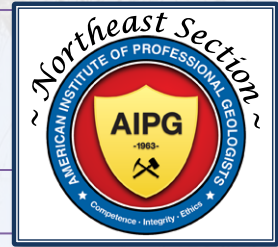




HMPGA & NE-AIPG -APRIL 16TH, FIELD TRIPS*-



*This flyer is for the afternoon field trips, see additional flyers and visit hmpga.wildapricot.org and ne-aipg.org/ for information on the evening **Student Expo & Professional/Career Networking** event.

- FIELD TRIP 2 ABSTRACT - Geologic History and Geomorphology of Cohoes Falls and Lower Mohawk River Area

1 PDH - approval is pending**

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The field trip will center upon a visit to a scenic overlook of the lower Mohawk River gorge and Cohoes Falls in Cohoes, New York. The overlook will be either at the Overlook Park or the Falls View Park, both of which are located on the southwestern side of the Mohawk River and downstream of Cohoes Falls. The overlooks provide a great vantage point to observe and discuss many of the features and topics described below.

The bedrock exposed at the Cohoes Falls, and on the walls and floor of the river gorge downstream and upstream of the falls, is a lithotectonic unit referred to as the Cohoes Mélange. The rocks in this unit were originally bedded shales and graywacke strata (a sequence often referred to as "flysch"), deposited during the mid-Ordovician Period in a foreland basin formed during the Taconic Orogeny.

These rocks were subsequently overridden by a westward-moving (per today's geography) allochthon (large thrust sheet) along low-angle thrust faults as the Taconic Orogeny progressed, and were deformed in the shear zone beneath the allochthon. As a result, the rocks exposed in the gorge and the falls exhibit both ductile and brittle deformation features including: pervasive, closely spaced cleavage; disrupted bedding; and thrust/reverse faults. The degree of deformation was so extreme that the unit is classified as a mélange. A change to an extensional regime after the compressional deformation resulted in later normal faults cross-cutting the earlier-formed rock fabric.

The current configuration and morphology of the Cohoes Falls and the lower Mohawk River gorge are the result of processes and events occurring during the Pleistocene Epoch through present times.

The present day gorge is cut deeply into the bedrock (50 to 100+ ft high vertical bedrock walls), the riverbed is composed primarily of bedrock and is relatively flat, and the river is underfit for the size of the gorge. The flow rates observed in the present-day Mohawk River are not sufficient to have formed this gorge. Much higher flow rates ending about 13,000 years ago, related to drainage of Glacial Lake Iroquois to the west through what is now the Mohawk River valley (referred to as the Iromohawk River) could explain many of the features observed in the gorge, including its depth, width and generally flat bottom, as well as the formation and position of Cohoes Falls. The present day Mohawk River flow has also contributed to some of the features observed in the gorge, such as the plunge pool at the base of the falls, and the 30 to 250 ft wide subchannel that is cut into the generally flat riverbed.

** professional development hours (PDHs), pending approval by NYSCPG for PGs and Design Professionals.

HMPGA & NE-AIPG

HUDSON MOHAWK PROFESSIONAL GEOLOGISTS ASSOCIATION (HMPGA) & NORTHEAST SECTION OF THE AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS (NE-AIPG)



Join us at The Century House in Latham, NY, after Field Trip 2 for the **Student Expo & Professional/Career Networking** event, complete with dinner and presentation on a PFOA study in the Bennington region of Vermont.