Curriculum Vitae

Amy Millmier Schmidt, Ph.D., P.E.

Professor & Livestock Bioenvironmental Engineer
University of Nebraska – Lincoln | Department of Biological Systems Engineering | Department of Animal Science
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Education

Ph.D. 2010 | Mississippi State University, Starkville, MS; Biological Engineering; Ph.D. Advisor: Dr. Jeremiah Davis; Dissertation: Design and analysis of static windrow piles for in-house broiler litter composting

M.S. 1999 | Iowa State University, Ames, IA; Agricultural Engineering; M.S. Advisors: Dr. Jeffery Lorimor and Dr. Charles Hurburgh (co-advisor); Thesis: Near-infrared spectroscopy for manure nutrient determination

B.S. 1997 | Iowa State University, Ames, IA; Agricultural Engineering

Employment

Professor & Livestock Bioenvironmental Engineer, July 2023 – Present. Departments of Biological Systems Engineering and Animal Science, University of Nebraska – Lincoln, Lincoln, NE

Associate Professor & Livestock Bioenvironmental Engineer, July 2018 – June 2023. Departments of Biological Systems Engineering and Animal Science, University of Nebraska – Lincoln, Lincoln, NE

Assistant Professor & Livestock Bioenvironmental Engineer, August 2012 – June 2018. Departments of Biological Systems Engineering and Animal Science, University of Nebraska – Lincoln, Lincoln, NE

Assistant Extension Professor, 2010 – 2012; Extension Instructor, 2008 – 2010; Research Associate III, 2007 – 2008. Department of Agricultural & Biological Engineering, Mississippi State University, Mississippi State, MS

Consultant, Cedar Valley Renewable Biomass Energy Conversion Feasibility Study, 2008; Value Ag, LLC, Columbia, MO

Extension Associate Professor, 2007; Extension Assistant Professor, 2001 – 2007; Commercial Agriculture Program and Division of Food Systems & Bioengineering, University of Missouri – Columbia, Columbia, MO

Consultant, Comprehensive Nutrient Management Planning Pilot Project – Phase II, 2003; National Pork Board, Clive, IA

Environmental Engineer, 1999 – 2001; Premium Standard Farms, Inc., Princeton, MO

Graduate Research Assistant, 1998 – 1999; Department of Agricultural and Biosystems Engineering, Iowa State University, Ames, IA

Professional Licensure

Registered Professional Engineer (License #18060), 2007 – Present, State of Mississippi

Registered Professional Engineer (License #PE-2004000840), 2004 – 2007, State of Missouri

Peer Reviewed Journal Publications

Zhang, Y., E. Bulut, X. Li, **A. Schmidt**, J. Schmidt, T. Arthur, and B. Wang. (In Review) Impact of livestock production operations on human exposure to β-lactam resistant *Escherichia coli* through lettuce consumption: Quantitative microbial exposure assessment. In review. *Applied and Environmental Microbiology*.

J. McMaine, B. Thaler, G. Flory, **A.M. Schmidt**, and M. Hurst. 2023. (In Press) Shallow burial with carbon for swine mortality carcass disposal. *Journal of the American Society of Agricultural and Biological Engineers.* http://doi.org/10.13031/ja.15462

Speicher, S., D. Miller, L. Durso, B. Woodbury, K. Eskridge, and **A. Millmier Schmidt**. 2023. Beef cattle feedlot runoff impacts on soil antimicrobial resistance. Under revision. *Agrosystems, Geosciences & Environment.* http://dx.doi.org/10.1002/agg2.20498

Olivo, A., E. Henning, L. Schott, and **A. Millmier Schmidt**. 2023. Carbon and nitrogen dynamics in agricultural soil after application of cattle manure and eastern red cedar wood chips. *Journal of Environmental Quality*. https://doi.org/10.1002/jeq2.20524

Mware, N., M.C. Hall, S. Rajendran, J.E. Gilley, **A. Schmidt**, S. Bartelt-Hunt, Y. Zhang, and X. Li. 2022. Resistome and mobilome in surface runoff from manured soil as affected by setback distance. *Journal of Hazardous Materials*. https://doi.org/10.1016/j.jhazmat.2022.128278

Yost, J.L., **A.M. Schmidt**, R. Koelsch, and L.R. Schott. 2021. Impact of swine manure on soil health properties: A systematic review. *Soil Science Society of America Journal*. https://doi.org/10.1002/saj2.20359.

Staley, Z. R., B. L. Woodbury, B. S. Stromer, **A. M. Schmidt**, D. D. Snow, S. L. Bartelt-Hunt, B. Wang, and X. Li. 2021. Stockpiling versus composting: Effectiveness in reducing antibiotic resistant bacteria and resistance genes in beef cattle manure. *Appl. Environment. Microbiol.* 87(16): Article e00750-21. https://journals.asm.org/doi/10.1128/AEM.00750-21

Gilley, J.E., S.L. Bartelt-Hunt, K.M. Eskridge, X. Li, **A. M. Schmidt**, and D.D. Snow. 2020. Antibiotic resistance genes in swine manure slurry as affected by pit additives and facility disinfectants. *Science of the Total Environment*. https://doi.org/10.1016/j.scitotenv.2020.143287

Miller, D.M., M.E. Jurgens, L.M. Durso and **A.M. Schmidt**. 2020. Simulated winter incubation of soil with swine manure differentially affects multiple antimicrobial resistance elements. *Frontiers in Microbiology* 11:611912. https://doi.org/10.3389/fmicb.2020.611912

Hall, M.C., N.A. Mware, J.E. Gilley, S.L. Bartelt-Hunt, D.D. Snow, **A.M. Schmidt**, K.M. Eskridge and X. Li. 2020. Influence of setback distance on antibiotic resistance genes in runoff and soil following the land application of swine manure slurry. *Environmental Science and Technology* 54(8):4800-4809. https://doi.org/10.1021/acs.est.9b04834

Meyers, M., L.M. Durso, J.E. Gilley, D.N. Miller, X. Li and **A. Millmier Schmidt**. 2020. Setback distance impacts on transport of antibiotic resistance phenotypes of fecal indicators. *Agrosystems, Geosciences & Environment* 3(1):1-8. https://doi.org/10.1002/agg2.20081

Meyers, M., L. Durso, J. Gilley, L. Castleberry, H. Waldrip and **A. Schmidt**. 2020. Antibiotic resistance gene profile changes in cropland soil following manure application and rainfall. *Journal of Environmental Quality* 49(3):754-761. https://doi.org/10.1002/jeq2.20060

Duerschner, J., S.Bartelt-Hunt, K.M. Eskridge, J.E. Gilley, X. Li, **A.M. Schmidt** and D.D. Snow. 2020. Swine slurry characteristics as affected by selected additives and disinfectants. *Environmental Pollution*. 260(2020). https://doi.org/10.1016/j.envpol.2020.114058

Staley, Z., X. Li, B. Woodbury, **A. Schmidt**, L. Durso, K. Eskridge. 2020. Corn stalk residue may add antibiotic resistant bacteria to manure composting piles. *Journal of Environmental Quality*. 49(3):745-753. https://doi.org/10.1002/jeq2.20017

Barrios, R., H. Khuntia, S. Bartelt-Hunt, J. Gilley, D. Snow, **A. Schmidt** and X. Li. 2020. Fate and transport of antibiotics and antibiotic resistance genes in runoff and soil as affected by the timing of swine manure slurry application. *Science of the Total Environment* (712):1-10. https://doi.org/10.1016/j.scitotenv.2020.136505

Schmidt, A. 2020. iAMResponsible™: Educating food producers & consumers about antimicrobial resistance. *Scientia*. https://doi.org/10.33548/SCIENTIA460.

N. Schuster, J.A. Peterson, J.E. Gilley, L.R. Schott and **A.M. Schmidt**. 2019. Soil arthropod abundance and diversity following land application of swine slurry. *Agricultural Sciences* 10(2). DOI:10.4236/as.2019.102013

E. Cortus, B. Kasu, J. Jacquet, N. Embertson, **A.M. Schmidt**, T.-T. Lim, and J. Heemstra. 2018. Relevant information sources in the vast and complex manure nutrient management network. *Journal of Extension* 56(3) Article # 3FEA6. https://www.joe.org/joe/2018june/a6.php

E.E. Stevens, D.N. Miller, B.A. Brittenham$_1$, S.J. Vitosh-Sillman, B.W. Brodersen, V.L. Jin, J.D. Loy and **A.M. Schmidt**. 2018. Alkaline stabilization of manure slurry inactivates porcine epidemic diarrhea virus. *Journal of Swine Health and Production* 26(2): 95-100. http://www.aasv.org/shap.html

J.E. Gilley, S.L. Bartelt-Hunt, L.M. Durso, K.M. Eskridge, X. Li, **A.M. Schmidt** and D.D. Snow. 2017. Setback distance requirements for removal of swine slurry constituents in runoff. *Transactions of the American Society of Agricultural and Biological Engineers*, 60(6): 1885-1894. http://doi.org/10.13031/trans.12310

S.J. Vitosh-Sillman, J.D. Loy, B. Brodersen, C. Kelling, K. Eskridge and **A.M. Schmidt**. 2017. Effectiveness of composting as a biosecure mortality disposal method for porcine epidemic diarrhea virus (PEDV)-infected pig carcasses. *Porcine Health Management*. 3:22. http://doi.org/10.1186/s40813-017-0068-z

Schuster, N.R., S.L. Bartelt-Hunt, L.M. Durso, J.E. Gilley, X. Li, D.B. Marx, **A.M. Schmidt**, and D.D. Snow. 2017. Runoff water quality

characteristics following swine slurry application under broadcast and injected conditions. *Transactions of the American Society of Agricultural and Biological Engineers*, 60(1): 53 – 56. http://doi.org/10.13031/trans.11370

Mun, S., G.F. Sassenrath, **A.M. Schmidt**, N. Lee, M.C. Wadsworth, B. Rice, J. Corbitt, J.M. Schneider, M.L. Tagert, J.W. Pote, and R. Prabhu. 2015. Uncertainty analysis of an irrigation scheduling model for water management in crop production. *Agricultural Water Management* (155): 100-112. https://doi.org/10.1016/j.agwat.2015.03.009

G.F. Sassenrath, J.M. Schneider, **A.M. Schmidt**, J.Q. Corbitt, J.M. Halloran, and R. Prabhu. 2013. Testing Gridded NWS 1-day Observed Precipitation Analysis in a Daily Irrigation Scheduler. *Agricultural Sciences*, 4, 621-627. http://dx.doi.org/10.4236/as.2013.412083

A.M. Schmidt, J. D. Davis, J. L. Purswell, Z. Fan, and A. S. Kiess. 2013. Spatial variability of heating profiles in windrowed poultry litter. *Journal of Applied Poultry Research*, 22:319-328. http://dx.doi.org/10.3382/japr.2012-00700

G.F. Sassenrath, J.M. Schneider, **A.M. Schmidt**, and A.M. Silva. 2012. Quality assurance of weather parameters for determining daily evapotranspiration in the humid growing environment of the Mid-South. *Mississippi Academy of Science*, 57:178-192.

J-Q Ni, A.J. Heber, T.T. Lim, P.C. Tao, and **A.M. Schmidt**. 2008. Methane and carbon dioxide emission from two pig finishing barns. *Journal of Environmental Quality*, 37:2001-2011. http://doi.org/10.2134/jeq2007.0386

A.J. Heber, J.-Q. Ni, T.-T. Lim, **A.M. Schmidt**, J. A. Koziel, P.C. Tao, D.B. Beasley, S.J. Hoff, R.E. Nicolai, L.D. Jacobson, and Y. Zhang. 2006. Quality assured measurements of animal building emissions: Gas concentrations. *Journal of the Air & Waste Management Association*, 56:1472-1483.

A.J. Heber, T.-T. Lim, J.-Q. Ni, P.C. Tao, **A.M. Schmidt**, J.A. Koziel, S.J. Hoff, L.D. Jacobson, Y. Zhang, and G.B. Baughman. 2006. Quality assured measurements of animal building emissions: Particulate matter concentrations. *Journal of the Air & Waste Management Association*, 56:1642-1648.

J. Lory, R. Massey, J. Zulovich, J. Hoehne, **A. Schmidt**, M. Shannon and C. Fulhage. 2004. An assessment of nitrogen-based manure application rates on 39 US swine operations. *Journal of Environmental Quality*, 33:1106-1113.

J. Lory, R. Massey, J. Zulovich, J. Hoehne, **A. Schmidt**, M. Shannon and C. Fulhage. 2004. Feasibility and costs of phosphorus application limits on 39 US swine operations. *Journal of Environmental Quality*, 33:1114-1123.

A. Millmier, C. Hurburgh, C. Fulhage, J. Hattey, and H. Zhang. 2000. Near-Infrared Sensing of Manure Nutrients. *Transactions of the American Society of Agricultural Engineers* 43(4).

Other Outputs (UNL Only)

Peer-reviewed Extension Publications:	173	**Invited Talks:**	85
Books & Book Chapters:	6	**Research Reports/Other:**	21
Conference Proceedings:	80	**Conference Presentations and Posters:**	105
Extension Presentations:	123	**Media:**	512

Internally Funded Research Grants (UNL Only) – $464 K

Externally Funded Research Grants (UNL Only) – $8.5 M

Graduate Students (UNL Only)

PhD Supervised: 4

MS Supervised: 11

Undergraduate Students (UNL Only)

Supervised Research: 18

Teaching Accomplishments (UNL Only)

BSEN 942: Antimicrobial Resistance (AMR) from a One Health Perspective
Spring Semester, 2019 – 2023
72 students | 8 U.S. Institutions
Graduate-level, multi-institutional seminar course exploring U.S. and global challenges related to antimicrobial resistance (AMR) in food systems with special focus on research-based strategies to mitigate potential risks associated with AMR.

AGEN/BSEN 441/841: Animal Waste Management
Fall Semester, 2022
This split-level undergraduate/graduate class focused on principles of livestock manure management system design and operation, regulatory requirements, nutrient management, water quality, and regenerative agriculture.

Awards and Recognition (UNL Only)

2023 American Society of Agricultural and Biological Engineers Educational Aids Blue Ribbon Award, High Impact Programs Category, *Interactive Nutrient Management Decision-Making Exercise*

2022 American Society of Agricultural and Biological Engineers Educational Aids Blue Ribbon Award, Electronic and Web-Based Programs Category, *Merits of Manure Content Library*

2022 American Society of Agricultural and Biological Engineers Recognition for Outstanding Service as an Associate Editor for the Natural Resources & Environmental Systems Community

2022 American Society of Agricultural and Biological Engineers Standards Development Award, *For leadership of the revision of ANSI/ASABE EP585.1 MAR2021, Animal Mortality Composting*

2020 American Society of Agricultural and Biological Engineers Educational Aids Blue Ribbon Award, Comprehensive Publication Category, *What's Going on Under Our Feet? Soil Biology Inspection Guide*

2018 American Society of Agricultural and Biological Engineers Educational Aids Blue Ribbon Award, Electronic and Web-Based Delivery Category, *AgSitePlanner.unl.edu*

2016 Nebraska Section of the American Society of Agricultural and Biological Engineers "Engineer of the Year"

2016 Nebraska Pork Producers Association "Outstanding Pork Service Award – Producer Outreach"

2016 American Society of Agricultural and Biological Engineers Standards Development Award, *For leadership of the development of ANSI/ASABE EP585 DEC2015, Animal Mortality Composting*

Select Service Accomplishments (UNL Only)

American Society of Agricultural and Biological Engineers

Member, 1994 – Present

ASABE Nominating Committee, 2022 – Present

ASABE Foundation Board of Directors, 2021 – Present

Revision Leader: *ANSI/ASABE EP585.1 MAR2021, Animal Mortality Composting Standard*, 2020 – 2021

Revision Leader: *X594 Closure of Earthen Manure Structures (Including Basins, Holding Ponds and Lagoons) Technical Design Standard*, 2018 – 2020

Revision Leader: *X403.4 Design of Anaerobic Lagoons for Animal Waste Management Technical Design Standard*, October 2017 – 2020

ASABE Professional Engineering Mentor, 2013 – Present

Lead Author: *ANSI/ASABE Standard EP585 Animal Mortality Composting Standard*, 2013 – 2015

Agricultural Engineering Professional Engineering Licensing Exam Cut Score Panel, 2009 and 2010

Revision Committee Member: *ASABE D384.1 Revised "As-Harvested" Manure Characteristics*, 2002 – 2004

ED-208 Extension Education Committee, Member, 2001 – Present, Officer Rotation 2009 – 2012

NRES-27 Agricultural By-products and Manure Management Systems Committee, Member, 2001 – Present, Officer Rotation 2009 – 2012

Phi Kappa Phi Honor Society | *Member***,** 2008 – Present

S-1032: Improving the Sustainability of Livestock and Poultry Production in the United States Multi-State Committee | Member, 2013 – Present

Society of Women Engineers | Professional Mentor, 2018 – Present

UNL Chancellor's Commission on the Status of Women, Member, 2019 – Present

Mental Health and Well-Being Working Group, Chair, 2020 – 2024

UNL Faculty Senate Diversity & Inclusion Committee, Member, 2023 – Present

University Employee Wellness Advisory Council, Member, 2022 – Present

University Conduct Board | Member, 2018 – Present

Dean's Extension Advisory Committee | Member, 2015 – 2017; Chair, 2016; Secretary, 2015

Biological Systems Engineering Department

Promotion & Tenure Committee | Member, 2018 – 2019, 2021 – 2023

Graduate Education Committee | Member, 2019 – 2020, 2022 – Present

Extension Committee | Member, 2019 – Present

Promotion & Tenure By-Laws Revision Committee | Member, 2018