



PCPG

Pennsylvania Council Of Professional Geologists
116 Forest Drive • Camp Hill, PA 17011
Phone (717) 730-9745 • pcpge.org

PENNSYLVANIA COUNCIL OF PROFESSIONAL GEOLOGISTS

Annual Meeting Program

Tuesday, March 7, 2017
Red Lion Hotel Harrisburg Hershey
4751 Lindle Road, Harrisburg, PA

- 8:30 – 9:00 *Board Meeting Arrivals / Refreshments (\$\$ - Registration Required)***
- 9:00 – 11:00 *PCPG Board Meeting***
- 11:00 – 11:30 *Annual Meeting Registration / Arrivals (Pennsylvania Ballroom – Upper Level)***
- 11:30 – 1:00 *Annual Meeting Luncheon (Pennsylvania Ballroom – Upper Level)***
- Opening Welcome (Dan Billman, P.G., PCPG President)
 - Board Introductions
 - Current and Planned Activities
 - PCPG Scholarship Essay Contest (Richard Wardrop, P.G.)
 - Runner Up – TBD
 - First Place – TBD
- 1:05 – 1:35 *Open Dialog: How can the Pennsylvania Geological Survey and PCPG work better together?***
Gale Blackmer, Ph.D., P.G., State Geologist (Pennsylvania Geological Survey)
- In light of ever-changing data needs, technology, budgets, and staffing, it is time once again for the Survey to touch base with our "customers." This is your chance to speak up, so bring your thoughts and questions. Some topics we might discuss: What do you like about our products? Are there other types of information or formats that would better serve your needs? Can the Survey work with PCPG members to provide a clearinghouse for geological information in Pennsylvania?
- 1:35 – 1:55 *Licensure of Professional Geologists in NYS: An overview***
Michael C. Rygel, Ph.D., Associate Professor, Chair (SUNY Potsdam)
President, New York State Council of Professional Geologists
- New York State Council of Professional Geologists (NYSCPG) President Michael Rygel will provide an update on the laws regulating the practice of geology and license geologists in NYS. Specifically, he will discuss the history of the licensure effort, details of the law, license requirements, the application process, and considerations for entities that wish to offer professional geologic services in New York.
- The NYSCPG was formed in 1995. The Council's mission includes advancing the geological sciences as a profession; promoting the protection of the public and the environment through professional practice; establishing high standards of ethical conduct; promoting the legal standing of geologists through legislation; and protecting the integrity of the profession.
- 2:00 – 2:45 *Characterizing Emissions and Developing Emission Factors at Gas Gathering Compressor Stations, Gas Gathering Pipelines and Gas Storage Fields***
Jenna Kromann, E.I.T., G.I.T., Environmental Scientist (GSI Environmental, Inc.)
- More than 51,000 reciprocating compressors are operating in the United States today, with a potential to contribute over 72.4 Bcf per year of methane emissions to the atmosphere (USEPA, 2016a). Additionally, the Pipeline and Hazardous Materials Safety Administration (PHMSA) estimates that there are over 240,000 miles of gas gathering lines in the U.S. Currently, there is minimal data available on leak rates from gathering lines. However, studies conducted on gas distribution pipelines have found that cast iron and unprotected steel piping have a potential for high leak rates (USEPA, 2016b).

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Additionally, knowledge of methane seepage from gas storage wells is currently limited and not fully represented in the Green House Gas Inventory (GHGI) (Petron et al., 2012; Tollefson, 2013). Soil gas measurements conducted by USGS and BLM show evidence of significantly elevated methane seepage from the ground surface near gas storage wells (Lyman et al. 2016; Stolp et al., 2006). These results underscore the need for a robust approach to detect and accurately quantify such emissions over the full range of expected field conditions, including seasonal variability in climate as well as operations, in order to better understand the true impacts of natural gas gathering, boosting and storage operations.

2:45 – 3:00

Break

3:00 – 3:45

Recommended Practices for Baseline Sampling of Water Wells in Areas of Shale Gas Development

Jenna Kromann, E.I.T., G.I.T, Environmental Scientist (GSI Environmental, Inc.)

This talk presents the findings of a Department of Energy-funded research project, which evaluated key sources of variability in pre-drill sampling results from a series of residential water wells in Northeastern Pennsylvania and Eastern Kentucky. Findings of this study suggest that sampling methodology can play an important role in the variability of methane concentrations, where a closed-system sampling method yields the most accurate methane concentrations in effervescing conditions. Regardless of the volume of water purged prior to sampling or the timing of sampling events, changes in methane concentration greater than two-fold were rarely observed. Nevertheless, at a subset of wells, the natural variability of methane concentrations during purging or over time was found to correlate closely with changes in sodium and specific conductance of the water. This suggests that mixing dynamics within these wells (i.e., varying mixtures of relatively saline vs fresh water sourced from different fractures or layers intersected by the well) are an important factor contributing to the natural variability of dissolved methane concentration during multiple sampling events. Results from these field studies culminated in the development of recommended practices for sampling of residential water wells in areas of shale development.

3:50 – 4:30

Sticks and Stones: How the Evolution of Land Plants Changed Clastic Depositional Systems

Michael C. Rygel, Ph.D., Associate Professor, Chair (SUNY Potsdam)

The evolution of land plants in the Early Paleozoic forever changed the surface of our planet by altering the dynamics of sediment production, transport, and deposition. This presentation provides an overview of the processes by which plants have shaped our planet, tests early ideas by Stan Schumm and Ed Cotter, and provides an overview of the sedimentological response to land plant evolution as recorded in New York, Pennsylvania, and West Virginia. Specifically, we demonstrate that the appearance of land plants corresponds to a dramatic increase in the abundance of terrestrial mudrocks, meandering fluvial systems, and storage of sediment in overbank areas. This work represents a subset of a larger body of research undertaken with Neil Davies (Cambridge University) and Martin Gibling (Dalhousie University).

4:30

Announcements, Door Prizes, Annual Meeting Adjournment

5:00 – 6:30

***Networking Reception (Pennsylvania Ballroom)
Entertainment by Jazz Assassins***

**Please remember to sign-out, and pick-up
your certificate of attendance prior to your departure.**



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About today's speakers

Gale Blackmer, Ph.D., State Geologist (PA DCNR) - Gale holds a B. A. in Geology from the University of Pennsylvania, an M. S. in Geology from Penn State, and a Ph.D. in Geology from Penn State. She ran through a few years with environmental companies and a series of temporary teaching positions before landing at the Pennsylvania Geological Survey in 1999, where her focus was on bedrock mapping in southeastern Pennsylvania. If pressed to identify a specialty, she would say structural geology and tectonics, although like most good mappers, she knows just enough about many disciplines to be dangerous. Gale worked her way up from Geologic Scientist to Manager of the Mapping Division. She was named Bureau Director and State Geologist in 2015.

Jenna Kromann, E.I.T., G.I.T., Environmental Scientist (GSI Environmental, Inc.) - Jenna is an Environmental Scientist with GSI Environmental Inc. She received her B.S. degree from Texas A&M University in Civil Engineering with a Water Resources specialization and an M.S. degree in Geological Sciences-Hydrogeology from the University of Texas at Austin. She has worked on a wide range of projects including: research related to regulations for unconventional oil and gas development, field site investigations, site evaluations, ecohydrologic studies, aquifer characterization, statistical analysis for determining background concentrations and assisted in developing a water balance software tool for hydraulic fracturing.

Michael C. Rygel, Ph.D., Associate Professor, Chair (SUNY Potsdam) - Michael earned a B.S. in Geology from the University of Pittsburgh at Johnstown in 2000 and a Ph.D. in Earth Science from Dalhousie University in 2005. He worked as a Post-Doctoral Research Associate at the University of Nebraska-Lincoln from 2005-2006 before becoming a faculty member at SUNY Potsdam in 2006. He was promoted to Associate Professor in 2012 and became Department Chair in 2014. He worked as a consultant for Devon Energy from 2011-2013 and spends his summers co-teaching Indiana University's Field Geology in the Northern Rocky Mountains (G429) since 2011.

Michael's research interests focus on the sedimentology and stratigraphy of shallow marine-terrestrial clastic systems. He focuses largely on Late Paleozoic strata and has worked in the Maritimes Basin (Atlantic Canada), Appalachian Basin (eastern USA), Anadarko Basin (Texas and Oklahoma), and numerous depocenters in eastern Australia. He has authored or co-authored 33 peer-reviewed journal articles and over 80 presentations at scientific meetings. He serves as President for the New York State Council of Professional Geologists (2015-present) and as an Associate Editor for the Canadian Journal of Earth Sciences and the Journal of Sedimentary Research. In 2010 he was awarded the Geological Society of America's Donald L. and Carolyn N. Biggs Earth Science Teaching Award.