The Waste to Worth Conference—hosted by the National Livestock and Poultry Environmental Learning Center—is a biannual event to be held in odd numbered years. The primary focus of the conference is to bring together agricultural professionals to address issues related to air, water, soil, and climate. We welcome you in 2015 as we explore our theme From Waste to Worth—Advancing Sustainability in Animal Agriculture.

An online version of this program and abstracts are available at www.eiseverywhere.com/emobile/mobile/live/85805

Full presentations can be viewed at www.extension.org/72719
Conference Planning

**Conference Co-chairs**
- Joe Harrison
  - Washington State University
- Mark Risse
  - University of Georgia

**Program Co-chairs**
- Saqib Mukhtar
  - Texas A & M System
- David Smith
  - Texas A & M System

**Conference Schedule**

**Monday (March 30)**
- 3:00 – 6:00 PM: Registration

**Tuesday (March 31)**
- 8:15 AM: Welcome
- 8:20 – 9:10 AM: Keynote | Removal of the Elwha Dam: The Return of the Salmon
- 9:20 AM – 12:10 PM: Concurrent Sessions
- 12:10 – 1:30 PM: Lunch Session
- 1:30 – 3:10 PM: Concurrent Sessions
- 3:30 PM – 8:30 PM: Transportation and Dinner at Tillicum Village
Wednesday (April 1)

7:00 – 8:15 AM  NRCS Meeting
8:15 – 12:00 PM  Changes, Challenges, and Opportunities for Animal Agriculture
                 Sponsored by Animal Agriculture Climate Change Project
12:00 – 12:30 PM  Pick up box lunches and board charter buses for tours.
12:30 – 6:30 PM  Tours
7:00 – 8:30 PM  Reception & Poster Session

Thursday (April 2)

9:00 AM – 12:10 PM  Concurrent Sessions
12:10 – 1:40 PM  Lunch, EPA Recognition of Environmental Stewards & Student Poster Awards
1:40 – 5:10 PM  Concurrent Sessions
5:10 – 7:00 PM  NRCS Meeting & AACC Project Team Meeting

Friday (April 3)

8:40 AM – 12:10 PM  Concurrent Sessions
12:10 PM  Conference Adjourns

Social Events

Tommy Bass  Montana State University
Mary Berg  North Dakota State University
Jill Heemstra  University of Nebraska Extension
Leslie Johnson  University of Nebraska
Becky Larson  University of Wisconsin
Robert Meinen  Penn State University
Rhonda Miller  Utah State University
Josh Payne  Oklahoma State University
Mark Risse  University of Georgia

Proceedings

Jactone Arogo  Virginia Tech
Liz Whitefield  Washington State University

Tours

David Smith  Texas A & M System
Liz Whitefield  Washington State University

Exhibitors

Erin Cortus  South Dakota State University
Jill Heemstra  University of Nebraska Extension
Leslie Johnson  University of Nebraska – Lincoln
Terry Whitehead  USDA-ARS

Student Awards

Mark Risse  University of Georgia

Exhibitors

Leslie Johnson  University of Nebraska
Teng Lim  University of Missouri
Mike Westendorf  Rutgers University

March 30 – April 3, 2015 | Westin Seattle | Seattle, Washington
Tuesday (March 31)

7:00 AM  REGISTRATION

8:15 AM  WELCOME
Joseph Harrison and Mark Risse

8:20 AM  KEYNOTE
Removal of the Elwha Dam: The Return of the Salmon
Dr. George R. Pess, USGS Northern Rockies Science Center

WESTERN DAIRY AIR QUALITY SYMPOSIUM
Moderator | Leytem

GRAND 1
9:00 AM  Technologies for Anaerobic Digestion of Flushed Swine Manure (Douglas Hamilton)

9:20 AM  Open Lot Dairy Ammonia Losses and Nitrogen Balance: a New Mexico Study (Richard Todd)

9:40 AM  A Novel Multiple Staged Leachbed Digestion System for the Treatment of Dry-lot Feedlot and Dairy Manures (Lucas Loetscher)

10:00 AM  Poultry Digestion: Emerging Farm-based Opportunity (Craig Frear)

10:20 AM  Evaluation of a Continuously-mixed Farm-based Anaerobic Co-digestion System Following the U.S. Protocol for Quantifying and Reporting on the Performance of Anaerobic Digestion Systems for Livestock Manures (Curt Gooch)

10:40 AM  MORNING BREAK

5TH AVENUE
GRAND CRESCENT
ST. HELENS
GRAND 2

INNOVATIONS IN ANAEROBIC DIGESTION DESIGN & OPERATION
Moderator | Larson

9:00 AM  Western Regional Ag Outlook: Impacts of Changing Climate (Lara Whitely Binder)

9:20 AM  Livestock Grazing in a Changing Climate: Implications for Adaptive Management (Justin Derner)

9:40 AM  Economics of Nitrogen Sources and Rates in a Long-term Cropping System (Paulo J. Flores)

10:00 AM  Overwinter Transformation and Fate of Fall-applied Manure Nitrogen (Martin Chantigny)

10:20 AM  Fate of Manure Nitrogen Applied for Grass Silage Production (Joe Harrison)

AACC WESTERN REGION MEETING
Moderator | Whitefield

9:00 AM  Soil Nitrate Testing Protocol Development for Lands Receiving Injected Manure (Robert Meinen)

9:20 AM  Ammonia and nitrous oxide model for open lot cattle production systems (Alan Rotz)

9:40 AM  Evaluation of a Continuously-mixed Farm-based Anaerobic Co-digestion System Following the U.S. Protocol for Quantifying and Reporting on the Performance of Anaerobic Digestion Systems for Livestock Manures (Curt Gooch)

10:00 AM  USDA Climate Hub Update (Bea Van Horne)

MEASUREMENT & FATE OF NITROGEN FROM MANURE APPLICATION
Moderator | Rahman

9:00 AM  Fate of Manure Nitrogen from Manure Application (Joe Harrison)

10:00 AM  Fate of Manure Nitrogen from Manure Application (Joe Harrison)
11:10 AM
Regulating Ammonia Emissions from Agriculture: Potential Pitfalls and Limitations (Sally Shaver)

11:10 AM
Effect of Temperature on Methane Production from Field-scale Anaerobic Digesters Treating Dairy Manure (Osman Arikan)

11:10 AM
Beef Cattle Selection and Management for Adaptation to Drought (Megan Rolf)

11:10 AM
What’re the Sources of Bacteria in Your Watershed? They May Not Be What You Expect. (Kevin Wagner)

11:10 AM
How Much of the Nitrogen Contained in Dairy Ration Components Is Partitioned into Milk, Manure Crops and Environmental N Loss? (Mark Powell)

11:30 AM
Effects of Mixing Duration on Biogas Production and Methanogen Distribution in Dairy Manure Anaerobic Digesters (Hui Wang)

11:30 AM
Adopting Policies and Priorities to Encourage Climate-smart Agriculture (Susan Capalbo)

11:30 AM
Preliminary Technical Evaluation of Three Reports by U.S. EPA Region 10 on Nitrate in Water Wells, Yakima River Basin, Yakima County, Washington (Jay Lazarus)

11:30 AM
Variation in State-based Manure Nitrogen Availability Approaches (John Lory)

11:50 AM
Scientific Evidence Indicates That Reducing NOx Emissions Is the Most Effective Strategy to Reduce Concentrations of Ammonium Nitrate, a Significant Contributor to PM2.5 Concentrations in California’s San Joaquin Valley (Errol Villegas)

11:50 AM
Money to Burn: How to Capitalize on BioCNG at Your Wastewater Plant (William "Gus" Simmons, Jr.)

11:50 AM
Fertilizer Value of Swine Manure: a Comparison of a Lagoon and a Deep Pit Slurry System (John Chastain)

12:10 PM
KEYNOTE (LUNCH PROVIDED)
A Governor’s Perspective on Climate Change
Governor Jay Inslee

GRAND BALLROOM
WASTE TO WORTH 2015
March 30 – April 3, 2015 | Westin Seattle | Seattle, Washington
1:30 PM
Particulate Matter from Open Lot Dairies and Cattle Feeding: Recent Developments (Brent Auvermann)

2:00 PM
Estimation of Infectious Risks in Residential Populations Near a Center Pivot Spraying Dairy/Wastewater (Robert Dungan)

2:30 PM
Impact of Aerosols on Respiratory Health of Dairy Workers and Residents Living Near Dairies: Discussion and Implications of Recent Research (Steve Reynolds)

1:30 PM
The Dairy Bio-refinery (Georgine Yorgey)

1:50 PM
Low Tech Waste to Energy Applications in Developing Countries (Gleyn Bledsoe)

2:10 PM
Economical Anaerobic Digestion of CAFO Animal Waste (Matthew Germane)

2:30 PM
Small to Mid-sized Diaries: Making Compact Anaerobic Digestion Feasible (Nadeem Afghan)

2:50 PM
Discharge Quality Water from Dairy Manure: a Summary of the McLanahan Nutrient Separation System (James Wallace)

1:30 – 3:10 PM
How Farmers and Ranchers Are Adapting to Local Weather Extremes to Prepare for Success in a Changing Climate (Producer Panel)
- Keith Berens, Cover Crops (NE)
- Sandra Matheson, Beef Rancher (WA)
- Mike DeSmet, Dairy Farmer (NM)
- Phil Le Dorze, Equine (WA)

1:50 PM
The Effect of Broiler Litter, Swine Effluent, and Municipal Biosolids Land Application on Small Plot Pathogen, Antibiotic Resistance and Nutrient Levels (John Brooks)

2:10 PM
Abundance and Fate of Fecal Indicators, Pathogens and Antibiotic Resistant Bacteria in a Vegetative Treatment System Receiving Cattle Feedlot Runoff (Lisa Durso)

2:30 PM
Manure Irrigation: Airborne Pathogen Transport and Assessment of Technology Use in Wisconsin (Rebecca Larson)

2:50 PM
Surface Runoff Transport of E. coli After Poultry Litter Application on Pastureland (Joshua Payne)

1:30 PM
Antibiotic Losses During Thermophilic Composting (Andy Bary)

1:50 PM
Co-digestion: A Primer on Substrate Utilization and Project Considerations (Craig Frear)

2:10 PM
Digested Solids: Forms, Markets and Trends (Jim Jensen)

2:30 PM
Renewable Natural Gas: Biogas Cleaning and Upgrading 101 (Nicholas Kennedy)

2:50 PM
Renewable Natural Gas: Economics (Chad Kruger)

3:10 PM
Food Waste and Food Processing Waste for Renewable Energy Production (Syu-Ruei Jhang)

3:30 PM
TRANSPORTATION TO BLAKE ISLAND HOTEL LOBBY

4:30 PM
TILLICUM VILLAGE SALMON BAKE & SHOW OFF-SITE
**Wednesday (March 31)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM</td>
<td>REGISTRATION</td>
</tr>
<tr>
<td>8:15 AM</td>
<td><strong>CHANGES, CHALLENGES, AND OPPORTUNITIES FOR ANIMAL AGRICULTURE</strong></td>
</tr>
<tr>
<td></td>
<td>Moderator</td>
</tr>
<tr>
<td></td>
<td>GRAND BALLROOM</td>
</tr>
<tr>
<td></td>
<td>International Perspectives on Challenges and Opportunities for Animal Agriculture in a Dynamic Water-Energy-Food-Land Nexus</td>
</tr>
<tr>
<td></td>
<td>Droughts and Climate Extremes: Lessons for the Future</td>
</tr>
<tr>
<td></td>
<td>Mike Hayes</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>MORNING BREAK</td>
</tr>
<tr>
<td>10:15 AM</td>
<td><strong>CHANGES, CHALLENGES, AND OPPORTUNITIES FOR ANIMAL AGRICULTURE</strong></td>
</tr>
<tr>
<td></td>
<td>Moderator</td>
</tr>
<tr>
<td></td>
<td>GRAND BALLROOM</td>
</tr>
<tr>
<td></td>
<td>Measuring the Environmental Hoofprint of Dairy and Beef Production Systems</td>
</tr>
<tr>
<td></td>
<td>How Climate Change Impacts Manure Management Systems</td>
</tr>
<tr>
<td></td>
<td>Karl Czymak</td>
</tr>
<tr>
<td></td>
<td>Adapting Agriculture to Sustainably Feed the World</td>
</tr>
<tr>
<td></td>
<td>Marty Matlock</td>
</tr>
<tr>
<td><strong>TOUR 1</strong></td>
<td>WHATCOM COUNTY ANAEROBIC DIGESTER TOUR</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Pick up box lunches and board charter bus for tour</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Tour departs.</td>
</tr>
<tr>
<td></td>
<td>VanderHaak Digester</td>
</tr>
<tr>
<td></td>
<td>VanDyk Digester</td>
</tr>
<tr>
<td></td>
<td>Edge of Field Research</td>
</tr>
<tr>
<td><strong>TOUR 2</strong></td>
<td>CLEAN SAMISH BAY INITIATIVE WATERSHED FARM TOUR</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Pick up box lunches and board charter bus for tour</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Tour departs.</td>
</tr>
<tr>
<td></td>
<td>Taylor Shellfish</td>
</tr>
<tr>
<td></td>
<td>Wesen Organic Dairy, LLC</td>
</tr>
<tr>
<td></td>
<td>Double S Quarter Horses</td>
</tr>
<tr>
<td><strong>TOUR 3</strong></td>
<td>BAINBRIDGE ISLAND EQUINE/SMALL FARMS TOUR</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Pick up box lunches and board charter bus for tour</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Tour departs.</td>
</tr>
<tr>
<td></td>
<td>IOS Ranch</td>
</tr>
<tr>
<td></td>
<td>HeyDay Farm</td>
</tr>
<tr>
<td></td>
<td>Islandwood Education/ Event Center</td>
</tr>
<tr>
<td><strong>TOUR 4</strong></td>
<td>KING COUNTY COMPOSTING TOUR</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Pick up box lunches and board charter bus for tour</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Tour departs.</td>
</tr>
<tr>
<td></td>
<td>Lenz Enterprises</td>
</tr>
<tr>
<td></td>
<td>Brightwater Treatment Facility</td>
</tr>
<tr>
<td></td>
<td>Cedar Grove Composting</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>RECEPTION, POSTER PRESENTATIONS &amp; RON SHEFFIELD MEMORIAL STUDENT POSTER COMPETITION</td>
</tr>
<tr>
<td><strong>WASTE TO WORTH 2015</strong></td>
<td>GRAND BALLROOM 3</td>
</tr>
</tbody>
</table>
Thursday (April 2)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>Registration</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Equine Pasture Management Introduction (Paul Siciliano)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Wood Chip Pad Winter Feeding Area as a New Livestock Manure Management System (Tom Basden)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Life Cycle Greenhouse Gas Emissions of Dairy and Bioenergy Systems (Horacio Aguirre-Villegas)</td>
</tr>
<tr>
<td>9:00 – 10:20 am</td>
<td>Tool Demonstration and Case Studies</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Identify and Synthesize Methods to Refine Phosphorus Indices from Three Regional Indexing Efforts (Andrew Sharpley)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Improvement of Pasture Utilization by Optimizing Horse Preference (Krishona Martinson)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Lifecycle Greenhouse Gas (GHG) Analysis of an Anaerobic Co-digestion Facility Processing Dairy Manure and Industrial Food Waste in NY State (Jackie Ebner)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Improve Estimation of Enteric Methane Emissions from Dairy and Beef Cattle: a Meta-analysis (Zifei Liu)</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Estimation of Phosphorus Loss from Agricultural Land in the Southern Region of the USA Using the APEX, TBET, and APLE Models (Deanna Osmond)</td>
</tr>
<tr>
<td>9:20 am</td>
<td>Measuring Pasture Dry Matter Intake of Horses (Paul Siciliano)</td>
</tr>
<tr>
<td>9:20 am</td>
<td>Evaluation of Feed Storage Runoff Water Quality and Recommendations on Collection System Design (Rebecca Larson)</td>
</tr>
<tr>
<td>9:20 am</td>
<td>Lifecyle Greenhouse Gas (GHG) Analysis of an Anaerobic Co-digestion Facility Processing Dairy Manure and Industrial Food Waste in NY State (Jackie Ebner)</td>
</tr>
<tr>
<td>9:20 am</td>
<td>Improvement Estimation of Enteric Methane Emissions from Dairy and Beef Cattle: a Meta-analysis (Zifei Liu)</td>
</tr>
<tr>
<td>9:20 am</td>
<td>Estimation of Phosphorus Loss from Agricultural Land in the Heartland Region Using the APEX Model: A First Step to Evaluating Phosphorus Indices (John Lory)</td>
</tr>
<tr>
<td>9:40 am</td>
<td>Improving Pasture Utilization by Optimizing Horse Preference (Krishona Martinson)</td>
</tr>
<tr>
<td>9:40 am</td>
<td>Implementation of a Progressive Manure Application Risk Management (ARM) System to Protect Watersheds from Agricultural Runoff and Leaching Events (Nichole Emberton)</td>
</tr>
<tr>
<td>9:40 am</td>
<td>Improving Estimation of Enteric Methane Emissions from Dairy and Beef Cattle: a Meta-analysis (Zifei Liu)</td>
</tr>
<tr>
<td>9:40 am</td>
<td>Estimation of Phosphorus Loss from Agricultural Land in the Heartland Region Using the APEX Model: A First Step to Evaluating Phosphorus Indices (John Lory)</td>
</tr>
<tr>
<td>10:00 am</td>
<td>Rotational Grazing Effects on Pasture Nutrient Content (Bridgett McIntosh)</td>
</tr>
<tr>
<td>10:00 am</td>
<td>Initial Evaluation of Vegetated Treatment Areas for Treating Runoff from Small Swine Operations in Central Texas (Daren Harmel)</td>
</tr>
<tr>
<td>10:00 am</td>
<td>Effect of Protein Supplementation on Low-quality Forage Diets on Enteric Methane Production of Beef Steers (Andy Cole)</td>
</tr>
<tr>
<td>10:00 am</td>
<td>Estimation of Phosphorus Loss from Agricultural Land in the Heartland Region Using the APEX Model: A First Step to Evaluating Phosphorus Indices (John Lory)</td>
</tr>
</tbody>
</table>

MORNING BREAK

From Waste to Worth | Advancing Sustainability in Animal Agriculture
**ENVIRONMENTAL MANAGEMENT OF EQUINE OPERATIONS**

- **Moderator**: Williams
- **Methods for Reducing Nutrient Load in Manure Leachate & Feeding Area Runoff**
  - **Moderator**: Dourdas
  - **Measurement & Mitigation of GHGs**
    - **Moderator**: Ogego
  - **National Air Quality Site Assessment Tool (NAQSAT)**
    - **Moderator**: Stowell
  - **Working Together to Improve the Effectiveness of P Indices: Challenges & Opportunities**
    - **Moderator**: Sharpely

### Session Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:50 AM</td>
<td>Existing Equine Pasture Best Management Survey Findings from NE-1441 States (Ann Swinker)</td>
<td>FIFTH AVENUE</td>
<td></td>
</tr>
<tr>
<td>10:50 AM</td>
<td>Effect of Wood Biochar Amendment to Sand on Leachate Water Quality with Repeated Dairy Manure Application: a Soil Column Study (Alysa Bradley)</td>
<td>GRAND 1</td>
<td></td>
</tr>
<tr>
<td>10:50 AM</td>
<td>Feeding Strategies to Mitigate Cost and Environmental Footprint of Pig Production in the U.S. (Jasmina Burek)</td>
<td>FIFTH AVENUE</td>
<td></td>
</tr>
<tr>
<td>1:10 AM</td>
<td>Plant Nutrient and Carbon Content of Equine Manure as Influenced by Stall Management and Implications for Nutrient Management (John Chastain)</td>
<td>GRAND 1</td>
<td></td>
</tr>
<tr>
<td>11:10 AM</td>
<td>Development of a New Manure Amendment for Reducing Ammonia Volatilization and Phosphorus Runoff from Poultry Litter (Philip Moore)</td>
<td>FIFTH AVENUE</td>
<td></td>
</tr>
<tr>
<td>11:10 AM</td>
<td>Measuring Nitrous Oxide and Methane Emissions from Feedyard Pen Surfaces: Experience with NFT-NS Chamber Technique (Kenneth Casey)</td>
<td>GRAND 2</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>The Importance of Nitrogen Stabilization (Tiffany Galloway)</td>
<td>GRAND 1</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Gas Reduction Benefits from Storage to Application of Anaerobic Digestion and Solid-liquid Separation of Dairy Manure (Michael Holly)</td>
<td>GRAND 2</td>
<td></td>
</tr>
<tr>
<td>11:50 AM</td>
<td>Electrolysis of Swine Manure Effluents Using Three Different Electrodes Fe-Fe, Al-Al, and Fe-Al (Shafiqur Rahman)</td>
<td>GRAND 1</td>
<td></td>
</tr>
<tr>
<td>11:50 AM</td>
<td>Factors Affecting Nitrous Oxide Emissions Following Subsurface Manure Application (David Smith)</td>
<td>GRAND 2</td>
<td></td>
</tr>
<tr>
<td>12:10 PM</td>
<td><strong>LUNCH &amp; STUDENT POSTER AWARDS</strong></td>
<td>GRAND BALLROOM 3</td>
<td></td>
</tr>
</tbody>
</table>

**March 30 – April 3, 2015 | Westin Seattle | Seattle, Washington**
ENVIRONMENTAL MANAGEMENT OF EQUINE OPERATIONS

NUTRIENT RECOVERY & UTILIZATION TECHNOLOGIES (GENERAL)

MEASUREMENT & MITIGATION OF GHGs

PATHOGENS & PHARMACEUTICALS II

WORKING TOGETHER TO IMPROVE THE EFFECTIVENESS OF P INDICES: CHALLENGES & OPPORTUNITIES

Moderator | Westendorf
FIFTH AVENUE
Moderator | Porter
CASCADE 1
Moderator | Smith
CASCADE 2
GRAND 2
Moderator | Kleinman

1:40 PM
Environmental Management on Equine Farms, or the Good, the Bad, and the Ugly (Michael Westendorf)

1:40 PM
Manure Separation: Bedding and Nutrient Recovery (Andrew Lenkaitis)

1:40 PM
Nitrous Oxide Emissions in Snow-covered Agricultural Soils: Manure-induced Fluxes (Martin Chantigny)

1:40 PM
Abundance and Fate of Antibiotics and Hormones in a Vegetative Treatment System Receiving Cattle Feedlot Runoff (Daniel Miller)

1:40 PM
Checking Ambition with Reality: Pros and Cons of Different Approaches to Site Assessment (Peter Kleinman)

2:00 PM
Enhancing Phosphorus Recovery from Scraped Liquid Dairy Manure Using Process Effluent (Jactone Ogejo)

2:00 PM
Impact of Manure Management on Greenhouse Gas Emissions in Semi-arid Regions (Rhonda Miller)

2:00 PM
Antibiotic Degradation During Anaerobic Digestion and Effects of Antibiotics on Biogas Production (Shannon Mitchell)

2:00 PM
What Is Your Idea on How to Improve the Effectiveness of the P Index Concept? (Open discussion)

2:10 PM
Horse Manure Composting: Facilities and Methods (Jean Bonhotal)

2:20 PM
Improved Recovery of Ammonia from Swine Manure Using Gas-permeable Membrane Technology and Aeration (Matias Vanotti)

2:20 PM
Practical Use and Application of the Poultry Carbon Footprint Calculation Tool (Claudia Dunkley)

2:20 PM
Dairy Cationic Polymer and High-speed Centrifugation Effects on Pathogen Reduction During Manure Solid/Liquid Separation (Zong Liu)

2:40 PM
Low Cost Aerated Static Composting Systems for Small Acreage Equine Operations (Masoud Hashemi)

2:40 PM
Utilizing Acid-tolerant Nitrifying Bacteria to Generate the Acidity Needed to Operate Ammonia Scrubbers on Poultry and Swine Facilities (Philip Bolu)

2:40 PM
Effects of Treated Poultry Litter on Potential Greenhouse Gas Emission and Field Application (Stephen Bolu)

2:40 PM
Environmental Antibiotic Resistance Bacteria and Genes: A Link to Public Health? (Marilyn Roberts)

3:00 PM
AFTERNOON BREAK
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker/Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 PM</td>
<td>Markets for Composted Agricultural Waste (Mollie Bogardus)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Factors Affecting Household Use of Organic Fertilizer (Laura McCann)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Swine Manure Odor Reduction Using a Humic Amendment: On-farm Demonstration (Eileen Fabian)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Expanding Markets for Manure Treatment Technologies: Making Innovations Economically Viable and</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Reaching Underserved Users (Panel Discussion)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>How Legacy Nutrients Affect Farm Conservation Measures</td>
<td>(Andrew Sharpley)</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Legacy Phosphorus in Calcareous Soils: Effects of Long-term Poultry Litter Application on Phosphorus Distribution in Texas Blackland Vertisol (Heidi Waldrip)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Large Scale Vermicomposting of Dairy Manures (Tom Herlihy)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Use of Zilpaterol Hydrochloride to Reduce Odors and Gas Production from Beef Feedlot Cattle Fed</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Diets with or Without Ethanol Byproducts (Bryan Woodbury)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Removing Phosphorus from Drainage Water: the Phosphorus Removal Structure (Joshua Payne)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Composted Horse Manure and Stall Bedding Pilot Project (Caitlin Youngquist)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Making Dairy Manure More Valuable Than Milk (Matt Freund)</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Manure Management Practices for Mitigation of Gaseous Emissions from Naturally Ventilated Dairy</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Barns (Pius Ndegwa)</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>2014-2015 Nutrient Recovery Technology Challenge</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Relationship Between Surface Waters and Underlying Stream Ditch Sediment in Selected Eagle Creek Tributaries (Candiss Williams)</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Reducing Hay Waste Associated with Outdoor Feeding of Adult Horses (Krishona Martinson)</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Industrial Scale Production of Amino Acid Fertilizer from Fish Waste and Under-utilized Fish</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>(Mahmoudreza Ovissipour)</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Volatile Organic Compound (VOC) Emissions from Beef Feedlot Pen Surface as Affected by Within</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Pen Location, Moisture, and Temperature (Bryan Woodbury)</td>
<td></td>
</tr>
</tbody>
</table>
Friday (April 3)

REGISTRATION

SUCCESS, TOOLS, & SKILLS IN OUTREACH TO PRODUCERS
Moderator | Cortus

NUTRIENT RECOVERY & UTILIZATION TECHNOLOGIES: MANURE TO ENERGY
Moderator | Bredeweg

CLIMATE IMPACTS & ADAPTATION
Moderator | Knox

FEED NUTRIENT MANAGEMENT: PLANNING SOFTWARE
Moderator | Harrison

GRAND 1 | FIFTH AVENUE | CASCADE 1 | CASCADE 2 | GRAND 2

7:00 AM
REGISTRATION

8:00 AM
Wisconsin Professional Manure Application Education (Richard Halopka)

8:40 AM
Nutrient Recovery Technologies: A Primer on Available and Emerging Nitrogen, Phosphorus, and Salt Recovery Approaches, their Performance and Cost (Jingwei Ma)

8:40 AM
Farms of the Future: Seeking Agriculture Energy Independence (William "Gus" Simmons, Jr.)

8:40 AM
Nutrient Recovery Technologies: A Primer on Available and Emerging Nitrogen, Phosphorus, and Salt Recovery Approaches, their Performance and Cost (Jingwei Ma)

8:40 AM
Economic Recovery of Nitrogen and Phosphorus from Anaerobic Digestate as Concentrated Ammonium Hydroxide and Hydroxyapatite (Dennis Burke)

8:40 AM
Anaerobic Digestion Projects: Environmental Credits 101 (Greg Astill)

8:40 AM
Software Training

9:00 AM
Using Whole Farm Walkovers to Prioritize Soil and Water Management with Farmers and Evaluate Watershed Resource Condition (Kevan Klingberg)

9:00 AM
Economic Recovery of Nitrogen and Phosphorus from Anaerobic Digestate as Concentrated Ammonium Hydroxide and Hydroxyapatite (Dennis Burke)

9:00 AM
Anaerobic Digestion Projects: Environmental Credits 101 (Greg Astill)

9:00 AM
Software Training

9:20 AM
Effects of Observability and Complexity on Farmers' Adoption of Environmental Practices (Laura McCann)

9:20 AM
Above the Dirt: a Look into North Carolina’s Clean Energy Future Through Waste-carbon Harvesting (William "Gus" Simmons, Jr.)

9:20 AM
Adapting Dairy Farms to Climate Change (Alan Rotz)

9:20 AM
Software Training

9:40 AM
The Pathways Project (Erin Cortus)

9:40 AM
Thermal-chemical Conversion of Animal Manures: Another Tool for the Toolbox (Jeff Porter)

9:40 AM
Farming Systems: A Look at an Integrated Livestock and Crop Farm (Joseph Lally)

9:40 AM
Software Training

10:00 AM
MORNING BREAK

From Waste to Worth | Advancing Sustainability in Animal Agriculture
### SUCCESS, TOOLS, & SKILLS IN OUTREACH TO PRODUCERS

#### Moderator | Cortus

**GRAND 1**

**10:30 AM**  
Anaerobic Digestion: Highlights of Successful Project Feasibility Studies (Jim Jensen)

**10:50 AM**  
University and Anaerobic Digestion Industry Partnerships: Laboratory Testing (Shannon Mitchell)

**11:10 AM**  
Farm-based Anaerobic Digestion Projects: Wastewater Disposal and Nutrient Considerations (Georgine Yorgey)

**11:30 AM**  
Using Solar Power to Provide Animals with Water While Protecting Water Quality (Gary Hawkins)

**11:50 AM**  
Evaporation Ponds - Waste Storage Facility Design Spreadsheet (Donald Hanson)

**12:10 PM**  
CONFERENCE ADJOURNS

### NUTRIENT RECOVERY & UTILIZATION TECHNOLOGIES: MANURE TREATMENT & LAND APPLICATION

#### Moderator | Porter

**FIFTH AVENUE**

**10:30 AM**  
Field Scale Management of Separated Dairy Manure Fractions (Dennis Haak)

**10:50 AM**  
Low-power Aerators Combined with Center Pivot Manure Application at a Northeast Nebraska Hog Finishing Facility Created an Easy to Manage, Turn-key System (Steve Melvin)

**11:10 AM**  
Sustainable Dairy Production Housing/Manure System: Compost Bedded Loose Housing Dairy Barn (Joseph Taraba)

### ANIMAL AGRICULTURE & CLIMATE CHANGE RESEARCH PANEL

#### Moderator | Stowell

**CASCADE 1**

**10:30 AM – 12:10 PM**  
Research in the animal agriculture and climate change field that attendees can take home for their clients, or find out where to look for more research coming out in the future. Each panelist will present a short introduction to their research program and highlight extension applications. (Panel discussion)

- Kristy Borrelli, REACTCH Project, University of Idaho
- Peter Tomlinson, Great Plains Grazing, Kansas State University
- Mark Powell, Global Research Alliance, USDA
- Bradley Boyd, Beef GHG, University of Nebraska – Lincoln
- Greg Thoma, Pork Carbon Footprint, University of Arkansas
- Rebecca Larson, Dairy CAP, University of Wisconsin

**10:30 AM**  
Time-temperature Combinations for Destruction of PEDV During Composting (Amy Millmier-Schmidt)

**10:50 AM**  
PEDV Survivability in Swine Mortality Compost Piles (Amy Millmier-Schmidt)

**11:10 AM**  
Farm-based Anaerobic Digestion Projects: Wastewater Disposal and Nutrient Considerations (Georgine Yorgey)

**11:10 AM**  
Sustainable Dairy Production Housing/Manure System: Compost Bedded Loose Housing Dairy Barn (Joseph Taraba)

**11:30 AM**  
Multi-specie Mortality Composting Demonstrations and Outreach in SW Nebraska (Jim Hicks)

**11:30 AM**  
Composting Swine Slurry to Reduce Indicators and Antibiotic Resistance Genes (Kimberly Cook)

**11:50 AM**  
Evaporation Ponds - Waste Storage Facility Design Spreadsheet (Donald Hanson)

### ANIMAL MORTALITY MANAGEMENT & COMPOSTING

#### Moderator | Mukhtar

**GRAND 2**

**10:30 AM**  
Research in the animal agriculture and climate change field that attendees can take home for their clients, or find out where to look for more research coming out in the future. Each panelist will present a short introduction to their research program and highlight extension applications. (Panel discussion)

- Kristy Borrelli, REACTCH Project, University of Idaho
- Peter Tomlinson, Great Plains Grazing, Kansas State University
- Mark Powell, Global Research Alliance, USDA
- Bradley Boyd, Beef GHG, University of Nebraska – Lincoln
- Greg Thoma, Pork Carbon Footprint, University of Arkansas
- Rebecca Larson, Dairy CAP, University of Wisconsin

**10:30 AM**  
Time-temperature Combinations for Destruction of PEDV During Composting (Amy Millmier-Schmidt)

**10:50 AM**  
PEDV Survivability in Swine Mortality Compost Piles (Amy Millmier-Schmidt)

**11:10 AM**  
Farm-based Anaerobic Digestion Projects: Wastewater Disposal and Nutrient Considerations (Georgine Yorgey)

**11:10 AM**  
Sustainable Dairy Production Housing/Manure System: Compost Bedded Loose Housing Dairy Barn (Joseph Taraba)

**11:30 AM**  
Multi-specie Mortality Composting Demonstrations and Outreach in SW Nebraska (Jim Hicks)

**11:30 AM**  
Composting Swine Slurry to Reduce Indicators and Antibiotic Resistance Genes (Kimberly Cook)

**11:50 AM**  
Evaporation Ponds - Waste Storage Facility Design Spreadsheet (Donald Hanson)
Venue Map

Exhibitors

Please be sure to visit our exhibitor booths located in the lobby of the Grand Level.

- BioCover
- BPFerm Energy Systems
- KPD Consulting Ltd.
- LANDTEC North America, Inc.
- Multiform Harvest Inc.
- Regenis
- U.S. EPA – AgSTAR
- University of Nebraska
WSDPTA thanks the following sponsors for their generous support of the 2015 Western Dairy Air Quality Symposium

Gold Plus Sponsors
Oregon Department of Agriculture

Gold Sponsors
Dairy MAX
Select Milk Producers
Washington State Dairy Products Commission (Dairy Farmers of Washington)

Silver Plus Sponsors
Dairy Farmers of America

Silver Sponsors
California Dairy Research Foundation
Cargill Feed & Nutrition
Dairy Cares
Dairy Producers of New Mexico (DPNM)
Dairy Producers of Utah
Farm Credit of New Mexico
Northwest Farm Credit Services
Texas Association of Dairymen (TAD)

Affiliate Sponsors
California Dairies, Inc.
Dairy Institute of California
Farmers Cooperative Creamery
Glorieta Geoscience, Inc.
Perkins, Mann & Everett
Texas Association of Dairymen
2015 Conference Sponsors

Platinum

Livestock and Poultry Environmental Learning Center

Washington State Department of Agriculture Dairy Nutrient Management

Animal Agriculture in a Changing Climate

Western States Dairy Producers Trade Association

Gold

MANURE Manager

PRIDE

REGENIS AN ANDGAR COMPANY

Silver

Climate Change Mitigation and Adaptation in Dairy Production Systems of the Great Lakes Region