



PCPG

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

This seminar involves computer-based training and will be held in the PSU Great Valley computer lab using PSU computers. Desktop surface space is limited, and you will not be able to use a personal laptop for this seminar.

Fracture Trace Analysis in a Digital Age

August 17, 2017

**PSU Great Valley
30 E. Swedesford Rd., Malvern, PA**

Overview

Fracture traces have long been used as tool in environmental science. In the past, the focus was on hard copy photo pairs and stereo viewers, which required long waits and visits to the BTGS library. With the advent of Penn Pilot, PAMAP lidar and orthoimagery data, and color infrared imagery being readily available, it is possible to easily do analyses for anywhere in the state. It has become apparent that fractures are of vital importance not only for water exploration but for contaminant mapping and even hydrocarbon exploration.

Participants will learn the basic theory of fracturing, as well as make use of GIS and image processing tools to utilize digital data.

Proposed Agenda

7:00-8:00 Arrivals, Registration, Log-in information, Continental

8:00-9:00 Theory of fractures and lineaments

- CSD
- Lineaments
- Fracture traces

Imagery

- Color Infrared
- Multispectral
- Radar
- Thermal
- INSAR
- Hyperspectral

9:00-10:00 Aerial imagery hands-on exercise

- PennPilot
- CIR

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- 10:00-10:10** **Break**
- 10:10-12:00** **Lidar hands on exercise**
- 12:00-1:00** **Group Luncheon**
- 1:00-2:00** **Geobotany and biogeophysics**
- 2:00-2:10** **Break**
- 2:10-3:00** **Applications**
- Water wells
 - Hydrocarbons
 - Forensic applications
- 3:00-3:30** **Future**
- 3:30-4:30** **Discussion, Q&A, Summary**
- 4:30** **Adjournment**
Complete Evaluation, Sign-Out, Receive Certificate of Attendance

About Our Instructor

Our course instructor is Jay Parrish, PhD., P.G, the prior Pennsylvania State Geologist of Pennsylvania. In that role, Dr. Parrish was responsible for establishing 100% LIDAR and Orthoimagery coverage data for the entire Commonwealth of Pennsylvania. He also taught remote sensing for the Pennsylvania State University's Dutton Institute.

Over his career, Dr. Parrish was employed at NASA's Jet Propulsion Laboratory, GeoSpectra, Mobil Oil, Mennonite Voluntary Service, Lancaster County GIS, Bowling Green State University, and R.E. Wright Associates, Inc. (REWAI)/SAIC.

In 2013, PCPG's Emrich Award for Distinguished Service recognizing meritorious service, dedication, and unfailing concern for the betterment of the profession of geology in Pennsylvania was awarded to Dr. Parrish.

Dr. Parrish has served on the National Geospatial Advisory Committee, the National Elevation Program Committee, and is a past president of The Pennsylvania Mapping and Geographic Information Consortium (PAMAGIC), and the Pennsylvania Geospatial Information Council (PAGIC).

Dr. Parrish earned a PhD in Geophysics from Penn State.