Vancouver Geotechnical Society
A Local Section of the Canadian Geotechnical Society

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NOTICE OF UPCOMING TECHNICAL PRESENTATION
Wednesday, 8 June 2022

TOPIC: **The January 28 2021 Highway 1 Embankment Failure at Rat Creek, Big Sur, California & Lessons Learned**

SPEAKER: **Dimitrios Zekkos, Ph.D. – Associate Professor, University of California Berkeley.**
Dimitrios Zekkos, PhD, PE, is an Associate Professor in the Civil and Environmental Engineering Department at the University of California at Berkeley. Dimitrios received his undergraduate degree from the University of Patras in Greece and his MSc and PhD from the University of California at Berkeley. Prior to joining Berkeley, Dimitrios worked for a consulting company in the Bay Area and as a Faculty member at the University of Michigan. His research work is at the interface of natural hazards, geotechnical engineering, and informatics. Dr. Zekkos' group devises and employs experimental and computational approaches to characterize the response of infrastructure and geo-systems to natural hazards, such as earthquakes and extreme storms, and environmental stressors such as climate change. Dr. Zekkos' research has been funded by the private sector, NSF, NASA, Michigan DOT, USGS, and the World Bank. Dr. Zekkos has been recognized by several awards including the Middlebrooks Award, Collingwood Prize and Casagrande Award by the American Society of Civil Engineers, as well as the Shamsher Prakash Research Award and the Outstanding Innovator Award by the International Society of Soil Mechanics and Geotechnical Engineering.

CONTENT: On January 28, 2021, a portion of scenic Highway 1 failed at Mile Marker 30 known as Rat Creek, in Big Sur, California. The failure resulted in complete closure of the highway at that location and a detour of 255 km for residents. The surface flow-induced erosion washed both lanes and some of the surrounding embankment material into the Pacific Ocean. An investigation under the Auspices of the Embankments, Dams, and Slopes (EDS) Technical Committee of the ASCE Geo-Institute (GI) was conducted and the findings of this investigation and subsequent studies will be presented. The failure was caused by overtopping and subsequent erosion of the roadway embankment that occurred after a debris flow triggered upstream and reached the embankment. The debris flow was triggered due to the destructive synergy of the Nolan wildfire that occurred a few months earlier, an atmospheric river that caused significant precipitation and the collapse of a natural debris-tree dam. The investigation involved on-the-ground field deployment that included UAVs, terrestrial lidar and geologic characterization as well as subsequent analyses. In addition, system-level analyses were conducted to understand exactly why the failure occurred specifically at Rat Creek and not somewhere else along the long stretch of Highway 1. The presentation will conclude with lessons learned from this failure and recommendations for enhanced system-level resiliency.

DETAILS: **Technical Presentation: 5:30 p.m. to 6:30 p.m.**
Link: https://attendee.gotowebinar.com/register/4074502443984660494