

**PCPG**

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

## ***The Last Ice Age in Western Pennsylvania: A Changing Climate as Seen in the Glacial Landscapes***

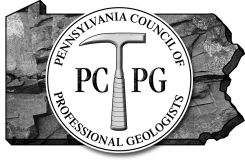
**June 14, 2019**

DoubleTree Pittsburgh-Cranberry  
910 Sheraton Drive, Mars, PA

### **Itinerary**

- 7:30 - 8:15      Registration, Continental, Networking (Atrium)
- 8:15 - 8:30      Assemble in Hotel Lobby - Bus on-boarding
- 8:30              Depart Hotel
- 8:30 - 4:30      #1: Jacksville Esker: Overview of the Jacksville Esker. Outcrop of Esker on cross street. East down road is gravel/sand mine, mining from the Esker.
- #2: West Liberty Bog: Remnants of Bog, south of road. Near Gravel Mine. Esker Outcrop on bank at intersection.
- #3: Muddy Creek Oilfield Exhibition  
View "old school" oil well operations. Discussion of history of Moraine State Park and what was here prior. A.) Prior to Moraine Lake, and B.) Prior, during the Wisconsin glacial stage.
- #4: Lunch at Pennsylvanian Outcrop @ Moraine State Park
- #5: McConnells Mill & Covered Bridge: (We'll park in lot above Covered Bridge, there will be a little hike.) Slippery Rock Gorge: Carved by glacial melt water and ice damming.
- #6: Terminal Moraine: Overview of the Wisconsin glacial stage terminal moraine.
- #7: Kame Gravel Pit: Gravel pit in a Kame deposit along the terminal moraine. Diverse and poorly sorted cobbles in the deposit.
- #8: Cleland Rock: (May need to park on Breakneck Bridge Road and hike in.) Overview of Slippery Rock Gorge and edge of ice dam lake.
- 4:30              Hotel: Sign-out, complete evaluation, receive certificate of attendance (Atrium)
- 4:30 - 6:00      Post field trip snacks, refreshments, networking (Atrium)

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### **About our Field Trip Guides**

**Dan A. Billman, P.G., C.P.G. (Billman Geologic Consultants, Inc.)** - Dan Billman has approximately thirty years of experience in the Appalachian Basin with the last twenty-six as a consulting geologist and president of Billman Geologic Consultants, Inc. Prior to independent consulting, Dan worked as an exploration and development geologist for Mark Resources Corporation and Eastern States Exploration Company. Mr. Billman is a registered Professional Geologist (PG) in the state of Pennsylvania, an American Association of Petroleum Geologist, Certified Petroleum Geologist (CPG) and an Associate Member of the International Institute of Minerals Appraisal.

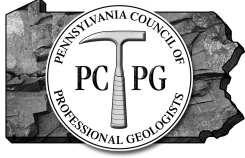
Dan Billman has extensive experience in both unconventional (shales and tight gas sandstones) and conventional development and exploration plays in the Appalachian Basin. Multiple independent E&P's, majors and supermajors with assets in the Appalachian Basin consistently seek geological counsel from Mr. Billman. Most notably, he worked closely with the Rice family as a consultant and Geologic Advisor to Rice Energy Inc. as it acquired its initial acreage positions in the Appalachian Basin.

Mr. Billman received his Bachelor of Science degree in Geology from the University of Toledo (Ohio) and his Master of Science degree in Geology from West Virginia University. He is a member of the American Association of Petroleum Geologists (AAPG) and is currently the AAPG Delegate representing the Pittsburgh Geological Society. Also, Mr. Billman is a Past-President of the Eastern Section of the American Association of Petroleum Geologists, after serving as the organizations Vice-president, Secretary and Treasurer. He is a former President (2 terms), Vice-President and Treasurer (2 terms) of the Pittsburgh Association of Petroleum Geologists. Mr. Billman is a member of the Independent Oil and Gas Associations of Ohio and Pennsylvania, the Pittsburgh Association of Petroleum Geologists, Pittsburgh Geological Society, Ohio Geological Society, Appalachian Geological Society, and Buffalo Association of Professional Geologists. Mr. Billman is a past board member of the Pennsylvania Council of Professional Geologists and current Past-President of the organization, through 2019. Mr. Billman has written and/or co-authored numerous published papers and technical presentations on the petroleum geology of the Appalachian Basin.

Glacial geology has been a "geologic interest" of Mr. Billman having grown up and been educated in northern Ohio.

**Albert D. Kollar, Director, Invertebrate Paleontology (Carnegie Museum of Natural History)** - Albert D Kollar is the Geologist, Invertebrate Paleontologist, Architecture Historian of the Carnegie Museum Building Stones and Section Head in the Section of Invertebrate Paleontology at the Carnegie Museum of Natural History. Mr. Kollar received his B.S. in Geology from Southampton and M.S. in Geology and Invertebrate Paleontology from the University of Pittsburgh. Albert's path to science was not defined until his first year in college. His initial interest was Greek and Roman History, Geography, Marine Geology and Aquatic Botany. Then he read two books, *Stratigraphy and Life History* by Marshall Kay and *On the Origin of Species* by Charles Darwin and

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**Albert D. Kollar, Director, Invertebrate Paleontologist (Carnegie Museum of Natural History) -  
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found himself on his first geology field trip to Big Bend Natural Park in Texas. There, he discovered a large femur dinosaur bone of Anatosaurus and a large Cretaceous Inoceramus clam on the same day. The rest is history. Since then, he has conducted field work to collect invertebrate fossils for the Carnegie Museum from the United States, Alaska, Canada, England, Wales, Ireland, Germany and Sweden.

He has co-authored publications on Carboniferous brachiopods, the Pennsylvanian age eurypterid trackway and the Fedexia amphibian skull both on display at the museum, and a review of the Pennsylvanian Climate Events in the central Appalachian Basin. And research that pertain to the Carnegie Jurassic age dinosaurs on exhibit at the museum such as, the Geology of the famous Diplodocus carnegii from Sheep Creek, Wyoming and the Geology of the Quarry Sandstone of Dinosaur National Park in Jensen, Utah.

His current research focus takes him to Croatia, France, Ireland and Italy in pursuit of the geology, architecture and cultural history of the Carnegie Museum building stones. The Carnegie was built in 1895 and 1907 and used 30 varieties of marbles, fossil limestones, sandstones, and granite many from antiquity, that were sourced from ancient quarries in Algeria, Croatia, Greece, France, Ireland, Italy, and the United States. He is working to interpret the Geology of Landscape Paintings on display in the Carnegie Museum of Art for evidence of human induced or natural environmental change.

Mr. Kollar received the 2017 AAPG Eastern Section George V. Cohee Public Service Award. Albert is past President of the Pittsburgh Geological Society serving from 2011 – 2014 and Chair's the Awards Committee. He is a member of AAPG, GSA, and ASMOSIA.