attendees)
347. January 14, 2010 – Presentation on “Two-stage ditch design” at the ISU-IDALS Drainage Engineers meeting in Fort Dodge, IA (25 attendees)
348. January 12, 2010 – Presentation on “Nitrogen loss through tile lines” at Crop Advantage Series Meeting in Ames, IA (75 attendees)
349. January 11, 2010 – Presentation on “Drainage design and water quality impacts of drainage” at the Iowa Land Improvement Contractors meeting in Des Moines, IA (75 attendees).
350. January 6, 2010 – Presentation on “Infiltration of manure, movement to tiles, and ways to minimize risk of rapid export from tiles” as part of the Commercial Manure Applicators Program
351. December 30, 2009 – Presentation on “Drainage water management” at the North Central Iowa Crop and Land Stewardship Clinic in Iowa Falls, IA (35 attendees).
352. December 4, 2009 – Presentation on “What strategies do we have for reducing nitrate export and how effective are they?” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees). [Invited]
353. December 3, 2009 – Presentation “Impact of application rate and timing on nitrate-nitrogen loss through subsurface drainage systems” at the Integrated Crop Management Conference in Ames, IA (260 attendees).
354. December 3, 2009 – Presentation “Effectiveness of variable-width buffer design for sediment reduction” at the Integrated Crop Management Conference in Ames, IA (250 attendees).
355. December 3, 2009 – Presentation “The language of conservation: The voices of conservation partnership staff” with Jackie Comito to the Iowa Soil and Water Conservation District Commissioners Annual Meeting in Ames, IA (150 attendees).
356. December 2, 2009 – Panel Presentation “Nitrogen management for water quality” at the Iowa Farm Bureau Federation Annual Meeting in Des Moines, IA (150 attendees).
357. November 23, 2009 – Presentation on “Performance of buffer systems” to students at West Branch, Mid-Prairie, and Iowa Mennonite (75 attendees).
358. October 1, 2009 – Presentation on “Drainage water management in Iowa” to the State Soil Technical Committee (15 attendees).
359. September 23, 2009 – Presentation on “Drainage water quality in Iowa: Findings from 20 years of studies at Gilmore City, IA” for the Hypoxia Task Force Tour (Invited by the Iowa Department of Agriculture and Land Stewardship to present – 125 attendees).
360. September 2, 2009 – Presentation on “Impacts of perennial strips on water quality” at Iowa Learning Farm Field Day near Prairie City, IA (30 attendees)
361. August 18, 2009 – Presentation on “Water quality in Iowa” to Willow Creek Watershed group in Greene County, IA (10 attendees)
362. August 17, 2009 – Presentation on “Integrated drainage-wetland landscape systems: A strategy to provide environmental and crop production benefits” to representatives of EPA (Invited by the Iowa Department of Agriculture and Land Stewardship to present – 20 attendees).

363. July 29, 2009 – Presentation on “Water quality impacts of conservation practices” at an Iowa Learning Farm Field Day near Holland, IA (45 attendees).
364. July 28, 2009 – Presentation on “Bioreactors and drainage water management” at NRCS training event at Lake Rathbun, IA (40 attendees)
365. July 23, 2009 – Presentation on “Water quality impacts of conservation practices” at an Iowa Learning Farm Field Day near Elma, IA (25 attendees).
366. July 22, 2009 – Presentation on “Managing manure over tile lines” at the 2009 Upper Midwest Manure Handling Expo near Boone, IA (150 attendees).
367. July 21, 2009 – Presentation on “Integrated drainage-wetland landscape systems: A strategy to provide environmental and crop production benefits” at the Iowa Environmental Protection Commission meeting (Invited by the Iowa Department of Agriculture and Land Stewardship to present – 10 attendees).
368. July 16, 2009 – Presentation on “How does drainage help” at the FEEL Crop Management Clinic near Ames, IA (45 attendees).
369. July 9, 2009 – Presentation on “How does drainage help” at the FEEL Crop Management Clinic near Ames, IA (55 attendees).
370. June 18, 2009 – Presentation on “Drainage water quality” at the Northeast Iowa Research and Demonstration Farm Field Day near Nashua, IA (60 attendees).
371. June 18, 2009 – Presentation on “Performance of cover crops in reducing nitrate loss” at workshop at the Northeast Iowa Research and Demonstration Farm near Nashua, IA (20 attendees).
372. June 17, 2009 – Presentation on “Impacts of conservation practices on water quality” at Iowa Learning Farm Field Day near Decorah, IA (95 attendees).
373. April 27, 2009 – Presentation on “Impacts of drainage on flooding” to Mason City noon Rotary (Invited presentation – 150 attendees).
374. March 17, 2009, and March 20, 2008 – Presentation on “Tile drainage and water quality” at Drainage Design Workshops held in Storm Lake and Humboldt, IA (90 attendees).
375. March 17, 2009, and March 20, 2008 – Presentation on “Benefits of tiling” at Drainage Design Workshops held in Storm Lake and Humboldt, IA (90 attendees).
376. March 10, 2009 – Presentation on “Agricultural runoff: Past, present, and future” at the Iowa Water Conference in Ames, IA (Invited presentation – 150 attendees)
377. February 26, 2009 – Presentation on “Water quality monitoring and performance measures” at the Performance Management Cooperators meeting in Ames, IA (15 attendees)
378. January 29, 2009 – Presentation on “Impact of extreme precipitation events on performance of conservation practices” at the Crop Advantage Series meeting in Atlantic, IA (95 attendees).
379. January 27, 2009 – Presentation on “Impact of extreme precipitation events on performance of conservation practices” at the Crop Advantage Series meeting in Carroll, IA (65 attendees).
380. January 22, 2009 – Presentation on “Water quality research in northern Iowa” at the Crop Advantage Series meeting in Fort Dodge, IA (25 attendees).
381. January 21, 2009 – Presentation on “Impact of extreme precipitation events on performance of conservation practices” at the Crop Advantage Series meeting in Ottumwa, IA (35 attendees).

382. January 13, 2009 – Presentation on “Drainage design and management” at the Iowa Land Improvement Contractors Annual Meeting in Des Moines, IA (35 attendees).
383. December 17, 2008 – Presentation on “Water quality update” at the Ag. Chemical Dealer Update in Ames, IA (85 attendees).
384. December 16, 2008 – Presentation on “Water quality and soil management – Ag. Drainage Well research results” at the Ag. Chemical Dealer Update in Storm Lake, IA (55 attendees).
385. December 10, 2008 – Presentation on “Impacts of extreme precipitation events on performance of conservation practices.” at the Integrated Crop Management Conference in Ames, IA (220 attendees).
386. December 10, 2008 – Presentation on “Effect of cover crops in reducing nitrate-nitrogen leaching in Iowa” at the Integrated Crop Management Conference in Ames, IA (120 attendees).
387. December 5, 2008 – Presentation on “How does Iowa tile drainage affect downstream flooding” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (95 attendees). [Invited]
388. December 4, 2008 – Presentation on “Two-stage ditch design and surface intakes and possible alternatives” at the Drainage Engineers meeting in Fort Dodge, IA (15 attendees)
389. November 20, 2008 – Presentation on “Buffers, not just along streams any more” at Soil and Water Conservation District Commissioners Annual Meeting (45 attendees).
390. October 2, 2008 – Presentation on “Impacts of conservation systems on water quality using the conservation systems rainfall simulator” at Boone County 6th grade educational event (50 attendees).
391. September 24, 2008 – Presentation on “Surface runoff impacts of tillage management practices” at Mitchell County Strip-Till Field Day (90 attendees).
392. September 18, 2008 – Presentation on “Cost effectiveness of conservation practices and cover crops for nitrate reduction” Environment and Natural Resources Extension professional development formerly In-service.
393. September 15, 2008 – Presentation on “Drainage water management and subirrigation” at producers field near Newell, IA (5 attendees).
394. September 10, 2008 – Presentation “Drainage Water Management in Iowa and Contributions to the Agricultural Drainage Management Coalition” at the Drainage Farm Forum sponsored by the Agricultural Drainage Management Coalition. Meeting held near Ames, IA (8 attendees).
395. September 10, 2008 – Presentation “Putting it all together” at the Iowa Drainage School near Ames, IA (23 attendees).
396. September 10, 2008 – Presentation “Using the Iowa Drainage Guide, design tables, and analytical design methods” at the Iowa Drainage School near Ames, IA (23 attendees).
397. September 9, 2008 – Presentation “What needs to go into drainage system layout” at the Iowa Drainage School near Ames, IA (23 attendees).
398. September 9, 2008 – Presentation “Drawing contour maps” at the Iowa Drainage School near Ames, IA (23 attendees).
399. August 25 and 29, 2008 – Presentation on “Impacts of biomass removal on water quality” at Bioeconomy Tours associated with the Farm Progress Show (50 attendees).

400. August 20, 2008 – Presentation on “Controlled drainage and nitrate-removal wetland performance” at NRCS Area 2 Technician Tour near Stanhope, IA (25 attendees). [Invited]
401. August 6, 2008 – Presentation on “Controlled drainage and impacts of conservation practices on runoff” at the Iowa Learning Farm Field Day near Otho, IA (135 attendees).
402. July 29, 2008 – Presentation on “Performance of conservation practices during extreme events” at Iowa Learning Farm Field Day near Plainfield, IA (35 attendees).
403. July 22, 2008 – Presentation on “Impacts of residue management on runoff water” using the portable rainfall simulator at Jazz in July in Des Moines, IA (30 attendees).
404. July 22, 2008 – Presentation “How do in-field tillage decisions affect downstream water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (60 attendees).
405. July 16, 2008 – Presentation “How do in-field tillage decisions affect downstream water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (50 attendees).
406. July 14, 2008 – Presentation “How do in-field tillage decisions affect downstream water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (65 attendees).
407. June 26, 2008 – Presentation on “Does tiling pay” at a early Summer Field Day at the Southeast Research and Demonstration Farm near Crawfordsville, IA (100 attendees).
408. June 26, 2008 – Presentation on “Controlled drainage water management” at a Drainage Field Day at the Southeast Research and Demonstration Farm near Crawfordsville, IA (50 attendees).
409. June 11, 2008 – Presentation on “Impacts of residue management on surface runoff and soil loss” using the portable rainfall simulator at a Iowa Learning Farm Field Day in Southeast Iowa (20 attendees)
410. May 21, 2008 – Presentation on “Sustainability of the bioeconomy: Environmental considerations” at the 81st Annual Soil Management and Land Valuation Conference in Ames, IA (200 attendees).
411. May 14, 2008 – Presentation on “Sustainability of the bioeconomy: Environmental concerns and opportunities” to Rural Economy Roundtable in Perry, IA organized by the Department of Economics at Iowa State university (20 attendees).
412. May 13, 2008 – Presentation on “Impacts of conservation and tillage practices on water quality” using the portable rainfall simulator Nodaway Valley 8th graders (12 students).
413. May 1, 2008 – Presentation on “Impacts of conservation and tillage practices on water quality” using the portable rainfall simulator at the Allamakee Soil and Conservation Day (220 6th graders).
414. March 26, 2008 – Presentation on “Potential implications of the Gulf of Mexico Hypoxia Action Plan” Environment and Natural Resources Extension professional development (8 attendees).
415. March 20, 2008 – Presentation on “Agricultural drainage water quality” at meeting organized by Humboldt USDA-NRCS (25 attendees). [Invited]
416. February 29, 2008, March 7, 2008, and March 18, 2008 – Presentation on “Tile drainage and water quality” at Drainage Design Workshops held in Fairfield, Jefferson, and Rockwell City, IA (102 attendees).

417. February 29, 2008, March 7, 2008, and March 18, 2008 – Presentation on “Benefits of tiling” at Drainage Design Workshops held in Fairfield, Jefferson, and Rockwell City, IA (102 attendees).
418. February 28, 2008 – Presentation on “Drainage implications of continuous corn” to Hamilton County Ag. Series in Webster City, IA (15 attendees).
419. February 27, 2008 – Presentation with Dr. Jacqueline Comito on “Building a culture of conservation: Water matters” at the 2008 Iowa Water Conference (125 attendees).
[Invited]
420. February 27, 2008 – Presentation on “The Iowa Plan for Wetland and Drainage Integrated Landscape Systems” at the 2008 Iowa Water Conference (125 attendees).
[Invited]
421. February 22, 2008 – Presentation on “Drainage research in Iowa” to members of the Iowa Corn Growers in Independence, IA.
422. February 19, 2008 – Presentation on Iowa Learning Farm project to the Iowa Senate Agriculture Committee [Invited with two other members of project team].
423. February 11, 2008 – Presentation on Iowa Learning Farm project to the Iowa House Agriculture Committee [Invited with two other members of project team].
424. January 31, 2008 – Presentation on “Nitrates and subsurface drainage in southern Iowa” at Crop Advantage Series meeting in Ottumwa, IA (55 attendees).
425. January 17, 2008 – Presentation on “Nitrates and subsurface drainage in southern Iowa” at Crop Advantage Series meeting in Osceola, IA (40 attendees).
426. January 8, 2008 – Presentation “Nitrogen management and water quality” to Coldwater-Palmer watershed group in Allison, IA (12 attendees).
427. January 3, 2008 – Presentation “Considerations for field drainage design” at North Central Crop Clinic in Iowa Falls, IA (50 attendees)
428. December 7, 2007 – Presentation “Potential yield impacts of improved drainage” at a meeting of the Iowa Corn Growers Environmental committee in Johnston, IA (15 attendees).
429. December 7, 2007 – Presentation “Potential yield impacts of improved drainage” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (55 attendees).
[Invited]
430. December 19, 2007 – Presentation “Nitrate leaching and subsurface drainage for southern Iowa” at Ag. Chemical Dealer update in Ames, IA (45 attendees).
431. December 4, 2007 – Presentation “Buffers and surface water pollutants” at Ag. Chemical Dealer update in Ames, IA (85 attendees).
432. November 29, 2007 – Presentation “Conservation systems and water quality: Estimating the impact of in-field management practices on surface water quality using the WEPP model” at the Integrated Crop Management Conference in Ames, IA (60 attendees).
433. November 28, 2007 – Presentation “Comparison of nitrate-nitrogen in subsurface drainage from continuous corn and corn-soybean rotation” at the Integrated Crop Management Conference in Ames, IA (120 attendees).
434. September 20, 2007 – Presentation on “Drainage design and water quality” at Extension Natural Resources and the Environment Development and Delivery Team In-service held in Ames, IA. (9 attendees)

435. September 18, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Trees Forever Field Day near Roland, IA (15 attendees).
436. September 13, 2007 – Presentation “Setting up drainage control structures” with Gary Sands at the Iowa Drainage School near Ames, IA (24 attendees).
437. September 12, 2007 – Presentation “Putting it all together” at the Iowa Drainage School near Ames, IA (24 attendees).
438. September 12, 2007 – Presentation “Using the Iowa Drainage Guide, design tables, and analytical design methods” at the Iowa Drainage School near Ames, IA (24 attendees).
439. September 11, 2007 – Presentation “What needs to go into drainage system layout” at the Iowa Drainage School near Ames, IA (24 attendees).
440. September 11, 2007 – Presentation “Drawing contour maps” at the Iowa Drainage School near Ames, IA (24 attendees).
441. September 6, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at NRCS Urban Stewards meeting in Ankeny, IA (15 attendees).
442. August 28, 2007 – Demonstration “Highlighting macropores to tile lines using smoke” at the Manure Management Clinic near Ames, IA (25 attendees).
443. August 27, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at an Iowa Learning Farm Field Day in Clay County, IA (35 attendees).
444. August 21, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at an Iowa Learning Farm Field Day near Adair, IA (35 attendees).
445. August 10, 2007 – Poster presentation “Agricultural drainage research” at the Corn Soybean Initiative Roundtable in Ames, IA.
446. August 8, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at an Iowa Learning Farm Field Day near Washington, IA (45 attendees).
447. August 2, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at an Iowa Learning Farm Field Day near Muscatine, IA (26 attendees).
448. July 27, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Plymouth County Fair.
449. July 19, 2007 – Presentation “In-field management and water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (15 attendees).
450. July 16, 2007 – Presentation “In-field management and water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (25 attendees).
451. July 14, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Des Moines Farmers Market. (~150 people that visited the rainfall simulator)
452. July 13, 2007 – Presentation “In-field management and water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (25 attendees).

453. July 11, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Leopold Center for Sustainable Agriculture 20th Anniversary celebration in Ames, IA.
454. July 10, 2007 – Presentation “In-field management and water quality” at the Crop Diagnostic Clinic at the Field Extension Education Laboratory near Ames, IA (25 attendees).
455. June 29, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at an Iowa Learning Farm Field Day near Fenton, IA (50 attendees).
456. June 27, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Iowa Farm Bureau Conservation and Natural Resource Issues Conference in Des Moines, IA (30 attendees).
457. June 27, 2007 – Presentation “Drainage design for economic and environmental benefits” at Iowa Farm Bureau Conservation and Natural Resource Issues Conference in Des Moines, IA (30 attendees). [Invited]
458. June 27, 2007 – Presentation “Design of buffers for water quality benefits” at Iowa Farm Bureau Conservation and Natural Resource Issues Conference in Des Moines, IA (30 attendees). [Invited]
459. May 10, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at the Iowa Children’s Water Festival in Ankeny, IA (200 attendees – 5th grade students).
460. April 20, 2007 – Presentation “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Earth Day Celebration, Mesquaki Department of Natural Resources, Tama, IA (80 attendees).
461. March 29, 2007 – Presentation on “Impacts of continuous corn on drainage water quality” and discussion co-leader for training module on “Implications of increased continuous corn including environmental considerations” at Extension Natural Resources and the Environment Development and Delivery Team In-service held in Ames, IA.
462. March 29, 2007 – Presentation on “Subsurface drainage water quality” and discussion leader for training module on “Nitrogen management implications on drainage water quality” at Extension Natural Resources and the Environment Development and Delivery Team In-service held in Ames, IA.
463. March 27, 2007 – Presentation with Jim Pease “ Natural resources and environmental stewardship” at ANR Extension Professional Development and Programming Meeting (100 attendees)
464. March 13, 2007 – Presentation “Controlled drainage – water quality benefits and irrigation potential” at Drainage Workshop in West Bend, IA (20 attendees).
465. March 13, 2007 – Presentation “Long-term benefits of tiling” at Drainage Workshop in West Bend, IA (20 attendees).
466. January 24, 2007 – Presentation “Drainage/water quality: Implications of continuous corn” at Crop Advantage Series meeting in Waterloo, IA (55 attendees).
467. January 18, 2007 – Presentation “N-application impacts on N-concentration” at Coldwater-Palmer Watershed meeting in Allison, IA (12 attendees).

468. January 11, 2007 – Presentation “Conservation systems for non-point source pollution: Case studies in Iowa” at Crop Advantage Series meeting in Carroll, IA (45 attendees).
469. January 10, 2007 – Presentation “Drainage/water quality: Implications of continuous corn” at Crop Advantage Series meeting in Mason City, IA (55 attendees).
470. January 8, 2007 – Presentation “Drainage water management and biofilters in Iowa” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (120 attendees). [Invited by LICA]
471. December 18, 2006 – Presentation “Pesticide movement in soils” at Agricultural Chemical Update in Denison, IA (40 attendees).
472. December 6, 2006 – Presentation “Pesticide movement in soils” at Agricultural Chemical Update in Ames, IA (30 attendees).
473. December 8, 2006 – Presentation “Drainage design now and in the future” at Iowa Drainage District Association annual meeting in Fort Dodge, IA (100 attendees).
474. November 30, 2006 – Presentation “Economic and environmental considerations for drainage design” at Integrated Crop Management Conference in Ames, IA (225 attendees).
475. September 27, 2006 – Presentation on Drainage water quality issues” at the Extension Ag. Engineers training session in Ames, IA.
476. September 7, 2006 – Presentation “Conservation systems and water quality” at Field Day in Hardin County (45 attendees).
477. September 6, 2006 – Presentation “Conservation systems and water quality” at Field Day in Plymouth County (100 attendees).
478. August 31, 2006 – Presentation “Conservation systems and water quality” at Farm Progress Show.
479. August 22, 2006 – Presentation “Beef manure and water quality issues” at Manure Management School in Ames, IA (50 attendees).
480. August 3, 2006 – Presentation “Subsurface drainage bioreactors” at Iowa Land Improvement Contractors Field Day (65 attendees).
481. July 12, 2006 – Presentation “Benefits of tiling and drainage water management” at Drainage Field Day at Southeast Iowa Research Farm, CCA Session (50 attendees).
482. June 28, 2006 – Poster Presentation “Water and nutrient management: In-field strategies” Iowa Farm Bureau Ag. And Environment Conference (65 attendees)
483. June 27, 2006 – Presentation “Water quality issues and conservation practices” at Smeltzer Trust Field Day in Webster County (65 attendees).
484. June 19, 2006 – Presentation “Water quality issues in Iowa” to Iowa Pork Industry Center Advisory Group (15 attendees).
485. March 13-17, 2006 – Presentation “Long-term benefits of tiling” at Iowa Drainage Design Workshops (200 attendees).
486. March 13-17, 2006 – Presentation “Controlled drainage: water quality benefits and irrigation potential” at Iowa Drainage Design Workshops (200 attendees).
487. March 7, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Agriculture and the Environment Conference in Ames, IA (150 attendees).
488. March 7, 2006 – Presentation “Subsurface drainage and nitrate-nitrogen leaching from fifteen years in north-central Iowa” at Agriculture and the Environment Conference in Ames, IA (50 attendees).

489. March 2, 2006 – Presentation “Nitrogen timing effects on drainage water quality” to Iowa Farm Bureau Environmental Advisory Committee (12 attendees) [Invited].
490. February 15, 2006 – Presentation “Drainage design” at Soil and Water Management Clinic in Ames, IA (10 attendees).
491. February 15, 2006 – Presentation “Drainage water management” at Soil and Water Management Clinic in Ames, IA (10 attendees).
492. January 24, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Crop Advantage Series meeting in Storm Lake, IA (45 attendees).
493. January 19, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Crop Advantage Series meeting in Spirit Lake, IA (50 attendees).
494. January 18, 2006 – Presentation “Agricultural drainage and water research” at Boone, IA weekly ag meeting (26 attendees).
495. January 13, 2006 – Presentation “Manure and drainage water quality” at North Central Iowa Crop Clinic (25 attendees).
496. January 12, 2006 – Presentation “Drainage water management” to Boone River Watershed Group (15 attendees).
497. January 10, 2006 – Presentation “Basic drainage design” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (80 attendees).
498. January 9, 2006 – Presentation “Drainage water management in Iowa” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (100 attendees).
499. December 15, 2005 – Presentation “Drainage management and cropping practices” at Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees).
500. November 30 and December 1, 2005 – Presentation “Conservation systems: effects of manure on drainage water quality” at Integrated Crop Management conference in Ames, IA (220 attendees).
501. September 23, 2005 – Presentation on “Water quality and buffers” to 20 gifted and talented 4th-6th grade students in Newton, IA.
502. September 15, 2005 – Presentation “Drainage water quality and drainage water management” at “8 to 80 Water Quality Field Day” at the Pekin project site (100 attendees).
503. September 7, 2005 – Presentation “Conservation drainage” to CREP stakeholders on field tour organized by IDALS (35 attendees).
504. August 24, 2005 – Presentation “Manure effects of water quality” at Manure Management Clinic in Ames, IA (40 attendees).
505. July 28, 2005 – Presentation “Subsurface drainage design and drainage water management in Iowa” at Ag Insights: Water Management Solutions, meeting sponsored by Hancor in Oelwein, IA (50 attendees).
506. July 7, 2005 – Presentation “Drainage design for crop production and environmental benefits” at Pro Ag Meeting, Mitchell County Extension, Osage, IA (15 attendees).
507. June 29, 2005 – Presentation “Drainage water management and drainage water quality” to State Soil Conservation Committee at Gilmore City research facility (60 attendees)
508. June 24, 2005 – Presentation “Conservation systems and water quality” at Iowa Learning Farm field day in Clay county, IA (15 attendees).
509. June 22, 2005 – Presentation “Conservation systems and water quality” at Iowa Learning Farm field day in Keokuk county, IA (25 attendees).

510. February 8, 2005 – Presentation “TMDL’s and nutrient criteria” to Southfork Watershed Alliance in Iowa Falls, IA (10 attendees).
511. January 25, 2005 – Presentation “New tiling research in Iowa” at Crop Advantage Series meeting in Atlantic, Iowa (120 attendees).
512. January 12, 2005 – Presentation “Modified drainage for improved water quality” at North Central Crop Clinic in Iowa Falls, IA (45 attendees)
513. January 11, 2005 – Presentation “Tiling research at Iowa State University” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (60 attendees).
514. January 6, 2005 – Presentation “New tiling research in Iowa” at Crop Advantage Series meeting in Cedar Rapids, Iowa (40 attendees).
515. January 4, 2005 – Presentation “New tiling research in Iowa and economic considerations” at Crop Advantage Series meeting in Mt. Pleasant, Iowa (25 attendees).
516. December 3, 2004 – Presentation “Drainage management practices” at the Iowa Drainage District Association meeting in Fort Dodge, Iowa (55 attendees)
517. November 10, 2004 – Presentation on “Drainage management practices and how they might be beneficial relative to animal agriculture”. Invited by Rick Robinson from Iowa Farm Bureau to present at the NRCS State Technical Committee Iowa Animal Agriculture Conservation Framework Subcommittee (12 attendees).
518. October 13, 2004 – Presentation “Drainage research at Pekin” at an open house at Pekin-Packwood school, Pekin, IA (20 students and 5 producers present).
519. September 9, 2004 – Presentation “Tiling and subsurface drainage” at Nashua field day (120 attendees).
520. September 1, 2004 – Presentation “Drainage water management” at the Farm Progress Show at the IDALS booth (Conservation Central Tent). Invited by IDALS (Bill Ehm) to present at this event (10 individuals at the presentation).
521. July 19 and 21, 2004 – Taught at the Field Extension Education Laboratory (FEEL) on tillage and compaction (75 people at the sessions).
522. June 30, 2004 – Presentation “Water quality and water quality research” at the Northwest Iowa Summer Field Day (presented to about 250 participants). Interviewed by KICD radio in Spencer about water quality research. Article in NW Iowa Review paper from Sheldon, IA about water quality issues.
523. June 14 and 15, 2004 – Provided instruction assistance in the AST 493L Water Quality course (12 participants).
524. February 24, 2004 – Presentation “Drainage history in Iowa” at the Northwest Research Farm winter meeting in Calumet, IA (30 people present, mostly producers).
525. February 23, 2004 – Presentation “Drainage water management: opportunities and challenges” and “Drainage design and subirrigation” at the Soil and Water Management short course in Ames, IA (30 attendees).
526. January 16, 2004 – Presentation “History of drainage in Iowa” at the Crop Advantage Series Meeting in Waterloo (75 people at presentations).
527. January 15, 2004 – Presentation “History of drainage in Iowa” at the Crop Advantage Series Meeting in Mason City (75 people at presentations).

Regional (81 total presentations, approximate number of individuals impacted – 4,946):

1. December 12, 2018 – Presentation on “What is the payoff on water quality goals?” at the Wisconsin Discovery Farms Annual Conference (250 attendees) [Invited]
2. October 26, 2018 – Presentation on “Iowa Nitrogen Issues” to NIWR Symposium in Lincoln, NE (Invited) (55 attendees)
3. July 24, 2018 – Presentation on “Drainage water quality research results and why the 4R Plus program is needed” at 4R Field Day near Waseca, MN (55 attendees)
4. July 19, 2018 – Presentation on “Nutrient reduction in Mississippi River Basin: Opportunities and challenges” at the Urban Ag Conference in Ames, IA (45 attendees)
5. June 12, 2018 – Presentation on “Impacts of 4R on productivity and nitrate-nitrogen loss in tile drainage” at the 4R Summit in Des Moines, IA (45 attendees)
6. June 11, 2018 – Presentation on “Guiding science of the Iowa Nutrient Reduction Strategy” at the 4R Summit in Des Moines, IA (225 attendees)
7. May 28, 2018 – Presentation on “Lessons learned from the Iowa nutrient reduction strategy and application to Nebraska’s nitrate challenges” to Nitrogen team with University of Nebraska Extension (on-line webinar, 15 attendees)
8. May 17, 2018 – Presentation on “Nitrate-N reduction in the Upper Mississippi River Basin in the USA: From farm to regional scale” at Nitrogen Attenuation Workshop at Massey University in Palmerston North, NZ (65 attendees) [Invited]
9. April 3 and 5, 2018 – Presentation on “Nutrient reduction in the Mississippi River: From regional to farm scale” at Upper Midwest Dairy Industry Association Spring meetings in St. Cloud and Rochester, MN (75 attendees)
10. February 20, 2018 – Presentation on “State of the Science” Nutrient Management and Impacts on Water Resources” at the Great Lakes to Gulf Watershed Leadership Summit (40 attendees)
11. February 6, 2018 – Presentation on “Drainage water quality research and the role it plays in state level nutrient reduction strategies” at Minnesota Nitrogen Conference in St. Cloud, MN (75 attendees)
12. December 15, 2017 – Presentation on “Next generation strategies for managing edge of field nutrient losses” for LPELC webinar (~20 on-line attendees)
13. December 13, 2017 – Presentation on “Impacts of 4R Nitrogen Management on Drainage Water Quality” at the South Dakota Agronomy Conference (200 attendees) [Invited]
14. June 13, 2017 – Presentation on “Impacts of 4R Nitrogen Management on Drainage Water Quality” at 4R Summit in Minneapolis, MN (125 attendees)
15. February 13, 2017 – Presentation on “Iowa Nutrient Reduction Strategy: Scale of implementation” at the AETC in Louisville, KY (45 attendees) [Invited]
16. November 2, 2016 – Panel presentation on state level nutrient reduction strategies at ANPC summit in Bentonville, AR (35 attendees)
17. March 21, 2016 – Presentation on “Nutrient Reduction Benefits of Cover Crops” at North Central Regional Water Network conference in Lincoln, NE (35 attendees)
18. March 10, 2016 – Presentation on “Nitrate-N Reduction Practices” to NuWay Cooperative in Fairmont, MN (55 attendees)
19. September 28, 2015 – Presentation on “Tile drainage and nitrate loss” to The Fertilizer Institute Advisory Board in Boston, MA (45 attendees)

20. February 25, 2015 – Presentation on “Design of Drainage Water Management Systems” at South Dakota-Minnesota Drainage Design Workshop in St. Cloud, MN (45 attendees)
21. February 17, 2015 – Presentation on “Design of Drainage Water Management Systems” at South Dakota-Minnesota Drainage Design Workshop in Sioux Falls, SD (55 attendees)
22. October 28, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in South Dakota (35 attendees)
23. October 2, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the North Central Water Conference in Minneapolis, MN (35 attendees)
24. August 6, 2014 – Presentation on “Drainage Water Management Systems” as part of Sustainable Corn annual meeting in Ames, IA (75 attendees)
25. August 1, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Iowa (25 attendees)
26. July 30, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Iowa (35 attendees)
27. June 17, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Missouri (25 attendees)
28. May 14, 2014 – Panel Participation on Nutrient Loss from Agricultural Lands at the Food and Agriculture Conference in Minneapolis, MN (125 attendees)
29. April 17, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Illinois (25 attendees)
30. February 18-19, 2014 – Presentation on “Drainage and Tillage” at the Minnesota Conservation Tillage Conference in St. Cloud, MN (105 attendees) [Invited]
31. February 14, 2014 – Presentation on “Bioreactors and Wetlands” at the Missouri Drainage Workshop (45 attendees) [Invited]
32. November 20, 2013 – Presentation on “Water quality benefits of prairie strips” at the Green Lands Blue Waters Annual Meeting in Minneapolis, MN (70 attendees) [Invited]
33. October 24, 2013 – Presentation on “Practices to reduce nutrient loads from drained landscapes” at a Regional Drainage Workshop in Chazy, NY (110 attendees) [Invited]
34. June 26, 2013 – Presentation on “Iowa nutrient loss reduction strategy” at the 4R Nutrient Stewardship Summit in Des Moines, IA (95 attendees) [Invited]
35. April 16, 2013 – Presentation on “Iowa Nutrient Reduction Nitrogen Science Assessment” at the Heartland Regional Water Conference in Overland Park, KS (65 attendees) [Invited]
36. April 10, 2013 – Presentation “Field to drainage district scale hydrologic impacts of drainage” at the North Central Extension and Research 217 Committee meeting and Agricultural Drainage Management Systems Task Force meeting in Sioux Falls, SD (35 attendees)
37. April 5, 2013 – Presentation “Swine manure and aqua-ammonia nitrogen application timing on subsurface drainage water quality” at the Waste to Worth Conference in Denver, CO (35 attendees) [Invited]
38. March 16, 2013 – Presentation on “Integration of native prairie filter strips in row crop agriculture” at the Prairie Enthusiast Conference in Mankato, MN (35 attendees) [Invited]

39. February 20, 2013 – Presentation on “Iowa Nutrient Reduction Nitrogen Science Assessment” Heartland Regional Water Quality Workshop in Nebraska City, NE (35 attendees) [Invited]
40. February 20, 2013 – Presentation on “Cover crops in sub-humid areas” at the Heartland Nutrient Management Workshop in Nebraska City, NE (35 attendees) [Invited]
41. November 14, 2012 – Presentation on “Iowa Nutrient Reduction Nitrogen Science Assessment” at the Building Science Assessments for State-Level Nutrient Reduction Strategies Workshop in Davenport, IA (85 attendees) [Invited]
42. September 12, 2012 – Presentation on “Drainage water quality benefits of native prairie” to the Hypoxia Task Force near Boone, IA (8 attendees)
43. September 11, 2012 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” to the Hypoxia Task Force in Des Moines, IA (55 attendees)
44. June 19, 2012 – Presentation on “Drainage water quality projects in Iowa” at Drainage Water Management Technical Service Provider Training in Emmetsburg, IA (15 attendees)
45. January 13, 2012 – Presentation “Subsurface drainage system design and management for crop production and environmental considerations” at the 20th Annual No-Tillage Conference in St. Louis, MO (90 attendees) [Invited]
46. January 5, 2012 – Presentation “Subsurface drainage opportunities and challenges” at the Ohio Certified Crop Advisors meeting in Columbus, OH (75 attendees) (Invited)
47. August 5, 2011 – Presentation “Benefits of conservation practices” at the Minnesota Strip Tillage Expo in Owatonna, IA (40 attendees)
48. July 15, 2011 – Presentation “Subsurface drainage and conservation practices” at the Farm Pilot Coordination, Inc. 2011 Midwest Regional Technology Summit in Des Moines, IA (35 attendees) [Invited]
49. March 2, 2011 – Presentation “Targeting of perennials” Field Tour as part of the NOAA 9th Climate Prediction Applications Science Workshop in Des Moines, IA (35 attendees)
50. February 17, 2011 – Presentation “Drain spacing considerations and computer based tools for drainage design” at the Missouri Drainage Workshop in Chillicothe, MO (50 attendees) [Invited]
51. February 15, 2011 – Presentation “A new twist on old conservation practices – Waterways, terraces, buffers, control structures, and targeting perennials” at the Nutrient Efficiency and Management Conference in Rochester, MN (65 attendees) [Invited]
52. November 17, 2010 – Presentation “Drainage management and nitrogen loss” at the North Central Extension-Industry Soil Fertility Conference in Des Moines, IA (200 attendees) [Invited]
53. April 6, 2010 – Presentation “Impacts of subsurface drainage” on Plant Management Network (available on-line) [Invited]
54. March 31, 2010 – Presentation “What you should know about drainage” Soil Science Society of America Webinar (57 attendees on-line during presentation) [Invited]
55. February 26, 2010 – Presentation on “Prairie Strips for Habitat Enhancement and Erosion Control” at the Midwest Organic and Sustainable Education Service Conference in LaCrosse, WI (75 attendees) [Invited]

56. December 15, 2009 – Presentation “What every CCA should know about drainage” at the Indiana Certified Crop Advisors Annual Meeting in Indianapolis, IN (290 attendees) [Invited]
57. October 28, 2009 – Presentation “Overview of nitrogen BMP’s: Costs and Benefits” at the Heartland Regional Water Quality Conference in Overland Park, KS (45 attendees) [Invited]
58. April 1, 2009 – Presentation “Integrated drainage-wetland landscape systems: A strategy to provide environmental and crop production benefits” at the Agricultural Drainage Management Systems Task Force meeting in Columbus, OH (50 attendees).
59. March 11, 2009 – Presentation “Wetlands and drainage: Iowa Perspective” at the Minnesota Agricultural Drainage Design Workshop in Willmar, MN (40 attendees).
60. December 2, 2008 – Presentation “Extreme rainfall events and 2008 floods in Iowa” at the 9th Annual IA-MN Drainage Research Forum in Owatonna, MN (95 attendees).
61. August 14, 2008 – Presentation “Theoretical aspects of management” at the 2008 Drainage Water Management Workshop in Lamberton, MN (16 attendees).
62. March 12, 2008 – Presentation “Intro to conservation drainage design: Shallow and managed drainage systems” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN with Gary Sands (60 attendees).
63. October 15, 2007 – Presentation “Drainage rights associated with the Iowa CREP program” at meeting of regional environmental and agricultural agencies organized by the Iowa Department of Agriculture and Land Stewardship (45 attendees)
64. April 4, 2007 – Presentation “Manure application on legumes” at Heartland Animal Manure Management Workshop in Nebraska City, NE (35 attendees from Iowa, Missouri, Nebraska, Kansas, and EPA) [Invited].
65. April 4, 2007 – Presentation “ISU long term poultry and swine manure studies on tile drain impacts” at Heartland Animal Manure Management Workshop in Nebraska City, NE (40 attendees from Iowa, Missouri, Nebraska, Kansas, and EPA) [Invited].
66. March 8, 2007 –Presentation “Wetland design considerations for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (40 attendees).
67. March 7, 2007 –Presentation “Intro to conservation drainage design: Shallow and managed drainage systems” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN with Gary Sands (40 attendees).
68. February 16, 2007 – Webcast presentation “Effects of manure application on drainage water quality” as part of the National Livestock and Poultry Environmental Learning Center webcast series. [Invited – national audience]
69. January 9, 2007 – Presentation “Placement of buffers, riparian area types, and other BMPs” at Heartland Water Quality Initiative Targeting Roundtable in Nebraska City, NE (25 attendees from Iowa, Missouri, Nebraska, Kansas, and EPA) (presentation with Dean Eisenhauer and Charles Barden) [Invited].
70. January 9, 2007 – Presentation “Targeting within landscapes and watersheds to improve conservation effectiveness” at Heartland Water Quality Initiative Targeting Roundtable in Nebraska City, NE (25 attendees from Iowa, Missouri, Nebraska, Kansas, and EPA) (presentation with Mark Tomer) [Invited].

71. November 28, 2006 – Presentation “Drainage water management update from Iowa” at IA-MN Drainage Research Forum in Dows, IA (85 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota).
72. October 16, 2006 – Presentation “Effects of manure on drainage water quality” to Nebraska Livestock and Environment Issues Committee (40 participants) [Invited].
73. October 18, 2006 – Presentation “Subsurface drainage in Iowa” to The Nature Conservancy Ag. And Hydrology Learning Network, Meeting held in Ames, IA (20 attendees) [Invited].
74. March 9, 2006 – Invited presentation “Wetland design for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (50 attendees).
75. November 2, 2005 – Presentation “Literature of drainage management practices” at IA-MN Drainage Research Forum in Dows, IA (80 attendees consisting of producers, contractors, and agency representatives from Iowa and Minnesota).
76. June 7-9, 2005 –Presentation “Subsurface drainage and treatment of drainage water to reduce nitrate-N” at Heartland Water Quality Initiative Nitrogen Workshop in Nebraska City, NE (75 attendees from Iowa, Nebraska, Kansas, Missouri, and USEPA) [Invited]
77. June 7-9, 2005 –Presentation “Design of drainage water treatment facilities” at Heartland Water Quality Initiative Nitrogen Workshop in Nebraska City, NE (20 attendees from Iowa, Nebraska, Kansas, Missouri, and USEPA) [Invited]
78. March 1-3, 2005 –Presentation “Wetland design for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (45 attendees).
79. January 26-27, 2005 –Presentation “Drainage design and management” at Heartland Water Quality Initiative Nitrogen Roundtable in Nebraska City, NE (30 attendees from Iowa, Nebraska, Kansas, Missouri, and USEPA) [Invited]
80. September 16, 2004 –Presentation “Research perspective on drainage management practices” at IA-MN Drainage Research Forum in Owatonna, MN. Invited by Gary Sands from University of Minnesota. There were approximately 110 attendees consisting of producers, contractors, and agency representatives from Iowa, Minnesota, and Canada.
81. March 3 and 4, 2004 –Presentation “Drainage water quality in Iowa” at the Minnesota Drainage Design Workshop in Mankato, MN (50 people present including contractors, producers, and agency personnel).

Other Extension Activities (10):

1. Provided technical content for Rock Your Watershed! A Game of Choice and Chance. Version 2. A computer game that highlights the environmental and economic impacts of land management and conservation practices. This version includes biodiversity, livestock, and urban considerations.
2. Provided technical content for Rock Your Watershed! A Game of Choice and Chance. A computer game that highlights the environmental and economic impacts of land management and conservation practices.
3. Video of impacts of residue management on surface water runoff was filmed for Pesticide Applicator Training (PAT) and was used in the winter of 2007 PAT programming (viewed by all participants). The video utilized the Conservations Systems Portable Rainfall Simulator.

4. Provided technical input on the development of six DVD's that highlight conservation in Iowa and provide messages for increasing conservation. This project was conducted as part of the Iowa Learning Farm project. One DVD completed in 2007 and five DVD's were completed in 2008.
5. Developed two Frequently Asked Questions for the Livestock and Poultry Environmental Learning Center on the eXtension website. FAQ's were related manure application to soybeans and impacts of nitrogen application rate on nitrate loss from drainage systems.
6. Provided technical assistance in designing a subsurface drainage bioreactor for West Buttrick Creek watershed project in Greene County as part of an Iowa Soybean Association water quality project. System was designed and installed in 2008.
7. Provided technical design assistance in designing subsurface drainage bioreactors for the Lime Creek and Coldwater-Palmer Creek projects in Northeast Iowa. These systems were installed in Fall of 2006.
8. The Conservation Systems Portable Rainfall Simulator was used at approximately 20 non-Iowa Learning Farm Field Day engagements in Iowa during 2009 as part of the Iowa Learning Farm project. Matt Helmers provided input on technical content of presentations. Some of these events were attended by Matt Helmers and some were staffed by the project team including Chris Strunk and Ryan Nelson.
9. The Conservation Systems Portable Rainfall Simulator was used at approximately 45 engagements in Iowa during 2008 as part of the Iowa Learning Farm project. Matt Helmers provided input on technical content of presentations. Some of these events were attended by Matt Helmers and some were staffed by the project team including Liz Juchems and Scott Jacobsen (student interns working on the Iowa Learning Farm project).
10. The Conservation Systems Portable Rainfall Simulator was used at approximately 35 engagements in Iowa during 2007 as part of the Iowa Learning Farm project. Matt Helmers provided input on technical content of presentations. Some of these events were attended by Matt Helmers and some were staffed by the project team including Brad Bond that is an Agricultural Engineering student (~3,373 attendees).

Media Interviews (27):

1. May 10, 2012 – Interview for Iowa Farm Bureau Federation Minute on conservation practices.
2. August 11, 2011 – Interview with Dream Green Radio on water quality impacts of landuse.
3. September 5-6, 2010 – Interview with Greenfire productions on water quality impacts of conservation practices.
4. September 24, 2010 – Interview with Globe Gazette on impacts of subsurface drainage.
5. September 20, 2010 – Interview for Pioneer Progrower Newsletter on subsurface drainage.
6. April 7, 2010 – Interview with kmland.com radio on strategic placement of native prairie vegetation.
7. August 28, 2009 – Interview with AgProfessional on drainage water management. Interview included on AgProfessional website.

8. August 28, 2009 – Interview with John Walter from Successful Farming on drainage water management. Interview included in InsideAg.
9. November 17, 2008 – Interview with Associated Press on impacts of perennial vegetation placement on water quality.
10. November 17, 2008 – Interview with Farm Journal on impacts of perennial vegetation placement on water quality.
11. November 17, 2008 – Interview with Iowa News Service on impacts of perennial vegetation placement on water quality.
12. June 25, 2008 – Interview with KBOO radio in Portland, Oregon on the impacts of agricultural management practices on flooding in the Midwest. 77 minute interview and call-in show.
13. June 4, 2008 – Interview with the Dubuque Telegraph Herald on the impacts of subsurface drainage on flooding.
14. December 2007 – Wallaces Farmer – Interview on what is conservation tillage (appeared January 2008).
15. November 2007 – Interview with Kirk Leeds of the Iowa Soybean Association on Drainage Design for radio spot on WHO.
16. October 2007 – Wallaces Farmer – Interview on effective and economical drainage design.
17. August 2007 – Ag. Professional – Interview and Question and Answer about “What is the potential for nutrient loss due to field drainage and/or overly wet spring seasons.”
18. June 27, 2007 – WHO-TV – Interview on surface water runoff and an educational rainfall simulator.
19. June 2, 2007 – Ames Tribune – Interview on surface water runoff and an educational rainfall simulator.
20. August 30, 2006 – Iowa Farm Bureau Spokesman – Interview on new tile drainage technologies.
21. August 17, 2006 – Iowa Farmer Today – Interview on drainage water management for reducing nitrate export.
22. August 17, 2006 – Iowa Farmer Today – Interview on best management practices for improving water quality.
23. November 27, 2005 – Des Moines Register – Interview on Drainage Water Management relative to what is known and unknown about this practice.
24. September 1, 2005 – The Prairie Star: Montana Ag Newspaper – Information on drainage water management and the objectives of this practice.
25. July 8, 2005 – Farm News – Interview on drainage water quality research at the Gilmore City drainage research facility.
26. June 2, 2005 – Iowa State Daily – Interview on nitrate-nitrogen leaching to drainage systems and that completely eliminating fertilizer application on a corn-soybean system would not eliminate nitrate-nitrogen loss.
27. July 24, 2004 – Northwest Iowa Review – Interview on water quality in Iowa and potential research at the Sutherland research farm.

Extension One-on-One Interactions:

On average 20 Extension one-on-one interactions or consultations per year (details available upon request)

Teaching and Advising Activities

Graduate Student Advising:

Served as Major or Co-Major Professor

No.	Name	Degree	Current Position
1	Emily Waring	Ph.D. Ag. Engineering (Expected 2021)	
2	Samuel Phillips	M.S. Ag. Engineering (Expected 2021)	
3	Brian Dougherty	M.S. Ag. Engineering (Completed 2018)	ISU Extension and Outreach Field Ag. Engineer
4	Bethany Brittenham	M.S. Ag. Engineering (Completed 2017)	Engineer with ISG
5	Kristina Craft	M.S. Ag. Engineering (Completed 2016)	Extension Program Specialist at ISU
6	Linda Schott	M.S. Ag. Engineering (Completed 2015)	PhD Program at UNiversity of Nebraska - Lincoln
7	Emily Waring	M.S. Ag. Engineering (Completed 2016)	Ph.D. student at ISU
8	Rebecca Roberts ^a	M.S. Graduate Program in Sustainable Agriculture (Completed 2016)	
9	Usman Anwar ^b	M.S. Graduate Program in Sustainable Agriculture (Completed 2014)	
10	Ryan Goeken	M.S. Graduate Program in Sustainable Agriculture (Completed 2013)	University of Wyoming International Programs
11	David Green ^c	Ph.D. Environmental Science (Completed 2016)	
12	Dan Andersen ^d	Ph.D. Ag. Eng. (Completed 2012)	Faculty member at Iowa State University
13	Jose Gutierrez Lopez ^e	M.S. Graduate Program in Sustainable Agriculture (Completed 2012)	Ph.D. student at the University of New Hampshire
14	Andrew Frana	M.S. Ag. Engineering (Completed 2012)	Engineer in central IA
15	Wade Welsh	M.S. Biorenewable Technology Program (Completed 2012)	U.S. Army Corps of Engineers
16	Delise Lockett	M.S. Ag. Eng. (Completed 2012)	Engineer in Maryland
17	Laura Christianson ^f	Ph.D. Ag. Eng./ Graduate Program in Sustainable Agriculture (Completed 2011)	Engineer with The Conservation Fund
18	Brad Bond ^d	M.S. Ag. Eng. (Completed 2010)	Engineer with Curry-Willie Associated in Ames, IA

No.	Name	Degree	Current Position
19	Zhiming Qi	Ph.D. Ag. Eng/Env. Science, (Completed 2009)	Faculty member at McGill University
20	Emily Hancheck ^g	M.S. Env. Science, Program begun in June 2007, Exited the Program	
21	Mario Perez-Bidegain ^h	Ph.D. Agronomy and Env. Science (Completed 2007)	Faculty member in Uruguay
22	Melissa Cheatham ^g	M.S. GPSA (Completed 2007)	University of Maryland and USDA-ARS as Research Associate
23	Kyle Riley	M.S. Ag. Eng. (Completed 2006)	Engineer with Watershed Concepts in Kansas City, MO
24	Greg Shepherd ^g	M.S. GPSA (Completed 2006)	Bennett Agricultural Research Corporation

^aCo-Major with Dr. Michael Castellano

^bCo-Major with Dr. Lisa Schulte

^cCo-major with Dr. William Crumpton

^dCo-major with Dr. Robert Burns

^eCo-Major with Dr. Tom Isenhardt

^fCo-Major with Dr. Alok Bhandari

^gCo-major Professor with Dr. Heidi Asbjornsen

^hCo-major Professor with Dr. Rick Cruse

Served as Program of Study Committee Member

No.	Name	Degree
1	Erica Neideigh	M.S. Ag. Engineering
2	Gabe McNunn	Ph.D. Agronomy (Completed 2018)
3	Daniel Linton	Ph.D. Agronomy
4	David Dziubanski	Ph.D. Env. Science (Completed 2018)
5	Alyvia Steenhoek	M.S. Sustainable Ag.
6	Andrew Craig	Ph.D. Ag. Engineering
7	John Jones	Ph.D. Agronomy
8	Lori Abendroth	Ph.D. Agronomy
9	Rafael Martinez-Feira	Ph.D. Agronomy (Completed 2018)
10	Peiyu Cao	Ph.D. Env. Science
11	Sierra Kubic	M.S. Industrial Technology
12	Chelsea Harbach	Ph.D. Plant Pathology
13	Katlyn Devoe	M.S. Ag. Engineering (Completed 2017)
14	Casey Judge	Ph.D. Env. Science
15	Sam McDeid	M.S. Env. Science (Completed 2017)
16	Conrad Brendal	M.S. Ag. Eng. (Completed 2017)
17	Hannah Hoglund	M.S. Env. Science (Completed 2017)

No.	Name	Degree
18	Tyler Groh	Ph.D. Env. Science (Completed 2018)
19	Morgan Davis	Ph.D. Env. Science (Completed 2018)
20	Chenyi Luo	M.S. Soil Science (Completed 2015)
21	Carrie Chennault	M.S. Sustainable Agriculture (Completed 2016)
22	Emily Altrichter	M.S. Env. Science (Completed 2016)
23	Manish Shrivastav	M.S. Ag. Eng. (Completed 2016)
24	Gang Han	M.S. Plant Pathology (Completed 2016)
25	Sitha Ketpratoom	M.S. Soil Science
26	Stephanie Enloe	M.S. Graduate Program in Sustainable Agriculture (Completed 2016)
27	Ross Tuttle	M.S. Civil Engineering
28	Scott Lee	Ph.D. Soil Science
29	Maurice Washington	Ph.D. Ag. Engineering (Completed 2017)
30	Liz Luby	M.S. Ag. Engineering (Completed 2015)
31	Kapil Arora	Ph.D. Ag. Engineering (Completed 2015)
32	Brett Zimmerman	M.S. Ag. Eng. (Completed 2016)
33	Charles Ikenberry	Ph.D. Ag. Engineering (Completed 2016)
34	Laurimar Goncalves Vendrusculo	Ph.D. Ag. Engineering (Completed 2015)
35	Jose Pantoja	Ph.D. Soil Science (Completed)
36	Vilma Mateos Remigio	Ph.D. Env. Science (Completed 2015)
37	Kelsey Regan	M.S. Ag. Eng. (Completed 2015)
38	Julie Mueller	M.S. Sustainable Agriculture
39	Rohith Gali	Ph.D. Ag. Engineering (Completed 2015)
40	Yuki Kojima	Ph.D. Soil Science (Completed 2015)
41	Huy Nguyen	M.S. Ag. Eng. (Completed 2014)
42	David Heer	M.S. Env. Science
43	Aaron Daigh	Ph.D. Env. Science (Completed 2013)
44	Daniel Murray	M.S. Ag. Engineering (Completed 2012)
45	Zachary Keninger	M.S. Env. Science (Completed 2012)
46	Tomorra Smith	M.S. Env. Science (Completed 2012)
47	Natasha Hoover	M.S. Env. Science (Completed 2012)
48	David Mitchell	M.S. Env. Science (Completed 2012)
49	Pramod Pandey	Ph.D. Ag. Engineering (Completed 2012)
50	Vic Albright	M.S. Toxicology (Completed 2011)
51	Rachel McDaniel	M.S. Ag. Eng. (Completed 2011)
52	Dedrick Davis	Ph.D. Env. Science (Completed 2011)
53	Robert McNaull	M.S. Ag. Eng. (Completed 2010)
54	Nick Ohde	M.S. Graduate Program in Sustainable Agriculture (Completed 2010)
55	Jean McGuire	M.S. Sociology (Completed 2010)
56	Vera Williams	M.S. Toxicology (Completed 2010)
57	Sara Kaplan	M.S. Sustainable Ag.

No.	Name	Degree
58	Priyanka Jindal	Ph.D. Env. Science (Completed 2010)
59	Lingyuan Yang	Ph.D. Env. Science (Completed 2010)
60	Peter Lammers	Ph.D. Graduate Program in Sustainable Agriculture (Completed 2009)
61	Aaron Andrews	M.S. Env. Science (Completed 2009)
62	Cassie Herringshaw	M.S. Env. Science (Completed 2009)
63	Ian Murphy	M.S. Toxicology (Completed 2009)
64	Jian Jin	Ph.D. Ag. Engineering (Completed 2009)
65	Dan Anderson	M.S. Ag. Eng. (Completed 2008)
66	Keegan Kult	M.S. Env. Science (Completed 2008)
67	Ishadeep Khanijo	M.S. Ag. Eng. (Completed 2008)
68	Francisco Meza-Aguero	Ph.D. Env. Science (left program in 2007)
69	David Webber	Ph.D. Water Resources (Completed 2007)
70	Longjie Hong	Ph.D. Civil Eng. (Completed 2007)
71	Dorivar Ruiz Diaz	Ph.D. Agronomy (Completed 2007)
72	Jason Palmer	M.S. Env. Science (Completed 2007)
73	Kris Knight	M.S. Env. Science (Completed 2007)
74	Jacob Prater	M.S. Env. Science (Completed 2007)
75	Jong Ahn Chun	Ph.D. Ag. Eng.-Univ. of Illinois (Completed 2007)
76	Manven Bansal	M.S. Ag. Eng. (Completed 2006)
77	Kelly Thorp	Ph.D. Ag. Eng. (Completed 2006)
78	Matt Dvorak	M.S. Geol. And Atmosp. Sci. (Completed 2006)
79	Dan Kaiser	Ph.D. Agronomy (Completed 2006)
80	Jennifer Hawkins	M.S. Agronomy (Completed 2006)
81	Quang Huy Nguyen	M.S. Env. Science (Completed 2006)
82	Kendall DeJong	M.S. Ag. Eng. (Completed 2006)
83	Sonal Singhal	M.S. Civil Eng. (Completed 2005)
84	Candace Batts-Deceased	Ph.D. Env. Science

Undergraduate Honors Thesis Advising:

No.	Name	Degree
1	Brittany Kirsch	B.S. Agronomy
2	Emily Steinwag	B.S. Civil Engineering
3	James Gilbert	B.S. Environmental Science
4	Aaron Andrews	B.S. Ag. Systems Technology

Host Professor/Supervisor for Post-Doctoral Research Associates and Professional and Scientific Staff:

No.	Name	Position	Time
1	Ainis Lagzdinis	Post-Doctoral Research Associate	March 2014-March 2016
2	Jacqueline Comito	Program Manager I	January 2014-present
3	E. Britt Moore	Extension Specialist	December 2013-August 2014

No.	Name	Position	Time
4	Dr. Jill Motschenbacher	Post-Doctoral Research Associate	August 2013-December 2013
5	Connie Cannon	Program Coordinator	July 2013-September 2016
6	Dr. Aaron Daigh	Post-Doctoral Research Associate	May 2013-November 2013
7	Elizabeth Juchems	Extension Program Specialist	May 2013-present
8	Nathan Stevenson	Extension Program Specialist	December 2011-present
9	Dr. Brian Gelder	Associate Scientist	September 2010-present
10	Carol Brown	Communications Specialist	July 2010-October 2015
11	Chris Witte	Research Associate	April 2010-present
12	Ann Staudt	Extension Program Specialist	October 2009-present
13	Carl Pederson	Agricultural Specialist	July 2004-present
14	Aaron Andrews	Extension Program Specialist	July 2010-August 2013
15	John Lundvall	Extension Program Specialist	July 2010-December 2012
16	Dr. Laura Christianson	Post-Doctoral Research Associate	January 2012-June 2012
17	Dr. Zhiming Qi	Post-Doctoral Research Associate	January 2010-August 2010
18	Reid Christianson	Extension Program Specialist	October 2008-April 2012
19	Dr. Xiaobo Zhou	Post-Doctoral Research Associate/ Assistant Scientist	August 2007-March 2013
20	Dr. Ranvir Singh	Post-Doctoral Research Associate	June 2005-September 2007
21	David Williams	Research Associate	September 2005-July 2009
22	Peter Lawlor	Research Associate II	July 2004-June 2008
23	David Baker	Research Associate II	July 2004-December 2005

Host Professor for International Interns:

No.	Name	Position	Time
1	Merly Herrera	Intern from Honduras	Spring 2017
2	Jose Antonio Gutierrez Lopez ^a	Intern from Mexico	Summer and Fall 2007 and Summer 2008
3	Amaury Demeestere	Intern from Lille University in France	June-September 2006
4	Thomas Fourmaux	Intern from Lille University in France	June-September 2005
5	Lidia Esteve ^b	Intern from Universitat de Lleida in Spain	July-December 2005
6	Julie Dupont	Intern from Lille University in France	June-October 2004

^aco-supervised with Dr. Heidi Asbjornsen

^bco-supervised with Dr. Amy Kaleita

Mentoring:

Kelly Thorp – Preparing Future Faculty Mentor. Fall 2005.

Supervised Independent Study Projects:

No.	Name	Program	Time
1	Lauren Salvato	Summer NSF-REU Program	Summer 2012
2	Salvador Gonzalez	Summer NSF-REU Program	Summer 2012
3	Jessica Bush	Summer NSF-REU Program	Summer 2012
4	Jason Wheat	Summer NSF-REU Program	Summer 2011
5	Jennifer Juarez	Summer Undergraduate Program	Summer 2010
6	Jeremy Sprecher	Summer NSF-REU Program	Summer 2010
7	Chris Strunk	AE 490	Fall 2009
8	Brad Bond	AE 490	Spring 2008
9	Hai Huang	AE 490	Fall 2005

Mentoring for Student Design Projects:

AE 415/416 – Co-mentor for student design project on “Bio-Electric Reactor”

AE 415/416 – Co-mentor for student design project on “Algae Turf Scrubber Feasibility”

AE 415/416 – Mentor for student design project on “Design of a Low-cost Flowmeter”

AE 415/416 – Mentor for student design project on “Water Harvesting of Drainage Water for Use as Irrigation”

Course Teaching:

NREM/ENT 582 – Ecosystem Service Management, Team taught with John Tyndall and Matt O’Neal (Fall 2010 and Spring 2013)

Invited On-campus Teaching Lectures and Presentations:

1. February 29, 2016 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (8 attendees).
2. March 12, 2013 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (10 attendees).
3. March 27, 2012 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (10 attendees).
4. November 16, 2011 – Guest lecture on “Emerging Drainage Issues” to AE 431/531 (11 attendees).
5. November 4, 2010 – Lecture on “Nitrogen loss from drainage systems and methods to reduce nitrate export” to TSM 424 (15 attendees)
6. November 1, 2010 – Seminar on “Nitrogen loss through drainage systems” in the department of Horticulture (15 attendees)
7. March 29, 2010 – Environmental Science Seminar on “Nitrogen loss from drainage systems in Iowa” (20 attendees)
8. March 23, 2010 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (8 attendees).

9. November 18, 2009 – Guest lecture on “Emerging Drainage Issues” to AE 431/531 (12 attendees).
10. October 28, 2009 – Lecture “Hydrological functioning of agroforestry systems” to NREM 460/560 (12 attendees)
11. April 6, 2009 – Guest lecture on “Understanding global warming relative to conservation practices” to Honors 322D (20 attendees)
12. March 3, 2009 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (8 attendees).
13. November 19, 2008 – Guest lecture on “Drainage design for water quality improvement” to AE 533 (6 attendees).
14. November 17, 2008 – Guest lecture on “Drainage design” to AE 533 (6 attendees).
15. April 20, 2007 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (7 attendees).
16. Spring 2007 – Co-taught with Heidi Asbjornsen and John Tyndall NREM 600 Seminar (Biodiversity, Conservation and Ecosystem Services in Managed Landscape). This seminar was in collaboration with seven universities and funded by the National Center for Ecological Synthesis and Analysis (~12 participants at ISU).
17. Fall 2007 – Guest lecture on “Emerging Drainage Issues” AE 431/531
18. October 10, 2006 – Lecture “Hydrological functioning of agroforestry systems” to NREM 460/560 (9 attendees)
19. April 18, 2006 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550. (9 attendees)
20. October 11, 2005 – Lecture “Manure and water quality” to Civil Engineering 591 seminar (35 attendees).
21. April 7, 2005 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550. (9 attendees)

Undergraduate Research Assistants Supervised:

No.	Name	Degree	Time
1	Sehba Faheem	Biosystems Engineering	Spring 2018-present
2	Kate Sanocki	Ag. Engineering	Spring 2018-present
3	Kaleb Baber	Ag. Engineering	Spring 2018-present
4	Katie Schwaegler	Biosystems Engineering	Spring 2017-Fall 2018
5	Maddie Tusha	Ag. Engineering	Summer 2017-Fall 2018
6	Mark Jacobs	Ag. Engineering	Summer 2017-present
7	Amanda Martin	Agricultural Systems Technology	Summer 2016-Fall 2016
8	Connor West	Ag. Engineering	Spring 2016-Fall 2017
9	Julia Edlefson	Agronomy	Summer 2016-Spring 2017
10	Sam Phillips	Ag. Engineering	Spring 2016-Spring 2018
11	Brandon Walls	Environmental Science	Fall 2015-Fall 2016
12	Quenton Schneider	Ag. Engineering	Spring 2015-Fall 2016
13	Melissa Larson	Environmental Science	Fall 2014-Fall 2015
14	Alex Martin	Ag. Engineering	Spring 2014-Spring 2016
15	Annie Wallace	Biosystems Engineering	Spring 2014-Spring 2016
16	Nathan Waskel	Physics	Fall 2014-Fall 2017

No.	Name	Degree	Time
17	Jeff Heyer	Biosystems Engineering	Spring 2013-Spring 2014
18	Chris Alphs	Ag. Education	Spring 2013-Fall 2013
19	Linda Geiger	Ag. Engineering	Spring 2013-Fall 2013
20	Patrick Kelly	Biosystems Engineering	Summer 2012-Fall 2014
21	Mikah Wright	Communications	Spring 2012-Summer 2013
22	Brett McArtor	Agricultural Systems Technology	Spring 2012-Summer 2012
23	Britteny Carpio	Political Science	Spring 2012-Summer 2012
24	Rebecca Meerdink	Environmental Science	Spring 2012-Summer 2013
25	Sara Sloan	Environmental Science`	Spring 2011-Summer 2012
26	Alessandra Engels	Environmental Science	Spring 2011-Spring 2012
27	Alex Steffens	Agricultural Engineering	Spring 2011-Fall 2011
28	Jeremy Sprecher	Biosystems Engineering	Summer 2010-Fall 2012
29	Emily Steinwag	Civil Engineering	Spring 2010-Spring 2012
30	Emily Mains	Agricultural Systems Technology	Spring 2010-Spring 2012
31	Chris Strunk	Agricultural Engineering	2009
32	Mark Weber	Agricultural Engineering	2009
33	Ryan Nelson	Industrial Technology	2009-2010
34	Scott Jacobson	Animal Ecology	2008-2010
35	Elizabeth Juchems	Ag. Business	Spring 2008-Summer 2011
36	Brad Bond	Agricultural Engineering	Spring 2007-Summer 2008
37	Rachel Maixner	Agricultural Engineering	Spring 2007-Spring 2008
38	Delise Lockett	Agricultural Engineering	Summer 2007-Fall 2008
39	Mike Hameister	Construction Engineering	Summer 2007
40	Rafael Pereira	Agricultural Engineering exchange student from Brazil	Fall 2006
41	Aaron Andrews	Agricultural Systems Technology	Summer 2006-Spring 2007
42	Matt Koehler	Agricultural Engineering	Summer 2006
43	James Gilbert	Environmental Science	Summer 2005-Fall 2005

Student Club Advising:

Advisor for the Agricultural Systems Technology Club

2005-2014

Professional Development Activities**Professional Development:**

- Nutrient and Edge of Field Monitoring Conference 2015
- Heartland Water Quality Initiative Regional Conference 2013
- Heartland Water Quality Initiative Nutrient Management Workshop 2013
- Waste to Worth Conference 2013
- Soil Science Society of America International Meeting (Cincinnati, OH) 2012
- American Geophysical Union Meeting (San Francisco, CA) 2011
- USDA-AFRI Managed Ecosystems Project Investigators Meeting (Washington, DC) 2011

- Soil Science Society of America International Meeting (San Antonio, TX) 2011
- International Symposium on Soil Quality and Management of World Mollisols 2010
- 9th International Drainage Symposium (Quebec City, Canada) 2010
- Environmental Defense Fund Nitrogen Workshop (Washington, D.C.) 2010
- Heartland Regional Roundtable (Nebraska City, NE) 2010
- American Society of Civil Engineers – Environment and Water Resources Institute Congress (Kansas City, MO) 2009
- Heartland Regional Water Quality Conference (Overland Park, KS) 2009
- USDA-CSREES National Water Conference (St. Louis, MO.) 2009
- Soil and Water Conservation Society (SWCS) – From Dust Bowl to Mud Bowl: Sedimentation, Conservation Measures and the Future of Reservoirs (Kansas, City, MO) 2009
- Soil and Water Conservation Society (SWCS) – Science to Solutions: Reducing Nutrient Export to the Gulf of Mexico (Des Moines, IA) 2009
- American Society of Agricultural and Biological Engineers (ASABE) Mid-Central Meeting (Ames, IA) 2009
- EPA Wetlands and Watershed Conference (Kansas City, MO) 2008
- 2nd International Salinity Forum (Adelaide, Australia) 2008
- Ecosummit 2007 (Beijing, China) 2007
- American Society of Agricultural and Biological Engineers (ASABE) Mid-Central Meeting (Columbia, MO) 2007
- DRAINMOD N-II Workshop (Raleigh, NC) 2007
- Soil and Water Conservation Society (SWCS) – Managing Agricultural Landscapes for Environmental Quality Workshop (Kansas City, MO) 2006
- Soil Science Society of America International Meeting (Indianapolis, IN) 2006
- USDA-CSREES Integrated Grant Writing Workshop (Kansas City, MO) 2006
- American Society of Civil Engineers – Environment and Water Resources Institute Congress (Omaha, NE) 2006
- ASABE International Meeting 2001-2018
- American Society of Agricultural Engineers Mid-Central Meeting (St. Joseph, MO) 2001-2005
- National Council for Science and the Environment Conference (Washington D.C.) 2006
- Water Table Management for Engineers Workshop (Columbus, OH) 2005
- Overholt Drainage School (Columbus, OH) 2005
- Heartland Water Quality Initiative, Nitrogen Management Roundtable (Nebraska City, NE) 2005
- Heartland Water Quality Initiative, Nitrogen Management Workshop (Nebraska City, NE) 2005
- Heartland Water Quality Initiative, Watershed Workshop (Kansas City, MO) 2005
- Heartland Water Quality Initiative, Phosphorus Management Workshop (Nebraska City, NE) 2004
- ISU Grant Writing Workshop (Ames, IA) 2004

- SWCS Annual Meeting (Minneapolis, MN) 2004
- NSF Grant Writing Workshop (Minneapolis, MN) 2003
- Heartland Water Quality Initiative, Animal Manure Management
Workshop (Nebraska City, NE) 2003
- ASCE GeoDenver Conference (Denver, CO)
2000