A tale of two rivers (and a few others); geologic and physiographic controls on gravel bed rivers in Oregon

Guest Speaker: Jim O’Connor

Oregon’s beautiful rivers come in a diversity of forms, from the wide and winding gravel channel of the lower Rogue River, to the bare bedrock bed of the Umpqua. What controls these differences? To make a long story short, it’s the geology. But it’s not the geology of the river bed, it’s the geology of the basin. From a regional analysis of river morphology, sediment yield, and aspects of sediment transport, it seems that lithologic controls exert overarching and far-reaching influence on the distribution of alluvial and non-alluvial channels and their consequently distinctive morphologies and behaviors—differences germane for understanding river response to tectonics and environmental perturbations, as well as for implementing effective restoration and monitoring strategies.

Bio: Jim O’Connor

Jim O’Connor is a Pacific Northwest native long interested in the processes and events that shape the remarkable and diverse landscapes of the region. Following this interest with a Geological Science major at University of Washington and M.S. and Ph.D. degrees at University of Arizona, he has spent the last 25 years studying the scenery, mostly with the U.S. Geological Survey in Portland, Oregon.
Message from the Chair

Greetings! Wow, what a November meeting! Thank you to everyone who joined us - with 105 people in attendance (see photo below), it was, to the best of my knowledge, the largest number of people that we’ve ever had at an AEG Oregon Section meeting. I would like to say a big thank you to our speaker, Dr. Richard Iverson, senior research hydrologist at the USGS Cascades Volcano Observatory in Vancouver, WA, who gave a fascinating talk on the Oso landslide. Dr. Iverson provided a compelling case for how the Oso event began gradually and then transitioned abruptly to a case of contractive deformation, widespread liquefaction, and catastrophic acceleration, resulting in a debris avalanche flow (DAF) of exceptional mobility for a landslide of its size. Furthermore, he explained how computer simulations of the event using the new D-Claw model demonstrate that the landslide’s motion appears to have been very sensitive to contingencies, specifically water-saturated porosity, and how this sensitivity has large ramifications for landslide hazards. His talk clearly captured – and kept – the attention of the audience throughout his formal presentation as well as the Q&A session. I thoroughly enjoyed the whole evening as did everyone else with whom I spoke, and I wanted to say thank you again to Dr. Iverson for sharing his insights into the Oso disaster with us.

In addition, I would like to thank Western States Soil Conservation, Inc. for sponsoring the beverages at last month’s meeting! Please be sure to thank Ford Stigall and Reid Kenner at Western States Soil Conservation, Inc. for their sponsorship of the Oregon Section of AEG when you have a chance.

The Oregon Section Board is interested in submitting a proposal to AEG National to host the 2019 AEG Annual Meeting in Portland. We will be scheduling a proposal planning meeting in January. Please contact me if you’re interested in joining this effort to bring the AEG Annual Meeting to Portland.

I hope to see all of you on Tuesday, December 16th when we welcome Dr. Jim O’Connor, research geologist at the USGS Water Science Center in Portland, OR to give his talk entitled A tale of two rivers (and a few others); geologic and physiographic controls on gravel bed rivers in Oregon.

Cheers,
Linda Mark, RG, CPG
Chair, Oregon Section of AEG
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Hans Cloos
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