



ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS  
Serving Professionals in Groundwater, Environmental, and Engineering Geology

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## Section Meeting

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**You are invited to attend the AEG KC/O Section's May 14, 2009 meeting. Mark Molinari, AEG President, will be our guest speaker.**

**Date:** Thursday, May 14, 2009

**Time:** 11:30-12:00 pm Registration and Lunch  
12:00-1:00 pm Speaker Presentation

**Topic:** "Practical Applications of Airborne LiDAR Data for Environmental and Engineering Geology Projects"

**Speaker:** Mark Molinari, AEG President, URS, Seattle, WA

**Cost:** \$15/person  
Students \$7.50

**Location:** Diastole, 2501 Holmes, Kansas City, MO

Diastole is a prominent fixture in the Hospital Hill area. It was built as Dr. E. Grey Dimond's residence which he later donated to UMKC. It contains valuable displays of 100s of artifacts that he had collected during his overseas travels. A picture and directions are available at: <http://www.umkc.edu/virtualtour/diastole.asp>

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Eligible for 1.0 Professional Development Hour (PDH) for attending.

For reservations, please call Blane Wood at (913) 563-1452 or email [blane.wood@pacelabs.com](mailto:blane.wood@pacelabs.com). Reservation **deadline is noon May 13, 2009.**

To access this information on the internet, please go to our section web page at [www.vocshop.com/aeg/aegkco.html](http://www.vocshop.com/aeg/aegkco.html).

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## **Practical Applications of Airborne LiDAR Data for Environmental and Engineering Geology Projects**

Over the past decade there has been a significant increase in the use of airborne LiDAR (Light Detection and Ranging) data to create detailed topographic base maps and high-resolution (0.2 - 1 m vertical accuracy) digital elevation models (DEMs) for a variety of regional and site-specific projects. If the scope of data acquisition is properly defined and implemented, LiDAR is effective in all types of terrain and vegetation; however it is particularly useful in densely vegetated areas where conventional photogrammetry-based topographic maps and resulting DEMs have a relatively low accuracy. In addition, it is very cost-effective in steep or remote terrain that cannot be easily surveyed by conventional methods. This talk will present a variety of examples where LiDAR was successfully used for environmental and engineering geology projects and the type of derivative products that can be generated using GIS or other computer applications. Primary lessons learned regarding acquisition and QA/QC review of LiDAR data, management of LiDAR vendors, managing large LiDAR data sets and automation of LiDAR data processing will also be summarized.

Example projects include:

- Use of LiDAR-derived GIS products for 28 separate proposed timber sale areas covering approximately 1,400 square miles in Tongass National Forest in Southeast Alaska to map and evaluate geologic hazards and watershed hydrology, karst, and potential hydrologic effects of the surging Hubbard Glacier on Russell Fjord, and road reconstruction
- Active fault and landslide mapping
- Unexploded ordinance range mapping
- Structural geologic mapping of an inaccessible rock avalanche
- Mine tailing and landslide debris volume estimates
- Levee evaluation
- Detailed topography for surface water- groundwater interaction for a contaminant plume
- Floodplain mapping and geomorphic analysis
- Wetlands