Characterizing Fault Displacement Hazards: Significant Progress and Significant Uncertainties


This talk focuses on the different methods and underlying data used to develop probabilistic and deterministic fault displacement estimates and well as our understanding of fault behavior (slip rate, magnitude, and recurrence) and the uncertainties associated with fault behavior and observations of historic fault slip. The presentation will also raise critical questions regarding both methodologies and design criteria used for infrastructure projects in light of these uncertainties

Biography:

Scott Lindvall is a Certified Engineering Geologist in California with 35 years of experience working in the consulting industry performing seismic and geologic hazard analyses, fault investigations, and engineering geology studies for both existing and proposed critical facilities. He is particularly interested in advancing the state of the practice by incorporating recent research on active faults and seismic sources into the evaluation of dams, aqueducts, pipelines, nuclear facilities, and other infrastructure.

Scott received his BS in Geology from Stanford University in 1984 and his MS in Geology from San Diego State University in 1988. Dick Jahns was Scott’s undergraduate advisor at Stanford, which makes this award especially meaningful to him. He has spent the majority of his career working for consulting firms specializing in seismic hazards and engineering geology. He currently manages the Lettis Consultants International southern California office, and prior, worked many years at both William Lettis & Associates, and Lindvall, Richter & Associates.
“Keen observation is at least as necessary as penetrating analysis”

Karl Terzaghi

**Message from the Chair**

Well yet another month has passed and another great talk has been given. Thanks to all those who attended the February meeting. It was a good turnout for a fun topic. Tim Shevlin shared his research in rockfall attenuators and introduced us to GeoBrugg’s new design tool. It is always fun seeing rock rolling videos and mitigation measures in action. Thanks to Tim and GeoBrugg for sponsoring the beverages as well. It was refreshing!

March brings the Jahns Distinguished Lecturer Scott Lindvall. Scott is especially grateful to be honored as Jahns Lecturer since Dick Jahns was his undergraduate advisor. Currently Scott manages the Lettis Consultants International in southern California office. He has a long lasting interest in seismology stemming from

**Biography Continued . . .**

His interest in geology came at a young age growing up in the Transverse Ranges of southern California. His geologist father, Eric Lindvall, helped instill an appreciation of the outdoors (and therefore geology) and was later instrumental in shaping Scott’s career. His interest in earthquakes was triggered at nine years old in the early morning hours of February 7, 1971 with the M6.6 San Fernando earthquake. Experiencing strong ground shaking from the main shock and several large aftershocks in the epicentral region, while dust was slowly rising from rock falls in the surrounding canyons, left a lasting impression.

Scott has performed detailed mapping of surface ruptures of earthquakes in southern California and Turkey, including the 1986 M6.6 Superstition Hills, 1992 M7.3 Landers, 1999 M7.4 İzmit (Kocaeli), 1999 M7.1 Düzce, and the 1999 M7.1 Hector Mine earthquake ruptures. Scott’s experience in neotectonics, paleoseismology, and geomorphology has enabled him to pursue research projects designed to better quantify the timing of past events, slip rate, surface displacement, and style of deformation on active strike-slip and reverse faults throughout southern California. He has been awarded over a dozen research grants funded by the U.S. Geological Survey National Earthquake Hazards Reduction Program (NEHRP) and the Southern California Earthquake Center (SCEC). Scott has directed geologic evaluations and seismic source characterizations in a variety of tectonic environments ranging from active plate boundaries to stable cratons. He served on the Technical Integration Team for a multi-year study sponsored by the US Nuclear Regulatory Commission, US Department of Energy, and the Electric Power Research Institute to develop the Central and Eastern United States Seismic Source Characterization for Nuclear Facilities, which has served as the regional seismic source model for hazard evaluations of nuclear facilities since its publication in 2012. Scott has also served on the advisory committee of the Earthquake-Induced Landslides Working Group for the California Geological Survey’s (CGS) Seismic Hazards Mapping Program and, more recently, the CGS Special Publication 42 Advisory Panel to update the regulatory guidance on assessing fault rupture hazards in California.
Message Continued . . .

firsthand experience with the M6.6 San Fernando earthquake. He will be presenting on Characterizing Fault Displacement Hazards: Significant Progress and Significant Uncertainties. Please come out to show our support for the Jahns Lecturer and possibly get some first hand stories of Dr. Jahns. As a reminder the meeting will be held at the Lucky Labrador Beer Hall on 1945 NW Quimby. New venue, same great crowd and interactions.

Once again, please consider registering for the 2020 Annual Meeting. Information on the meeting can be found at aegannualmeeting.org.

Looking forward to seeing you at the Lucky Lab!

Ben George
Oregon AEG Chapter Chair

STUDENT AWARDS
Attendance to the 2020 Annual AEG Meeting,
Portland, Oregon
Two award types are available for qualifying students in the Oregon Chapter Region

STUDENT PRESENTER AWARD:
$250 for meeting and field course registration.

STUDENT ATTENDEE AWARD:
$100 for meeting registration

Travel reimbursement/coordination available for awardees outside of the Portland Metro Area.

All Award Candidates are required to submit the following items:

Application for Annual Meeting Student Award - Complete the application provided at www.aegoregon.org/student-award/ or the provided QR code, and submit to the Oregon Chapter Board.
**Student Award Continued . . .**

**Confirmation of Active AEG Student Membership** - If you are not currently a Student Member of AEG, you may register for free at [www.aegweb.org/join-aeg](http://www.aegweb.org/join-aeg). Only Student Members of AEG are eligible for this award.

**Geology Essay** - Describe your geology-related activities outside of the university classroom and how these activities inform or relate to your goals for future practice as a professional geologist. (minimum of 250 words)

Continued . . .

Student Presenter Award Candidates are required to meet the following additional criteria:

**Accepted Abstract for the AEG 2020 Annual Meeting** - Abstracts for the Annual Meeting must be submitted online no later than May 1, 2020. ([www.aegannualmeeting.org/technical-sessions](http://www.aegannualmeeting.org/technical-sessions))

The AEG Technical Committee should provide confirmation of acceptance by June 15, 2020. A copy of the acceptance notice from AEG must be submitted with the application.

**Complete applications for these awards are due no later than 10 p.m., Friday, June 26, 2020.**

Submittal can be emailed to Oregon Chapter Chair, Ben George at bgeorge@ccilt.com. Selection of award winners is at the sole discretion of the AEG Oregon Chapter Board. The Board reserves the right to not select a winner(s) if applicants do not meet the minimum requirements. We expect to select winners by July 10, 2020.

*Application can be found on the following page*

---

**Geology Quiz**

What is the deepest canyon in North America when measured from the river surface to the peak of the highest surrounding mountain?

A) Grand Canyon, AZ  
B) Hells Canyon, OR  
C) King Canyon, CA
Oregon AEG Chapter
Application for Annual Meeting Student Award
Portland, Oregon, September 15-20, 2020

Two award types are available for qualifying students in the Oregon Chapter Region

STUDENT PRESENTER AWARD: $250 for meeting and field course registration.

STUDENT ATTENDEE AWARD: $100 for meeting registration

Travel reimbursement/coordination available for awardees outside of the Portland Metro Area.

Student Name: ____________________________

AEG Student Member Number (1): ____________________________

College/University: ____________________________

Address (2) ________________________________________________

E-mail: ____________________________

Phone number: ____________________________

Title of Presentation (3): ____________________________

______________________________________________

______________________________________________

______________________________________________

______________________________________________

______________________________________________

Attach a 250- to 500-word essay (4) describing your geology-related activities outside of the university classroom and how these activities inform or relate to your goals for future practice as a professional geologist.

Applications are due no later than 10 p.m., Friday, June 26, 2020. It is the intent of the AEG Oregon Chapter Board to select award winners by July 10, 2020. Selection of award winners is at the sole discretion of the AEG Oregon Chapter Board.

Please submit the application package to the AEG Oregon Chapter Board via email to the Oregon Chapter Chair, Ben George at bgeorge@ccilt.com.

(1) Student membership with AEG is free. Please join on-line at: www.aegweb.org/join-aeg
(2) If your address will be different over the summer, please supply both your current and summer address.
(3) If applying for the Student Presenter Award, submit a copy of your abstract with this application, and a copy of the acceptance notice from the AEG Technical Committee indicating you will be presenting at the 2020 AEG Annual meeting.
(4) Attach the required essay and additional supporting documentation, if applicable.
“The earth is large and old enough to teach us modesty.”

Hans Cloos
Your Environmental, Geotechnical & Clean Water Professionals

360-771-7586
info@holtservicesinc.com
www.holtservicesinc.com
We engineer success stories.

PBS is a trusted source of practical, sustainable solutions to the region's environmental and engineering challenges—enabling projects to succeed and communities to thrive.

ENVIROMENTAL SERVICES • HEALTH & SAFETY SURVEY • GEOTECHNICAL ENGINEERING STRUCTURAL ENGINEERING • CIVIL ENGINEERING

EARTH DYNAMICS LLC
2284 NW Thurman St.
Portland, OR 97210
(503) 227-7868
info@earthdyn.com

Engineering Geophysics:
- Seismic Refraction/Reflection
- Shearwave Velocity Studies
- Electrical Resistivity Profiling
- Ground Penetrating Radar
- Magnetics/Electromagnetics
- Gravity
- Marine Geophysics

Vibration & Noise Analysis:
- Remote Vibration Monitoring
- Real-time Frequency Analysis
- Construction Monitoring
- Demolition Monitoring
- Blast Design and Monitoring
- Pre-construction Surveys
- Sensitive Equipment Certification

Rock Mechanics:
- Uniaxial Compressive Strength
- Direct and Indirect Tensile Strength
- Dynamic & Static Elastic Moduli
- Thermal Properties
- Density & Porosity
- Moisture Content
“A soil adapted to the growth of plants, is necessarily prepared and carefully preserved; and, in the necessary waste of land which is inhabited, the foundation is laid for future continents, in order to support the system of the living world.”

James Hutton
Chapter Officers & Committee Chairs

Chair:
Benjamin George
Cornforth Consultants, Inc.
bgeorge@ccilt.com

Chair-Elect:
Michael Marshall
GRI
mmarshall@gr.com

Treasurer:
Nancy Calhoun
DOGAMI
nancy.calhoun@oregon.gov

Secretary:
Aine Mines,
Cornforth Consultants, Inc.
amines@cornforthconsultants.com

Past-Chair:
Chris Humphrey
FERC
goeuhumphrey@yahoo.com

Program Chair:
Jasmin Jamal
Aspect Consulting
jjamal@aspectconsulting.com

Field-Trip Chair:
Erin Dunbar
Geosyntec Consultants, Inc.
dunbar.erin@gmail.com

Membership Chair:
Ruth Wilmot
Columbia Geotechnical, Inc.
ruthwilmot@comcast.net

Legislature Chair:
Volunteer Needed
This could be you!

Newsletter Editor:
Bryon Free
Oregon Department of Transportation
Bryonfree@gmail.com

Webpage Editor:
Matt Randall
PBS Engineering and Environmental
matt.randall@pbsusa.com

PSU Student Chapter President:
Stephanie Welch
Portland State University
sw22@pdx.edu

This could be you!

The Oregon Chapter is also on the web at
http://www.aegoregon.org
National AEG webpage:
http://aegweb.org

Subscribe to the newsletter by sending any e-mail to
aegoregon-subscribe@groups.electricembers.net

Thanks For Supporting AEG


The AEG Oregon Chapter Newsletter

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.

AEG OREGON CHAPTER NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Chapter or other Chapters, and other interested people who have requested and paid a local subscription fee of $10.00. E-mail subscriptions are free. News items are invited and should be sent to: Ben George, AEG Oregon Chapter Chair-Elect, Cornforth Consultants, Inc., 10250 SW Greenburg Road, Suite 111, Portland, OR 97223, e-mail: bgeorge@ccilt.com, phone (503) 452-1100. Electronic media is preferred. Deadline for submittal is the 25th of the month. Advertising: business card size $100/yr; ¼ page $200/yr; ½ page $350/yr; 1 page $450/yr.