

2019 Shale Network Workshop Agenda

Monitoring Communities and Their Environment

Nittany Lion Inn, State College, Pennsylvania, May 16–17, 2019

Workshop Organized and/or Sponsored By:

Penn State (Earth and Environmental Systems Institute; Marcellus Center for Outreach and Research), University of Pittsburgh, Evergreen Conservancy, PA Department of Environmental Protection (PA DEP), Shell Oil Co., Oak Ridge Associated Universities

Thursday, May 16, 2019

9:30 a.m. – 4:30 p.m. Field Trip to Eureka Resources, LLC and Wayne Township Landfill
(Meet in The Nittany Lion Inn main lobby (Park Avenue entrance) at **9:30 a.m.** to depart at 9:45 a.m.)
David Yoxtheimer (Penn State University)

*****All Sessions are in Boardrooms 1 & 2 at The Nittany Lion Inn unless noted otherwise*****

5:30 – 6:30 p.m. Registration
Outside Boardrooms 1 & 2

5:30 – 7:30 p.m. Ice Breaker
Boardroom 1
Poster presenters: put posters up for Ice Breaker and poster presentation during lunch Friday.

7:30 – 9:00 p.m. Group Discussion (*PA Coal – Gas Committee*): Issues Related to the Interface of Coal Mining and Natural Gas Development
Boardroom 2
Moderators: Susan L. Brantley (Penn State University), Seth Pelepko (PA DEP)
Greg Rumbaugh (MSHA Technical Services), John Love (Dominion Energy Transmission), Carl Carlson (Range Resources), Casey Saunders (Consol), Heather Dougherty, Daniel Su, Steven Schatzel (NIOSH)

Friday, May 17, 2019

*****All Sessions are in Boardrooms 1 & 2 at The Nittany Lion Inn unless noted otherwise*****

7:15 a.m. Registration
Outside Boardrooms 1 & 2

7:30 a.m. Continental Breakfast and Poster Setup
Breakfast located outside Boardrooms
Speakers, please upload talks before session starts
Poster presenters: put posters up before 8:00 a.m. and remove promptly by 5:00 p.m.

8:00 a.m. Promoting Better Dialogue about Environmental Issues around Shale Gas Development for Communities
Susan L. Brantley (Penn State University), Shale Network Team

8:20 a.m. Collaboration in Shale Gas Development: The Case of the Center for Responsible Shale Development
Jared Cohon (Carnegie Mellon University; Chair of the Center for Responsible Shale Development)

8:40 a.m. The Trajectory of Shale Gas Development, Natural Gas Liquids, and the Plastics Industry in the Northeastern USA
Warren Wilczewski (U.S. Energy Information Administration)

9:00 a.m. Petrochemical Facility Overview and Update, Monaca PA: The "Cracker Plant"
Jim Sewell (Environmental Manager, Shell Chemical Company)

Friday, May 17, 2019 – Continued

9:20 a.m.	Involving Communities in Environmental Decision Making: A Case Study of the Shell Ethane Cracker Facility <i>Jennifer Baka (Penn State University)</i>	
9:40 a.m.	Mapping and Reservoir Characterization of Geologic Intervals for Natural Gas Liquids Storage Applications <i>Kristin Carter (PA Geological Survey; Douglas G. Patchen (WV University Research Corporation); Jessica P. Moore (West Virginia Geological and Economic Survey); Mohammad Fakhari (Ohio Division of Geologic Survey); Gary Daft, Philip Dinterman (West Virginia Geological and Economic Survey); Michael P. Solis (Ohio Division of Geologic Survey); Robin V. Anthony, Katherine W. Schmid, Brian J. Dunst, Antonette Markowski, Stephen Shank (PA Geological Survey)</i>	
10:00 a.m.	Where Does Frac Water Come From? An Overview of Regulatory and Monitoring Experiences from the Susquehanna River Basin Commission with Focus on Natural Gas Development <i>James Shallenberger, Paula Ballaron (Susquehanna River Basin Commission)</i>	
10:20 a.m.	Coffee Break <i>Speakers, please upload talks for next session</i>	
10:30 a.m.	Panel Discussion: Can Government, Industry, and Citizenry Work Together? How It Works and How It Could Work <i>Afton Sterling (Southwestern Energy); Jessica Shirley (PA DEP); Jennifer Baka (Penn State University); Matthew Mehalik (Breathe Project)</i>	
11:30 a.m.	Beneficial Re-Use of Shale Gas Brines? <i>Nathaniel Warner, Thomas J. Geeza (Penn State University); David P. Gillikin (Union College); Bonnie McDevitt, Katherine Van Sice, Audrey Stallworth, Frank Dorman, William Burgos, Patrick Drohan, Katherine E. Marak, Miriam Arak Freedman (Penn State University)</i>	
11:50 a.m. – 1:00 p.m.	Reception-Style Lunch and Poster Session <i>Afternoon speakers, please upload talks</i>	
<i>Coffee service located outside Boardrooms</i>	Boardroom 1 <i>From Impacts to Exposure</i>	Boardroom 2 <i>Connecting Science and Communities</i>
1:00 p.m.	A Semi-Quantitative Geospatial Pollutant-Specific Exposure Metric for Use in Health Studies Associated with Unconventional Natural Gas Development in Pennsylvania James Fabisiak Erica Jackson (University of Pittsburgh), Shaina Stacy (University of Pittsburgh); Hillman Cancer Inst. UPMC)	Petrochemical Development and Plastics: Community Impacts and Economics Matthew Mehalik (Breathe Project)
1:20 p.m.	Investigating Hydrocarbon Sources in Upland Groundwater, Marcellus Shale Region, Northeastern Pennsylvania and Southern New York Bruce Lindsey , Peter B. McMahon , Matthew Conlon (U.S. Geological Survey)	Connecting Community Organizations, Schools, and Volunteers through Water Quality Monitoring Holly Travis , Katie Farnsworth (Indiana University of PA); Matt Genchur (Stormwater Education Partnership)
1:40 p.m.	What to do with shale gas brines if recycling for hydraulic fracturing is not feasible? Radisav D. Vidic , Vikas Khanna (University of Pittsburgh)	Working with citizen scientists and homeowners to understand hydrocarbon-related contamination of water resources near oil and gas development Josh Woda , Tao Wen (Penn State University); Jacob Lemon (Trout Unlimited); Frederick B. Zelt (Independent Geoscientist); Chuck Keeports (National Forest Service); Susan L. Brantley , (Penn State University)

Friday, May 17, 2019 – Continued

2:00 p.m.	Break for coffee, rooms opened back up for Plenary
2:15 p.m.	Methane Emissions from New and Legacy Oil and Gas Development <i>Mary Kang (McGill University)</i>
2:35 p.m.	Methane Emissions from Unconventional Natural Gas Production in the Marcellus Shale <i>Zachary Barkley, Ken Davis (Penn State University); Thomas Lauvaux (Universite Paris-Saclay); Aijun Deng (Utopus Insights, Inc); Natasha Miles, Scott Richardson (Penn State University); Colm Sweeney, Alan Fried (University of Colorado)</i>
2:55 p.m.	A Status Report on the Management of Legacy Well Liability by PA DEP <i>Seth Pelepko, Harry Wise, Serena Oldhouser (PA DEP)</i>
3:15 p.m.	A Legal Perspective on Abandoned Wells in Pennsylvania <i>Katherine Knickelbein, Rick Watling (Office of Chief Counsel for the PA DEP)</i>
3:35 p.m.	Wrap Up Plenary Discussion: What Do We Need to Do Next? <i>Susan L. Brantley, Radisav Vidic, Jennifer Baka</i>
4:00 p.m.	Assessment and Adjournment <i>Poster presenters, please remove your posters promptly</i>

POSTERS

Tetiana Cantlay (Duquesne University); **Daniel J. Bain** (University of Pittsburgh); **John F. Stolz** (Duquesne University) – Mass Ratio Analyses for Detecting Conventional and Unconventional Oil and Gas Well Brines in Natural Samples

Lauren Dennis, **Kenneth Davis**, **Scott Richardson**, **Alejandro Ayala**, **Josh Woda**, and **Susan L. Brantley** (Penn State University) – Quantifying Methane Fluxes in an Area of Shale Gas Development in a Northeastern Pennsylvania Watershed

Sara A. Lincoln, (Penn State University); **Trinity L. Hamilton** (University of Minnesota); **Odetta Mina** (Penn State University); **Thomas B.P. Oldenburg**, **Jagoš R. Radović** (University of Calgary); **David A. Yoxtheimer**, **Susan L. Brantley** (Penn State University) – Impacts of Unconventional Oil and Gas Drilling Waste on Pennsylvania Landfills

Marika Nell (Cornell University); **Michelle Bamberger** (Vet Behavior Consults); **Ahmed H. Ahmed** (Cornell University); **Renee Santoro** (PSE Healthy Energy); **Anthony R. Ingraffea**, **Robert E. Oswald**, and **Damian E. Helbling** (Cornell University) - Surface water and groundwater analysis using liquid chromatography-high resolution mass spectrometry and biological assays in Susquehanna County, PA

Xianzeng Niu, **Tao Wen**, **Susan L. Brantley** (Penn State University) – Identifying How Stream Chemistry Changes as Coal-fired Power Plants Shift to Natural Gas

Danielle Pratt (Duquesne University); **Daniel J. Bain** (University of Pittsburgh); **John F. Stolz** (Duquesne University) – Assessing the Availability and Quality of Data for Unconventional Gas Extraction in Pennsylvania using Complaints and Production Reports

Tao Wen, **Josh Woda**, **Virginia Marcon**, **Xianzeng Niu**, **Zhenhui Li**, **Susan L. Brantley** (Penn State University) – Using Groundwater Chemistry to Identify Potential Migration of Methane Near Shale Gas Wells in the Appalachian Basin

Jennifer Williams, **David. Yoxtheimer**, **Kathy Brasier**, **Sharon Dykhoff** (Penn State University); **Eugene Ruocchio**, **Yvonne Pickering** (State College High School); **Susan L. Brantley** (Penn State University) – TeenShale Network: Outreach in Science and the Science in Outreach