

# Association of Environmental and Engineering Geologists – Arizona Section

**Dinner Meeting:  
Wednesday, September 9, 2015**

**SunUp Brewing Company in Phoenix**

**5:30 PM Mingling and Drinks**  
*Sponsor: TBD*

**6:30 PM Dinner and Presentation**

**SPEAKER:**

**Mr. Eldon Gath**

*2014-2015 Richard h. Jahns Distinguished Lecturer in Applied Geology*

**PRESENTATION:**

**Tectonic Geomorphic and Paleoseismic Investigations  
for the Panama Canal**

**Cost: \$30 AEG Member  
\$35 Non-Member  
\$15 Government  
\$10 Students**

**Location: SunUp Brewing Company  
322 E. Camelback Rd.  
Phoenix, Arizona 85012**

RSVP by Friday September 4, 2015 to Zachery Shafer at [zachery.shafer@aecom.com](mailto:zachery.shafer@aecom.com)

## BIOGRAPHY

### Mr. Eldon Gath

*2014-2015 Richard H. Jahns Distinguished Lecture in Applied Geology*

<http://www.aegweb.org/about-aeg/awards/jahns-distinguished-lecturer/2015-jahns-lecturer>

Eldon, a consulting engineering geologist, has more than 30 years of experience in the identification, investigation, and remediation of geologic hazards, involving land use planning, environmental assessments, field exploration programs, and presentation of findings. He has particular experience with the evaluation of active faults for construction site planning, the development of seismic safety programs and policies, and is currently engaged in efforts to modernize California's 40-year old active fault zoning act (Alquist-Priolo Earthquake Fault Zoning Act).

Eldon is the President of Earth Consultants International, a geological consulting firm that he co-founded in 1997, following 12 years with Leighton Consulting in southern California. He has considerable international experience including field projects in Turkey, Panama, Mexico, Costa Rica and Papua New Guinea, as well as project involvement in many others.

Eldon is a graduate of the University of Minnesota, Institute of Technology, with a BS degree in Geology in 1978. He has been in graduate school ever since; MS program at Cal State LA (1982-1990), PhD program at UC Riverside (1993-1996), PhD program at UC Irvine (1998-2008), but despite getting very close, he has never managed to complete the degree due to his busy consulting responsibilities, professional organization involvement, and travel schedules; or conflicted priorities, if you ask his advisors.

Eldon is a frequently invited speaker to local southern California colleges. Since his first professional presentation on the Whittier fault at AGU in 1987, he has given over one hundred presentations before professional, academic, and public groups, and has published dozens of papers on a wide range of geological and professional practice topics, several of which have received awards for outstanding presentations and papers.

## ABSTRACT

### **Tectonic Geomorphic and Paleoseismic Investigations for the Panama Canal**

This talk summarizes five years of geological exploration in Panama to quantify the fault hazards to the Panama Canal and the Canal Expansion Project, using tectonic geomorphic mapping and analysis, paleoseismic trenching, and seismic hazard analysis. Faults that were investigated include the Gatún, Limón, Azota, Pedro Miguel, Miraflores, and Agua Blanca. The talk will illustrate techniques of field reconnaissance, trench site selection, 3-D trenching of strike slip faults, and how to assemble into a seismic hazard model. This talk includes a detailed analysis of the AD 1621 Panama Viejo earthquake, how the source fault was identified using archeoseismology along the Camino de Cruces (Spanish trail), and how several quantitative 3-D paleoseismic trenching studies of the Pedro Miguel fault were used to quantify the coseismic displacement kinematics of that earthquake for design of a major Canal expansion project dam across the fault. An overview of the Panama Canal and the Canal Expansion Project is also presented.

