

AEG's 2020 Virtual Annual Meeting
September 16-18, 2020

**TECHNICAL SESSION #4: APPLIED GEOSCIENCE METHODS FOR PROBLEM SOLVING –
A GALLERY OF PRACTICAL EXAMPLES, PART I**

Presenter Biographies

Isaac Pope - Reaching New Heights: The Cascade Volcanoes as Exemplary Laboratories for Applied Geoscience



Isaac Pope is a young undergraduate student with an insatiable fascination of geoscience. In addition to his field work, Isaac has studied numerous books ranging from graduate to professional level on a variety of geological and mathematical disciplines which contributed to him beginning his college studies at the age of fourteen. With publications in peer-reviewed journals, he has not only conducted much university-level research on both geological and mathematical topics, but he is also greatly interested in education stemming from his desire to share the wonder of science and mathematics with others.

James Arthurs - Post-eruption Transportation Repairs at Hawaiian Volcanoes National Park



James holds a B.S. in Geological Engineering from the Colorado School of Mines and a Ph.D. in Geology from the University of Auckland where he researched landslides in weathered volcanic ash. He received a New Zealand Geotechnical Society Student Award in 2008 and the Young Author Award from the 68th Highway Geology Symposium in 2017. He worked seven years for Ground Engineering as a geotechnical engineer, focusing on site investigations and retaining wall design. For the past four years, he has worked at the Central Federal Lands Highway Division of the Federal Highway Administration. He is the current Chair of the Mile High Chapter of AEG. James is in training for a marathon (to be completed once the pandemic is over).

Jenise Thompson - The Reactor and the Volcano: A Risk-Informed Approach of the NRC to Assess Volcanic Hazards at New Nuclear Reactor Sites



Ms. Jenise-Marie H. Thompson is a Geologist in the External Hazards Center of Expertise within the Office of Nuclear Reactor Regulation. In this capacity, she has been involved in siting reviews for numerous NRC-regulated facilities, including new reactor applications and consolidated interim storage facilities. Ms. Thompson is also actively involved in revising existing guidance for siting reviews and developing new guidance based on emergent needs. Ms. Thompson is an NRC-qualified technical reviewer and project manager, as well as a PMI-certified Project Management Professional (PMP).

Ms. Thompson joined the NRC in 2007 as a Geologist in the Office of New Reactors. Since then, Ms. Thompson has served as a rotational project manager in the Division of New Reactor Licensing and as a Regulatory Guide Project Manager in the Office of Nuclear Regulatory Research. Ms. Thompson also served as a project manager coordinating the technical staff review efforts for the post-Fukushima seismic and flooding walkdowns and hazard reevaluations; as the acting division technical assistant for the Division of Site Safety and Environmental

Analysis in the Office of New Reactors; and as the technical lead for a proposed new regulatory guide related to volcanic hazards.

Ms. Thompson holds a B.S. in Geology from the University of the Pacific and an M.S. in Geology from the University of Maryland, College Park. Ms. Thompson also has a graduate certificate in Sustainable Natural Resources from Oregon State University.

Patrick Pringle - Tree-Ring Analysis (Dendrochronology) – A Tool for Dating of Subfossil Forests – Victim Tree Examples from Mount Rainier Lahars and the Bonneville Landslide



Patrick Pringle is Professor Emeritus of Earth Sciences at Centralia College, Washington. He taught at Centralia College from 2005–2017 and was a Research Geologist at DNR’s Washington Geological Survey from 1990–2005 and at the US Geological Survey Cascades Volcano Observatory from 1982–1990. Pat studies volcanoes, earthquakes, landslides, and debris flows using radiocarbon and tree-ring analysis to establish the history of past geologic events. He is the author of books on the roadside geology of Mounts St. Helens and Rainier as well as many published papers and reports; the Mount Rainier book won the Geoscience Information Society’s “Best Guidebook Award” for 2009, presented at the Geological Society of America’s Annual Meeting that year. He has won several teaching awards including

2016 Faculty of the Year from the Washington Association of College Trustees. [Links to publications and other data](#)

Leon van Paassen - Microbially Induced Desaturation (MID), a New Method to Mitigate Earthquake-Induced Liquefaction



Leon van Paassen is associate professor at Arizona State University (ASU) and senior investigator at the National Science Foundation Engineering Research Centre for Bio-mediated and Bio-inspired Geotechnics (CBBG). He received a master's degree in applied earth sciences in 2002 from Delft University of Technology with a specialization in engineering geology. During and after his graduation, he worked several years as a geotechnical engineering consultant at IFCO Foundation Expertise and research institute Deltares. In 2009, he obtained his doctorate in applied sciences at the Department of Biotechnology of Delft University of Technology. His thesis on Biogrout: Microbially

induced carbonate precipitation as ground improvement method resulted in several publications, patents and was awarded with several national and international awards. In his research, he integrates the fields of environmental biotechnology and geotechnical engineering, aiming to develop sustainable solutions, which improve resource efficiency and reduce the environmental impact of civil and mining engineering industry.

Iuliia Tcibulnikova - Permafrost Degradation as Geological Engineering Challenge in Alaska: Application of Remote Sensing Techniques

E. Morley Beckman - Finding the American Tunnel: Using Directional Drilling Techniques to Intersect Abandoned Mine Workings



Ms. Beckman is a geotechnical engineer and project manager with Deere & Ault Consultants / Schnabel Engineering. She has over 15 years of engineering and geology experience, specializing in construction management, geotechnical field investigation, analysis and design. She works primarily on water related projects including new dams and dam rehabilitation, and on underground projects including abandoned mine rehabilitation and shaft and microtunnel intakes. Her undergraduate degree in Geology and graduate degree in Geotechnical Engineering have prepared her for work in the always-fascinating and technically challenging geologic landscape of the western US. Her previous employment with Kleinfelder in Oakland, CA gave her a wealth of experience, from drilling in the rugged hills near Santa Cruz to the shores of the San Francisco Bay, to project management and construction oversight, to rallying an office of young engineers for happy hour. Her prior role at Civil & Environmental Consultants in Pittsburgh, PA taught her the value of insulated steel toed boots, as well as introducing her to the mysteries and engineering challenges of abandoned coal mines. Morley has diverse experience and interests in the field of geotechnical engineering and engineering geology, and is equally comfortable working long hours behind a drill rig or reviewing design drawings in detail to fine-tune every last recommendation for her clients.

Timothy Blackwood - Addressing Geologic Hazards in the Newell Creek Canyon Natural Area through Avoidance, Accommodation, and Mitigation



Tim Blackwood is the president of Pali Consulting, Inc., a geotechnical consulting firm specializing in geologic hazards assessment and mitigation. Tim has nearly 28 years of experience, principally in the Pacific Northwestern United States and the Hawaiian Islands, but elsewhere in the US and internationally. He is licensed as a professional engineer and engineering geologist in Oregon, Washington, and Hawaii, as applicable. His broad range of experience covers project scales varying from many thousand acre watershed assessments to detailed site investigations. His projects include evaluation and geotechnical design of public facilities, transportation projects, commercial and industrial facilities, energy siting studies, and corridor/routing projects of various kinds. Much of his time is spent on rockfall, seismic and landslide hazard evaluation, risk assessment, and mitigation.