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EDUCATION

- 2004** **Ph.D. Soil Science**, University of Kentucky
Emphasis: Nutrient Management of Animal Wastes
- 1995** **M.S. Agricultural Education**, University of Kentucky.
- 1992-93** **Major:** Engineering Technology, Lexington Community College
- 1991** **Associate Degree**, Lexington Community College.
- 1987** **B.S. Agricultural Economics**, University of Kentucky.

REFEREED PUBLICATIONS

- Fulton, J.P., S.A. Shearer, **S.F. Higgins**, and T.P. McDonald. (2012). A method to generate and use as-applied surfaces to evaluate variable-rate fertilizer applications. *Precision Agriculture*, Published online 25 September 2012. doi: 10.1007/s11119-012-9286-1.
- Luck, J.D., S.K. Pitla, S.A. Shearer, T.G. Mueller, C.R. Dillon, J.P. Fulton, and **S.F. Higgins**. (2010). Potential for Pesticide and Nutrient Savings via Map-based Automatic Boom Section Control of Spray Nozzles. *Computers & Electronics in Agriculture*, 70(1), 19-26.
- Sistani, K.R., J.G. Warren, N. Lovanh, **S.F. Higgins**, and S. Shearer. (2010). Greenhouse Gas Emissions from Swine Effluent Applied to Soil by Different Methods. *Soil Science Society of America Journal*, 74(2), 429-435.
- Luck, J.D., S.R. Workman, **S.F. Higgins**, and M.S. Coyne. (2009). Consequences of Manure Filtration through Pervious Concrete during Simulated Rainfall Events. *Biosystems Engineering*, 102(4), 417-423.
- Fulton, J.P., **S.F. Higgins**, T.F. Burks, C.J. Sobolik, and S.A. Shearer. (2009). Grain Yield Monitor Flow Sensor Accuracy for Simulated Varying Field Slopes. *Applied Engineering in Agriculture*, 25(1), 15-21.
- Luck, J.D., S.R. Workman, **S.F. Higgins**, and M.S. Coyne. (2008). Solid Material Retention and Nutrient Reduction Properties of Pervious Concrete Mixtures. *Biosystems Engineering*, 100(3), 401-408.

- Prewitt, R.M., M.D. Montross, S.G. McNeill, T.S. Stombaugh, S.A. Shearer, **S.F. Higgins**, and S. Sokhansanj. (2007). Corn Stover Availability and Collection Efficiency using Typical Hay Equipment. *Transactions of the ASABE*, 50(3), 705-711.
- Luck, J.D., S.R. Workman, **S.F. Higgins**, and M.S. Coyne. (2006). Hydrologic Properties of Pervious Concrete. *Transactions of the ASABE*, 49(6), 1807-1813.
- **Higgins, S.F.**, M.S. Coyne, S.A. Shearer, and J.P. Fulton. (2006). Evaluating a Rapid On-Farm Nutrient Determination Model for Use in Implementing Nutrient Management Plans. *Water, Air, & Soil Pollution*, 171(1), 333-358.
- Fulton, J.P., S.A. Shearer, **S.F. Higgins**, M.J. Darr, and T.S. Stombaugh. (2005). Rate Response Assessment from Various Granular VRT Applicators. *Transactions of the ASABE*, 48(6), 2095-2103.
- Fulton, J.P., S.A. Shearer, **S.F. Higgins**, D.W. Hancock, and T.S. Stombaugh. (2005). Distribution Pattern Variability of Granular VRT Applicators. *Transactions of the ASABE*, 48(6), 2053-2064.
- **Higgins, S.F.**, M.S. Coyne, S.A. Shearer, and J.D. Crutchfield. (2005). Determining Nitrogen Fractions in Swine Slurry. *Bioresource Technology*, 96(9), 1081-1088.
- **Higgins, S.F.**, S.A. Shearer, M.S. Coyne, and J.P. Fulton. (2005). A Rapid Method for Determining TN and TP Concentrations in Swine Slurry. *Transaction of the ASABE*, 47(5), 1727-1737.
- **Higgins, S.F.**, S.A. Shearer, M.S. Coyne, and J.P. Fulton. (2004). Relationship of Total Nitrogen and Total Phosphorus Concentration to Solids Content in Animal Waste Slurries. *Applied Engineering in Agriculture*, 20(3), 355-364.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, M.E. Anderson, T.F. Burks and **S.F. Higgins**. (2003). Simulation of Fixed and Variable-Rate Application of Granular Materials. *Transactions of the ASABE*, 46(5), 1311-1321.
- Workman, S.R., **S.F. Higgins**, and S.A. Shearer. (2001). Monitoring Subsurface Drainage Flow at Remote Locations. *Applied Engineering in Agriculture*, 17(6), 783-786.
- Fulton, J.P., S.A. Shearer, G. Chabra, and **S.F. Higgins**. (2001). Performance Assessment and Model Development of a Variable-Rate, Spinner-Disk Fertilizer Applicator. *Transactions of the ASABE*, 44(5), 1071-1081.

MEETING PAPERS

- Bolster, C.H., R.D. Coffey, S. Coleman, P. Goodman, **S.F. Higgins**, T. Horvath, B. Lee, C. Renfro, E.L. Ritchey, R. Smallwood, J. Sanders, S. Mehlhope, K. Woodrich. 2013. Development and Testing of a Revised Phosphorus Index for Kentucky. Kentucky Water Resources Research Institute Annual Symposium. March 18, 2013
- Warren, J.G., K. Sistani, S. Shearer, and **S.F. Higgins**. 2007. Evaluation of pre-plant swine effluent application methods for corn grain production. In Agronomy abstracts CD-ROM. ASA, Madison, WI.

- Maia, G.D.N., R.S. Gates, E.G. Wilkerson, **S.F. Higgins**, A. Singh, and J.L. Taraba. 2006. Characterization of Headspace Gases in Ventilated and Impermeable Swine Manure Tanks and their Abatement using Biofiltration. ASABE Annual International Meeting, Portland, Oregon, July 9-12.
- Luck, J.D., S.R. Workman, **S.F. Higgins**, and M.S. Coyne. 2006. Hydrologic Properties of Pervious Concrete. Paper No: 067063. ASABE Annual International Meeting, Portland, Oregon, July 9-12.
- Wendroth, O., X. Shuai, R.J. Walton, J. Dinger, J. Currens, D. Edwards, M.S. Coyne, J. Grove, and **S.F. Higgins**. 2006. Salt Movement through the Vadose Zone of a Karst Soil—First Experiences with a Transfer Function Approach. Annual Symposium of the Kentucky Water Resources Research Institute, Lexington, KY, March 26.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, **S.F. Higgins**, T.C. Dowdy, and T.P. McDonald. 2004. 'As-Applied' Spatial Data Model for Evaluating Variable-Rate Fertilizer Application Accuracy. ASABE Paper No. 041115. Annual International Meeting, Ottawa, Ontario, Canada, August 1-4.
- Fulton, J.P., S.A. Shearer, **S.F. Higgins**, T.S. Stombaugh, M. J. Darr, and D.W. Hancock. 2004. Comparison of VRT Granular Applicators. ASABE Paper No. 041113. Annual International Meeting, Ottawa, Ontario, Canada, August 1-4.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, and **S.F. Higgins**. 2003. Comparison of Variable-Rate Granular Application Equipment. ASABE Paper No. 031125. Annual International Meeting, Las Vegas, Nevada, July 27-30.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, **S.F. Higgins** and C.R. Dillon. 2002. 'As-Applied' Model Validations for Variable-Rate Application of Granular Materials. In. P.C. Robert et al. (ed.) Proc. 6th International Conference on Precision Agriculture. ASA Misc. Publ., ASA, CSSA, and SSSA, Madison, WI.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, and **S.F. Higgins**. 2002. Simulation of Variable-Rate Application of Granular Materials. ASABE Paper No. 021168. Annual International Meeting, Chicago, Illinois, July 28-31.
- Fulton, J.P., S.A. Shearer, T.S. Stombaugh, and **S.F. Higgins**. 2001. Pattern Assessment of a Spinner Disc Variable-Rate Fertilizer Applicator. ASABE Paper No. 011116. Annual International Meeting, Sacramento, California, July 29-August 1.
- Thomasson, J.A., S.A. Shearer, R.L. Hoskinson, R.K. Fink, J.R. Wooten, T.G. Mueller, J.P. Fulton, and **S.F. Higgins**. 2001. Decision Support System for Agriculture (DSS4Ag) Applied to Fertilization of Corn and Cotton. ASABE Paper No. 011018. Annual International Meeting, Sacramento, California, July 29-August 1.
- Fulton, J.P., S.A. Shearer, M.E. Anderson, T.F. Burks and **S.F. Higgins**. 2000. Simulated Application Errors for Granular Materials for Fixed and Variable-Rate Application. ASABE Paper No. 001153. Annual International Meeting, Milwaukee, Wisconsin, July 9-12.

- Shearer, S.A., T.F. Burks, J.A. Thomasson, T.G. Mueller, J.P. Fulton, **S.F. Higgins**, and S. Samson. 1999. Yield Prediction Using A Neural Network Classifier Trained Using Soil Landscape Features and Soil Fertility Data. ASABE Paper No. 993042. Annual International Meeting, Toronto, Canada, July 18-21.
- Fulton, J.P., S.A. Shearer, G. Chabra, and **S.F. Higgins**. 1999. Field Evaluation of a Spinner Disc Variable-Rate Fertilizer Applicator. ASABE Paper No. 991101. Annual International Meeting, Toronto, Canada, July 18-21.
- Shearer, S.A., **S.F. Higgins**, S.G. McNeill, G.A. Watkins, R.I. Barnhisel, J.C. Doyle, J.H. Leach, and J.P. Fulton. 1997. Data Filtering and Correction Techniques for Generating Yield Maps from Multiple Combine Systems. ASABE Paper No. 971034. Annual International Meeting, Minneapolis, Minnesota, August 10-14.
- Shearer, S.A., R.I. Barnhisel, **S.F. Higgins**, G.A. Watkins, C.J. Soblik, J.P. Fulton. 1996. Assessment of the Potential for Site-Specific Management of Crop Production in Central Kentucky. ASABE 961003, Annual International Meeting, Phoenix, Arizona.

GUEST LECTURES

- ASC 382 Animal Production Principles
- BAE 403 Biosystems and Ag Engineering Design II
- NRE 471 Senior Problem in Natural Resources and Environmental Science
- PLS 477G Land Treatment of Waste
- ASC 406 Beef Cattle Science, 2013, 2015
- ASC 320 Equine Management, 2013, 2014, 2016
- ASC 406 Beef Cattle Science, 2014
- ASC 382 Animal Production Principles, 2015, 2016

POSTER PRESENTATIONS

- **Higgins, S.F.**, Gumbert, A., and S. Mehlhope. 2013. University of Kentucky – Making Connections. Gulf Hypoxia Task Force Meeting, Louisville KY.
- Gumbert, A., **S.F. Higgins**, and S. Workman. 2008. W4: Cane Run Watershed Assessment and Restoration Project. National Water Quality Conference, Reno, NV.
- **Higgins, S.F.**, S. Shearer, C. Dillon, and R. Coffey. 2008. A7: Demonstration of Enhanced Technologies for Land Application of Animal Nutrient Sources in Sensitive Watersheds. National Water Quality Conference, Reno, NV.
- **Higgins, S.F.** 2008. Demonstration of Enhanced Technologies for Land Application of Animal Nutrient Sources in Sensitive Watersheds. Soil and Water Conservation Society Annual Conference, Conservation Innovation Grant Poster Showcase, Tucson, AZ.

- **Higgins, S.F.**, S. Workman, and A. Gumbert. 2007. Cane Run Watershed Assessment and Restoration Project. Southern Region Water Quality Conference, Fayetteville, AR.
- Workman, S.R., **S.F. Higgins**, M.S. Coyne, J.D. Luck. 2007. Pervious Concrete for Solid/Liquid Separation and Waste Remediation. Paper No. 067063.
- **Higgins, S.F.**, B.K. Koostra, S.A. Shearer. 2007. Development of a GIS Decision Support System for Planned Expansion of Animal Enterprises. Paper No. 062005.

EXTENSION AND OUTREACH PUBLICATIONS

- Providing Water for Beef Cattle in Rotational Grazing Systems. 2016. **Stephen F. Higgins** and Lee Moser, Biosystems and Agricultural Engineering, and Kevin Laurent, Animal and Food Sciences. ID-236.
- Farmstead Planning: Old Farm Buildings Repurposed for Better Farming. How to Develop a Farming Complex. 2016. **Stephen F. Higgins** and Lee Moser, Biosystems and Agricultural Engineering. AEN-131.
- Drought Risk Management for Beef Cattle Farms. 2016 **Stephen F. Higgins**, Lee Moser, and Kylie Schmidt, Biosystems and Agricultural Engineering. AEN-130.
- Best Management Practices for Kentucky Dairy Operations. 2016. **Stephen F. Higgins**, Kylie Schmidt, and Lee Moser, Biosystems and Agricultural Engineering, and Amanda Abnee Gumbert, Agriculture Extension Programs.
- What Type of Environment Do Your Cattle Have? September, 2016. **Stephen F. Higgins**. Cow Country News.
- Are Your Stressed Cattle Stressing You Out? August, 2016. **Stephen F. Higgins**. Cow Country News.
- “Plan B”. July, 2016. **Stephen F. Higgins** and Lee Moser. Cow Country News.
- Providing Water for Beef Cattle in Rotational Grazing Systems with Tire Waterers. July, 2016. **Stephen F. Higgins**. University of Kentucky Extension Grazing Newsletter.
- Farmstead Planning- Old Farm, New Farming. June, 2016. **Stephen F. Higgins** and Lee Moser. Cow Country News.
- Checklist for a Multipurpose Barn. April, 2016. **Stephen F. Higgins** and Lee Moser. Cow Country News.
- All-Weather Surfaces for Cattle Watering Facilities. 2015. **Stephen F. Higgins**, Kylie Schmidt, and Donnie Stamper, Biosystems and Agricultural Engineering and Kevin Laurent, Animal and Food Sciences. ID-229.
- Composting Animal Mortalities. Volume 18. Winter 2015. **Stephen F. Higgins**. HoofPrint Newsletter.
- Backgrounding Operations: Stay Clean and on the Right Side of the Law. August, 2014. **Stephen F. Higgins**. Cow Country News.

- Making Winter Feeding Easier and Sustainable. January, 2014. **Stephen F. Higgins**. The Farmer's Pride.
- Closing a Liquid Manure Storage Structure. 2014. **Stephen F. Higgins** and Kylie Schmidt, Biosystems and Agricultural Engineering. AEN-125.
- Lowering Somatic Cell Counts with Best Management Practices. 2014. **Stephen F. Higgins**, Kylie Schmidt, and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-123.
- Increasing Dry Cow and Bred Heifer Performance with Environmental Management. 2014. **Stephen F. Higgins** and Kylie Schmidt, Biosystems and Agricultural Engineering. AEN-121.
- Kentucky Nutrient Management Planning Guidelines. 2014. **Stephen F. Higgins** and Kylie Schmidt, Biosystems and Agricultural Engineering, and Amanda A. Gumbert, Agriculture Extension Programs. ID-211.
- On-Farm Composting of Animal Mortalities. 2013. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering, and Amanda A. Gumbert, Agriculture and Natural Resources. ID-166 – revised.
- On-Farm Disposal of Animal Mortalities. 2013. **Stephen Higgins** and Spencer Guinn, Biosystems and Agricultural Engineering, and Amanda Abnee Gumbert, Agriculture and Natural Resources. ID-167 - revised
- Environmental Compliance for Dairy Operations. 2013. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering, and Amanda A. Gumbert, Agriculture and Natural Resources. ID-200.
- All-Weather Surfaces for Livestock. 2013. **Stephen F. Higgins**, Stephanie Mehlhope, and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-115.
- Feedlot Design and Environmental Management for Backgrounding and Stocker Operations. 2013. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering, and Jeff Lehmkuhler, Animal and Food Sciences. ID-202.
- Environmental Compliance for Dairy Operations, 2013. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. ID-200.
- Enhanced Vegetative Strips for Livestock Facilities. 2012. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering, and Ray Smith, Plant and Soil Sciences. ID-189.
- Nutrient Management Concepts for Livestock Producers. 2012. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-113.
- Strategic Winter Feeding of Cattle Using a Rotational Grazing Structure. 2011. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. ID-188.
- Stormwater BMPs for Confined Livestock Facilities. 2011. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-103.

- Sinkhole Management for Agricultural Producers. 2011. Sarah Wightman and **Stephen F. Higgins**, Biosystems and Agricultural Engineering, and Rob Blair, Kentucky Division of Water. AEN-109.
- Paved Feeding Areas and the Kentucky Agriculture Water Quality Plan. 2011. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-107.
- Stream Crossings for Cattle. 2011. **Stephen F. Higgins**, Carmen Agouridis, and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-101.
- Pasture Feeding, Streamside Grazing, and the Kentucky Agriculture Water Quality Plan. 2011. **Stephen F. Higgins**, Sarah J. Wightman, and Carmen T. Agouridis, Biosystems and Agricultural Engineering. AEN-105.
- How to Close an Abandoned Well. 2011. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-104.
- Building a Grade Stabilization Structure to Control Erosion. 2011. **Stephen F. Higgins**, Donnie Stamper, and Sarah Wightman, Biosystems and Agricultural Engineering. AEN-100.
- Woodland Winter Feeding of Cattle: Water Quality Best Management Practices. 2011. **Stephen F. Higgins** and Sarah Wightman, Biosystems and Agricultural Engineering and Jeff Stringer, Forestry. ID-187.
- Alternative Water Source: Developing Springs for Livestock. 2011. **Steve F. Higgins**, Donnie J. Stamper, and Sarah J. Wightman, Biosystems and Agricultural Engineering. AEN-98.
- Shade Options for Grazing Cattle. 2011. **Stephen F. Higgins**, Carmen T. Agouridis, and Sarah J. Wightman, Biosystems and Agricultural Engineering. AEN-99.
- Riparian Buffers: A Livestock Best Management Practice for Protecting Water Quality. 2009. Amanda Gumbert, Agricultural Programs, and **Stephen F. Higgins** and Carmen Agouridis, Biosystems and Agricultural Engineering. ID-175.
- Using Soil-Cement on Horse and Livestock Farms. 2009. **Steve F. Higgins**, D. Spencer Guinn, and Donnie Stamper, Biosystems and Agricultural Engineering. ID-176.
- Options for Controlling Canada Geese. 2009. **Stephen F. Higgins** and Spencer Guinn, Biosystems and Agricultural Engineering and Amanda Gumbert, Agricultural Programs. ID-174.
- Using Dry Lots to Conserve Pastures and Reduce Pollution Potential. 2008. **Stephen F. Higgins**, Biosystems and Agricultural Engineering and Roberta Dwyer, Veterinary Sciences. ID-171.
- Drinking Water Quality Guidelines for Cattle. 2008. **Stephen F. Higgins** and Carmen T. Agouridis, Biosystems and Agricultural Engineering, and Amanda A. Gumbert, Agricultural Programs. ID-170.
- Composting Horse Muck. 2008. **Stephen F. Higgins**, Stephen Workman, V. Nicole Gallagher, and Donald J. Stamper, Biosystems and Agricultural Engineering, and Robert Coleman, Animal and Food Sciences. ID-168.

- High Traffic Area Pads for Horses. 2007. STEPHEN F. HIGGINS, Benjamin Koostra, Stephen Workman, and Victoria Nicole Gallagher, Biosystems and Agricultural Engineering, and Robert Coleman, Animal and Food Sciences. ID-164.
- Pervious Concrete as a Flooring Material for Horse Handling Areas. 2007. STEPHEN F. HIGGINS and Steve Workman, Biosystems and Agricultural Engineering and Robert J. Coleman, Animal and Food Sciences. ID-161.
- Grain Drill Calibration Procedures for Winter Wheat. 2000. S.A. Shearer, S.G. McNeill, G.A. Watkins, and **Stephen F. Higgins**, Biosystems and Agricultural Engineering. AEN-81.
- Elements of Precision Agriculture: Basics of Yield Monitor Installation and Operation. 1999. S.A. Shearer, J.P. Fulton, S.G. McNeill, and **Stephen F. Higgins**, Biosystems and Agricultural Engineering and T.G. Mueller, Agronomy. PA-1.

COLLEGE DUTIES AND COMMUNITY OUTREACH ENGAGEMENT

- Ensure that the College of Agriculture, Food, and Environment is an effective steward of its 17,000+ acres of land across Kentucky
- Work to make the College of Agriculture Experiment Station a model of environmental compliance at federal, state, and local levels
- Act as the liaison for nutrient management and water quality issues between the College of Agriculture, Food, and Environment and the following agencies: USDA-Agricultural Research Service (ARS), Natural Resources Conservation Service (NRCS), Kentucky Division of Water (KDOW), Kentucky Office of the State Veterinarian, Kentucky Transportation Cabinet, Kentucky Commerce Cabinet, Soil and Water Commissioner, Kentucky Agriculture Water Quality Authority, and Kentucky Division of Waste Management
- Act as the liaison between the College of Agriculture, Food, and Environment and the Departments of Biosystems and Agricultural Engineering, Animal and Food Sciences, Forestry, Management and Operations, Plant and Soil Sciences, and Veterinary Sciences regarding nutrient management, water quality issues, and water quality best management practices
- Meet with College of Agriculture, Food, and Environment Deans, Department Chairs, and interdepartmental staff to discuss and communicate research projects and environmental issues involving the Experiment Station
- Act as a liaison between the farm staff and college faculty to implement new approaches to manage animal nutrient sources and to preserve water quality.
- Develop and maintain Agriculture Water Quality and Nutrient Management Plans for the Experiment Station
- Write extension publications and conduct educational programs concerning environmental compliance and best management practice (BMP) implementation

- Implement, encourage, and obtain funding for water quality BMPs on the Experiment Station
- Demonstrate BMPs and other management methods that protect water quality
- Maintain a working relationship with state agencies designed to solve state water quality problems and agricultural and watershed issues
- Serve as the representative for the College of Agriculture, Food, and Environment with the EPA-Region IV regarding inspections and affiliated projects
- Serve on College of Agriculture, Food, and Environment committees involving the University Experiment Station farms and the Equine Initiative
- Participate on Task Forces formed by the Lexington Fayette Urban County Government dealing with municipal waste and surface water issues.

INVITED PRESENTATIONS (MORTALITY COMPOSTING, AWQP BMPS, CANE RUN WATERSHED, NUTRIENT MANAGEMENT)

- **Pasture to Plate Environmental Session Presentation.** BMP implementation and production benefits of environmental practices. Princeton, Owenton (Eden Shale Farm), and West Liberty, Kentucky. September, 2016.
- **Kentucky Agriculture Water Quality Authority New BMP and Cost-Share Modification Presentation.** BMP implementation and cost-share. Frankfort, KY. June, 2016.
- **Ag Water Quality BMP Implementation Field Presentation.** Presentation for Kentucky Beef Network board regarding water quality and BMP installations. Eden Shale Farm, Owenton, Kentucky. June, 2016.
- **Ag Water Quality BMP Implementation Field Presentation.** Presentation for the Commissioner of the Kentucky Department of Environmental Protection. Eden Shale Farm, Owenton, Kentucky. June, 2016.
- **Stormwater Management in Agriculture.** Kentucky Stormwater Conference. Louisville, KY. June, 2016
- **Ag Water Quality BMP Implementation Field Presentation.** BMP presentation to cattle producers. Eden Shale Farm, Owenton, Kentucky. May, 2016.
- **Ag Water Quality BMP Implementation Field Presentation.** BMP presentation to state commissioners of various natural resource management divisions. Eden Shale Farm, Owenton, Kentucky. May, 2016.
- **Kentucky Grazing School Water Quality Presentation.** Water quality BMPs and environmental considerations of site design. Versailles, KY. May, 2016.

- **Ag Water Quality BMP Implementation Field Presentation.** Presentation for French foreign exchange students in the Equine Science Program regarding water quality and BMP installations. Lexington, Kentucky. May, 2016.
- **Spring Nutrient Management Planning Training BMP Session.** Nutrient management and BMP implementation. West Liberty and Lexington, Kentucky. April, 2016.
- **Kentucky Agriculture Water Quality Authority Winter Feeding Area and Manure Stack Pad Presentation.** BMP implementation. Frankfort, KY. March, 2016.
- **Dairy BMP and Site Management Tour at WKU Dairy.** BMPs and environmental compliance. Bowling Green, KY. March, 2016.
- **Environmental Bootcamp for Agricultural Professionals.** KAWQA, AWQPs, NMPs, and BMPs. London, Owingsville, Radcliff, and Princeton, Kentucky. February-March, 2016
- **Ag Water Quality BMP Implementation Field Presentation.** Presentation for Barren County cattle producer group regarding water quality and BMP installations. Eden Shale Farm, Owenton, Kentucky. February, 2016.
- **BMP and Manure Management Presentation.** KAWQA, AWQPs, NMPs, and BMPs. Fleming, Hart, Madison, Marion, Nelson, Pulaski, Rowan, and Washington Counties, Kentucky. February-March, 2016.
- **Nutrient Management and Agricultural Water Quality BMPs.** Department Seminar for the Department of Biosystems and Agricultural Engineering, University of Kentucky. February, 2016.
- **Master Cattleman Farmstead Management and BMP Installation Presentation.** BMPs and Farm Design. Campbell, Fayette, Hardin, Larue, Meade, Morgan, Wayne, and Woodford Counties, Kentucky. November, 2015.
- **Eden Shale BMP Tour for NRCS Staff.** BMPs and nutrient management. Eden Shale Farm, Owenton, Kentucky. November, 2015.
- **Kentucky Agriculture Water Quality Authority Winter Feeding Area and bedded structure Presentation.** BMP implementation. Frankfort, KY. November, 2015.
- **Pasture to Plate Environmental Session Presentation.** BMP implementation and production benefits of environmental practices. Princeton, Owenton (Eden Shale Farm), and West Liberty, Kentucky. October, 2015.
- **Eden Shale BMP Tour for KDOW Staff.** BMPs and nutrient management. Eden Shale Farm, Owenton, Kentucky. October, 2015.
- **Eden Shale BMP Tour for Eden Shale Open House 2015.** BMPs and nutrient management. Eden Shale Farm, Owenton, Kentucky. October, 2015.
- **Regional Beef Field Day BMP Presentation.** September, 2015.
- **BMP Outreach Presentations.** BMP implementation for beef cattle producers. Caldwell, Morgan, Owen, and Shelby Counties, Kentucky. September, 2015.

- **BMP Field Day Presentation for new staff from KDOW, DCA, Conservation Districts, and Bacon Creek Watershed Group.** Eden Shale Farm, Owenton, Kentucky. August, 2015.
- **Composting Livestock Mortalities Presentation.** Veterinary Science Symposium. Lexington, Kentucky. August, 2015.
- **Ag Water Quality BMP Implementation Field Presentation.** BMP installation and effectiveness presentation for visitors from Mississippi State University. University of Kentucky North Farm, Lexington, KY. July, 2015.
- **Kentucky Farm Bureau BMP Presentation.** May, 2015.
- **Conservation Planning Training for NRCS Technical Service Providers.** BMPs and conservation planning. May, 2015.
- **Environmental Bootcamp for Agricultural Professionals.** KAWQA, AWQPs, NMPs, and BMPs. May, 2015.
- **Agricultural Professionals Field Day.** BMPs at the Eden Shale Farm. Owenton, KY. April, 2015.
- **Master Cattlemen Program.** BMPs and environmental compliance. April, 2015.
- **Watershed Management and Land Use Impacts on Water Quality.** Presentation for students at Kentucky Horse Park. Lexington, Kentucky. April, 2015.
- **Integrated Pest Management Training.** Biosolids. Princeton, KY. March, 2015.
- **Master Cattlemen Program.** BMPs and environmental compliance. March, 2015.
- **Turf and Landscape Management Short Course.** BMPs for turf management. Lexington, KY. February, 2015.
- **Meade County Extension Office.** BMPs for beef operations. February, 2015.
- **Research Administrator's Society.** BMPs implemented on UK's research farms. Atlanta, GA. February, 2015.
- **McLean County Extension Office.** BMPs for beef operations. January, 2015.
- **Robertson County Extension Office.** Livestock mortality composting. November, 2014.
- **Kentucky Division of Water.** Demonstrated BMP Paddock at UK's North Farm. Lexington, KY. November, 2014.
- **Managing Beef Cattle in Confinement Conference.** Siting a confinement cattle facility. Lexington, KY. November 24, 2014.
- **Robertson County Extension Office.** Livestock composting. September 9, 2014.
- **Cane Run Tour for Kentucky Association for Environmental Education Conference.** Tour of Cane Run Watershed project area and progress. Lexington, Kentucky. September, 2016.
- **Kentucky Division of Water.** Best Management Practices. Frankfort, Kentucky. August 22, 2014.

- **Kentucky Agricultural Development Council Nutrient Management Presentation.** BMP implementation and nutrient management. Frankfort, Kentucky. July, 2014.
- **Larue County Extension Office.** BMPs for beef operations. August 12, 2014.
- **Kentucky Division of Water.** Demonstrated livestock mortality composting. July 30, 2014.
- **Breckinridge County Extension Office.** Composting livestock mortalities. July 2014.
- **Boyd County Extension Office.** Nutrient management for cattle operations. July 2014.
- **CAIP Training.** Nutrient management. Hopkinsville, Kentucky. July 2014.
- **Christian County Extension Office.** Composting livestock mortalities. July 2014.
- **Master Stocker Program.** BMPs and environmental compliance. April 2014.
- **Small Ruminant Grazing Conference.** BMPs for small ruminant producers. Lexington, Kentucky. March 2014.
- **Estill County Extension Office.** Managing mud and nutrients on beef operations. March 2014.
- **Scott County Extension Office.** Managing mud and nutrients on beef operations. March 2014.
- **Oldham County Extension Office.** Managing mud and nutrients on beef operations. March 2014.
- **Lincoln County Extension Office.** BMPs and environmental compliance. March 2014.
- **Shelby County Extension Office.** BMPs and environmental compliance. March 2014.
- **Nelson County Extension Office.** BMPs and environmental compliance. March 2014.
- **Fleming County Extension Office.** BMPs and environmental compliance. March 2014.
- **Christian County Extension Office.** BMPs and environmental compliance. March 2014.
- **Warren County Extension Office.** BMPs and environmental compliance. March 2014.
- **Metcalf County Extension Office.** BMPs and environmental compliance. March 2014.
- **Adair County Extension Office.** BMPs and environmental compliance. March 2014.
- **Master Stocker Program.** BMPs and environmental compliance. March 2014.
- **Clark County Extension.** Livestock mortality composting. Winchester, Kentucky. February, 2014.
- **Mortality Composting Presentation.** Livestock mortality composting. Oneida, Kentucky. January, 2014.
- **Level 2 Kentucky Certified Professional Turf Manager Workshop.** Water quality and best management practices. Lexington, Kentucky. January, 16, 2014.
- **Kentucky Division of Water.** Nutrient management and best management practices. Frankfort, Kentucky. December 9, 2013.

- **Cane Run Watershed Council.** Cane Run Watershed Project update. Lexington, Kentucky. December 2, 2013.
- **Cattlemen's Association.** Composting animal mortalities. Oneida, KY. November 7, 2013.
- **Repurposing Old Winter Feeding Areas Presentation.** Farmstead planning field day. Versailles, Kentucky. November, 2013.
- **Field Day.** Repurposing winter feeding areas. Danville, Kentucky. September 24, 2013.
- **National Master Farm Homemakers' Guild.** UK North Farm livestock mortality composting. Lexington, Kentucky. September, 2013.
- **Field Day.** Livestock mortality composting and Kentucky Agriculture Water Quality Plans. Georgetown, Kentucky. August 12, 2013.
- **Field Day.** Water quality and nutrient management. Eden Shale Farm. August 3, 2013.
- **National Master Farm Homemakers' Guild.** Pervious horse washing pad. Spindletop Farm. July 25, 2013.
- **National Master Farm Homemakers' Guild.** Livestock mortality composting. C. Oran Little Research Farm. July 25, 2013.
- **NRCS Nutrient Management Code 590 Training.** Technical Service Providers. Mt. Sterling, Kentucky. May 22, 2013.
- **NRCS Nutrient Management Code 590 Training.** Technical Service Providers. Hopkinsville, Kentucky. May 21, 2013.
- **NRCS Nutrient Management Code 590 Training.** Technical Service Providers. Campbellsville, Kentucky. May 20, 2013.
- **Cane Run Watershed Council.** Cane Run Watershed Project update. Lexington, Kentucky. May 13, 2013.
- **Young Dairymen.** Environmental stewardship for young dairy producers. February 26, 2013.
- **NRCS Nutrient Management Code 590 Training.** University of Kentucky faculty and Extension associates. February 18, 2013.
- **Master Cattleman.** Bracken County Cooperative Extension Service, Kentucky. February 11, 2013.
- **NRCS Nutrient Management Code 590 Training.** University of Kentucky faculty and Extension associates. February 11, 2013.
- **Small Ruminant Grazing Conference.** Environmental stewardship for small ruminant production. Morehead State University. February 2, 2013.
- **Living the Country Life Radio.** Woodland winter feeding for cattle. January 28, 2013.
- **Kentucky River Watershed Watch Alliance Conference.** *Pathogens in Our Waterways* January 19, 2013.

- **Breeder's Short Course.** University of Kentucky Equine Initiative. January 19, 2013.
- **Dairy Meeting.** Warren County Cooperative Extension Service, Kentucky. Composting and Environmental Concerns. January 17, 2013.
- **Master Stocker.** Jefferson County Cooperative Extension Service, Kentucky. December 13, 2012.
- **Master Stocker.** Boone County Cooperative Extension Service, Kentucky. November 27, 2012.
- **Master Cattlemen.** Fayette County Cooperative Extension Service, Kentucky. November 20, 2012.
- **Master Stocker.** Edmonson County Cooperative Extension Service, Kentucky. November 12, 2012.
- **Division of Water.** Agent training, Lake Barkley, Kentucky. November 8, 2012.
- **Master Stocker.** Nelson County Cooperative Extension Service, Kentucky. November 6, 2012
- **Field Day.** Animal mortality composting and mud control. Muhlenberg County, Kentucky. November 5, 2012.
- **Master Gardener.** Composting. Washington County Cooperative Extension Service, Kentucky. October 16, 2012
- **Field Day.** Mud control, winter feeding, and animal mortality composting. Harrison County Cooperative Extension Service, Kentucky. October 8, 2012.
- **Master Cattlemen,** Woodford County Cooperative Extension Service, Kentucky. October 4, 2012.
- **Beef Bash.** Environmental Concerns for Cattlemen. September 27, 2012.
- **Master Stocker.** Madison County Cooperative Extension Service, Kentucky. September 25, 2012.
- **Master Stocker.** Madison County Cooperative Extension Service, Kentucky. September 25, 2012.
- **Cattlemen Field Day.** Composing Animal Mortalities. Warren County Cooperative Extension Service, Kentucky. September 20, 2012.
- **Division of Conservation.** Agriculture Water Quality Compliance Training. West Liberty, Kentucky. September 19, 2012.
- **Division of Compliance Assistance.** Agriculture Water Quality Compliance Training. Bowling Green, Kentucky. August 1, 2012.
- **Field Day.** Composing Animal Mortalities. Allen County Cooperative Extension Service, Kentucky. July 30, 2012.
- **Division of Compliance Assistance.** Agriculture Water Quality Compliance Training. Somerset, Kentucky. July 25, 2012.

- **Division of Compliance Assistance.** Agriculture Water Quality Compliance Training. Princeton, Kentucky. July 18, 2012.
- **Field Day.** Waste Management and the Regulations that Affect You. July 11, 2012.
- **Division of Compliance Assistance.** Agriculture Water Quality Compliance Training. Frankfort, Kentucky. July 10, 2012.
- **Sheep Profit Day.** Nutrient Management, BMPs, Composting Animal Mortalities. May 17, 2012.
- **Master Cattleman Program.** Boyd County, Kentucky. April 17, 2012.
- **Southern States Agriculture Water Quality Issues.** February 2, 2012.
- **Master Stocker Program.** January 31, 2012.
- **Master Stocker Program.** January 6, 2012.
- **KFB Annual Meeting Beef Conference.** Animal mortality composting. December 1, 2011.
- **Presentation.** November 2, 2011.
- **Livestock BMP Workshop.** October 25, 2011.
- **Master Stocker Program.** October 14, 2011.
- **Field Day.** Mortality composting. EKU in Madison County, Kentucky. October 6, 2011.
- **Field Day.** Composting Animal Mortalities. Menifee County Cooperative Extension Service, Kentucky. September 17, 2011.
- **Master Cattlemen Program.** Composting Animal Mortalities and Nutrient Management. ARC Versailles, Kentucky. September 16, 2011.
- **Master Cattlemen Program.** Composting Animal Mortalities and Nutrient Management. ARC Woodford County, Kentucky. September 15, 2011.
- **Master Cattlemen Program.** Composting Animal Mortalities and Nutrient Management. ARC Princeton, Kentucky. September 8, 2011.
- **Franklin County Solid Waste Administrator.** Mortality Composting. LRC Woodford County, Kentucky. August 31, 2011.
- **Meade County Beef Field Day.** Mortality Composting. Meade County, Kentucky. August 30, 2011.
- **Simpson County Beef Field Day.** August 23, 2011.
- **Agriculture Water Quality Authority.** Frankfort, Kentucky. August 16, 2011.
- **Field Day.** Mortality composting. Breckenridge County, Kentucky. August 1, 2011.
- **Kentucky Farm Bureau Federation Natural Resources Advisory Committee.** Ag. Water Quality Plan livestock BMPs. Frankfort, Kentucky. July 25, 2011.
- **Field Day.** Mortality composting. Carroll County Extension Service. July 12, 2011.

- **Recycling and Local Assistance's Solid Waste Workshop for County Officials and Solid Waste Coordinators.** Mortality composting. Lake Cumberland State Park, Kentucky. June 9, 2011.
- **USDA Area Emergency Coordinator.** Mortality composting. LRC Woodford County, Kentucky. June 8, 2011.
- **Eden Shale Pasture Walk.** Owen County, Kentucky. June 2, 2011.
- **Cane Run Watershed Council.** Cane Run Watershed Project update. Lexington, Kentucky. May 16, 2011.
- **Casey County Extension Office.** Mortality composting. April 29, 2011.
- **Barren County Extension Office.** Mortality composting. April 27, 2011.
- **Shelby County Extension Office.** April 21, 2011.
- **Fleming County Extension Office.** April 4, 2011.
- **Clark County Extension Office.** Mortality composting. March 21, 2011.
- **Adair County Young Farmer Group.** Mortality composting. LRC Woodford County, Kentucky. March 10, 2011.
- **Agriculture Water Quality Authority.** Frankfort, Kentucky. March 3, 2011.
- **Legacy Trail Enhancement Project.** Cane Run watershed. Lexington, Kentucky. March 1, 2011.
- **Kentucky Association of Milk, Food, and Environmental Sanitarians.** Mortality composting. Louisville, Kentucky. February 23, 2011.
- **Mid-South Stocker Conference.** Composting mortalities and environmental compliance. Bowling Green, Kentucky. February 22, 2011.
- **Kentucky Equine Research.** Mortality composting. LRC Woodford County, Kentucky. February 16, 2011.
- **Barren County Extension Office.** February 8, 2011.
- **Eastern Kentucky University Farms administration and staff.** Mortality composting. LRC Woodford County, Kentucky. February 1, 2011.
- **Southern States.** Nutrient management and protecting water quality. Lexington, Kentucky. January 26, 2011.
- **Lexington Greenspace Commission.** Cane Run Watershed Project. Lexington, Kentucky. January 19, 2011.
- **Cane Run Watershed Council.** Lexington, Kentucky. January 10, 2011.
- **Fleming County Extension Office.** January 5, 2011.
- **Fayette County Neighborhood Council.** Cane Run Project presentation, Nov 8, 2010.
- **Cane Run Project tour for Dr. Mullen's class.** October 14, 2010.

- **Master Cattlemen Program.** Composting Animal Mortalities and Nutrient Management. ARC Woodford County, Kentucky. October 12, 2010.
- **ARC Tour for DOC Meeting with Coleman et al. and NRCS.** Composting Animal Mortalities and Nutrient Management. ARC Woodford County, Kentucky. October 12, 2010.
- **Boyle County Extension.** Composting Animal Mortalities for Cattleman's Meeting. Boyle County, Kentucky. October 12, 2010.
- **Mason County Extension.** Composting Animal Mortalities. Mason County Landfill, Kentucky. October 7, 2010.
- **Regional Cattleman's Field Day.** Composting Animal Mortalities. Henry County, Kentucky. October 5, 2010.
- **Western Kentucky University.** Composting Animal Mortalities for Conservation Districts, Extension, and NRCS. Bowling Green, Kentucky. October 1, 2010.
- **Beef Bash – West Kentucky Substation.** Nutrient Management and Composting Animal Mortalities. Caldwell County, Kentucky. September 23, 2010.
- **KyFarmStart – Pulaski County Field Day.** Water Quality and Composting Animal Mortalities. Pulaski County, Kentucky. September 21, 2010.
- **Scott County Extension Tour.** Composting Animal Mortalities. ARC Woodford County, Kentucky. September 16, 2010.
- **Northern Kentucky Extension Tour for Don Sorrell.** Composting Animal Mortalities. ARC Woodford County, Kentucky. September 15, 2010.
- **Meade County Field Day.** Composting Animal Mortalities. Meade County, Kentucky. August 13, 2010.
- **Bath County Field Day.** Composting Animal Mortalities. Bath County, Kentucky. August 11, 2010.
- **Taylor County Field Day.** Composting Animal Mortalities. Taylor County, Kentucky. July 21, 2010.
- **Bob Wiseman Brownbag Luncheon.** Cane Run Grants and Improvements to Watershed. July 13, 2010.
- **Kentucky Association of Conservation Districts Convention.** Composting and Tour. July 2010.
- **Robinson Scholars.** July 2010.
- **Environmental Impacts and Horse Bath Live Demonstration.** Invited Presentation with Amanda Gumbert by Pat Trotter. June 22, 2010.
- **Hart County Field Day.** Hart County, Kentucky. April 20, 2010.
- **KSU Third Thursday: Composting and Water Quality.** March 18, 2010.
- **Ag Water Quality Authority.** February 18, 2010, April 8, 2010.

- **North Farm Dairy, Cane Run, Pesticides.** Dean's Meeting. February 15, 2010.
- **Fleming County Cattleman's Association.** Composting. Fleming County, Kentucky. February 11, 2010.
- **Hart County Extension Office.** Composting. Hart County, Kentucky. February 4, 2010.
- **State Extension Tour.** February 2, 2010.
- **Southern States Annual Meeting.** January 26, 2010.
- **Bath County Cattleman's Association.** CNMP-Composting. Bath County, Kentucky. January 25, 2010.
- **Kentucky Association of Counties.** December 17, 2009.
- **Laurel County.** Laurel County, Kentucky. December 15, 2009.
- **Shakertown.** December 15-16, 2009.
- **Ag Quality Authority.** USGS. Louisville, Kentucky. December 10, 2009.
- **Kentucky Farm Bureau.** Composting. December 2009.
- **KWA Alliance Roundtable.** Cane Run Creek Watershed Restoration Project. Louisville, Kentucky. November 22, 2009.
- **Nutrient Management.** Invited Guest Lecturer for Agricultural Research Center and Eastern Kentucky University for Mark Coyne. November 4-5, 2009.
- **Sustainable Agriculture.** Agricultural Research Center. October 7, 2009.
- **University of Kentucky.** Livestock and the Environment: Grazing Near Streams. Animal Sciences Labs. Lexington, Kentucky. September 28-29, 2009.
- **University of Kentucky.** Land Use Planning. Animal Sciences Lecture. Lexington, Kentucky. September 23, 2009.
- **Asbury College.** Mud horses and Clean Water: Grazing near Streams. Invited Presentation by Ray Smith. Draft Horse Field Day. Wilmore, Kentucky. September 19, 2009.
- **Fayette County Field Day.** Fayette County, Kentucky. September 9, 2009.
- **Livestock Production Principles.** September 8, 2009.
- **Natural Resources Conservation Service.** Legacy Trail Endurance Race. August 28, 2009.
- **Washington County.** Fallen Stock. Washington County, Kentucky. August 13, 2009.
- **Natural Resources Conservation Service.** Princeton Environmental and Education Possibilities. August 10, 2009.
- **Cane Run Watershed Restoration Project/ Best Management Practices.** Tours with Amanda Gumbert. July 13, 2009.
- **Turf Field Day.** Ag Water Quality Best Management Practices. Invited Presentation by AJ Powell Jr. Turf Field Day; field presentation from Wagon Tours. July 9, 2009.

- **Cattleman's Tour.** Fallen Stock. July 7, 2009.
- **Equine Pavilion.** Ag Water Quality Plan. Lexington, Kentucky. June 19, 2009.
- **ADD's natural Resources and Environmental Protection Advisory Committee.** Cane Run Creek Watershed Restoration Project. June 10, 2009.
- **Bluegrass Partnership for a Green Community.** June 10, 2009.
- **Agricultural Research Center.** Composting Demonstrations. April 30, 2009, May 4, 2009, May 6, 2009.
- **Third Thursday: Soils and Ponds.** Natural Resources Conservation Service. April 16, 2009.
- **Logan County Field Day.** Logan County, Kentucky. April 1, 2009.
- **Environmental Concerns and Lawn Renovation Using Organics.** Invited Presentation by Charlie Slack in Plant and Soil Sciences. North Farm Update. University of Kentucky. Lexington, Kentucky. February 18, 2009.
- **Bluegrass Partnership for a Green Community.** Cane Run Creek Watershed Restoration Project. February 11, 2009.
- **University of Kentucky.** Riparian Areas. North Farm, University of Kentucky. Lexington, Kentucky. February 6, 2009.
- **Animal and Food Sciences.** University of Kentucky. Lexington, Kentucky. February 6, 2009.
- **Kentucky Pork Producers Annual Meeting.** Comprehensive Nutrient Management Plans. January 24, 2009.
- **Clark County.** Fallen Stock. Clark County, Kentucky. December 18, 2008.
- **Ag Water Quality Authority.** Ag Water Quality Plan. December 11, 2008.
- **Natural Resource Center.** Class, University of Kentucky. Lexington, Kentucky. December 5, 2008.
- **Woodford County.** Animal Research Center Tour. Woodford County, Kentucky. November 19, 2008.
- **Grayson County Extension Office.** Fallen Stock. Nutrient Committee. Grayson County, Kentucky. November 6, 2008.
- **Cane Run Watershed Restoration Project.** Invited Presentation by Larry Grabau. Water Quality Issues. November 5, 2008.
- **Lexmark.** Cane Run Creek Watershed Restoration Project. Invited Presentation by Becki Owens. Sustainability Speaker Series. Lexington, Kentucky. October 8, 2008.
- **GOV Conference.** Topic: Environment. October 6-7, 2008.
- **Agriculture Water Quality Authority meeting.** September 18, 2008.
- **Equine Field Day.** Ag Water Quality Plan. August 7, 2008.

- **Department of Transportation.** Fallen Stock. Shelby County, Kentucky. June 21, 2008.
- **Ag Water Quality Plan.** Agronomy Field Day. June 12, 2008.
- **Erosion Study Advisory Committee.** June 4, 2008.
- **Kentucky Water Summit 2008.** Watershed Management Breakout Session. May 19, 2008.
- **Lexmark.** Cane Run Creek Watershed Restoration Project. Lexington, Kentucky. May 13, 2008.
- **Natural Resources and Environmental Sciences Planning Initiative.** May 1, 2008.
- **Raven Run.** Ag Water Quality Best Management Practices. Lexington, Kentucky. April 29, 2008.
- **American Farm Bureau.** Tour of Animal Research Center. Woodford County, Kentucky. April 28, 2008.
- **University of Kentucky.** Reducing Mud in High Traffic Areas. Lexington, Kentucky. April 25, 2008.
- **Grazing Schools for Horse Owners.** Kenton County, Kentucky. April 4, 2008.
- **Gamma Sigma Delta Seminar.** March 26, 2008.
- **Kentucky Water Resources Research Institute.** Reducing Mud in High Traffic Areas. March 17, 2008.
- **Composting.** Fulton County, Kentucky. February 19, 2008.
- **Kentucky Farm Bureau Presidents and Vice Presidents Conference.** Ag Water Quality Plan. Louisville, Kentucky. February 13, 2008.
- **Soil and Water Commission Meeting.** January 11, 2008.
- **Cane Run Creek Watershed Restoration Project.** Initial Project Meeting. Lexington, Kentucky. December 14, 2007.
- **Kentucky State.** Animal Research Center Bus Tour. Frankfort, Kentucky. November 14, 2007.
- **McConnell Forest.** October 30, 2007.
- **Animal and Food Sciences Symposium.** October 1-2, 2007.
- **Kentucky Tourism Cabinet.** Lexington, Kentucky. September 25, 2007.
- **Farm Bureau.** Beef Unit Lunch. September 6, 2007.
- **Private Property Effects on Water Quality.** Invited Presentation by Don Blevins. September 4, 2007.
- **Natural Resource Initiative Planning Committee.** August 29, 2007.
- **Kentucky Department of Transportation.** Compost Field Day. August 23, 2007.
- **Natural Resources Conservation Service.** August 20, 2007.

- **Division of Conservation Conference.** Frankfort, Kentucky. August 7, 2007.
- **Logan County Field Day.** Logan County, Kentucky. July 31, 2007.
- **Frankfort Watershed Steering Committee.** Frankfort, Kentucky. June 19, 2007.
- **Grazing Schools for Horse Owners.** Boyle County, Kentucky. May 12, 2007.
- **University of Kentucky.** Agriculture and the environment. Lexington, Kentucky. April 30, 2007.
- **Agricultural Research Service.** April 21, 2007.
- **Eastern Kentucky University.** Meadowbrook Farm and Manure Management. Richmond, Kentucky. April 21, 2007.
- **Grazing Schools for Horse Owners.** Boone County, Kentucky. April 15, 2007.
- **Lexmark.** Cane Run Creek Watershed Restoration Project. Lexington, Kentucky. April 9, 2007.
- **Composting.** Shelby County, Kentucky. March 27, 2007.
- **Agronomy Land Use.** February 21, 2007.
- **Farm Machinery Show.** Louisville, Kentucky. February 14-15 and 17, 2007.
- **Bluegrass Partnership for a Green Community.** Lexington, Kentucky. February 13, May 9, and July 8, 2007.

GRANTS (INVESTIGATOR /COOPERATING RESEARCHER)

- Winter Feeding and Other Cattle Best Management Practices. Investigator: **Stephen F. Higgins.** Sept 2016 to Sept 2018. \$368,938.
- Managing Poo: Adoption of Nutrient Management and Conservation Practices. Investigators: Amanda Abnee Gumbert and **Stephen F. Higgins.** July 2016 to June 2018. \$58,100
- Pollinator Habitat Improvement (non-traditional audience outreach). Investigator: **Stephen F. Higgins.** Jan 2016 to Sept 2016. \$2,500.
- Kentucky Dairy Education and Outreach Project (Milk, Mud, and Clean Cows). Investigator: **Stephen F. Higgins.** Feb 2014 to June 2014. \$44,466
- Managing Mud, Manure, and Runoff: Kentucky Livestock BMP Demonstration and Training Project. Investigator: **Stephen F. Higgins.** Feb 2013 to Sept 2016. \$833,333
- Conservation Practice Code 590 Nutrient Management Training. Investigator: **Stephen F. Higgins.** September 2012 to September 2013. \$27,500
- Agricultural Water Quality Improvement Project. Investigator: **Stephen F. Higgins.** March 2011 to March 2012. \$92,400

- Development and Implementation of Stream Restoration and Riparian Corridor Techniques for Enhancing Water Quality in the Cane Run Watershed. National Resources Conservation Service- National Resources and the Environment Grant. Investigators: Carmen T. Agouridis, **Stephen F. Higgins**, Richard Warner. Mar 2010 to Mar 2013. \$360,000
- Princeton BMP Demonstration Project. Investigator: **Stephen F. Higgins**. Nov 2010 to Sept Dec 2013. \$315,000
- Evaluating the Effectiveness of Weep Berm Systems for Treating Runoff from the Composting of Horse Muck. Investigators: Carmen T. Agouridis, Richard C. Warner, Christopher D. Barton, and **Stephen F. Higgins**. April 2010 to April 2012. \$207,057
- Control and Treatment of Runoff from a Muck Storage Pad using a Permeable Containment Basin and Phytotechnologies. Investigators: Christopher D. Barton, Carmen T. Agouridis, and **Stephen F. Higgins**. April 2010 to April 2012. \$105,009
- Examining the Effects of Stream Restoration and Riparian Buffer Development on Water Quality of a Small Spring-Fed Stream. Investigators: Carmen T. Agouridis, **Stephen F. Higgins**, and Christopher D. Barton. April 2010 to April 2012. \$15,428
- Fayette County Conservation District Cost Share: On-Farm Water Enhancement Program for a Heavy Use area (Stream Crossing). Investigator: **Stephen F. Higgins**. June 2008 to Sept 2008. \$1,500
- Fayette County Conservation District Cost Share: On-Farm Water Enhancement Program for a Spring Development. Investigator: **Stephen F. Higgins**. June 2008 to September 2008. \$5000
- Environmental and Public Protection Cabinet- 2008 Kentucky Waste Tire Crumb Rubber Grant: Kentucky Horse Park Draft Barn. Investigator: **Stephen F. Higgins**. April 2008 to December 2008. \$5,179
- EPA: Cane Run and Royal Spring Watershed Based Plan Implementation Project. Investigators: **Stephen F. Higgins**, Steve Workman, and Amanda Abnee Gumbert. June 2008 to June 2012. \$757,238
- EPA: Cane Run and Royal Spring Watershed Based Plan. Investigators: **Stephen F. Higgins**, Amanda Abnee Gumbert, Carmen Agouridis, and Jeff Stringer. June 2008 to June 2012. \$1,110,940

- USDA – CSREES: Gaseous Production from Impermeable Swine Waste Storage Tanks and its Abatement using Biofilters. Investigators: R.S. Gates, A. Singh, Stephen F. Higgins, and E.G. Wilkerson. Feb 1, 2007 to Jan 31, 2010. \$487,087
- USDA – Conservation Innovation Grant: Programmable Controls for Solid-Liquid Settling Basins. Investigator: Stephen F. Higgins. September 2007 to September 2009. \$42,677
- USDA – Conservation Innovation Grant: Spray Nozzle Control for Preservation of Vegetated Conservation Features. Investigators: Scott Shearer, Tom Mueller, and Stephen F. Higgins. September 2007 to September 2009. \$74,897
- Pervious Concrete for Solid/Liquid Separation and Waste Remediation. USGS section 104B Program. Investigators: S.R. Workman, J.D. Luck, and **S.F. Higgins**. \$4,999 for 1 year
- Woodford Count Conservation District-State Cost share Practice: Agricultural Waste Control Facility. Investigator: **S.F. Higgins**. June 2006 to June 2008. \$20,000
- USDA – Conservation Innovation Grant: Demonstration of Enhanced Technologies for Land Application of Animal Nutrient Sources in Sensitive Watersheds. Investigators: **S.F. Higgins**, S.A. Shearer, M.S. Coyne and C.R. Dillon. Project Duration: Sept. 28, 2004 through Sept. 27, 2007. \$354,572
- Precision Agriculture: Development of a Decision Support System for Animal Enterprise Expansion in Kentucky. Investigators: **S.F. Higgins**, B. K. Koostra, S.A. Shearer, R. Fleming, D. Zourarakis, G. Henson. Project duration: Sept. 1, 2004 through Aug. 31, 2007. \$64,983
- Swine and Dairy Waste Management Using Precision Agriculture. Senate Bill 271, General Assembly, Commonwealth of Kentucky. Investigator: S.A. Shearer, R.I. Barnhisel, J.L. Taraba and **S.F. Higgins**. Project duration: Apr. 1, 1998 to Mar. 31, 2001. \$119,200
- Precision Agriculture: Development and Assessment of Integrated Practices for Kentucky Producers - Phase II - IV. Investigators: S.A. Shearer, T.G. Mueller, and C.R. Dillon. Project duration: Sept. 1, 2000 through Aug. 31, 2003. \$795,174.
- Precision Agriculture: Development and Assessment of Integrated Practices for Kentucky Producers. Investigators: S.A. Shearer, T.G. Mueller, and C.R. Dillon. Project duration: May 1, 1999 through Aug. 31, 2002. \$467,800.
- Swine and Dairy Waste Management Using Precision Agriculture. Senate Bill 271, General Assembly, Commonwealth of Kentucky. Investigator: S.A. Shearer, R.I. Barnhisel, J.L. Taraba and **S.F. Higgins**. Project duration: Apr. 1, 1998 to Mar. 31, 2001. \$119,200
- Water and Crop-Yield Management Improvement with Data from Remote and Ground-Level Sensors (A8223009). Idaho National Energy and Environmental Laboratory, U.S. Department of Energy. Investigators: J.A. Thomasson, S.A. Shearer and D.A. Pennington. Project duration: Oct. 1, 1997 to Sept. 31, 2000. \$54,500 (sub-contract with Mississippi State University).

- Site-Specific Nutrient and Biosolids Management for Agricultural Lands. USEPA Nonpoint Source 319(h) Program. Investigators: S.A. Shearer, R.I. Barnhisel, D.G. Overhults and J.H. Grove. Project duration: Nov. 1, 1995 to Dec. 31, 2001. \$195,700
- Variable-rate seeding: a comparative study with Kentucky corn producers. Kentucky Corn Growers Association. Investigators: R.I. Barnhisel, S.A. Shearer and M.J. Bitzer
- Site-specific nutrient and biosolids management for agricultural lands. U.S. Environmental Protection Agency Nonpoint Source 319 (h) Program. Investigators: S.G. McNeill and S.A. Shearer
- Site-specific management of herbicides on crop lands. Senate Bill 271, General Assembly, Commonwealth of Kentucky. Investigators: S.A. Shearer, R.I. Barnhisel and G.A. Watkins
- Agricultural pesticide handling and application technology demonstration. U.S. Environmental Protection Agency Nonpoint Source 319 (h) Program. Investigators: S.G. McNeill and S.A. Shearer.
- Swine and Dairy Waste Management Using Precision Agriculture. SB-271, General Assembly, Commonwealth of Kentucky. Investigators: S.A. Shearer, J.L. Taraba and **S.F. Higgins**
- Effects of Variable Seeding and Nitrogen Rates, Based on Landscape Position, on Corn Yield: A focus of Economic Response Using Precision Agriculture. Kentucky Corn Growers Association. Investigators: R.I. Barnhisel, S.A. Shearer and M.J. Bitzer. Project duration: Apr. 8, 1998 through Mar. 30, 1999. \$5,000
- Tri-State Development of Multimedia Educational Materials on Site Specific Farming. Challenge Grant, U.S. Department of Agriculture. Investigators: A. Ward, S.A. Shearer and M. Morgan. Project duration: Aug. 1, 1997 through July 31, 1999. \$54,000 (sub-contract with The Ohio State University)
- No-Till Drill Performance Assessment for Wheat Stand Establishment Following Corn. Kentucky Small Grain Growers Association. Investigators: S.G. McNeill and S.A. Shearer. Project duration: Sept. 1, 1997 through Dec. 31, 1999. \$8,105
- Water and Crop-Yield Management Improvement with Data from Remote and Ground-Level Sensors (A8223009). Idaho National Energy and Environmental Laboratory, U.S. Department of Energy. Investigators: J.A. Thomasson, S.A. Shearer and D.A. Pennington. Project duration: Oct. 1, 1997 to Sept. 31, 2000. \$54,500 (sub-contract with Mississippi State University)
- Site-Specific Nutrient and Biosolids Management for Agricultural Lands. USEPA Nonpoint Source 319(h) Program. Investigators: S.A. Shearer, R.I. Barnhisel, D.G. Overhults and J.H. Grove. Project duration: Nov. 1, 1995 to Dec. 31, 2001. \$195,700
- Agricultural Pesticide Handling and Application Technology Demonstration. USEPA Nonpoint Source 319(h) Program. Investigators: S.G. McNeill and S.A. Shearer. Project duration: Apr. 1, 1994 to Dec. 31, 1999. \$195,000
- Equipment Enhancement to Support Variable-Rate Response Surface Development. S.A. Shearer, **S.F. Higgins**, T.G. Mueller, T.S. Stombaugh, C.R. Dillon, and J.P. Fulton. Precision Agriculture Special Grant from USDA/CSREES - Phase III Funding. \$63,662

- Outreach Education for Precision Agriculture. T. S. Stombaugh, S.A. Shearer, J.P. Fulton, T.G. Mueller and C.R. Dillon. Precision Agriculture Special Grant from USDA/CSREES – Phase III Funding. \$63,447
- Dynamic Testing of Force-Impetus Yield Monitors Under Rough Terrain Conditions. T.F. Burks, S.A. Shearer, L. G. Wells, S.G. McNeill, J.P. Fulton and **S.F. Higgins**. Precision Agriculture Special Grant from USDA/CSREES – Phase II Funding. \$35,349

RESEARCH REPORTS

- SPR360, Compost for Steep Erosion. Sudhir Palle, **Dr. Steve Higgins**, and Theodore Hopwood II. Kentucky Transportation Center, College of Engineering. In cooperation with Kentucky Transportation Cabinet Commonwealth of Kentucky. June 2008
- KTC-07-17/SPR 294-05-1F, RECYCLING PRACTICES FOR ENVIRONMENTAL MATERIALS. Sudhir Palle, **Dr. Steve Higgins**, and Theodore Hopwood II. Kentucky Transportation Center, College of Engineering. In cooperation with Kentucky Transportation Cabinet Commonwealth of Kentucky. June 2007

COLLEGE PROJECTS

- Shade Project - Summer 2011. \$11,000
- Rotational Grazing Project – Karen McDowell’s Paddocks. Spring 2012. \$10,085.14
- Barn 26 Project – Spring 2012. \$47,000
- IACUC
 - Swine Report. September 2012.
 - South Farm Report. September 2012.
 - Horse Shade Structures, Summer 2013.
- Shade Project - Summer 2012. \$12,000
- Hay Huts, Summer 2012 - \$18,000
- Hay Huts, Spring 2013 - \$24,000
- Pasture Renovation, Spring 2013 - \$80,000
- Run-in Shed Renovation, Summer 2014 - \$12,000
- Hazardous Chemical Cleanup, Summer 2014