AEG OREGON
NEWSLETTER

DECEMBER 2025

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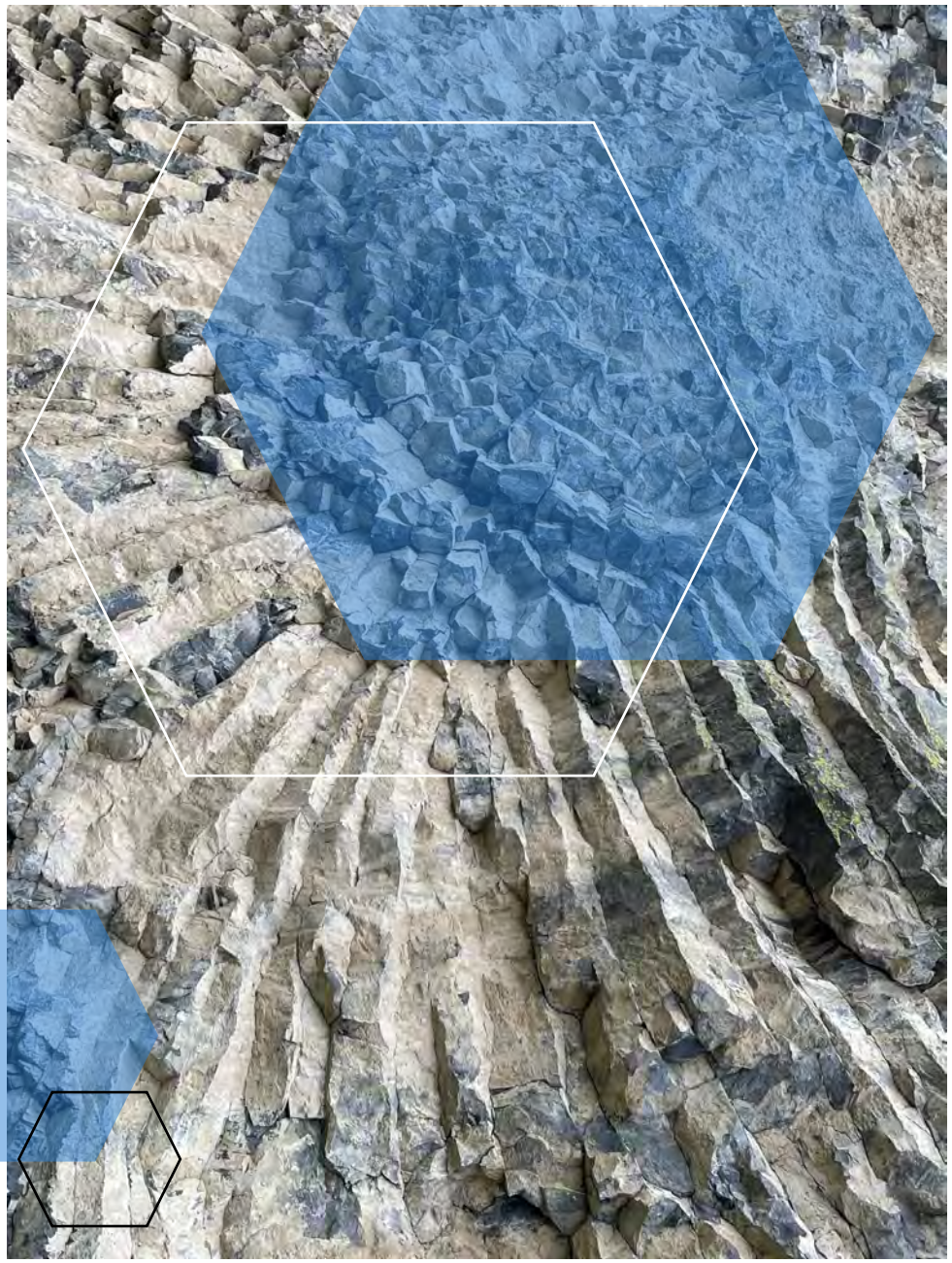

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UPCOMING MEETINGS

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JANUARY 20, 2026
ASCE/AEG Joint Meeting
Polychrome Bridge Launch

FEBRUARY 17, 2026
Special Event!

MARCH 17, 2026
TBD

APRIL 21, 2026
TBD

MAY 19, 2026
Student Night

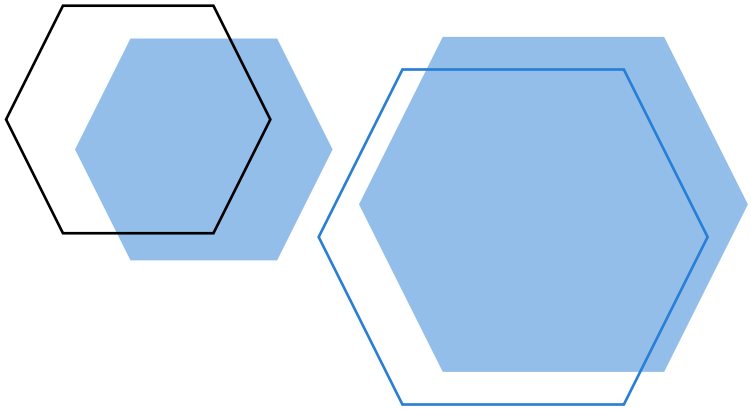
Remembering David Tillson

By Richard and Mavis Kent

DECEMBER MEETING

DYNAMIC PERFORMANCE MONITORING OF A ROCKFALL ATTENUATOR SYSTEM

Western Federal Lands Highway Division (WFLHD) and Cornforth Consultants have planned and installed an advanced dynamic instrumentation system to monitor two midslope rockfall attenuator systems for WFLHD. These attenuator systems, installed along the Ketchum–Challis Highway corridor in central Idaho, have experienced repeated structural distress due to heavy snow loads, rockfall, and avalanche impacts, particularly during the 2016–2017 winter season, resulting in bent posts, deformed and separated base plates, broken wire ropes, and “shower-curtaining” of mesh panels. To accurately quantify the loading mechanisms responsible for these failures and to support future design optimization, the project prioritized the installation of a high-resolution, dynamic monitoring system capable of readings at a 20 Hz cadence.



Each monitored system contains three to four posts and is equipped with a suite of sensors, including strandmeters installed on wire ropes, load cells on post anchors, and strain gauges on posts. Load cells are installed at center fence segments where peak forces are expected, while strain gauges are positioned near the post bases to capture maximum bending strains under snow and avalanche loading. Strandmeters are mounted on select wire ropes to monitor axial load transfer.

This dynamic system requires significant power infrastructure, 300 Ah battery capacity and 800 W of solar input per attenuator to support continuous high-frequency measurements, necessitating extremely challenging access and installation of heavy components high on the slope due to the visual quality objectives of the Sawtooth National Recreation Area.

Each attenuator ADAS transmits data via 900 MHz radios to a base station situated within cellular coverage to a station several miles away.

The base station forwards data to cloud-based monitoring platforms, enabling near-real-time visualization of snow depth, cable loads, post strains, and photographic site conditions. Threshold exceedance rules will be developed to identify damage events, based on seasonal load ranges and abrupt changes in strain or tension measurements.

Installation occurred in the summer of 2025 to avoid snow-related access challenges, and monitoring is underway. The installation process required a three-person SPRAT-qualified technical team and a rope hauling system to transport materials high onto the slope. The terrain and variable rock conditions required adaptation and several accommodations, including direct mounting of enclosures onto rock and installation of solar panels up to 75 feet from the enclosures.

The dynamic instrumentation system will provide critical quantitative insight into the load environment governing attenuator performance. These measurements will inform future design improvements and enable WFLHD and the profession to develop more resilient rockfall and avalanche attenuation infrastructure.

MEETING DETAILS

Date:
Tuesday, December 16, 2025

Agenda:
5:30 p.m. – 6:00 p.m., Social
6:00 p.m. – 7:00 p.m., Dinner
7:00 p.m., Presentation

Location:
Old Market Pub
6959 SW Multnomah Boulvard

RSVP:
Ticket prices vary. Use cash or check to pay at the door. If you want to pay with card, RSVP here.

MEET THE PRESENTERS

DARREN BECKSTRAND

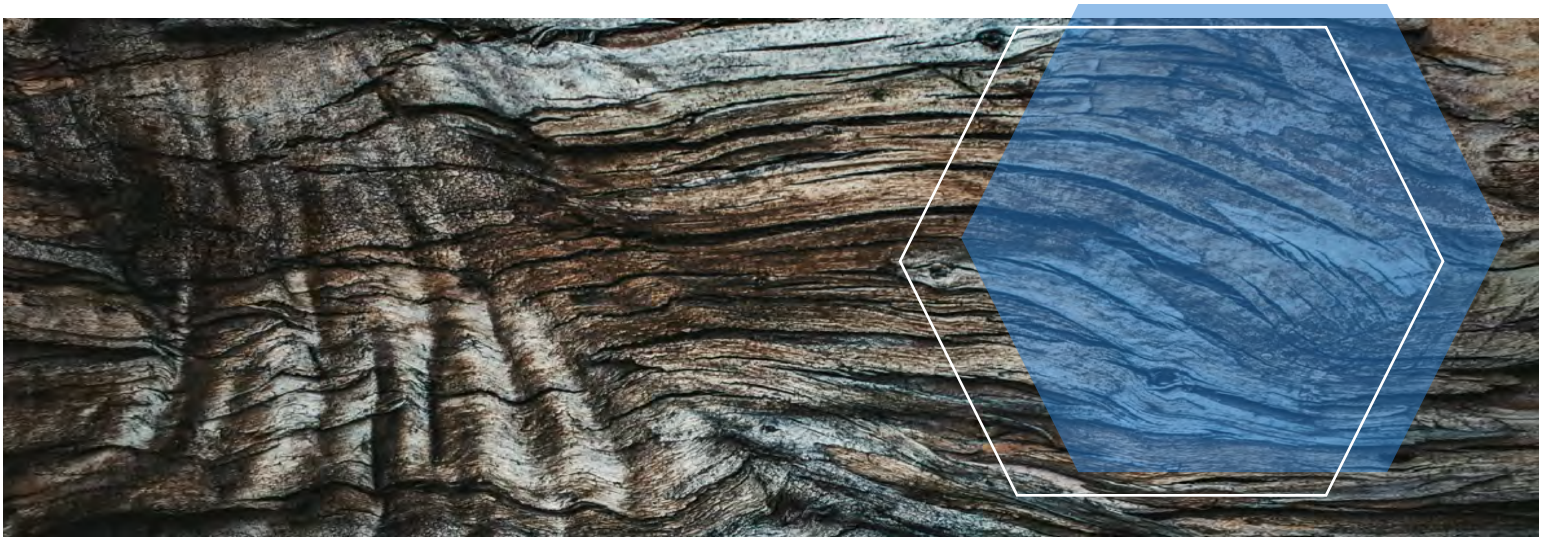
Darren Beckstrand has 25 years of experience in engineering geology, specializing in civil infrastructure, geologic hazard assessments, rockfall remediation, and geotechnical instrumentation. A recognized leader in Geotechnical Asset Management (GAM), he assists state Departments of Transportation in developing programs to quantify and manage asset risks across their highway networks.

RACHEL HUNT

Based in Boise, Idaho, Rachel is an engineering geologist with 10 years of experience in subsurface investigations and construction services. Her expertise focuses on evaluating rock slope hazards, performing stability assessments, and investigating landslides. Rachel is a licensed Geologist and SPRAT-trained rope access technician.

EVAN BEYER

Evan is a geotechnical engineer with seven years of experience in the western U.S. He specializes in exploratory drilling programs, laboratory testing, and engineering evaluations for seepage and slope stability. He also supports rock slope engineering using rope access techniques. Evan is a licensed Civil Engineer, Geologist-in-Training, and SPRAT-trained technician.



LETTER FROM THE CHAIR

HAPPY HOLIDAYS!

AEG Oregon,

I cannot be the only person who despises Christmas commercials. I swear, they all do the same old trick—remix a classic Christmas song with lyrics about the product. If I hear one more Hertz commercial to the tune of Carol of the Bells, I am going to snap.

That rant out of way, happy holidays to all! My wife and I just got done planning our annual pilgrimage to our home state of Indiana. We have three different families to see over the course of a week. It sounds exhausting, and it is, but it is also going to a lot of fun. It's always exciting to road trip around the Hoosier state to see our extended families. I hope you are planning some time to be with family during the holidays or are at least taking some time off to relax.

This December, we have Darren Beckstrand, Evan Beyer, and Rachel Hunt from Cornforth Consultants presenting on research they are performing for Western Federal Lands on the response of midslope rockfall attenuators to rockfall events, snow loads, and avalanches. It should be a very interesting presentation; I hope to see you all there.

Regards,

Nicholas Farny, LEG, LG

AEG Oregon Chair

REMEMBERING DAVID TILLSON

(1932–2024)

BY RICHARD AND MAVIS KENT

Someone asked us to describe David in one sentence. It's difficult and complicated. A sentence will not do him justice but could be crafted something like, "Don't call me Dave because my mother named me David for a reason." David was an amazing Engineering Geologist and Mathematician.

David had sisu. He had determination, spirit, resolving powers, courage, persistence, guts, tenacity, stubbornness, steadfastness, and perseverance. His mind was sharp right up until the end. He loved puzzles and would never leave a conversation before he told a series of jokes.

David was a licensed Engineering Geologist in Oregon and held a Certificate to operate a Class I Nuclear Reactor from the US Atomic Energy Commission. David's membership in professional organizations included the Association of Engineering Geologists, American Association for the Advancement of Science, American Geophysical Union, Association of Ground Water Scientists and Engineers, Computer Oriented Geological Society, International Association of Mathematical Geologists, International Association of Engineering Geologists, International Association of Rock Mechanics, Northwest Scientific Association, Seismological Society of America, and Utah Geological Association.

David authored and co-authored over 35 publications, presentations, and lectures on diverse subjects, including Hanford Geology and Seismology, Juan de Fuca Subducting Plate, Wells and Copper Creek dam projects, landmine detection imaging tomography, Pacific Northwest 1872 Earthquake, seabed and ice sheet nuclear waste disposal, and wave diffusion geotomography.

Richard met David in 1973 and remained colleagues and true friends for the next 51 years. Around 1973, five west coast electric utilities became interested in expanding power generation by building [more] nuclear, coal, geothermal, and hydroelectric power plants. The utilities shared personnel, technical investigations, and policy strategies on a wide range of issues needing resolutions. Nuclear power plant siting involved a mind-boggling array of expertise, but the initial engineering geology investigations emphasized capable faults and seismic design. Responsibilities for the engineering geology investigations of the proposed 22 nuclear power plant sites included David for Washington Public Power Supply System (WPPS), Richard for Pacific Power & Light (PP&L) and (on loan to) Portland General Electric (PGE), James Mecca for Puget Sound Power & Light, and the geology department of Pacific Gas & Electric (PG&E).

PG&E had northern California engineering geology experience that could be translated to plant siting. We decided to discuss this experience by visiting PG&E in their San Francisco offices. After an exhausting technical meeting, David, Richard, and James went back to the nearby Hyatt Regency, raised their glasses full of spirits, and listened to the soft harp music in the lobby. This would be typical of the meetings and get-togethers that cemented our relationships.

The large nuclear plant, Trojan, went online in 1975 but was shuttered after only 17 years, about one-half its intended life. PGE did not have staff engineering geologists and asked PP&L (aka Richard) to review technical reports once in awhile. A fault line was identified near the plant, and bedrock fractures and joints were found under the plant. One fracture passed under the spent-fuel pool. The containment was barged to Hanford, and the cooling tower was blown up in 2006. Because PP&L was active in pursuing nuclear power, Richard's offices were periodically the recipient of bomb threats by nuclear plant activist Lloyd Marbet and his group. Richard would scramble along with other office-mates to

the elevators and wait on the 6th Avenue sidewalk for the all-clear. Threats became a quasi-serious topic of discussion between David and Richard.

David was well-read, with a library of books on topics ranging from science to mathematics to art. David would suggest penetrating readings in mathematical geology by the International Association for Mathematical Geology that caused Richard's eyes to water before he was even past the preface. David sought research techniques for determining probabilities of geologic events and processes applied to building nuclear power plants and nuclear waste disposal. David's library included such titles as "Chance, Luck and Statistics," in which the probability of winning at Heads & Tails is casually discussed. Other books and documents in David's library point to his genius-level of interest in seeking potential geologic solutions to the nuclear industry. David interest in art included library books on Modern Art and Leonardo da Vinci.

David was an expert's expert on many nuclear topics. His family moved to Hanford in 1944 during the development of the atomic bomb. David worked on Hanford construction jobs, including dismantling the Hanford construction camp in 1949. After that time, he was in the military and attended the University of Washington (UW), where he obtained a B.S. in geology in 1957. He again attended UW and received a B.A. in mathematics in 1973. He continued his education during the remainder of his life, including the completion of graduate studies in nuclear engineering, civil engineering, electrical engineering, advanced mathematics, computer sciences, and business administration.

After obtaining his B.S. in Geology, he joined Standard Oil Company (Carter Oil) as an exploration geophysicist seeking oil, gas, coal, and other energy minerals. David was very experienced in nuclear related projects and research. David worked as a Hanford Production Reactor Operations Shift Manager for several years in the 1960s and learned about radionuclides discharged into the Columbia River through his work as a Hanford Water Treatment Plant Supervisor. David later joined Battelle Northwest as a Senior Research Scientist performing geologic and hydrologic radionuclide studies.

David consulted to the Department of Energy on the Basalt Waste Isolation Project, advised the Edison Electric Institute in Washington D.C. on utility nuclear waste management, and served as chair for Electric Power Research Institute Task Panel on nuclear fusion, solar, and geothermal energy. David was Principal Geologist for WPPSS, where he managed geologic, geotechnical, and seismic information necessary to site, license, and construct five nuclear power plants in the state of Washington, investigated sites for nuclear and coal power plant systems throughout the Pacific Northwest, and evaluated potential geothermal energy sources.

In the late 1970s, David moved from Kennewick to Salt Lake City, where he continued to consult on a variety of jobs. David was the geotechnical nuclear waste licensing advisor for Nevada and provided geological licensing support to Nevada's Nuclear Waste Project on the proposed Yucca Mountain High Level Waste Repository. He became a member of the Utah State Geologic Task Force on Siting Radioactive Waste Disposal Facilities.

(Article continues on page 12)

REMEMBERING DAVID TILLSON

(CONTINUED FROM PAGE 9)

David had some unusual assignments and experiences. He was asked to examine trenches near the Dugway Proving Ground, Utah, where 1,647 sheep had been buried due to death by windblown nerve gas 30 years before. David reported that, because nerve gas breaks down quickly, the sheep were mostly dust. He found one bone sample. David would have a big smile whenever he talked about meeting Eddie Rickenbacker, the World War I Ace who brought down 26 aircraft and received the Distinguished Flying Cross eight times, one of which had been upgraded to the Medal of Honor.

David was consulted to find the Joseph "Jack" Slade coffin using a 3D Ground Penetrating Radar (GPR) mapping of the Stranger's Plat B-4 in the Salt Lake City Cemetery. The Plat reportedly contained the body of Slade pickled in whiskey. Slade was a stagecoach and Pony Express superintendent who was instrumental in the opening of the American West and was included in Mark Twain's first book, *Roughing It*. During a drunken spree in Virginia City, Montana, Slade was lynched by local vigilantes in 1864 for disturbing the peace. In order to keep Slade from burial in "boot hill," his wife Virginia had a metal-lined coffin constructed, into which his body was placed along with a barrel of whiskey as a preservative. Virginia brought the coffin to the Salt Lake City cemetery and had it placed in Plat B-4 in a temporary grave labeled "Stranger," with instructions for the coffin to be removed to Carlyle, Illinois, in the fall. Virginia never returned. A specific location of the buried coffin within Plat B-4 was not recorded. David interpreted the 2D and 3D GPR mapping data to successfully locate the anomaly of Jack Slade's disintegrated metal-lined wood coffin.

In the early 2000s, David was the Principal Consulting Geologist for the NATO Expansion Engineering & Program Management Corporation as the prime contractor to the Polish Minister of Defense, responsible for the modernization of seven airfields to conform to NATO requirements. He then provided consulting as Principal of Environmental Geophysical Services specializing in the use of 3D GPR to image near-surface conditions, both spatially and temporally.

In 2018, David moved from Salt Lake City to Vancouver, Washington, where he joined Mavis Kent's company, Plateau Geosciences Group (PPG) as a geophysicist. David brought his GPR equipment and interpretation expertise to PPG. He became involved in such projects as finding voids in the concrete-lined Portland City Water Reservoir #6 and the depth of the original 1920s roadbed beneath State Highway 20 between Albany and Corvallis, Oregon.

David and Richard would meet for lunch in Vancouver. They argued about sending nuclear waste to the sun. David told Richard about walking into a cave near Yucca Mountain set up with office furniture, walking out and hearing a bang, and then walking back into the cave where nothing remained of the furniture except their unseen molecules. After their last lunch, as they parted, David said to Richard, "I enjoy having lunch—let's do it again soon."

David reminds us that we have nothing to retire from. We are lucky, thankful, and blessed to have had friends like David.

David Dwight Tillson passed away in December 2024.

AEG OREGON BULLETIN

TEST DATES

December 10, 2025: 100-day application deadline for the March 20, 2026, ASBOG exams.

January 4, 2026: 75-day application deadline for the March 20, 2026, ASBOG exams.

STUDENT NIGHT

Student night will be May 21, 2026. This is an opportunity for students to present their projects and mingle with industry professionals. And there are prizes! It's never too early to start thinking about what you might present.

CALL FOR CONTENT!

We would love to hear from you! Tell us about your recent projects, career milestones, events, awards, and job postings or submit articles and visual elements. Send newsletter contributions to Sarah Norton at snorton@gri.com.

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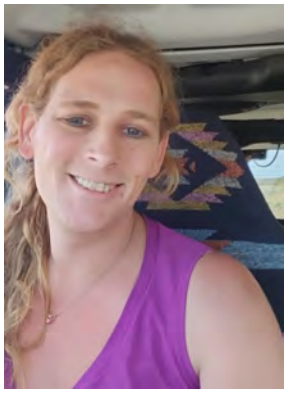

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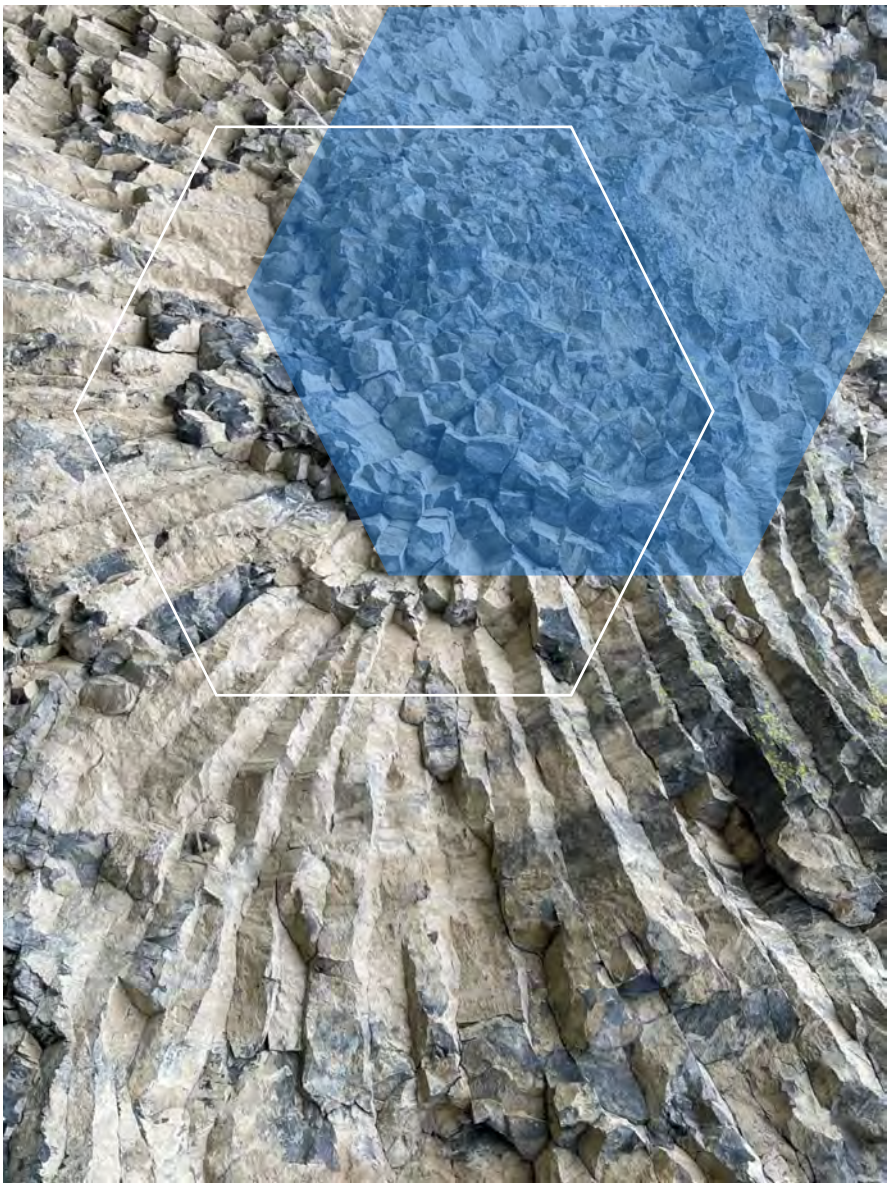

THANKS FOR SUPPORTING AEG

A BIG THANKS TO OUR…

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http://www.aegoregon.org

NATIONAL AEG WEBPAGE
http://aegweb.org

THE AEG OREGON CHAPTER NEWSLETTER

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public's 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.

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