2010 MANURE EXPO
Balancing Production and Conservation

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July 15, 2010
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Contest is open to farm owners, partners and managers of large livestock or poultry operations.

See website for full contest details.

Contest void where prohibited.
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Message from the Chairman

Educational Sessions Descriptions

2010 Manure Expo Agenda

Speaker Biographies

Exhibitor List

Exhibitor Maps

www.das.psu.edu/manure-expo
The manure industry

Thanks you!

Platinum

Chesapeake Bay Foundation
614 North Front Street, Suite G Harrisburg PA 17101
http://www.cbf.org • Tuffelman@cbf.org

College of Agricultural Sciences, Penn State
303 ASI Building, University Park PA 16802
www.das.psu.edu/research-extension/nutrient- • rjm134@psu.edu

Gold

PennAg Industries Association Manure Haulers/Applicators Council
2215 Forest Hills Drive, Suite #39 Harrisburg PA 17112
www.pennag.com • Abradford@pennag.com

Pennsylvania Dairy Stakeholders
777 W. Harrisburg Pike Middletown PA 17057
www.padairystake.org • Nab4@psu.edu

Pennsylvania Pork Producers Council
2215 Forest Hills Drive, Suite #39 Harrisburg PA 17112
www.papork.org • Abradford@pennag.com

Bronze

Dow AgroSciences
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www.dowagro.com • Jbc1ark@dow.com

Firestone Specialty Products
250 W. 96th Street, Indianapolis IN 46260
www.firestonesp.com • Info@firestonesp.com

Jamesway Farm Equipment
12 Route 249, St. Francois-xavier QC, J0b 2v0
www.jameswayfameq.com • Ralphf@jameswayfameq.com
One need not look hard to realize that the balance between profitable agricultural operation and environmental stewardship impacts everyone. The bar is rising in every state, province, watershed, county, barn and field. Much of the ever-increasing pressure on agriculture to move to this higher bar is derived from water quality improvement that is behind societal expectations and legislated goals. Science-based monitoring shows that improvements from the industry can be made. Technological developments can help us take the steps toward higher ground.

Bringing the Manure Expo to the Northeast and Mid-Atlantic Regions is something that began to take shape more than three years ago. In planning for the 2010 event the committee knew that a top-of-the-line show would be needed. Never did we anticipate that the Expo would be perfectly timed with many events that will raise the bar to new heights in the near future. A regional focus begins in the Chesapeake Bay watershed where agriculture will face new challenges presented by TMDL (Total Maximum Daily Load) implementation and changing EPA expectations. However, state borders and watershed definitions will not hold back change.

Environmental issues are a cost of business. Part of that cost is taking the time to be informed and to stay abreast of new tools that you can use to meet your goals. The 2010 Manure Expo provides the premier annual event where you can do just that. No matter your state or watershed, if you deal with manure professionally or at home, if you deal with nutrient management, or if you deal with agricultural production this is the event for you to see what the latest technologies and management concepts have to offer. We believe we are providing the highest quality program this event has seen. The 2010 Manure Expo is being formed around a high bar.

Simply put the Expo offers something for everyone. In many ways we expect to provide more than you can do in one day. When you attend choose carefully and use the agenda to custom-fit the program to your needs. Experts from eight states and Washington, D.C., will present pertinent information on relevant topics. Exhibitors will show you their latest technologies and help you see how their products might fit into your business plan.

The intersections between agricultural production and environmental conservation are everywhere. Traveling these roads with a sustainable business is in everyone’s interest. Come to the 2010 Manure Expo. We are setting a high bar. Are you?

Sincerely,
Robb Meinen
Chairman, 2010 Manure Expo
Senior Extension Associate, Cooperative Extension,
Department of Dairy and Animal Science,
The Pennsylvania State University.

Note from the Chairman

In advance I would like to thank the many people who will contribute (or have contributed) to making the 2010 Manure Expo the greatest to date. You will see their names in this Show Guide, see their companies exhibiting the latest in manure and nutrient technologies, and see them volunteering at the show. While we have used a multi-state group to advise and guide Expo content there is a core instrumental committee here at Penn State. Deserving recognition in this space are Bob Oberheim and Debra Ellis (Ag Progress Days), Dr. Doug Beegle (Crops and Soil Sciences), Dr. Peter Kleinman (USDA-ARS Pasture Systems and Watershed Management Research Unit) and Kristen Saacke-Blunk (PSU Agriculture and Environment Center).
2010 MANURE EXPO
EDUCATIONAL SESSION DESCRIPTIONS

See agenda on page 8 for time and location details. See map on page 15 to find location.

9:00 AM Educational Sessions
Attend the session of your choice. Various program continuing educational credits may be available at each session. Not up for a session? Please enjoy the exhibition.

Manure Application in No-Till
Doug Beegle (Penn State University), Peter Kleinman (USDA-ARS), Quirine Ketterings (Cornell University), Josh McGrath (University of Maryland)
This session reviews the trade-offs in different manure application methods, summarizing research from across the region. Various manure incorporation technologies will be discussed.

Money in the Ground, Money in Your Pocket: Calibrate Manure Spreaders to Achieve Both
Jerry Martin (Penn State University), Natalie Rector (Michigan State University)
Participants will learn how to estimate the capacity of a manure spreader, several manure spreader calibration methods, and how to put a dollar value on manure.

Mortality Composting Part 1 - How Does Your Animal Mortality Management Fit Into Your Nutrient Management Plan?
Mark Hutchinson (University of Maine), Jean Bonhotal (Cornell University)
Does your mortality management fit into your nutrient management plan? Implementing proper methods can help. This session meets in the classroom to discuss management of composting. The afternoon session will travel to an active mortality composting pile.

Agriculture and the Chesapeake Bay TMDL
Dave Hansen (University of Delaware)
The Environmental Protection Agency is developing a Total Maximum Daily Load for the Chesapeake Bay watershed; the largest TMDL ever attempted. We will discuss the implications of this effort for agriculture in the watershed.

Nutrient Trading, Technology and the Chesapeake Bay
John Hines (Deputy Secretary, Office of Water Management, PA DEP)
PA is drafting a Watershed Implementation Plan for the EPA Chesapeake Bay TMDL, and a key component of the plan includes the implementation and support of Technology and Nutrient Trading. Nutrient trading has served as a platform to promote new technologies that address manure, and Deputy Secretary Hines will discuss the potential these technologies may be able to provide in meeting Chesapeake Bay nutrient reduction goals.

In-House Poultry Litter Management
Bud Malone (Malone Poultry Consulting)
Current and future trends influencing in-house litter management will be discussed as it relates to environmental and production challenges facing the poultry industry.

In-Field Storage of Manure
Greg Binford (University of Delaware)
The presentation will discuss the types of nutrients and the amounts of nutrients that tend to escape from poultry litter when stored in the field.

PaOneStop: Online Nutrient Balance Sheet Mapping Demonstration
Rick Day (Penn State University), Bob Neiderer (Penn State University)
PaOneStop is an online tool that allows farmers to create maps of their farms required for completion of Nutrient Balance Sheets. The system allows farmers to map features such as field boundaries, sinkholes, water features, wells, streams, manure setbacks, stream buffers, and staging areas. The final map shows all features superimposed on an aerial image or topographic map. Two demonstrations will be held followed by a “hands-on” afternoon session where participants will create their own maps.

10:00 AM Educational Sessions
Attend the session of your choice. Various program continuing educational credits may be available at each session. Not up for a session? Please enjoy the exhibition.

Manure Application on Frozen and Snow-Covered Soil
Amber Radatz (University of Wisconsin, Discovery Farms)
The UW-Discovery Farms Program conducts research on surface water losses from agricultural systems on real, working Wisconsin farms. Our data shows that a significant amount of the annual nutrient and sediment loss comes during the frozen ground period. Careful manure management and informed decision making can reduce these losses.

Catch, Retain and Recycle Manure with Cover Crops
Natalie Rector (Michigan State University)
Cover crops grow during three of the four manure spreading seasons: fall, winter and spring. Utilize them to catch and hold manure waters, increase infiltration, decrease leaching & runoff ultimately recycling nutrients cost effectively to the next crop.

In-House Poultry Litter Management
Bud Malone (Malone Poultry Consulting)
Current and future trends influencing in-house litter management will be discussed as it relates to environmental and production challenges facing the poultry industry.

Soil Compaction Field Exercise
Sjoerd Duiker (PSU)
We will discuss the principles of soil compaction – how to avoid it, how to remediate it. Participants will evaluate the threat of compaction of different
Manure Application and Odor
Robin Brandt (Penn State University)
This session will review techniques for sensory evaluation of nuisance odors and present findings from recent research on manure application methods and odor emission, using multiple assessor field olfactometry.

Fly Minimization Techniques
Shelly Dehoff (PA Ag Ombudsman)
This session will provide a brief overview of fly ID, sources of flies, and minimization techniques for dairy and poultry operations. I will also briefly explain the fly complaint response system in PA.

Expanding Opportunities for Digester Systems at US Livestock Facilities
Chris Voell (US EPA, AgSTAR)
There are currently 150 manure digester biogas systems in place in the US, with thousands of project opportunities yet to be realized. Growing interest in digesters hinge on the fact that these projects not only provide renewable energy and greenhouse gas reductions, but opportunity for revenue from carbon sales and other value-added products. Come hear about the opportunity for these projects, but also the hurdles that stand in the way of widespread adoption.

Turning Manure into Biochar as a Value Added Product
Rory Maguire (Virginia Tech University)
Manure can be turned into biochar by pyrolysis. I will discuss the benefits to soils of land applying this biochar.

Manure Application in Alfalfa/Legumes
Quirine Ketterings (Cornell University), Karl Czymmek (PRO-DAIRY, Cornell University)
Nutrient management plans require manure application to corn and forage grasses to be limited to crop N needs possibly resulting in manure having to be applied to other cropland such as alfalfa. In this session, we will discuss the pros and cons of manure application to alfalfa and show results of a 10-year corn-alfalfa rotation in which manure is the fertility source for both the corn and the alfalfa years.

Using Dairy Manure Solids as Bedding
Mary Schwarz (Cornell University)
Although there is a shortage of bedding sources there is plenty of manure on farms that could be used for this purpose if processed by separation, digestion and/or composting. Using manure solids as dairy cow bedding can provide an economic benefit without adversely affecting herd health.

PaOneStop: Online Nutrient Balance Sheet Mapping Demonstration
Rick Day (Penn State University), Bob Neiderer (Penn State University)
PaOneStop is an online tool that allows farmers to create maps of their farms required for completion of Nutrient Balance Sheets. The system allows farmers to map features such as field boundaries, sinks, wells, streams, manure setbacks, stream buffers, and staging areas. The final map shows all features superimposed on an aerial image or topographic map. Two demonstrations will be held followed by a “hands-on” afternoon session where participants will create their own maps.

11:00 AM Dry Equipment Demonstrations
Exhibitors and Industry Representatives will demonstrate the latest in solid manure handling and application technologies. Attendees can view the demonstrations, walk the application area and “kick the tires”.

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## 2010 MANURE EXPO AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Location Information</th>
<th>College Building Sessions</th>
<th>Demonstration Area Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Gates Open - Exhibitors available all day</td>
<td>Manure Application in No-Till - Beegle (PSU), Kleinman (USDA ARS), Ketterings (Cornell), McGrath (Maryland)</td>
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<td>Exhibitors will demonstrate the latest in solid manure and compost handling and application equipment</td>
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<tr>
<td>12:00</td>
<td>Free Time-Visit Exhibitors</td>
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<td><strong>Mortality Composting Part 2</strong> - Lessons at the Compost Pile - Hutchinson (Maine), Bonhotal (Cornell)</td>
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<td>In-field Storage of Manure - Binford (Delaware)</td>
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<td>2:30</td>
<td>Liquid Equipment Demonstrations - Located at Demonstration Area</td>
<td>Exhibitors will demonstrate the latest in liquid manure handling and application equipment</td>
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<tr>
<td>4:00</td>
<td>Manure Safety Demonstrations - Located at Safety Demonstration Area</td>
<td>Demonstration of Ventilating Manure Storages to Reduce Risk When Entering - Murphy (PSU), Manbeck (PSU), Hill (PSU), Tillapaugh (PSU)</td>
<td>Manure Spill Response Demonstration - Meinen (PSU)</td>
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Continuing Education Credit opportunities are available for Certified Manure Haulers and Brokers, PA Nutrient and Odor Management Plan Writers, and Certified Crop Advisors. Please check the 2010 Manure Expo website for details. See map on page 15 to find location.
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- Turning Manure into Biochar as a Value Added Product - Maguire (VA Tech)
- Manure Application in Alfalfa/Legumes - Ketterings (Cornell), Czymmek (PRO-DAIRY, Cornell)
- Using Dairy Manure Solids as Bedding - Schwarz (Cornell)
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Manure Expo 2010
DOUG BEEGLE
Dr. Doug Beegle is a Distinguished Professor in Penn State’s Department of Crop and Soil Sciences. Beyond teaching responsibilities he coordinates several Extension education programs involving plant nutrition, soil testing, manure management, and whole farm nutrient management. His research is internationally known in the areas of soil test evaluation and calibration, fertility management (N, P, K, S), starter fertilizer management, development of nutrient management systems, and management of agricultural phosphorus and the environment. He is advisor to state and federal government agencies and other organizations on nutrient management and agriculture-related water quality issues.

GREG BINFORD
Dr. Gregory D. Binford is a Soil Fertility Specialist at the University of Delaware working in the areas of fertilizer and manure management. His work focuses on maximizing crop production while minimizing environmental harm.

JEAN BONHOTAL
Jean has worked at the Cornell Waste Management Institute in solid waste education for 20 years, first working for Cornell Cooperative Extension in Broome County, then for the Cornell Waste Management Institute. Jean initially worked to develop youth programs and then as the need increased, concentrated her efforts more on composting. For the last ten years, she has been working on composting feedstock from food to manure to animal carcasses. Currently her time is split between manure and carcass & butcher waste composting education and research. Compost quality and consistency in the market place has also become a high priority, we encourage on-farm use but often farms are required to move nutrients off the farm. Transferring manure into compost is an effective, efficient way to accomplish that. Previous experience includes working with different agencies including US Forest and National Park Service, US EPA, NYS DEC and greenhouse industry. She received an M.S. degree in Education and Communication from SUNY Binghamton in 1991, a B.S. in Biology from Utah State University in 1984 and an A.A.S. in Natural Resources from SUNY Morrisville.

ROBIN C. BRANDT
Dr. Brandt is the director of the Penn State Odor Assessment laboratory, in the Department of Agricultural and Biological Engineering, where he also serves as a lecturer. His current research focus employs human sensory evaluation to quantify agricultural odors for investigation of odor reduction practices. Dr. Brandt is a registered professional engineer with over 25 years experience in land-based recycling programs.

KARL CZYMMEK
Karl Czymmek holds a degree in Agriculture from Cornell University majoring in soil science and environmental informatics. He currently works as a crop consultant to dairy, crop and vegetable farms in Western New York State. He has worked with Cornell’s PRO-DARY Program since 1999 providing programming in nutrient and environmental management, with particular emphasis on CAFO regulations.

RICK L. DAY
Dr. Rick Day is an associate professor of soil science and environmental information systems in the Department of Crop and Soil Sciences, College of Agricultural Sciences at Penn State University. His current position is divided among cooperative extension, resident education, and research. He serves as director of the Land Analysis Laboratory, director of the Cooperative Extension Geospatial Technology Program, and director of the Penn State University – Chesapeake site of the Penn State University – Chesapeake site of the National Consortium for Rural Geospatial Innovations in America (RuralGIS). Dr. Day’s activities focus on research and technology transfer of geospatial technologies for use in environmental assessment, natural resource management, soil science, agriculture, and land use planning and management.

SHELLEY DEHOFF
Shelby Dehoff serves as one of two Agricultural Ombudsman in PA. The program provides education, relations, education and conflict management related to agriculture. One of her educational efforts includes teaching agricultural producers about files and fly minimization practices. Shelby works for the Lancaster County Conservation District, and is funded through a grant from the PA Department of Agriculture, Bureau of Environmental and Resource Management from Pennsylvania. She lives in southeastern York County.

SJOERD DUIKER
Spred Duiker is Associate Professor of Soil Management and Applied Soil Physics in the Department of Crop and Soil Sciences at Penn State. His M.S. is Crop Science from the Agricultural University in Wageningen, The Netherlands. His Ph.D is in Soil Science from the Ohio State University. Spred is the Extension Specialist of soil management at Penn State. He does research on the effects of tillage, soil compaction, and cover crops on soil quality. His prime interest is to develop sustainable no-till systems to address prime soil quality concerns on farms in Pennsylvania and beyond, which include soil erosion, low soil organic matter content, nutrient losses to surface water, and carbon and nitrogen sequestration in farmlands.

DR. DAVE HAINSEN
Dave Hainsen is an associate professor of soil and environmental quality at the University of Delaware. He is an extension nutrient management specialist and program leader for the University of Delaware. He is also a co-chair of the Delaware Bay Program Water Quality Goal Implementation Team and a member of the Delaware Bay Scientific and Technical Advisory Committee.

DAVIS HILL
Dave Hill is a Senior Extension Associate in the Department of Agricultural and Biological Engineering. He is the program director of Managing Agricultural Emergencies in the Agricultural Safety and Health program. He has developed a series of training modules with emergency response to agricultural emergencies and leads a team of instructors in delivering this training to over 2,000 emergency responders each year throughout PA. Dave also coordinates two training programs for farm families dealing with managing farm emergencies and first aid topics.

JOHN T. HINES
John T. Hines currently serves as the Deputy Secretary for Water Management. He oversees statewide policy and program development related to all aspect of water management. Prior to his appointment John served as Executive Director of DEP’s Water Planning Office and as the Acting Director of Watershed Management where he oversaw activities related to nonpoint source pollution management, stormwater management, water allocation and planning, conservation districts, interstate river basin commissions, estuary programs, national organizations, state water planning efforts, coastal resource management, and water management budgeting and internal program development. John served as the lead negotiator for DEP in the final stage of the passage of the Water Resources Planning Act (Act 220 of 2002). He was also critical to the drafting of Annex 2001 that was signed by the eight Great Lakes States and the Provinces of Ontario and Quebec as a Presidential Scholar, John holds a Bachelors Degree in Social Sciences and a Masters Degree in Geography and Regional Planning. A native of Greene County, he currently resides in Palmyra, Lebanon County, with his wife, Amy, and his children, Alexis and Matthew.

MARK HUTCHINSON
Mark is an Associate Extension Professor with the University of Maine Cooperative Extension and a Certified Crop Advisor. His local responsibilities include national and applied research for both commercial agriculture and home horticulture in Knox and Lincoln counties in Maine. Mark has also worked regionally and internationally on a variety of compost issues for the past eight years. Mark is a Director of the Maine Compost School. His applied research is focuses on compost and soil health for commercial agriculture. He works with dairy and poultry farms to develop composted bedding pack systems, compost digesters, and vegetable and small fruit crops and determining nitrogen mineralization rates of compost. As a member of the Maine Compost Team, (MCT) he provides leadership in carcass and slaughterhouse compost research, carcass disposal policy development and educational outreach. Through a NARES professional development program, Mark and his colleagues are training other agriculture professionals in carcass management techniques which include proper compost methodologies and field utilization.

QUIRINE M. KETTERINGS
Quirine Ketterings joined Cornell University in fall 2000 to provide leadership for the Field Crops nutrient management extension and applied research program of the College of Agriculture and Life Sciences. Quirine received her B.S. from Wageningen University, the Netherlands,
and her PhD from Ohio State University. She established and leads the Cornell Nutrient Management Spear Program (NMSP, https://nmsp.cals.cornell.edu), the college’s applied research, teaching and extension program for field crop fertilizer and manure management, that aims to improve dairy industry awareness of crop nutrient needs, environmentally sound nutrient management practices, and overall soil fertility management.

**PETER KLEINMAN**

Peter Kleinman is a soil scientist with the Agricultural Research Service who works on nutrient management issues facing farmers in the mid-Atlantic and northeastern region. His multi-disciplinary research on manure management reveals the trade-offs in different practices and technologies. His research on phosphorus underpins many of the tools currently used to guide agricultural phosphorus management.

**ROARY MAGUIRE**

Rory Maguire has worked with the management of organic wastes since coming to the US from Northern Ireland 12 years ago. He is currently an Associate Professor and Extension Specialist in soil fertility and helps farmers adopt new technologies to improve manure management, in addition to running the Virginia Tech Soil Testing Laboratory.

**BUD MALONE**

Bud Malone was an extension poultry specialist for the University of Delaware for 34 years and recently started a consulting business following his retirement in 2009. His current research has focused on broiler husbandry, bedding alternatives, litter management and amendments; and evaluation of programs to address broiler waste management and air quality issues. His extension program emphasis has been in the area of best management practices for broiler farms and the implementation of production practices that enhance the poultry industry’s profitability, competitiveness and environmental compatibility. During the past five years his initiatives has included the use of trees as vegetative filters for poultry farms, response training for dehumidification and disposal of flocks with Avian Influenza, and most recently in-house composting of litter between flocks for pathogen reduction.

**HARVEY MABECK**

Harvey B. Mabbeck, Ph.D, P.E., is Distinguished Professor Emeritus, Agricultural and Biological Engineering Department, Pennsylvania State University. He has taught and conducted research on agricultural building systems for over 40 years. For the past six years he has collaborated with Dr. Dennis J. Murphy to document the ventilation system requirements to reduce confined-space manure storage entry risk. He currently is co-chairing an American Society of Agricultural Engineers (ASAE) committee to develop an international standard “Ventilation of Confined-Space Manure Storage to Reduce Entry Risk”.

**JERRY MARTIN**

Jerry Martin works with Penn State Cooperative Extension as a Senior Extension Associate in Pennsylvania’s Nutrient Management Education Program associated with PennState’s nutrient management law. He conducts educational and training programs for commercial and public nutrient management specialists, and for individual producers who become certified to write their own nutrient management plans. He also provides educational programs and technical information on topics relating to nutrient management, manure management, water quality best management practices and related agronomic and livestock management issues for producers, consultants, and public audiences.

**JOSH MCGRATH**

Joshua M. McGrath, Ph.D., is an Assistant Professor and directs the Laboratory for Agriculture and Environmental Studies (LAES) at the University of Maryland in the Department of Environmental Science & Technology. His research and extension activities focus on agricultural productivity and environmental quality as they relate to soil fertility, nutrient management, and water quality. LAES is currently conducting research on a range of questions including in-situ treatment of agricultural drainage; sensor based variable rate nitrogen application; manure management in no-till; manure storage to reduce nutrient losses; and persistence of manure pathogens in the environment.

**ROBB MEINEN**

Robb Meinen is a Senior Extension Associate in Penn State’s Department of Dairy and Animal Science. He is Chairman of the 2010 Manure Expo, advisor to the PennAg Industries Manure Applicators Council, and the lead educator in Pennsylvania’s Act 49 Commercial Manure Hauler and Broker Certification Program. There are nearly 900 individuals certified in the program. Meinen has a BS in Animal Science and is currently pursuing a PhD in Soil Science. Before coming to Penn State two years ago Meinen managed a large farm-to-feeder sow farm where he became an industry leader in both swine production and environmental stewardship. Additional work at Penn State includes manure digestion research, manure incorporation research, odor management planning, and provision of farm-level environmental assessments.

**DENNIS MURPHY**

Dennis J. Murphy, Ph.D, CSP, is Distinguished Professor and Extension Safety Specialist, Agricultural & Biological Engineering, Penn State University. He divides his time between extension and outreach, research, and resident education activities. Current program areas include applied research and education for: agricultural safety and health management, tractor and machinery safety issues; youth safety; methods of managing farm worker safety in general; developing hazard analyses tools; and evaluating safety interventions.

**BOB NEIDERER**

Bob Neiderer is a Research Support Associate with the Land Analysis Lab in the Crop and Soil Science Department at Penn State University. His duties include technical support and promotion of web based applications for the improvement of the agricultural community. He is actively involved in the following projects AgMap, FFA.S.A.F.E. FarmMap, and PManStep, as well as assisting in research and cooperative extension.

**AMBER RADATZ**

Amber Radatz is a Southwestern Wisconsin Nutrient Management Outreach Specialist for the University of Wisconsin-Extension and the UW-Discovery Farms Program. As part of the Discovery Farms Program, Amber presents educational programs in areas of nutrient and manure management and sediment and nutrient losses in surface water runoff. Amber grew up in Western Wisconsin on her family’s dairy farm. She attended UW-Madison and received her Bachelor’s and Master’s degrees in Soil Science. She began her career with the Discovery Farms Program in 2004 as a website and communications specialist, and moved into her current position as an outreach specialist in 2009.

**NATALIE RECTOR**

Rector has served as a multi-county field crop educator and now has state-wide responsibilities for nutrient management with Michigan State University Extension. She has a BS in Crop and Soil Science and MS in Natural Resources both from MSU. She was recently honored with the Michigan Pork Producers Associations Distinguished Service Award. Rector conducts research and outreach that focuses on helping farmers apply manure in an economical, agronomically beneficial and environmentally friendly manner. She educates producers, of all sizes, on Right-to-Farm guidelines related to manure management and to the permit process that is regulated through the Michigan Department of Environmental Quality. She educates private consultants who develop and implement comprehensive nutrient management plans (ONMP).

**MARY SCHWARZ**

Mary has worked for Cornell University since 1981 in the departments of Animal Science, Entomology, Clinical Sciences and Cornell Waste Management Institute. For the past 5 years, she has been coordinating and conducting research and outreach activities connected with waste management including the use of manure solids as bedding. She received an M.S. in education in 1995 and a B.S., in animal science in 1981, both from Cornell University.

**JAMES TILLAPAUGH**

Jim is a Project Assistant in Penn State’s Agricultural and Biological Engineering department. He is currently working on an educational program for reducing risk when entering confined-space manure storage facilities.

**CHRIS WOELL**

Chris is Program Manager-AgSTAR, USEPA Climate Change Division. Chris currently works both in the US and internationally to advance development of renewable biogas recovery systems. Currently with the EPA AgSTAR program, Chris works across the US with livestock producers, project developers, utilities, and government agencies to overcome barriers to biogas project development. While at EPA Chris has assisted in the development of biogas use projects in the landfill gas and manure digester fields. Chris has also worked on biogas recovery in Poland, Russia, Turkey and Ukraine through the US led methane to Markets program. Prior to joining EPA, Chris spent 15 years in the solid waste management field, and also was Executive Director of a national trail organization. Chris has degrees in forestry from Paul Smiths College in New York and natural resources management from the University of Maryland.

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**Manure Expo 2010**

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Continued from page 7

1:30 PM Educational Sessions
Attend the session of your choice. Various program continuing educational credits may be available at each session. Not up for a session? Please enjoy the exhibition.

Manure Application in No-Till
Doug Beegle (Penn State University), Peter Kleeman (USDA-ARS), Quirine Ketterings (Cornell University), Josh McGrath (University of Maryland)
This session reviews the trade-offs in different manure application methods, summarizing research from across the region. Various manure incorporation technologies will be discussed.

Soil Compaction Field Exercise
Sjoerd Duiker (PSU)
We will discuss the principles of soil compaction – how to avoid it, how to remediate it. Participants will evaluate the threat of compaction of different manure spreaders, and monitor compaction using compaction sensors at different depths.

Mortality Composting Part 2 - Lessons at the Compost Pile
Mark Hutchinson (University of Maine), Jean Bonhotal (Cornell University)
Does your mortality management fit into your nutrient management plan? Implementing proper methods can help. This session meets at the demonstration area to catch a ride to learn lessons at an active mortality composting pile.

Manure Application and Odor
Robin Brandt (Penn State University)
This session will review techniques for sensory evaluation of nuisance odors and present findings from recent research on manure application methods and odor emission, using multiple assessor field olfactometry.

Fly Minimization Techniques
Shelly Dehoff (PA Ag Ombudsman)
This session will provide a brief overview of fly ID, sources of flies, and minization techniques for dairy and poultry operations. I will also briefly explain the fly complaint response system in PA.

In-House Poultry Litter Management
Bud Malone (Malone Poultry Consulting)
Current and future trends influencing in-house litter management will be discussed as it relates to environmental and production challenges facing the poultry industry.

In-Field Storage of Manure
Greg Binford (University of Delaware)
The presentation will discuss the types of nutrients and the amounts of nutrients that tend to escape from poultry litter when stored in the field.

PaOneStop: Online Nutrient Balance Sheet Mapping Demonstration
Rick Day (Penn State University), Bob Neiderer (Penn State University)
This session is the “hands-on” session and is limited to 20 participants. Pre-register by calling Bob Neiderer at (814) 865-2279. PaOneStop is an online tool that allows farmers to create maps of their farms required for completion of Nutrient Balance Sheets. The system allows farmers to map features such as field boundaries, sinkholes, water features, wells, streams, manure setbacks, stream buffers, and staging areas. The final map shows all features superimposed on an aerial image or topographic map. Two demonstrations will be held followed by a “hands-on” afternoon session where participants will create their own maps.

2:30 PM Liquid Equipment Demonstrations
Exhibitors and Industry Representatives will demonstrate the latest in liquid manure handling and application technologies. Attendees can view the demonstrations, walk the application area and “kick the tires”.

4:00 PM Manure Safety and Spill Response Demonstrations
Demonstration of Ventilating Manure Storages to Reduce Risk When Entering
Dennis Murphy, Harvey Manbeck, Davis Hill, James Tillapaugh (all of the Penn State University Agriculture Safety Team)
A scale model of a confined-space manure storage is the centerpiece of this program to demonstrate hazards to workers and animals due to toxic gas accumulation in these enclosed facilities.

Manure Spill Response Demonstration
Robb Meinen (Penn State University)
The second part of the safety demonstrations will involve a live action manure spill. Learn and view the steps that should be taken to protect human safety and minimize environmental impact during an accidental manure spill.

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Registration as of May 24, 2010. Exhibitor registrations are still being accepted.

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MANURE EXPO INFORMATION
Chesapeake-Bay Foundation
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2010 MANURE EXPO EXHIBITORS AND DEMONSTRATION AREA

Additional Educational Sessions and Attractions
Look for detailed information on these subjects when you arrive at the Expo.

- Sinkhole Tour
- Soil Pit
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- Ask An Expert Booth
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