



Vancouver Geotechnical Society

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Canadian Geotechnical
Society

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NOTICE OF UPCOMING TECHNICAL PRESENTATION Wednesday, 30 March 2022

TOPIC: Will it Stay or Will it Go?: Use of LiDAR to Assess Slope Instability

SPEAKER: Ben Leshchinsky, Ph.D. – Associate Professor, Department of Civil and Construction Engineering, Oregon State University.

Ben Leshchinsky is an Associate Professor and Richardson Chair in the College of Forestry and School of Civil and Construction Engineering (joint appointment) at Oregon State University. He received his B.S. from University of Delaware in 2007, and his MS and PhD from Columbia University in 2008 and 2012, respectively. His research focuses on evaluating the evolution of slope instability from a variety of disturbances as well as the design of geotechnical infrastructure under extreme conditions. He is currently an Associate Editor on four journal editorial boards, including the *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, *Geotechnique*, *Landslides*, *Geotextiles and Geomembranes*, and *Geosynthetics International*. He is the recipient of the 2018 International Geosynthetics Society Young Researcher Award and the 2020 ASCE Arthur Casagrande Award. Most importantly, he has the honor of exhausting his patient family with lessons about soil mechanics and slope instability every time they enjoy a trip to the beach.

CONTENT: Lidar is a promising tool for evaluating the hazard and behavior of unstable slopes due to its resolution, accuracy, and the ability to process away visual obstacles, such as vegetation. Elevation models processed from lidar are particularly useful as they enable quantitative and enhanced qualitative interpretation of landslide features, and in the case of repeat data collection, evaluation of kinematics and changes that are not easily discernable by eye. Most of all, when integrated with principles of slope stability analysis, lidar data serves as a robust foundation for understanding landslide behavior at multiple scales. This presentation will discuss (1) use of lidar for deriving first-order estimates of landslide volumes and strength from forensic analysis of inventories, (2) use of digital elevation models and slope stability analyses towards creating landslide susceptibility maps for seismic and precipitation disturbance under a variety of remotely-sensed antecedent moisture conditions, and (3) interpretation of lidar to reveal drivers and change for landslides in Oregon's coastal environment. The increasing availability of lidar presents us with a unique opportunity to better assess the risk stemming from geohazards, enhance asset management, and understand geomorphic and geologic processes at a more refined level.

DETAILS: Technical Presentation: 5:30 p.m. to 6:30 p.m.

Link: <https://attendee.gotowebinar.com/register/5568767331412833295>