

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:

- 8/14 – present Professor, Agricultural and Biosystems Engineering Department, Iowa State University
- 8/13 – present Associate Chair for Research and Extension, Agricultural and Biosystems Engineering Department
- 7/13 – present Dean’s Professor in the College of Agriculture and Life Sciences, Iowa State University
- 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:

- 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
- American Society of Civil Engineers
- American Water Resources Association
- 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-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-present
 - Member Nomenclature Committee (SW-07) 2007-present
 - 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 2008-present

Engineering in Agriculture.

- 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 Awards Committee (Chair 2010 – present) 2008-present
- Agricultural Systems Technology Club Faculty Advisor 2005-present
- ABE Social Committee 2004-2014
- ABE Research Farms Committee 2004-present
- 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 Quality 2006-2007
- ABE Awards Committee 2005-2007
- ABE Promotion and Tenure Committee 2005-2006
- 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:

- Member of College of Engineering Awards Committee 2011-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

- Ag BMP Database Technical Committee 2014-present
- Member of the Source Water Protection Partnership Group 2013-present
- Member of The Fertilizer Institute 4R Research Fund Technical Advisory Group 2013-present
- Member of Cedar River Watershed Technical Team 2011-present
- Member of HUD Watershed Demonstration Pilot Project Advisory Committee 2011-present
- 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 2006-2008

Agriculture Representative	
<ul style="list-style-type: none"> Invited participant in meeting on Drainage Modeling Sponsored by U.S. Army Corps of Engineers 	2006
<ul style="list-style-type: none"> Member of USDA-NRCS ad-hoc committee on Vegetative Treatment Systems for Open Lot Runoff 	2004
Technical Reviewer:	No. of
Reviews	
Journals:	
<ul style="list-style-type: none"> Transactions of ASABE 	14
<ul style="list-style-type: none"> Applied Engineering in Agriculture 	4
<ul style="list-style-type: none"> Journal of Hydrology 	5
<ul style="list-style-type: none"> Journal of Irrigation and Drainage Engineering, ASCE 	5
<ul style="list-style-type: none"> Soil Science Society of America 	2
<ul style="list-style-type: none"> Soil Science 	1
<ul style="list-style-type: none"> Journal of Soil and Water Conservation 	4
<ul style="list-style-type: none"> Pedosphere 	1
<ul style="list-style-type: none"> Journal of Environmental Management 	2
<ul style="list-style-type: none"> Paleolimnology 	1
<ul style="list-style-type: none"> Journal of Environmental Quality 	12
<ul style="list-style-type: none"> Special Issue of Asian Association of Agricultural Engineering Journal (2005) 	1
<ul style="list-style-type: none"> Journal of the American Water Resources Association 	4
<ul style="list-style-type: none"> Agricultural Water Management 	1
<ul style="list-style-type: none"> Ecohydrology 	1
<ul style="list-style-type: none"> Environmental Modeling and Software 	2
<ul style="list-style-type: none"> Agriculture Ecosystems and Environment 	2
<ul style="list-style-type: none"> Hydrological Processes 	1
<ul style="list-style-type: none"> Agronomy Journal 	3
<ul style="list-style-type: none"> Ecological Engineering 	4
<ul style="list-style-type: none"> Canadian Journal of Soil Science 	1
<ul style="list-style-type: none"> Water, Air, and Soil Pollution 	2
<ul style="list-style-type: none"> Water Resources Research 	1
<ul style="list-style-type: none"> Earth Surface Processes and Landforms 	1
<ul style="list-style-type: none"> Vadose Zone Journal 	1
<ul style="list-style-type: none"> Water Environment Research 	1
Others:	
<ul style="list-style-type: none"> Reviewer of Paper by Union of Concerned Scientists 	1
<ul style="list-style-type: none"> Reviewer for National Research Council Report "Clean Water Act Implementation across the Mississippi River Basin 	1
<ul style="list-style-type: none"> ASAE Drainage Symposium IX (2010) 	2
<ul style="list-style-type: none"> USDA-ARS Peer Review 	2

- ASAE Drainage Symposium VIII (2004) 3

Proposal Reviewer:

- 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 1
- 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 (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 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
 - Hosted visiting scientist from China – Dr. Wenquan Niu 10/2011-4/2012
 - Hosted visiting scientist from China – Dr. Xining Zhao 10/2011-4/2012
 - Hosted visiting scientist from Uruguay – Dr. Mario Perez-Bidegain Spring 2011
- Visits outside the U.S.*
- 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 (84):

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

1. 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* doi:10.2134/jeq2014.09.0386.
2. Andersen, D.S., **Helmers, M.J.**, & Burns, R.T. In Press. Phosphorus sorption capacity of six Iowa soils before and after five years of use as vegetative treatment areas. Accepted April 2015 to *Applied Engineering in Agriculture*
3. 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.
4. 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.
5. 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.
6. Iqbal, J., M. Castellano, **M.J. Helmers**, T. Parkin, and X. Zhou. In press. Denitrification and N₂O emissions in annual croplands, perennial grass buffers and restored perennial grasslands. Accepted October 2014 to *Soil Science Society of America Journal*.
7. 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.

8. Kladivko, E.J., **M.J. Helmers**, L.J. Abendroth, D. Herzmann, R. Lal, M. Castellano, D.S. Mueller, J.E. Sawyer, R.P. Anex, R.W. Arritt, B. Basso, J.V. Bonta, L. Bowling, R.M. Cruse, N.R. Fausey, J. Frankenberger, P. Gassman, A.J. Gassmann, C.L. Kling, A. Kravchenko, J.G. Lauer, F.E. Miguez, E.D. Nafziger, N. Nkongolo, M. O'Neal, L.B. Owens, P. Owens, P. Scharf, M.J. Shipitalo, J.S. Strock, and M.B. Villamil. 2014. Standardized research protocols and database development for transdisciplinary understanding of corn systems and climate. *Journal of Soil and Water Conservation* 69(6): 532-542.
9. Necpalova, M., R.P. Anex, A.N. Kravchenko, L.J. Abendroth, S.J. Del Grosso, W.A. Dick, **M.J. Helmers**, D. Herzmann, E.J. Kladivko, J.G. Lauer, E.D. Nafziger, J.E. Sawyer, P.C. Scharf, J. Strock, and M.B. Villamil. 2014. What does it take to detect a change in soil carbon stock? A regional comparison of minimum detectable difference and experiment duration in the North-Central United States. *Journal of Soil and Water Conservation* 69(6): 517-531.
10. Daigh, A.L.*, **M.J. Helmers**, E. Kladivko, X. Zhou*, R. Goeken*, J. Cavadini, D. Barker, and J. Sawyer. 2014. Soil water during the drought of 2012 as affected by rye cover crop in fields in Iowa and Indiana. *Journal of Soil and Water Conservation* 69(6): 564-573.
11. Cox, R., M. O'Neal, R. Hessel, L. Schulte, and **M. Helmers**. 2014. The impact of prairie strips on aphidophagous predator abundance and soybean aphid predation in agricultural catchments. *Environmental Entomology* 43(5):1185-1197.
12. Smith, T.W., R.K. Kolka, X. Zhou*, **M.J. Helmers**, R.M. Cruse, and M.D. Tomer. 2014. Effects of native perennial vegetation buffer strips on dissolved organic carbon in surface runoff from an agricultural landscape. *Biogeochemistry* 120(1-3):121-132.
13. Andersen, D.S.*, R.T. Burns, **M.J. Helmers**, and L.B. Moody. 2014. Vegetative treatment system impacts on groundwater quality. *Trans. of ASABE* 57(2): 417-430.
14. Gutierrez-Lopez, J.*, H. Asbjornsen, **M.J. Helmers**, and T. Isenhardt. 2014. Regulation of soil moisture dynamics in agricultural fields using strips of native prairie vegetation. *Geoderma* 226:238-249.
15. Perez-Suarez, M., M. Castellano, R. Kolka, H. Asbjornsen, and **M.J. Helmers**. 2014. Nitrogen and carbon dynamics in prairie vegetation strips across topographic gradients in mixed Central Iowa agroecosystems. *Agriculture, Ecosystems and Environment* 188:1-11.
16. Daigh, A.L., X. Zhou, **M.J. Helmers**, C.H. Pederson, R. Horton, and R. Ewing. 2014. Subsurface drainage flow and soil water dynamics of reconstructed prairies and corn rotations for biofuel production. *Vadose Zone Journal* doi:10.2136/vzj2013.10.0177.
17. Zhou, X.*, **M.J. Helmers**, H. Asbjornsen, R. Kolka, M. Tomer, and R. Cruse. 2014. Nutrient removal by prairie filter strips in agricultural landscape. *Journal of Soil and Water Conservation* 69(1): 54-64.
18. Zhao, X., X. Chen, J. Huang, P. Wu, and **M.J. Helmers**. 2014. Effects of vegetation cover of natural grassland on runoff and sediment yield on loess hilly region of China. *Journal of the Science of Food and Agriculture* 94(3): 497-503.
19. Jordan, N., L. Schulte-Moore, C. Williams, D. Mulla, D. Pitt, C. Schively-Slotterback, R. Jackson, D. Landis, B. Dale, D. Becker, M. Rickenbach, **M.J. Helmers**, and R. Bringi. 2013. Landlabs: An Integrated Approach to Creating Agricultural Enterprises That

- Meet the Triple Bottom Line. *Journal of Higher Education Outreach and Engagement* 17(4):175-200.
20. Christianson, L.*, J. Tyndall, and **M.J. Helmers**. 2013. Financial comparison of seven nitrate reduction strategies for Midwestern agricultural drainage. *Water Resources and Economics* 2-3: 30-56.
 21. Christianson, L.*, T. Knott, D. Larsen, J. Tyndall, and **M.J. Helmers**. 2013. Adoption potential of nitrate mitigation practices: An ecosystem service approach. *International Journal of Agricultural Sustainability* DOI: 10.1080/14735903.2013.835604.
 22. Zhou, X.*, **M.J. Helmers**, and Z. Qi. 2013. Field scale modeling of subsurface tile drainage using MIKE SHE. *Applied Engineering in Agriculture* 29(6): 865-873.
 23. Tyndall J.C., L. Schulte, M. Liebman, and **M.J. Helmers**. 2013. Field-level financial assessment of contour prairie strips for environmental quality enhancement. *Environmental Management* 52(3):736-747.
 24. Christianson, L.*, R. Christianson*, **M.J. Helmers**, C. Pederson, and A. Bhandari. 2013. Modeling and calibration of drainage denitrification bioreactor design criteria. *Journal of Irrigation and Drainage Engineering* 139: 699-709.
 25. Andersen, D.S*, R.T. Burns, L.B. Moody, **M.J. Helmers**, B. Bond, I. Khanijo, and C. Pederson. 2013. Impact of system management on vegetative treatment system effluent concentrations. *Journal of Environmental Management* 125: 55-67.
 26. Liebman, M., **M.J. Helmers**, L.A. Schulte, and C.A. Chase. 2013. Using biodiversity to link agricultural productivity with environmental quality: Results from three field experiments in Iowa. *Renewable Agriculture and Food Systems* 28(2): 115-128.
 27. Asbjornsen, H., V. Hernandez-Santana, M. Liebman, J. Bayala, J. Chen, **M.J. Helmers**, C. K. Ong, and L.A. Schulte-Moore. 2013. Targeting perennial vegetation in agricultural landscapes for enhancing ecosystem services. Accepted to *Renewable Agriculture and Food Systems* doi:10.1017/S1742170512000385.
 28. Hernandez-Santana, V., X. Zhou*, **M.J. Helmers**, H. Asbjornsen, R. Kolka, and M. Tomer. 2013. Native prairie filter strips reduce runoff from hillslopes under annual row-crop systems in Iowa, USA. *Journal of Hydrology* 477: 94-103.
 29. Christianson, L.*, **M.J. Helmers**, A. Bhandari, and T. Moorman. 2013. Internal hydraulics of an agricultural drainage denitrification bioreactor. *Ecological Engineering* 52: 298-307.
 30. Zhao, X., P. Wu, X. Chen, **M.J. Helmers**, and X. Zhou. 2013. Runoff and sediment yield under simulated rainfall on hillslopes in the Loess Plateau of China. *Soil Research* 51(1): 50-58.
 31. Christianson, L.*, N. Hoover, A. Bhandari, and **M.J. Helmers**. 2012. Technical note: The potential of municipal yard waste to be denitrification bioreactor fill. *Applied Engineering in Agriculture* 26(5): 849-854.
 32. Christianson, L.*, A. Bhandari, and **M.J. Helmers**. 2012. A practice-oriented review of woodchip bioreactors for agricultural drainage. *Applied Engineering in Agriculture* 28(6): 861-874.
 33. Christianson, L.*, A. Bhandari, **M.J. Helmers**, K. Kult, T. Sutphin, and R. Wolf. 2012. Performance evaluation of four field-scale agricultural drainage denitrification bioreactors in Iowa. *Trans. ASABE* 55(6): 2163-2174.

34. **Helmers, M.J.**, R. Christianson*, G. Brenneman, D. Lockett*, and C. Pederson. 2012. Water table, drainage, and yield response to drainage water management in southeast Iowa. *Journal of Soil and Water Conservation* 67(6): 495-501.
35. **Helmers, M.J.**, X. Zhou*, H. Asbjornsen, R. Kolka, M.D. Tomer, and R. Cruse. 2012. Sediment removal by perennial filter strips in row-cropped ephemeral watersheds. *Journal of Environmental Quality* 41(5): 1531-1539.
36. **Helmers, M.J.**, X. Zhou*, J.L. Baker, S.W. Melvin, and D.W. Lemke. 2012. Nitrogen loss on tile-drained Mollisols as affected by nitrogen application rate under continuous corn and corn-soybean rotation systems. *Canadian Journal of Soil Science* 92: 493-499.
37. Niu, W., Q. Guo, X. Zhou, and **M.J. Helmers**. 2012. Effect of aeration and soil water redistribution on the air permeability under subsurface drip irrigation. *Soil Science Society of America Journal* 76(3): 815-820.
38. Qi, Z.* , L. Ma, **M.J. Helmers**, L.R. Ahuja, and R.W. Malone. 2012. Simulating nitrate-nitrogen concentration from a subsurface drainage system in response to nitrogen application rates using RZWQM2. *Journal of Environmental Quality* 41: 289-295. [Short Communication]
39. Qi, Z.* , S. Feng, and **M.J. Helmers**. 2012. Modeling cadmium transport in neutral and alkaline soil columns at various depths. *Pedosphere* 22(3): 273-282.
40. Lammers, P.J., M.D. Kenealy, J.B. Kliebenstein, J. D. Harmon, **M.J. Helmers**, and M.S. Honeyman. 2012. Energy use in pig production: An examination of current Iowa systems. *Journal of Animal Science* 90(3): 1056-1068.
41. Schilling, K., P. Jindal, N. Basu, and **M.J. Helmers**. 2011. Impact of artificial subsurface drainage on groundwater travel times and baseflow discharge in an agricultural watershed, Iowa (USA). *Hydrological Processes* 26(20): 3092-3100.
42. Andersen, D.S.* , R.T. Burns, L.B. Moody, and **M.J. Helmers**. 2011. Using total solids concentration to estimate nutrient content of feedlot runoff effluent from solid settling basins, vegetative infiltration basins, and vegetative treatment areas. *Applied Engineering in Agriculture* 27(5): 803-810.
43. Lawlor, P.A.* , **M.J. Helmers**, J.L. Baker, S.W. Melvin, and D.W. Lemke. 2011. Comparison of liquid swine manure and ammonia nitrogen application timing on subsurface drainage water quality in Iowa. *Trans. ASABE* 54(3): 973-981.
44. Qi, Z.* , **M.J. Helmers**, R. Malone, and K. Thorp. 2011. Simulating long-term impacts of winter rye cover crop on hydrologic cycling and nitrogen dynamics for a corn-soybean crop system. *Trans. ASABE* 54(5): 1575-1588.
45. Dosskey, M.G., Z. Qiu, **M.J. Helmers**, and D.E. Eisenhauer. 2011. Improved indexes for targeting placement of buffers of Hortonian runoff. *Journal of Soil and Water Conservation* 66(6): 362-372.
46. Qi, Z.* , **M.J. Helmers**, R.D. Christianson, and C.H. Pederson. 2011. Nitrate-nitrogen losses through subsurface drainage under various agricultural land covers. *Journal of Environmental Quality* 40: 1578-1585.
47. Dosskey, M. G., **M.J. Helmers**, and D. E. Eisenhauer. 2011. A design aid for sizing filter strips using buffer area ratio. *Journal of Soil and Water Conservation* 66(1): 29-39.
48. Qi, Z.* , **M.J. Helmers**, and A. Kaleita. 2011. Soil water dynamics under various land covers in Iowa. *Agricultural Water Management* 98(4): 665-674.

49. Stenback, G., W. Crumpton, K. Schilling, and **M.J. Helmers**. 2011. Rating curve estimation of nutrient loads in Iowa rivers. *Journal of Hydrology* 396: 158-169.
50. Christianson, L., A. Bhandari, and **M.J. Helmers**. 2011. Pilot-scale evaluation of denitrification drainage bioreactors: Reactor geometry and performance. *Journal of Environmental Engineering* 137(4): 213-220.
51. 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. 2011. Comparison of construction costs for vegetative treatment systems in the Midwestern United States. *Applied Engineering in Agriculture* 27(3): 413-423.
52. Lammers, P.J., M.S. Honeyman, J.D. Harmon, and **M.J. Helmers**. 2010. Energy and carbon inventory of Iowa swine production facilities. *Agricultural Systems* 103:551-561.
53. Zhou, X.*, **M.J. Helmers**, H. Asbjornsen, R. Kolka, and M. Tomer. 2010. Perennial filter strips reduce nitrate levels in soil and shallow groundwater after grassland-to-cropland conversion. *Journal of Environmental Quality* 39(6): 2006-2015.
54. Perez-Bidegain, M.*, **M.J. Helmers**, and R. Cruse. 2010. Modeling phosphorus transport in an agricultural watershed using the WEPP model. *Journal of Environmental Quality* 39(6): 2121-2129.
55. Christianson, L., A. Castelló, R. Christianson, A. Bhandari, and **M.J. Helmers**. 2010. Hydraulic property determination of denitrifying bacteria fill media. *Applied Engineering in Agriculture* 26(5): 849-854.
56. Andersen, D. S., R. T. Burns, L. B. Moody, **M.J. Helmers**, R. Horton, and C. Pederson. 2010. Use of the Soil-Plant-Air-Water model to predict hydraulic performance of vegetative treatment areas for controlling open lot runoff. *Trans. ASABE* 53(2): 537-543.
57. Arora, K., S. K. Mickelson, **M.J. Helmers**, and J.L. Baker. 2010. Review of pesticide retention process occurring in buffer strips receiving agricultural runoff. *Journal of the American Water Resources Association* 46(3): 618-647.
58. Gassman, P.W., J. Tisl, E. Palas, C.L. Fields, T.M. Isenhardt, K. Schilling, C.F. Wolter, L.S. Seigley, and **M.J. Helmers**. 2010. Conservation practice establishment in two northeast Iowa watersheds: Strategies, water quality implications, and lessons learned. *Journal of Soil and Water Conservation* 65(6): 381-392.
59. Qi, Z.* and **M.J. Helmers**. 2010. The conversion of permittivity as measured by a PR2 capacitance probe into soil moisture values for Des Moines Lobe soils in Iowa. *Soil Use and Management* 26(1): 82-92.
60. Andersen, D. S., R. T. Burns, L. B. Moody, **M.J. Helmers**, and R. Horton. 2010. Comparison of the Iowa State University – Effluent limitation guidelines model with the soil-plant-air-water model for evaluating containment basin performance. *Trans. ASABE* 53(1): 207-217.
61. Lammers, P.J., M.D. Kenealy, J.B. Kliebenstein, J.D. Harmon, **M.J. Helmers**, and M.S. Honeyman. 2010. Non-solar energy use and 100-year global warming potential of Iowa swine feedstuffs and feeding strategies. *Journal of Animal Science* 88: 1204-1212.
62. Qi, Z.* and **M.J. Helmers**. 2010. Soil water dynamics under winter rye cover crop in central Iowa. *Vadose Zone Journal* 9(1): 53-60.

63. Zhou, X.*, M. Al-Kaisi, and **M.J. Helmers**. 2009. Environmental and economic benefits of conservation practices in Iowa: Soil formation and area specific evaluation study. *Soil and Tillage Research* 106(1): 71-78.
64. Lammers, P. J., M. S. Honeyman, J. D. Harmon, J. B. Kliebenstein, and **M.J. Helmers**. 2009. Construction resource use of different types and scales of pig production facilities. *Applied Engineering in Agriculture* 25(4): 585-593.
65. Riley, K. D.*, **M.J. Helmers**, P A. Lawlor, and R. Singh. 2009. Water balance investigation of controlled drainage in non-weighing lysimeters. *Applied Engineering in Agriculture* 25(4): 507-514.
66. Zhou, X.*, **M.J. Helmers**, M. Al-Kaisi, and H.M. Hanna. 2009. Cost-benefit analysis of conservation management practices for sediment reduction in an Iowa agricultural watershed. *Journal of Soil and Water Conservation* 64(5): 314-323.
67. Roberts, A., **M.J. Helmers**, I. Fillery. 2009. The adoptability of perennial-based farming systems for hydrologic and salinity control in dryland farming systems in Australia and the United States. *Crop & Pasture Science* 60: 83-99.
68. Singh, R.*, **M.J. Helmers**, A. L. Kaleita, and E. S. Takle. 2009. Potential impact of climate change on subsurface drainage in Iowa's subsurface drained landscapes. *Journal of Irrigation and Drainage Engineering* 135(4): 459-466.
69. Tomer, M.D., M.G. Dosskey, M.R. Burkart, D.E. James, **M.J. Helmers**, and D.E. Eisenhauer. 2009. Methods to prioritize placement of riparian buffers for improved water quality. *Agroforestry Systems* 75(1): 17-25.
70. Asbjornsen, H., G. Shepherd*, **M. Helmers**, and G. Mora. 2008. Seasonal patterns in depth of water uptake under contrasting annual and perennial systems in the Corn Belt Region of the Midwestern U.S. *Plant and Soil* 308:69-92.
71. Schilling, K. E., and **M.J. Helmers**. 2008. Effects of subsurface drainage tiles on streamflow in agricultural watersheds: exploratory hydrograph analysis. *Hydrological Processes* 22(23): 4497-4506.
72. Lawlor, P. A.*, **M.J. Helmers**, J. L. Baker, S. W. Melvin, and D. W. Lemke. 2008. Nitrogen application rate effects on nitrate-nitrogen concentrations and losses in subsurface drainage. *Trans. ASABE* 51(1): 83-94.
73. Dosskey, M. D., **M.J. Helmers**, and D. E. Eisenhauer. 2008. A design aid for determining widths of filter strips. *Journal of Soil and Water Conservation* 63(4): 232-241.
74. Schilling, K. E., and **M.J. Helmers**. 2008. Tile drainage as Karst: Conduit flow and diffuse flow in a tile-drained watershed. *Journal of Hydrology* 349: 291-301.
75. **M.J. Helmers**, T. M. Isenhardt, C. L. Kling, T. B. Moorman, W. W. Simpkins, and M. Tomer. 2007. Theme overview: Agriculture and water quality in the cornbelt: Overview of issues and approaches. *Choices* 22(2):79-84.
76. Singh, R.*, **M.J. Helmers**, W. G. Crumpton, and D. W. Lemke. 2007. Predicting effects of drainage water management in Iowa's subsurface drained landscapes. *Agricultural Water Management* 92:162-170.
77. Asbjornsen, H., G. Mora, and **M. Helmers**. 2007. Variation in depth of water uptake in contrasting perennial and annual ecosystems in central Iowa: Application of a multiple-source mass-balance isotope approach. *Agriculture, Ecosystems, and Environment*. 121: 343-356.

78. Dosskey, M. G., **M.J. Helmers**, D. E. Eisenhauer, T. G. Franti, and K. D. Hoagland. 2006. An approach for using soil surveys to guide the placement of water quality buffers. *Journal of Soil and Water Conservation*. 61(6): 344-354.
79. Singh, R.*, **M.J. Helmers**, and Z. Qi. 2006. Calibration and validation of DRAINMOD to design subsurface drainage systems for Iowa's tile landscapes. *Agricultural Water Management*. 85: 221-232.
80. **Helmers, M. J.** and D. E. Eisenhauer. 2006. Overland flow modeling in a vegetative filter considering non-planar topography and spatial variability of soil hydraulic properties and vegetation density. *Journal of Hydrology* 328: 267-282.
81. Dosskey, M. G., D. E. Eisenhauer, and **M.J. Helmers**. 2005. Establishing conservation buffers using precision information. *Journal of Soil and Water Conservation* 60(6): 349-354.
82. **Helmers, M. J.**, D. E. Eisenhauer, M. G. Dosskey, T. G. Franti, J. Brothers, and M. C. McCullough. 2005. Flow pathways and sediment trapping in a field-scale vegetative filter. *Trans. ASAE* 48(3): 955-968.
83. **Helmers, M. J.**, D. E. Eisenhauer, T. G. Franti, and M.G. Dosskey. 2005. Modeling sediment trapping in a vegetative filter accounting for converging overland flow. *Trans. ASAE* 48(2): 541-555.
84. Dosskey, M. G., **M.J. Helmers**, D. E. Eisenhauer, T. G. Franti, and K. D. Hoagland. 2002. Assessment of concentrated flow through riparian buffers. *Journal of Soil and Water Conservation* 57(6): 336-343.

Peer-reviewed Journal Articles in Review (2):

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

1. Goeken, R.*, X. Zhou*, and **M.J. Helmers**. In review. Comparison of timing and volume of subsurface drainage under perennial forage and row crops in a tile-drained field in Iowa. Submitted to *Trans. ASABE*.
2. Daigh, A.L., X. Zhou, **M. Helmers**, and R. Horton. In review. Subsurface drainage water quality of biofuel-based reconstructed prairies and corn rotations. Submitted October 2013 to *Journal of Environmental Quality*.

Book Chapters (7) (Numbers 1-4 since promotion):

1. Osmond, D.L., P. Gassman, K. Schilling, C. Wolter, C.L. Kling, **M. Helmers**, T. Isenhardt, W. Simpkins, T. Moorman, M. Tomer, S. Rabotyagov, M. Jha, D.L.K. Hoag, D.W. Meals, and M. Arabi. 2012. Chapter 11: Walnut Creek and Squaw Creek Watersheds, Iowa: National Institute of Food and Agriculture–Conservation Effects Assessment Project. In: Osmond, D.L., D.W. Meals, D. LK. Hoag, and M. Arabi (eds.). *How to Build Better Agricultural Conservation Programs to Protect Water Quality: The National Institute of Food and Agriculture–Conservation Effects Assessment Project Experience*. Ankeny, IA: Soil and Water Conservation Society. p. 201-220.
2. Liebman, M., **M.J. Helmers**, and L. Schulte Moore. 2011. Integrating conservation with biofuel feedstock production. In: M. Schnepf (ed.), *Managing Agricultural Landscapes for Environmental Quality II*. Soil and Water Conservation Society of America, Ankeny, IA.

3. Comito, J. and **M.J. Helmers**. 2011. The language of conservation. In: L. Wright Morton and S.S. Brown (eds.), *Pathways for Getting to Better Water Quality: The Citizen Effect*. Springer Science +Business Media.
4. Strock, J.S., G.R. Sands, and **M.J. Helmers**. 2011. Subsurface drainage design and management to meet agronomic and environmental goals. In: J.L. Hatfield and T.J. Sauer (eds.), *Soil Management: Building a Stable Base for Agriculture*. American Society of Agronomy and Soil Science Society of America.
5. **Helmers, M. J.**, T. Isenhardt, M. Dosskey, S. Dabney, and J. Strock. 2008. Buffers and vegetative filter strips. Chapter 4 in *Final Report: Gulf Hypoxia and Local Water Quality Concerns Workshop*. American Society of Agricultural and Biological Engineers, St. Joseph, MI. [Invited Oral Presentation at Workshop- Helmers]
6. Baker, J. L., **M.J. Helmers**, and J. M. Laflen. 2006. Water management practices: rain-fed cropland. Chapter 2 in *Evaluating the Environmental Benefits of Agricultural Conservation Practices- The Status of our Knowledge*. Soil and Water Conservation Society, Ankeny, IA.
7. Lorimor, J., **M.J. Helmers**, and R. Koelsch. 2004. Vegetative infiltration basin design. Chapter 7 in *Vegetative Treatment Area Guidance Document*. USDA-NRCS.

Other Significant Publications (Not peer-reviewed for acceptance) (4):

1. Al-Kaisi, M.M, R.W. Elmore, J.G. Guzman, H.M. Hanna, C.E. Hart, **M.J. Helmers**, E.W. Hodgson, A.W. Lenssen, A.P. Mallarino, A.E. Robertson, and J.E. Sawyer. 2013. Drought impact on crop production and the soil environment: 2012 experiences from Iowa. *Journal of Soil and Water Conservation* 68(1):19A-24A.
2. Christianson, L. A. Bhandari, and **M.J. Helmers**. 2009. Emerging technology: Denitrification bioreactors for nitrate reduction in agricultural waters. *Journal of Soil and Water Conservation* 64:139A-141A.
3. Christianson, L. A. Bhandari, and **M.J. Helmers**. 2009. Woodchip bioreactors: A new nitrate reduction option. *Getting into Soil & Water*, Iowa Water Center. Vol. 1, pg 13.
4. **Helmers, M. J.**, D. Lemke, W. Crumpton, and S. Melvin. 2009. Integrated drainage-wetland landscape systems: A strategy to provide environmental and crop production benefits. *Getting into Soil & Water*, Iowa Water Center. Vol. 1, pg 4.

Referred Conference Proceedings (2):

1. **Helmers, M. J.**, and J. M. Duncan. 2000. Ultimate load design of laterally loaded drilled shaft foundations. In: *New Technological and Design Developments in Deep Foundations*, edited by Norman D. Dennis Jr., Ray Castelli, and Michael W. O'Neill. Proceedings of Sessions of Geo-Denver 2000. Reston, VA: American Society of Civil Engineers, pp. 207–223. [Oral Presentation - Helmers]
2. Mokwa, R. L., J. M. Duncan, and **M.J. Helmers**. 2000. Development of p-y Curves for partly saturated silts and clays. In: *New Technological and Design Developments in Deep Foundations*, edited by Norman D. Dennis Jr., Ray Castelli, and Michael W. O'Neill. Proceedings of Sessions of Geo-Denver 2000. Reston, VA: American Society of Civil Engineers, pp. 224–239. [Oral Presentation - Mokwa]

Conference Proceedings without Review (15):

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

1. Christianson, L.*, A. Bhandari, and **M.J. Helmers**. 2011. Potential Design Methodology for Agricultural Drainage Denitrification Bioreactors. World Environmental and Water Resources Congress (EWRI). Palm Springs, California. 22-26 May 2011.
2. **Helmers, M.J.**, X. Zhou*, and Z. Qi*. 2010. Artificial drainage and associated nutrient loss on Mollisols in Iowa. International Symposium on Soil Quality and Management of World Mollisols. Harbin, China.
3. Christianson, L*, D. Horne, J. Hanly, A. Bhandari, and **M.J. Helmers**. 2010. Denitrification Bioreactors for Agricultural Drainage Nitrate Treatment in New Zealand. 19th World Congress of Soil Science, Soil Solutions for a Changing World, Brisbane, Australia.
4. Christianson, L.*, **M.J. Helmers**, and A. Bhandari. 2010. Bioreactor Design Geometry Effects on Nitrate Removal. ASABE's 9th International Drainage Symposium: Sustainable Drainage Water Management in a Changing Environment, Québec City, Canada. Paper No. IDS-CSBE100073.
5. **Helmers, M.J.**, R. Christianson, D. Lockett, G. Brenneman, and C. Pederson. 2010. Water table response to drainage water management in Southeast Iowa. ASABE's 9th International Drainage Symposium: Sustainable Drainage Water Management in a Changing Environment, Québec City, Canada. Paper No. IDS-CSBE100138.
6. Andersen, D.S*, R.T. Burns, L.B. Moody, and **M.J. Helmers**. 2010. Using total solids concentration to estimate nutrient content of feedlot runoff effluent from solid settling basins, vegetative infiltration basins, and vegetative treatment areas. Proceedings of the 2010 International Symposium on Air Quality and Waste Management for Agriculture. ASABE. Paper No. 711P0510cd
7. Christianson, L., A. Bhandari, **M.J. Helmers**, and M. St. Clair. 2009. Denitrifying bioreactors for treatment of tile drainage. *In: Proceedings of the EWRI Congress, ASCE.* [Oral Presentation - Christianson]
8. **Helmers, M. J.**, S. Melvin, and D. Lemke. 2009. Drainage main rehabilitation in Iowa. *In: Proceedings of the EWRI Congress, ASCE.* [Oral Presentation - Helmers]
9. 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]
10. 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.
11. 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]
12. 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]
13. 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]
 14. 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]
 15. 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. AWRAs 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 (61):

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

1. 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]
2. 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]
3. 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]
4. **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]
5. 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]
 6. 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]
 7. 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.
 8. **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]
 9. **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]
 10. 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]
 11. 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]
 12. 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.
 13. 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]
 14. 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.

15. 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.
16. 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.
17. **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]
18. 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]
19. 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]
20. **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]
21. 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]
22. 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]
23. 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.
24. 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.
25. 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]
26. 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]
 27. **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]
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 29. Bhandari, A*, L. Christianson, and M. Helmers. 2010 Denitrification Bioreactors for Treatment of Agricultural Drainage. ISU Sustainability Symposium, Ames, Iowa. [Poster presentation – Bhandari]
 30. 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]
 31. 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]
 32. 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]
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 34. **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]
 35. **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]
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 37. 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]

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39. 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]
40. 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]
41. 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]
42. **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]
43. 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]
44. Perez-Bidegain, M.*, **M.J. Helmers**, and R. Cruse. 2006. Modelling phosphorus transport using the WEPP model. *In: ASA-CSSA-SSSA Annual Meeting Abstracts*. Nov. 12-16, 2006, Indianapolis, IN. [Poster Presentation – Perez-Bidegain]
45. 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]
46. Al-Kaisi, M., M. Licht, H.M. Hanna, **M.J. Helmers**, M. Duffy, and J. Comito. 2006. An interactive learning approach for promoting conservation systems in Iowa. *In: ASA-CSSA-SSSA Annual Meeting Abstracts*. Nov. 12-16, 2006, Indianapolis, IN. [Poster Presentation – Al-Kaisi]
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48. Asbjornsen, H., **M. Helmers**, M. Liebman, L. Schulte, R. Kolka, M. Tomer, C. Cambardella, K. Schilling, R. Cruse, J. Opsomer, P. Drobney, and M. Nocchi. 2005. Restoring eco-hydrological functioning of agricultural systems in the Midwestern U.S. through strategic integration of perennial plants in Iowa, USA. *In: Proceedings of the XXII International Union of Forest Research Organizations (IUFRO) World Congress*. Brisbane, Australia, 8-13 August, 2005. [Poster Presentation - Asbjornsen]
49. Asbjornsen, H., **M. Helmers**, M. Liebman, L. Schulte, R. Kolka, M. Tomer, C. Cambardella, K. Schilling, R. Cruse, J. Opsomer, P. Drobney, and M. Nocchi. 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]
50. Asbjornsen, H., **M. Helmers**, M. Liebman, L. Schulte, R. Kolka, M. Tomer, C. Cambardella, K. Schilling, J. Opsomer, and M. Nocchi. 2005. Water, nutrient and carbon cycling in watersheds with contrasting annual-perennial plant community configurations. *In: Proceedings of Agriculture and the Environment Conference* (March 8-9, 2005, Iowa State University, Ames, IA). [Poster Presentation - Asbjornsen]
51. **Helmers, M. J.**, P. A. Lawlor, J. L. Baker, S. W. Melvin, W. Crumpton, D. W. Lemke. 2005. Temporal subsurface flow patterns from fifteen years in north-central Iowa. *In: Proceedings of Agriculture and the Environment Conference* (March 8-9, 2005, Iowa State University, Ames, IA). [Poster Presentation - Helmers]
52. P. A. Lawlor*, **M.J. Helmers**, J. L. Baker, S. W. Melvin, W. Crumpton, D. W. Lemke. 2005. Nitrogen application rate effects on yield, nitrate-nitrogen concentration and loss in subsurface drainage. *In: Proceedings of Agriculture and the Environment Conference* (March 8-9, 2005, Iowa State University, Ames, IA). [Poster Presentation - Lawlor]
53. 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]
54. Crumpton, W. G. and **M.J. Helmers**. 2004. Integrated drainage-wetland systems for reducing nitrate loads from tile drained landscape. *In: Proceedings of Self-Sustaining Solutions for Streams, Wetlands, and Watersheds* (September 12-15, 2004, St. Paul, Minnesota). ASAE Publication 701P0504. St. Joseph, MI: ASAE. [Oral Presentation - Crumpton]
55. Dosskey, M. G., **M.J. Helmers**, D. E. Eisenhauer, T. G. Franti, and K. D. Hoagland. 2004. A buffer capability index for water quality planning. *In: Proceedings of the Soil and Water Conservation Society Annual Conference* (July 24-28, 2004, St. Paul, MN). [Poster Presentation - Dosskey]
56. **Helmers, M. J.**, D. Jaynes, R. Kanwar, S. Melvin, and J. Baker. 2004. Past and present agricultural drainage management research in Iowa. *In: Proceedings Soil and Water Conservation Society Annual Conference* (July 24-28, 2004, St. Paul, MN). [Oral Presentation - Helmers]
57. Baker, J. L., S. W. Melvin, P. A. Lawlor, **M.J. Helmers**, D. W. Lemke, and W. G. Crumpton. 2004. Nitrate-nitrogen in agricultural drainage and potential reduction with in-field management practices. *In: Proceedings of Agriculture and the Environment Conference* (March 1-2, 2004, Iowa State University, Ames, IA). [Oral Presentation - Baker]
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59. **Helmers, M. J.**, D. E. Eisenhauer, T. G. Franti, and M. G. Dosskey. 2003. Performance of riparian grass buffers considering converging overland flow, field and storm characteristics. *In: Proceedings of the Riparian Symposium: Water Quality Aspects of Buffers, 64th Midwest Fish and Wildlife Conference (December 7-10, 2003, Kansas City, MO).* [Invited Oral Presentation - Helmers]
60. Eisenhauer, D. E., M. G. Dosskey, **M.J. Helmers**, T. G. Franti, and J. M. Brothers. 2003. Topographic effects on sediment trapping in riparian grass buffers. *Riparian Symposium: Water Quality Aspects of Buffers, In: Proceedings of the Riparian Symposium: Water Quality Aspects of Buffers, 64th Midwest Fish and Wildlife Conference (December 7-10, 2003, Kansas City, MO).* [Invited Oral Presentation - Eisenhauer]
61. Dosskey, M. G., **M.J. Helmers**, D. E. Eisenhauer, T. G. Franti, and K. D. Hoagland. 2003. New tools for planning and designing riparian buffers for water quality improvement. *In: Proceedings of the Riparian Symposium: Water Quality Aspects of Buffers, 64th Midwest Fish and Wildlife Conference (December 7-10, 2003, Kansas City, MO).* [Invited Oral presentation - Dosskey]

Research Reports (20):

1. **Helmers, M.J.** and W. Crumpton. 2014. Water and nutrient research: In-field and offsite strategies – 2013 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship.
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.
8. Andersen, D.S.*, R.T. Burns, L.B. Moody, **M.J. Helmers**, and J.D. Lawrence. 2010. Performance of vegetative treatment systems on six beef feedlots in Iowa. Final Report to the Iowa DNR. May 2010.

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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17. Crumpton, W., **M.J. Helmers**, G. Stenback, and R. Singh. 2005. Targeted Watershed Project – 2005 Annual Report. Report of Research Performed under Sponsorship of the Iowa Department of Agriculture and Land Stewardship and the EPA. 3p.
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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 (13):

1. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. Eastern South Dakota Water Conference. (October 29, 2014)
2. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. Soil and Water Conservation Society Fellows Forum. (July 27, 2014)
3. **Helmers, M.J.** 2014. Iowa Nutrient Reduction Strategy. University of Minnesota Water Resources Seminar. (March 11, 2014)
4. **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.
5. **Helmers, M.J.** 2013. Watershed-scale nutrient reduction strategies. Presented at Agree workshop in Washington, D.C. (March 21, 2013)
6. **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)
7. **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)
8. **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)
9. **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)
10. **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)
11. **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)
12. **Helmers, M. J.** 2005. Buffers and vegetative filter strips. Presented at Gulf Hypoxia and Local Water Quality Concerns Workshop. (September 26-28, 2005)
13. **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 (6):

1. 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]
2. 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.
3. 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.
4. 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]
5. 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]
6. 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]
7. 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 (22):

1. **Helmers, M.J.** 2014. Cover crops, bioreactors, and wetlands for nitrate reduction. *In*: Proceedings of the 26th Annual Integrated Crop Management Conference (December 3-4, 2014, Iowa State University, Ames, IA), pp. 163-166. [Oral Presentation - Helmers]

2. **Helmers, M.J.** 2013. Nutrient reduction strategy: One farm, many practice. *In: Proceedings of the 25th Annual Integrated Crop Management Conference* (December 4-5, 2013, Iowa State University, Ames, IA), pp. 153-158. [Oral Presentation - Helmers]
3. Hanna, M. and **M.J. Helmers**. 2012. Balancing tillage, soil loss, and profitability. *In: Proceedings of the 24th Annual Integrated Crop Management Conference* (November 28-29, 2012, Iowa State University, Ames, IA), pp. 169-174. [Oral Presentation - Helmers]
4. **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]
5. **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]
6. 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.
7. **Helmers, M.J.** 2010. Drainage Management and nitrogen loss. North Central Extension-Industry Conference Proceedings. Des Moines, IA
8. **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]
9. **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]
10. **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]
11. **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]
12. 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]

13. **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]
14. 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]
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17. **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]
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19. **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]
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2. 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.
3. 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.
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. **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.
6. 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):

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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).

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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.

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Extension Fact Sheets (14):

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1. Zhou, X.* and **M.J. Helmers** 2009. Water quality and conservation practices. Published by the Iowa Learning Farm Project.
2. Zhou, X.* and **M.J. Helmers** 2009. Northwest Loess Hills: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
3. Zhou, X.* and **M.J. Helmers** 2009. Deep Loess Hills: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
4. 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.
5. 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.
6. 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.
7. Zhou, X.* and **M.J. Helmers** 2009. Eastern Till Prairies: Supplement to Water quality and conservation practices. Published by the Iowa Learning Farm Project.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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 \$47,794,260 as PI or Co-PI; \$7,102,988 on projects as PI):**

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 - 12/31/16	PI	\$74,865
Prairie Strips in Iowa: Water Quality Evaluation	IDALS	M.J. Helmers , Schulte-Moore, Harris, Liebman	09/01/14 - 08/31/16	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 - 06/30/16	PI	\$69,580

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
Influence of alternative biomass cropping systems on short-term ecosystems processes	USDA-AFRI	T. Isenhart, 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
Hickory Grove water quality	IDNR	M. Soupier, 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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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	US EPA Region 7	J. Coats and M.J. Helmers	10/10/06 - 09/30/08	Co-PI	\$95,023

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
County, Missouri					
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	ISWRRI	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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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	ISWRRRI	M.J. Helmers	07/01/05 - 06/30/06	PI	\$16,605
Vegetative filter education and assessment in Iowa	ISWRRRI	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
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. Schillilng, W. Simpkins, M. Al-Kaisi, and M.J. Helmers	10/01/04 - 09/30/08	Co-PI	\$660,000

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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
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

Projects Not-Funded

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
Depressional storage in hydric soils and its hydrological impacts on downstream flow	NSF	A. Kaleita, M. Soupier, 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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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 depression 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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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. Soupir	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. Soupir, and M.J. Helmers	05/01/09 - 04/30/10	Co-PI	\$56,223

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	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
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. Kladvko	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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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. Brenneman, 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

Project Title	Name of Grantor	Participants	Period	Role	Grant Amount
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
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 (37 total events, approximate number of individuals impacted – 2198):**

1. 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 Waseca, MN. There were 115 attendees consisting of producers, contractors, and agency
2. 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.
3. 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
4. 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.
5. 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.
6. Iowa Water Conference
March 4, 2013 – Coordinated a session at the Iowa Water Conference titled “STRIPs project at Neal Smith.” There were 55 attendees.
7. 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
8. 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.
9. 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.
10. 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
11. 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.
 12. 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.
 13. 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.
 14. 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
 15. 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.
 16. 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.
 17. 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.
 18. 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.
 19. 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.
 20. 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.
21. 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.
 22. 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.
 23. 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.
 24. 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.
 25. 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.
 26. 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 Lambertson, MN. There were 16 specially invited contractors at this meeting.
 27. 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.
 28. 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.
 29. 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.
 30. 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.
 31. 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).
32. 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.
 33. 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.
 34. 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.
 35. 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.
 36. 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.
 37. 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 (373 total presentations, approximate number of individuals impacted – 24,033):**

1. 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)
2. 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)
3. 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)
4. 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)
5. 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)
6. December 18, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)

7. December 11, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Stanhope, IA (75 attendees)
8. December 11, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Stanhope, IA (75 attendees)
9. December 5, 2017 – Presentation on “Landuse Impacts on Drainage” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (85 attendees)
10. December 4, 2014 – Presentation on “Cover Crops, Bioreactors, and Wetlands for Nitrate Reduction” at the Integrated Crop Management Conference in Ames, IA (405 attendees)
11. November 20, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Cover Crops and Bioreactors” at the Iowa Learning Farms workshop near Washington, IA (45 attendees)
12. November 6, 2014 – Presentation on “Practices to Reduce Nutrient Loss from Agricultural Lands” to Leadership Iowa group (45 attendees)
13. November 5, 2014 – Presentation on “Practices to Reduce Nutrient Loss from Agricultural Lands” to Ames High School Environmental Science class (205 attendees)
14. October 21, 2014 – Training for Ag Leader on Drainage Design (20 attendees)
15. October 1, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
16. September 24, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
17. 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)
18. September 9, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Iowa Learning Farms field day near Bedford, IA (15 attendees)
19. 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)
20. September 3, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” as part of the United Suppliers Sustain Training (35 attendees)
21. June 24, 2014 – Field tour of Neal Smith Prairie Strips site with SERA-17 group (45 attendees)
22. June 23, 2014 – Presentation on “Iowa Nutrient Reduction Strategy” at the SERA-17 annual meeting in Des Moines, IA (75 attendees)
23. June 23, 2014 – Field tour of Neal Smith Prairie Strips site with Bioeconomy group (25 attendees)
24. June 26, 2014 – Presentation on “Drainage Water Management” at the Southeast Iowa Summer Field Day (95 attendees)
25. June 26, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Southeast Iowa Summer Field Day (55 attendees)
26. June 19, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Iowa Learning Farms field day in Elkadar, IA (15 attendees)
27. June 11-12, 2014 – Presentation on “Soil Loss and Drainage” at the Water Rocks! Teacher Summit in Ames, IA (35 attendees)

28. 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)
29. April 3, 2014 – Presentation on “Drainage Redesign” at the ASCE annual meeting in Ames, IA (55 attendees)
30. April 3, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: Drainage Considerations” at the ASCE annual meeting in Ames, IA (55 attendees)
31. 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)
32. March 20, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Rockwell City, IA (25 attendees)
33. March 20, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Rockwell City, IA (25 attendees)
34. March 19, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Spencer, IA (15 attendees)
35. March 19, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Spencer, IA (15 attendees)
36. March 18, 2014 – Presentation on “Benefits of Drainage” at Drainage Workshop in Bancroft, IA (25 attendees)
37. March 18, 2014 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Bancroft, IA (25 attendees)
38. March 13, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Northern Research Farm annual meeting (75 attendees)
39. March 6, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Southeast Research Farm annual meeting (65 attendees)
40. February 13, 2014 – Presentation on “Iowa Nutrient Reduction Strategy” at the Northwest Iowa Farm Alliance meeting in Sioux Center, IA (75 attendees)
41. 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)
42. February 7, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Western Iowa No-till meeting (25 attendees)
43. January 24, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the Practical Farmers of Iowa annual meeting in Ames, IA (65 attendees)
44. January 23, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Waterloo, IA (55 attendees)
45. January 22, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Pioneer Agronomist meeting in Altoona, IA (65 attendees)
46. January 16, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Moravia, IA (55 attendees)
47. 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)
48. January 14, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Ames, IA (55 attendees)
49. January 14, 2014 – Presentation on “Drainage and Nitrate Reduction” at Iowa Land Improvement Contractors annual meeting in Des Moines, IA (95 attendees)

50. January 10, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Burlington, IA (85 attendees)
51. January 8, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Okoboji, IA (65 attendees)
52. January 8, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Max Yield Growers meeting in Algona, IA (45 attendees)
53. January 7, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Max Yield Growers meeting in Spencer, IA (50 attendees)
54. January 6, 2014 – Presentation on “Iowa Nutrient Reduction Strategy: One Farm Many Practices” at the Crop Advantage Series meeting in Sheldon, IA (75 attendees)
55. December 13, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at Worth and Cerro Gordo county regional extension meetings (105 attendees)
56. 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)
57. December 10, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at Golden Furrow regional meeting in Fairfield, IA (55 attendees)
58. 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)
59. 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)
60. December 4, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Farm News Expo in Fort Dodge, IA (85 attendees)
61. December 3, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop in Osage, IA (20 attendees)
62. December 2, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop in Grundy Center, IA (20 attendees)
63. November 12, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Learning Farms Field Day near Plainfield, IA (65 attendees)
64. October 1, 2013 – Presentation on “Water quality benefits of prairie strips” at the DNR/IDALS Watershed Coordinators meeting near Coon Rapids, IA (20 attendees)
65. 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)
66. September 25, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the NRCS Regional Training near Greenfield, IA (40 attendees)
67. September 24, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the NRCS Regional Training near Armstrong, IA (45 attendees)
68. September 12, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Lake Rathbun Watershed Association Annual Meeting (150 attendees)

69. 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)
70. August 15, 2013 – Presentation on “Subsurface drainage design and drain spacing” at Drainage Workshop near Chariton, IA (15 attendees)
71. 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)
72. July 17, 2013 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” at the Iowa Learning Farms Field Day near Otho, IA (55 attendees)
73. 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)
74. June 25, 2013 – Presentation on “Drainage water quality” at the Northern Research Farm Spring field day in Kanawha, IA (75 attendees)
75. June 11, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Western Iowa No-Till Field Day (85 attendees)
76. April 22, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Northeast Iowa NRCS Nutrient Management training in West Union, IA (45 attendees)
77. April 2, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Cover Crop field day near Ames, IA (45 attendees)
78. April 1, 2013 – Presentation on “Iowa Nutrient Reduction Strategy” at Cover Crop Iowa Learning Farms field day near Sioux Center, IA (55 attendees)
79. March 20, 2013 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Storm Lake, IA (25 attendees)
80. March 14, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Northern Research Farm Winter meeting in Kanawha, IA (75 attendees)
81. 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)
82. January 24, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Waterloo, IA (125 attendees)
83. January 22, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Carroll, IA (125 attendees)
84. January 17, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Atlantic, IA (125 attendees)
85. January 16, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Environmental Protection Commission meeting in Des Moines, IA (15 attendees)
86. January 15, 2013 – Presentation on “Drainage design: sizing and spacing” at the Iowa Land Improvement Contractors Annual Conference in Des Moines, IA (95 attendees)
87. 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)

88. January 10, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Mason City, IA (125 attendees)
89. January 9, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Okoboji, IA (65 attendees)
90. 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)
91. January 3, 2013 – Presentation on “Iowa’s Nutrient Reduction Strategy Science Assessment” at the Crop Advantage Series in Sheldon, IA (115 attendees)
92. December 12, 2012 – Drainage presentations in Brooklyn, IA (45 attendees)
93. December 11, 2012 – Presentation on “Water quality benefits of prairie buffers” to Jasper County Soil and Water Conservation District in Newton, IA (8 attendees)
94. December 7, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” at the Iowa Drainage District Association Annual Meeting in Fort Dodge, IA (75 attendees)
95. December 6, 2012 – Presentation on “Gilmore City drainage water quality studies” to the Iowa State Soil Conservation Committee in Des Moines, IA (15 attendees)
96. December 6, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Ag Chem Update in Ames, IA (125 attendees)
97. December 5, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Ag Chem Update in Iowa City, IA (120 attendees)
98. December 4, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” at the Iowa Farm Bureau Annual Meeting in Des Moines, IA (120 attendees)
99. November 29, 2012 – Presentation on “Impacts of tillage on profitability and soil loss” at the Integrated Crop Management Conference in Ames, IA (250 attendees)
100. November 28, 2012 – Presentation on “Iowa Nutrient Reduction Strategy” at the Integrated Crop Management Conference in Ames, IA (300 attendees)
101. November 27, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” to Extension Agricultural Engineering and Agronomy Field Specialists at Nevada, IA (20 attendees)
102. November 6, 2012 – Presentation on “Nutrient Reduction Strategy Science Assessment” for Manure Applicator Certification Training (video recording)
103. October 30, 2012 – Presentation on “Surface runoff impacts of cover crops” at Iowa Learning Farms near Emerson, IA (30 attendees)
104. October 16, 2012 – Presentation “Manure application to soybeans: Water quality impacts” to the Environmental Protection Commission (35 attendees)
105. October 8, 2012 – Presentation on “Water quality benefits of prairie buffers” at Iowa Learning Farm field day near Jefferson, IA (30 attendees)
106. October 2, 2012 – Presentation on “Phosphorus transport from agricultural fields” at Northeast Iowa Watershed coordinators meeting (30 attendees)
107. September 4, 2012 – Presentation on “Water quality impacts of drainage water management” at Subirrigation Field Day near Paullina, IA (25 attendees)
108. July 25, 2012 – Presentation on “Water quality impacts of prairie vegetation” to Masters of Agronomy Distance students (35 attendees)

109. July 10, 2012 – Presentation on “Benefits of Iowa CREP wetlands” near Colo, IA (12 attendees)
110. June 27, 2012 – Presentation on “Impacts of conservation practices on water quality” at Iowa Learning Farm field day near Sumner, IA (45 attendees)
111. 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)
112. June 22, 2012 – Presentation on “Strategic placement of native prairie systems” to NSF-REU students at the Neal Smith National Wildlife Refuge (12 attendees)
113. 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)
114. June 20, 2012 – Presentation on “Nutrient reduction strategy science assessment” to the Water Resources Coordinating Council in Des Moines, IA (30 attendees)
115. June 8, 2012 – Presentation on “Subsurface drainage bioreactors” at Hewitt Creek field day near New Virginia, IA (25 attendees)
116. 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)
117. 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)
118. March 15, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in LeMars, IA (25 attendees)
119. March 15, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in LeMars, IA (25 attendees)
120. March 14, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in Algona, IA (35 attendees)
121. March 14, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Algona, IA (35 attendees)
122. March 13, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in Mason City, IA (15 attendees)
123. March 13, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Mason City, IA (15 attendees)
124. 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)
125. January 30, 2012 – Presentation on “Benefits of Drainage” at Drainage Workshop in New Hampton, IA (65 attendees)
126. January 30, 2012 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in New Hampton, IA (65 attendees)
127. 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)
128. January 9, 2012 – Presentation on “Subsurface drainage design” at the Iowa Land Improvement Contractors Annual Meeting in Des Moines, IA (125 attendees)

129. 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)
130. December 15, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Iowa Falls, IA (55 attendees)
131. December 15, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Iowa Falls, IA (55 attendees)
132. 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)
133. 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)
134. 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)
135. 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)
136. September 16, 2011 – Presentation on “Use of conservation systems for water quality benefits” at the Norman Borlaug Harvest Fest near Cresco, IA (200 attendees)
137. September 6, 2011 – Presentation on “Water quality impacts of targeted perennial placement” at Field Day near Prairie City, IA (20 attendees)
138. July 27, 2011 – Presentation on “Water quality impacts of targeted perennial placement” at Field Day near Greenfield, IA (55 attendees)
139. July 18, 2011 – Presentation on “Subsurface drainage design and targeting of perennials” to regional agronomists in Sioux Center, IA (45 attendees)
140. July 13, 2011 – Presentation on “Water infiltration and nutrient cycling in both ag and urban environments” in Linn County, IA (35 attendees)
141. June 29, 2011 – Presentation on “Tile and field drainage issues” at the Northeast Iowa Research and Demonstration Farm Field Day (135 attendees)
142. June 22, 2011 – Presentation on “Water quality impacts of land use” at the Ag-Based Renewable Energy Workshop near Ames, IA (35 attendees)
143. June 14, 2011 – Presentation on “Targeting of perennials” to the Iowa State Soil Conservation Committee near Prairie City, IA (25 attendees)
144. June 4, 2011 – Presentation on “Impacts of conservation practices” at Celebrate the Lake at Don Williams Park near Boone, IA (115 attendees)
145. June 3, 2011 – Presentation on “Drainage design” to Ukraine visitors near Ames, IA (12 attendees)
146. May 6, 2011 – Presentation on “Impacts of conservation practices” at Palo Alto 5th Grade Conservation day near Ruthven, IA (125 attendees)
147. April 20, 2011 – Presentation on “Nitrogen management and water quality” as part of the Iowa Learning Farms conservation webinar (209 views of the webinar)
148. March 17, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Pomeroy, IA (35 attendees)

149. March 17, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Pomeroy, IA (35 attendees)
150. March 16, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Garner, IA (40 attendees)
151. March 16, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Garner, IA (40 attendees)
152. March 10, 2011 – Presentation on “Benefits of Drainage” at Drainage Workshop in Paullina, IA (15 attendees)
153. March 10, 2011 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Paullina, IA (15 attendees)
154. March 2, 2011 – Presentation on “Enhancing environmental stewardship: A whole farm approach” at the Iowa Water Conference in Ames, IA (60 attendees)
155. 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)
156. 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)
157. 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)
158. January 25, 2011 – Presentation on “Arguments for and against drainage” at Crop Advantage Series Meeting in Carroll, IA (65 attendees)
159. January 18, 2011 – Presentation on “Drainage research results” at Crop Advantage Series Meeting in Storm Lake, IA (40 attendees)
160. January 12, 2011 – Presentation on “Farm drainage research” at Crop Advantage Series Meeting in Mason City, IA (125 attendees)
161. December 10, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Calmar, IA (30 attendees)
162. December 10, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Calmar, IA (30 attendees)
163. December 8, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Jefferson, IA (55 attendees)
164. December 8, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Jefferson, IA (55 attendees)
165. December 7, 2010 – Presentation on “Tile drainage and water quality: Controlled drainage, bioreactors, and wetlands” at Drainage Workshop in Pella, IA (30 attendees)
166. December 7, 2010 – Presentation on “Long-term benefits of tiling” at Drainage Workshop in Pella, IA (30 attendees)
167. December 3, 2010 – Presentation on “Trends in Iowa runoff” at the Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees)
168. 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)

169. 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)
170. October 19, 2010 – Presentation on “Water quality in Iowa” at the Iowa Pork Industry Center In-service (15 attendees)
171. September 28, 2010 – Presentation on “Bioreactor for water quality benefits” at local NRCS meeting in Webster City, IA (35 attendees)
172. September 24, 2010 – Presentation on “Use of conservation systems for water quality benefits” at the Norman Borlaug Harvest Fest near Cresco, IA (200 attendees)
173. 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)
174. August 27, 2010 – Presentation “Benefits of vegetative buffers” at a field day near Cosgrove, IA (30 attendees)
175. 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)
176. 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)
177. 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)
178. 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)
179. June 30, 2010 – Presentation on “An update on ag land drainage” at the Northwest Research Farm Field Day near Calumet, IA (250 people)
180. 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)
181. 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)
182. June 23, 2010 – Presentation on “Impacts of conservation practices on surface water quality” at Hickory Grove watershed meeting near Nevada, IA (25 attendees)
183. March 30, 2010 – Presentation on “Drainage design and water quality impacts of drainage” at Pioneers Growers meeting in Reinbeck, IA (45 attendees)
184. March 25, 2010 – Presentation on “Conservation practices and education” at State County Conservationists meeting in Des Moines, IA (35 attendees)
185. March 24, 2010 – Presentation on “Strategic placement of prairie vegetation for water quality benefits” at Tallgrass Prairie Center in Cedar Falls, IA (35 attendees)
186. March 23, 2010 – Presentation on “Economics of Tiling” at Farm Real Estate and Appraisers conference in Ames, IA (125 attendees)
187. March 17, 2010 – Presentation on “Benefits of Drainage” at Drainage Workshop in Dyersville, IA (15 attendees)
188. March 17, 2010 – Presentation on “Water quality impacts of drainage” at Drainage Workshop in Dyersville, IA (15 attendees)

189. March 16, 2010 – Presentation on “Drainage design” at Drainage Workshop in Grundy Center, IA (40 attendees)
190. March 9, 2010 – Presentation “Cedar River case study” at the Iowa Water Conference in Ames, IA (130 attendees)
191. March 9, 2010 – Presentation “Landscape scale nutrient reduction from nonpoint sources” at the Iowa Water Conference in Ames, IA (75 attendees)
192. February 18, 2010 – Presentation on “Tile drainage and water quality in Iowa” at Northeast Iowa Project Coordinators meeting in Independence, IA (40 attendees)
193. 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)
194. February 4, 2010 – Presentation on “Nitrogen loss through tile lines” at Crop Advantage Series meeting in Fort Dodge, IA (30 attendees)
195. January 19, 2010 – Presentation on “Bioreactors and grassed waterways” to Hewitt Creek watershed meeting (10 attendees)
196. 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)
197. January 14, 2010 – Presentation on “Two-stage ditch design” at the ISU-IDALS Drainage Engineers meeting in Fort Dodge, IA (25 attendees)
198. January 12, 2010 – Presentation on “Nitrogen loss through tile lines” at Crop Advantage Series Meeting in Ames, IA (75 attendees)
199. 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).
200. 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
201. December 30, 2009 – Presentation on “Drainage water management” at the North Central Iowa Crop and Land Stewardship Clinic in Iowa Falls, IA (35 attendees).
202. 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]
203. 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).
204. December 3, 2009 – Presentation “Effectiveness of variable-width buffer design for sediment reduction” at the Integrated Crop Management Conference in Ames, IA (250 attendees).
205. 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).
206. December 2, 2009 – Panel Presentation “Nitrogen management for water quality” at the Iowa Farm Bureau Federation Annual Meeting in Des Moines, IA (150 attendees).

207. November 23, 2009 – Presentation on “Performance of buffer systems” to students at West Branch, Mid-Prairie, and Iowa Mennonite (75 attendees).
208. October 1, 2009 – Presentation on “Drainage water management in Iowa” to the State Soil Technical Committee (15 attendees).
209. 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).
210. September 2, 2009 – Presentation on “Impacts of perennial strips on water quality” at Iowa Learning Farm Field Day near Prairie City, IA (30 attendees)
211. August 18, 2009 – Presentation on “Water quality in Iowa” to Willow Creek Watershed group in Greene County, IA (10 attendees)
212. 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).
213. July 29, 2009 – Presentation on “Water quality impacts of conservation practices” at an Iowa Learning Farm Field Day near Holland, IA (45 attendees).
214. July 28, 2009 – Presentation on “Bioreactors and drainage water management” at NRCS training event at Lake Rathbun, IA (40 attendees)
215. July 23, 2009 – Presentation on “Water quality impacts of conservation practices” at an Iowa Learning Farm Field Day near Elma, IA (25 attendees).
216. July 22, 2009 – Presentation on “Managing manure over tile lines” at the 2009 Upper Midwest Manure Handling Expo near Boone, IA (150 attendees).
217. 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).
218. July 16, 2009 – Presentation on “How does drainage help” at the FEEL Crop Management Clinic near Ames, IA (45 attendees).
219. July 9, 2009 – Presentation on “How does drainage help” at the FEEL Crop Management Clinic near Ames, IA (55 attendees).
220. June 18, 2009 – Presentation on “Drainage water quality” at the Northeast Iowa Research and Demonstration Farm Field Day near Nashua, IA (60 attendees).
221. 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).
222. June 17, 2009 – Presentation on “Impacts of conservation practices on water quality” at Iowa Learning Farm Field Day near Decorah, IA (95 attendees).
223. April 27, 2009 – Presentation on “Impacts of drainage on flooding” to Mason City noon Rotary (Invited presentation – 150 attendees).
224. 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).
225. 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).

226. March 10, 2009 – Presentation on “Agricultural runoff: Past, present, and future” at the Iowa Water Conference in Ames, IA (Invited presentation – 150 attendees)
227. February 26, 2009 – Presentation on “Water quality monitoring and performance measures” at the Performance Management Cooperators meeting in Ames, IA (15 attendees)
228. 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).
229. 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).
230. January 22, 2009 – Presentation on “Water quality research in northern Iowa” at the Crop Advantage Series meeting in Fort Dodge, IA (25 attendees).
231. 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).
232. January 13, 2009 – Presentation on “Drainage design and management” at the Iowa Land Improvement Contractors Annual Meeting in Des Moines, IA (35 attendees).
233. December 17, 2008 – Presentation on “Water quality update” at the Ag. Chemical Dealer Update in Ames, IA (85 attendees).
234. 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).
235. 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).
236. 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).
237. 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]
238. 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)
239. November 20, 2008 – Presentation on “Buffers, not just along streams any more” at Soil and Water Conservation District Commissioners Annual Meeting (45 attendees).
240. 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).
241. September 24, 2008 – Presentation on “Surface runoff impacts of tillage management practices” at Mitchell County Strip-Till Field Day (90 attendees).
242. 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.

243. September 15, 2008 – Presentation on “Drainage water management and subirrigation” at producers field near Newell, IA (5 attendees).
244. 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).
245. September 10, 2008 – Presentation “Putting it all together” at the Iowa Drainage School near Ames, IA (23 attendees).
246. 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).
247. September 9, 2008 – Presentation “What needs to go into drainage system layout” at the Iowa Drainage School near Ames, IA (23 attendees).
248. September 9, 2008 – Presentation “Drawing contour maps” at the Iowa Drainage School near Ames, IA (23 attendees).
249. 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).
250. August 20, 2008 – Presentation on “Controlled drainage and nitrate-removal wetland performance” at NRCS Area 2 Technician Tour near Stanhope, IA (25 attendees).
[Invited]
251. 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).
252. July 29, 2008 – Presentation on “Performance of conservation practices during extreme events” at Iowa Learning Farm Field Day near Plainfield, IA (35 attendees).
253. 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).
254. 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).
255. 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).
256. 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).
257. 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).
258. 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).
259. 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)
260. 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).

261. 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).
262. 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).
263. 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).
264. March 26, 2008 – Presentation on “Potential implications of the Gulf of Mexico Hypoxia Action Plan” Environment and Natural Resources Extension professional development (8 attendees).
265. March 20, 2008 – Presentation on “Agricultural drainage water quality” at meeting organized by Humboldt USDA-NRCS (25 attendees). [Invited]
266. 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).
267. 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).
268. February 28, 2008 – Presentation on “Drainage implications of continuous corn” to Hamilton County Ag. Series in Webster City, IA (15 attendees).
269. 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]
270. February 27, 2008 – Presentation on “The Iowa Plan for Wetland and Drainage Integrated Landscape Systems” at the 2008 Iowa Water Conference (125 attendees). [Invited]
271. February 22, 2008 – Presentation on “Drainage research in Iowa” to members of the Iowa Corn Growers in Independence, IA.
272. February 19, 2008 – Presentation on Iowa Learning Farm project to the Iowa Senate Agriculture Committee [Invited with two other members of project team].
273. February 11, 2008 – Presentation on Iowa Learning Farm project to the Iowa House Agriculture Committee [Invited with two other members of project team].
274. January 31, 2008 – Presentation on “Nitrates and subsurface drainage in southern Iowa” at Crop Advantage Series meeting in Ottumwa, IA (55 attendees).
275. January 17, 2008 – Presentation on “Nitrates and subsurface drainage in southern Iowa” at Crop Advantage Series meeting in Osceola, IA (40 attendees).
276. January 8, 2008 – Presentation “Nitrogen management and water quality” to Coldwater-Palmer watershed group in Allison, IA (12 attendees).
277. January 3, 2008 – Presentation “Considerations for field drainage design” at North Central Crop Clinic in Iowa Falls, IA (50 attendees)
278. 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).

279. 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]
280. December 19, 2007 – Presentation “Nitrate leaching and subsurface drainage for southern Iowa” at Ag. Chemical Dealer update in Ames, IA (45 attendees).
281. December 4, 2007 – Presentation “Buffers and surface water pollutants” at Ag. Chemical Dealer update in Ames, IA (85 attendees).
282. 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).
283. 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).
284. 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)
285. 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).
286. September 13, 2007 – Presentation “Setting up drainage control structures” with Gary Sands at the Iowa Drainage School near Ames, IA (24 attendees).
287. September 12, 2007 – Presentation “Putting it all together” at the Iowa Drainage School near Ames, IA (24 attendees).
288. 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).
289. September 11, 2007 – Presentation “What needs to go into drainage system layout” at the Iowa Drainage School near Ames, IA (24 attendees).
290. September 11, 2007 – Presentation “Drawing contour maps” at the Iowa Drainage School near Ames, IA (24 attendees).
291. 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).
292. August 28, 2007 – Demonstration “Highlighting macropores to tile lines using smoke” at the Manure Management Clinic near Ames, IA (25 attendees).
293. 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).
294. 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).
295. August 10, 2007 – Poster presentation “Agricultural drainage research” at the Corn Soybean Initiative Roundtable in Ames, IA.
296. 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).

297. 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).
298. July 27, 2007 – Demonstration “Impacts of in-field management on runoff water quality using the Conservation Systems Portable Rainfall Simulator” at Plymouth County Fair.
299. 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).
300. 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).
301. 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)
302. 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).
303. 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.
304. 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).
305. 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).
306. 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).
307. 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]
308. 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]
309. 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).
310. 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).
311. 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.
312. 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.
 313. March 27, 2007 – Presentation with Jim Pease “ Natural resources and environmental stewardship” at ANR Extension Professional Development and Programming Meeting (100 attendees)
 314. March 13, 2007 – Presentation “Controlled drainage – water quality benefits and irrigation potential” at Drainage Workshop in West Bend, IA (20 attendees).
 315. March 13, 2007 – Presentation “Long-term benefits of tiling” at Drainage Workshop in West Bend, IA (20 attendees).
 316. January 24, 2007 – Presentation “Drainage/water quality: Implications of continuous corn” at Crop Advantage Series meeting in Waterloo, IA (55 attendees).
 317. January 18, 2007 – Presentation “N-application impacts on N-concentration” at Coldwater-Palmer Watershed meeting in Allison, IA (12 attendees).
 318. 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).
 319. January 10, 2007 – Presentation “Drainage/water quality: Implications of continuous corn” at Crop Advantage Series meeting in Mason City, IA (55 attendees).
 320. 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]
 321. December 18, 2006 – Presentation “Pesticide movement in soils” at Agricultural Chemical Update in Denison, IA (40 attendees).
 322. December 6, 2006 – Presentation “Pesticide movement in soils” at Agricultural Chemical Update in Ames, IA (30 attendees).
 323. December 8, 2006 – Presentation “Drainage design now and in the future” at Iowa Drainage District Association annual meeting in Fort Dodge, IA (100 attendees).
 324. November 30, 2006 – Presentation “Economic and environmental considerations for drainage design” at Integrated Crop Management Conference in Ames, IA (225 attendees).
 325. September 27, 2006 – Presentation on Drainage water quality issues” at the Extension Ag. Engineers training session in Ames, IA.
 326. September 7, 2006 – Presentation “Conservation systems and water quality” at Field Day in Hardin County (45 attendees).
 327. September 6, 2006 – Presentation “Conservation systems and water quality” at Field Day in Plymouth County (100 attendees).
 328. August 31, 2006 – Presentation “Conservation systems and water quality” at Farm Progress Show.
 329. August 22, 2006 – Presentation “Beef manure and water quality issues” at Manure Management School in Ames, IA (50 attendees).
 330. August 3, 2006 – Presentation “Subsurface drainage bioreactors” at Iowa Land Improvement Contractors Field Day (65 attendees).

331. July 12, 2006 – Presentation “Benefits of tiling and drainage water management” at Drainage Field Day at Southeast Iowa Research Farm, CCA Session (50 attendees).
332. June 28, 2006 – Poster Presentation “Water and nutrient management: In-field strategies” Iowa Farm Bureau Ag. And Environment Conference (65 attendees)
333. June 27, 2006 – Presentation “Water quality issues and conservation practices” at Smeltzer Trust Field Day in Webster County (65 attendees).
334. June 19, 2006 – Presentation “Water quality issues in Iowa” to Iowa Pork Industry Center Advisory Group (15 attendees).
335. March 13-17, 2006 – Presentation “Long-term benefits of tiling” at Iowa Drainage Design Workshops (200 attendees).
336. March 13-17, 2006 – Presentation “Controlled drainage: water quality benefits and irrigation potential” at Iowa Drainage Design Workshops (200 attendees).
337. March 7, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Agriculture and the Environment Conference in Ames, IA (150 attendees).
338. 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).
339. March 2, 2006 – Presentation “Nitrogen timing effects on drainage water quality” to Iowa Farm Bureau Environmental Advisory Committee (12 attendees) [Invited].
340. February 15, 2006 – Presentation “Drainage design” at Soil and Water Management Clinic in Ames, IA (10 attendees).
341. February 15, 2006 – Presentation “Drainage water management” at Soil and Water Management Clinic in Ames, IA (10 attendees).
342. January 24, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Crop Advantage Series meeting in Storm Lake, IA (45 attendees).
343. January 19, 2006 – Presentation “Conservation systems: manure and drainage water quality” at Crop Advantage Series meeting in Spirit Lake, IA (50 attendees).
344. January 18, 2006 – Presentation “Agricultural drainage and water research” at Boone, IA weekly ag meeting (26 attendees).
345. January 13, 2006 – Presentation “Manure and drainage water quality” at North Central Iowa Crop Clinic (25 attendees).
346. January 12, 2006 – Presentation “Drainage water management” to Boone River Watershed Group (15 attendees).
347. January 10, 2006 – Presentation “Basic drainage design” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (80 attendees).
348. January 9, 2006 – Presentation “Drainage water management in Iowa” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (100 attendees).
349. December 15, 2005 – Presentation “Drainage management and cropping practices” at Iowa Drainage District Association annual meeting in Fort Dodge, IA (75 attendees).
350. 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).
351. September 23, 2005 – Presentation on “Water quality and buffers” to 20 gifted and talented 4th-6th grade students in Newton, IA.

352. 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).
353. September 7, 2005 – Presentation “Conservation drainage” to CREP stakeholders on field tour organized by IDALS (35 attendees).
354. August 24, 2005 – Presentation “Manure effects of water quality” at Manure Management Clinic in Ames, IA (40 attendees).
355. 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).
356. July 7, 2005 – Presentation “Drainage design for crop production and environmental benefits” at Pro Ag Meeting, Mitchell County Extension, Osage, IA (15 attendees).
357. June 29, 2005 – Presentation “Drainage water management and drainage water quality” to State Soil Conservation Committee at Gilmore City research facility (60 attendees)
358. June 24, 2005 – Presentation “Conservation systems and water quality” at Iowa Learning Farm field day in Clay county, IA (15 attendees).
359. June 22, 2005 – Presentation “Conservation systems and water quality” at Iowa Learning Farm field day in Keokuk county, IA (25 attendees).
360. February 8, 2005 – Presentation “TMDL’s and nutrient criteria” to Southfork Watershed Alliance in Iowa Falls, IA (10 attendees).
361. January 25, 2005 – Presentation “New tiling research in Iowa” at Crop Advantage Series meeting in Atlantic, Iowa (120 attendees).
362. January 12, 2005 – Presentation “Modified drainage for improved water quality” at North Central Crop Clinic in Iowa Falls, IA (45 attendees)
363. January 11, 2005 – Presentation “Tiling research at Iowa State University” at Iowa Land Improvement Contractors Association annual meeting in Des Moines, IA (60 attendees).
364. January 6, 2005 – Presentation “New tiling research in Iowa” at Crop Advantage Series meeting in Cedar Rapids, Iowa (40 attendees).
365. January 4, 2005 – Presentation “New tiling research in Iowa and economic considerations” at Crop Advantage Series meeting in Mt. Pleasant, Iowa (25 attendees).
366. December 3, 2004 – Presentation “Drainage management practices” at the Iowa Drainage District Association meeting in Fort Dodge, Iowa (55 attendees)
367. 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).
368. October 13, 2004 – Presentation “Drainage research at Pekin” at an open house at Pekin-Packwood school, Pekin, IA (20 students and 5 producers present).
369. September 9, 2004 – Presentation “Tiling and subsurface drainage” at Nashua field day (120 attendees).
370. 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).
371. July 19 and 21, 2004 – Taught at the Field Extension Education Laboratory (FEEL) on tillage and compaction (75 people at the sessions).

372. 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.
373. June 14 and 15, 2004 – Provided instruction assistance in the AST 493L Water Quality course (12 participants).
374. February 24, 2004 – Presentation “Drainage history in Iowa” at the Northwest Research Farm winter meeting in Calumet, IA (30 people present, mostly producers).
375. 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).
376. January 16, 2004 – Presentation “History of drainage in Iowa” at the Crop Advantage Series Meeting in Waterloo (75 people at presentations).
377. January 15, 2004 – Presentation “History of drainage in Iowa” at the Crop Advantage Series Meeting in Mason City (75 people at presentations).

Regional (60 total presentations, approximate number of individuals impacted – 3,341):

1. October 28, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in South Dakota (35 attendees)
2. October 2, 2014 – Presentation on “Water Quality Benefits of Prairie Strips” at the North Central Water Conference in Minneapolis, MN (35 attendees)
3. August 6, 2014 – Presentation on “Drainage Water Management Systems” as part of Sustainable Corn annual meeting in Ames, IA (75 attendees)
4. August 1, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Iowa (25 attendees)
5. July 30, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Iowa (35 attendees)
6. June 17, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Missouri (25 attendees)
7. May 14, 2014 – Panel Participation on Nutrient Loss from Agricultural Lands at the Food and Agriculture Conference in Minneapolis, MN (125 attendees)
8. April 17, 2014 – Presentation “Design of Drainage Water Management Systems” as part of Regional Drainage Training for NRCS in Illinois (25 attendees)
9. February 18-19, 2014 – Presentation on “Drainage and Tillage” at the Minnesota Conservation Tillage Conference in St. Cloud, MN (105 attendees) [Invited]
10. February 14, 2014 – Presentation on “Bioreactors and Wetlands” at the Missouri Drainage Workshop (45 attendees) [Invited]
11. 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]
12. October 24, 2013 – Presentation on “Practices to reduce nutrient loads from drained landscapes” at a Regional Drainage Workshop in Chazy, NY (110 attendees) [Invited]
13. June 26, 2013 – Presentation on “Iowa nutrient loss reduction strategy” at the 4R Nutrient Stewardship Summit in Des Moines, IA (95 attendees) [Invited]

14. April 16, 2013 – Presentation on “Iowa Nutrient Reduction Nitrogen Science Assessment” at the Heartland Regional Water Conference in Overland Park, KS (65 attendees) [Invited]
15. 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)
16. 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]
17. 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]
18. February 20, 2013 – Presentation on “Iowa Nutrient Reduction Nitrogen Science Assessment” Heartland Regional Water Quality Workshop in Nebraska City, NE (35 attendees) [Invited]
19. February 20, 2013 – Presentation on “Cover crops in sub-humid areas” at the Heartland Nutrient Management Workshop in Nebraska City, NE (35 attendees) [Invited]
20. 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]
21. September 12, 2012 – Presentation on “Drainage water quality benefits of native prairie” to the Hypoxia Task Force near Boone, IA (8 attendees)
22. September 11, 2012 – Presentation on “Iowa Nutrient Reduction Strategy Science Assessment” to the Hypoxia Task Force in Des Moines, IA (55 attendees)
23. June 19, 2012 – Presentation on “Drainage water quality projects in Iowa” at Drainage Water Management Technical Service Provider Training in Emmetsburg, IA (15 attendees)
24. 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]
25. January 5, 2012 – Presentation “Subsurface drainage opportunities and challenges” at the Ohio Certified Crop Advisors meeting in Columbus, OH (75 attendees) (Invited)
26. August 5, 2011 – Presentation “Benefits of conservation practices” at the Minnesota Strip Tillage Expo in Owatonna, IA (40 attendees)
27. 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]
28. 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)
29. 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]

30. 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]
31. 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]
32. April 6, 2010 – Presentation “Impacts of subsurface drainage” on Plant Management Network (available on-line) [Invited]
33. March 31, 2010 – Presentation “What you should know about drainage” Soil Science Society of America Webinar (57 attendees on-line during presentation) [Invited]
34. 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]
35. 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]
36. 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]
37. 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).
38. March 11, 2009 – Presentation “Wetlands and drainage: Iowa Perspective” at the Minnesota Agricultural Drainage Design Workshop in Willmar, MN (40 attendees).
39. 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).
40. August 14, 2008 – Presentation “Theoretical aspects of management” at the 2008 Drainage Water Management Workshop in Lamberton, MN (16 attendees).
41. 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).
42. 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)
43. 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].
44. 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].
45. March 8, 2007 – Presentation “Wetland design considerations for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (40 attendees).

46. 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).
47. 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]
48. 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].
49. 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].
50. 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).
51. October 16, 2006 – Presentation “Effects of manure on drainage water quality” to Nebraska Livestock and Environment Issues Committee (40 participants) [Invited].
52. 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].
53. March 9, 2006 – Invited presentation “Wetland design for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (50 attendees).
54. 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).
55. 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]
56. 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]
57. March 1-3, 2005 –Presentation “Wetland design for drainage water treatment” at Minnesota Agricultural Drainage Design Workshop in Mankato, MN (45 attendees).
58. 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]
59. 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.

60. 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 (9):

1. 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.
2. 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 Conservation Systems Portable Rainfall Simulator.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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).
9. 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 kmaland.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	Kristina Craft	M.S. Ag. Engineering (Expected 2016)	
2	Linda Schott	M.S. Ag. Engineering (Expected 2016)	
3	Emily Waring	M.S. Ag. Engineering (Expected 2016)	
4	Rebecca Roberts ^a	M.S. Graduate Program in Sustainable Agriculture	
5	Usman Anwar ^b	M.S. Graduate Program in Sustainable Agriculture (Completed 2014)	
6	Ryan Goeken	M.S. Graduate Program in Sustainable Agriculture (Completed 2013)	
7	Dan Andersen ^c	Ph.D. Ag. Eng. (Completed 2012)	Faculty member at Iowa State University
8	Jose Gutierrez Lopez ^d	M.S. Graduate Program in Sustainable Agriculture (Completed 2012)	Ph.D. student at the University of New Hampshire
9	Andrew Frana	M.S. Ag. Engineering	Engineer in Eastern IA
10	Wade Welsh	M.S. Biorenewable Technology Program (Completed 2012)	U.S. Army Corps of Engineers
11	Delise Lockett	M.S. Ag. Eng. (Completed 2012)	Engineer in Maryland
12	Laura Christianson ^e	Ph.D. Ag. Eng./ Graduate Program in Sustainable Agriculture (Completed 2011)	Engineer with The Conservation Fund
13	Brad Bond ^c	M.S. Ag. Eng. (Completed 2010)	Engineer with Curry-Willie Associated in Ames, IA
14	Zhiming Qi	Ph.D. Ag. Eng/Env. Science, (Completed 2009)	Faculty member at McGill University
15	Emily Hancheck ^f	M.S. Env. Science, Program begun in June 2007, Exited the Program	
16	Mario Perez- Bidegain ^g	Ph.D. Agronomy and Env. Science (Completed 2007)	Faculty member in Uruguay
17	Melissa Cheatham ^f	M.S. GPSA (Completed 2007)	University of Maryland and USDA-ARS as Research Associate
	Kyle Riley	M.S. Ag. Eng. (Completed	Engineer with Watershed

No.	Name	Degree	Current Position
		2006)	Concepts in Kansas City, MO
18	Greg Shepherd ^f	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. Robert Burns

^dCo-Major with Dr. Tom Isenhardt

^eCo-Major with Dr. Alok Bhandari

^fCo-major Professor with Dr. Heidi Asbjornsen

^gCo-major Professor with Dr. Rick Cruse

Served as Program of Study Committee Member

No.	Name	Degree
1	Gang Han	M.S. Plant Pathology
2	Sitha Ketpratoom	M.S. Soil Science
3	Stephanie Enloe	M.S. Graduate Program in Sustainable Agriculture
4	Ross Tuttle	M.S. Civil Engineering
5	Scott Lee	Ph.D. Soil Science
6	Maurice Washington	Ph.D. Ag. Engineering
7	Liz Luby	M.S. Ag. Engineering
8	Kapil Arora	Ph.D. Ag. Engineering
9	Charles Ikenberry	Ph.D. Ag. Engineering
10	Laurimar Goncalves Vendrusculo	Ph.D. Ag. Engineering
11	Jose Pantoja	Ph.D. Soil Science
12	Vilma Mateos Remigio	Ph.D. Env. Science
13	Rohith Gali	Ph.D. Ag. Engineering
14	Yuki Kojima	Ph.D. Soil Science
15	David Green	Ph.D. Env. Science
16	David Heer	M.S. Env. Science
17	Aaron Daigh	Ph.D. Env. Science (Completed 2013)
18	Daniel Murray	M.S. Ag. Engineering (Completed 2012)
19	Zachary Keninger	M.S. Env. Science (Completed 2012)
20	Tomorra Smith	M.S. Env. Science (Completed 2012)
21	Natasha Hoover	M.S. Env. Science (Completed 2012)
22	David Mitchell	M.S. Env. Science (Completed 2012)
23	Pramod Pandey	Ph.D. Ag. Engineering (Completed 2012)
24	Vic Albright	M.S. Toxicology (Completed 2011)
25	Dedrick Davis	Ph.D. Env. Science (Completed 2011)
26	Robert McNaull	M.S. Ag. Eng. (Completed 2010)
27	Nick Ohde	M.S. Graduate Program in Sustainable Agriculture

No.	Name	Degree
		(Completed 2010)
28	Jean McGuire	M.S. Sociology (Completed 2010)
29	Priyanka Jindal	Ph.D. Env. Science (Completed 2010)
30	Lingyuan Yang	Ph.D. Env. Science (Completed 2010)
31	Peter Lammers	Ph.D. Graduate Program in Sustainable Agriculture (Completed 2009)
32	Aaron Andrews	M.S. Env. Science (Completed 2009)
33	Cassie Herringshaw	M.S. Env. Science (Completed 2009)
34	Ian Murphy	M.S. Toxicology (Completed 2009)
35	Jian Jin	Ph.D. Ag. Engineering (Completed 2009)
36	Dan Anderson	M.S. Ag. Eng. (Completed 2008)
37	Keegan Kult	M.S. Env. Science (Completed 2008)
38	Ishadeep Khanijo	M.S. Ag. Eng. (Completed 2008)
39	Francisco Meza-Aguero	Ph.D. Env. Science (left program in 2007)
40	David Webber	Ph.D. Water Resources (Completed 2007)
41	Longjie Hong	Ph.D. Civil Eng. (Completed 2007)
42	Dorivar Ruiz Diaz	Ph.D. Agronomy (Completed 2007)
43	Jason Palmer	M.S. Env. Science (Completed 2007)
44	Kris Knight	M.S. Env. Science (Completed 2007)
45	Jacob Prater	M.S. Env. Science (Completed 2007)
46	Jong Ahn Chun	Ph.D. Ag. Eng.-Univ. of Illinois (Completed 2007)
47	Manven Bansal	M.S. Ag. Eng. (Completed 2006)
48	Kelly Thorp	Ph.D. Ag. Eng. (Completed 2006)
49	Matt Dvorak	M.S. Geol. And Atmosp. Sci. (Completed 2006)
50	Dan Kaiser	Ph.D. Agronomy (Completed 2006)
51	Jennifer Hawkins	M.S. Agronomy (Completed 2006)
52	Quang Huy Nguyen	M.S. Env. Science (Completed 2006)
53	Kendall DeJong	M.S. Ag. Eng. (Completed 2006)
54	Sonal Singhal	M.S. Civil Eng. (Completed 2005)
55	Candace Batts-Deceased	Ph.D. Env. Science

Undergraduate Honors Thesis Advising:

No.	Name	Degree
1	Emily Steinwag	B.S. Civil Engineering
2	James Gilbert	B.S. Environmental Science
3	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-Present
2	Jacqueline Comito	Program Manager I	January 2014-present

No.	Name	Position	Time
3	E. Britt Moore	Extension Specialist	December 2013-August 2014
4	Dr. Jill Motschenbacher	Post-Doctoral Research Associate	August 2013-December 2013
5	Connie Cannon	Program Coordinator	July 2013-present
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-present
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	Jose Antonio Gutierrez Lopez ^a	Intern from Mexico	Summer and Fall 2007 and Summer 2008
2	Amaury Demeestere	Intern from Lille University in France	June-September 2006
3	Thomas Fourmaux	Intern from Lille University in France	June-September 2005
4	Lidia Esteve ^b	Intern from Universitat de Lleida in Spain	July-December 2005
5	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. March 12, 2013 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (10 attendees).
2. March 27, 2012 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (10 attendees).
3. November 16, 2011 – Guest lecture on “Emerging Drainage Issues” to AE 431/531 (11 attendees).
4. November 4, 2010 – Lecture on “Nitrogen loss from drainage systems and methods to reduce nitrate export” to TSM 424 (15 attendees)
5. November 1, 2010 – Seminar on “Nitrogen loss through drainage systems” in the department of Horticulture (15 attendees)
6. March 29, 2010 – Environmental Science Seminar on “Nitrogen loss from drainage systems in Iowa” (20 attendees)
7. March 23, 2010 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (8 attendees).
8. November 18, 2009 – Guest lecture on “Emerging Drainage Issues” to AE 431/531 (12 attendees).

9. October 28, 2009 – Lecture “Hydrological functioning of agroforestry systems” to NREM 460/560 (12 attendees)
10. April 6, 2009 – Guest lecture on “Understanding global warming relative to conservation practices” to Honors 322D (20 attendees)
11. March 3, 2009 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (8 attendees).
12. November 19, 2008 – Guest lecture on “Drainage design for water quality improvement” to AE 533 (6 attendees).
13. November 17, 2008 – Guest lecture on “Drainage design” to AE 533 (6 attendees).
14. April 20, 2007 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550 (7 attendees).
15. 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).
16. Fall 2007 – Guest lecture on “Emerging Drainage Issues” AE 431/531
17. October 10, 2006 – Lecture “Hydrological functioning of agroforestry systems” to NREM 460/560 (9 attendees)
18. April 18, 2006 – Guest lecture on “Surface runoff and management practices to reduce runoff” to Toxicology 550. (9 attendees)
19. October 11, 2005 – Lecture “Manure and water quality” to Civil Engineering 591 seminar (35 attendees).
20. 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	Quenton Schneider	Ag. Engineering	Spring 2015-present
2	Melissa Larson	Environmental Science	Fall 2014-present
3	Alex Martin	Ag. Engineering	Spring 2014-present
4	Annie Wallace	Biosystems Engineering	Spring 2014-present
5	Nathan Waskel	Physics	Fall 2014-present
6	Jeff Heyer	Biosystems Engineering	Spring 2013-Spring 2014
7	Chris Alphs	Ag. Education	Spring 2013-Fall 2013
8	Linda Geiger	Ag. Engineering	Spring 2013-Fall 2013
9	Patrick Kelly	Biosystems Engineering	Summer 2012-Fall 2014
10	Mikah Wright	Communications	Spring 2012-Summer 2013
11	Brett McArtor	Agricultural Systems Technology	Spring 2012-Summer 2012
12	Britteny Carpio	Political Science	Spring 2012-Summer 2012
13	Rebecca Meerdink	Environmental Science	Spring 2012-Summer 2013
14	Sara Sloan	Environmental Science`	Spring 2011-Summer 2012
15	Alessandra Engels	Environmental Science	Spring 2011-Spring 2012
16	Alex Steffens	Agricultural Engineering	Spring 2011-Fall 2011
17	Jeremy Sprecher	Biosystems Engineering	Summer 2010-Fall 2012

No.	Name	Degree	Time
18	Emily Steinwag	Civil Engineering	Spring 2010-Spring 2012
19	Emily Mains	Agricultural Systems Technology	Spring 2010-Spring 2012
20	Chris Strunk	Agricultural Engineering	2009
21	Mark Weber	Agricultural Engineering	2009
22	Ryan Nelson	Industrial Technology	2009-2010
23	Scott Jacobson	Animal Ecology	2008-2010
24	Elizabeth Juchems	Ag. Business	Spring 2008-Summer 2011
25	Brad Bond	Agricultural Engineering	Spring 2007-Summer 2008
26	Rachel Maixner	Agricultural Engineering	Spring 2007-Spring 2008
27	Delise Lockett	Agricultural Engineering	Summer 2007-Fall 2008
28	Mike Hameister	Construction Engineering	Summer 2007
29	Rafael Pereira	Agricultural Engineering exchange student from Brazil	Fall 2006
30	Aaron Andrews	Agricultural Systems Technology	Summer 2006-Spring 2007
31	Matt Koehler	Agricultural Engineering	Summer 2006
32	James Gilbert	Environmental Science	Summer 2005-Fall 2005

Student Club Advising:

Advisor for the Agricultural Systems Technology Club

2005-present

Professional Development Activities**Professional Development:**

- 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:

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| 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 |
| • 2 nd 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 | 2001-2014 |
| • 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 |