

Agenda

Slope Process & Movement

J.S. Kite

Slope stability basics
Types of slope movement and instability

- Rock fall
- Planar slides
- Slumps
- Debris flow & more

Tools for evaluating geology, soils and topography
Identifying slope stability issues

How Geological History Made the Appalachian Region “Naturally” Landslide Prone

How humans make the Appalachian Region “Unnaturally” even more landslide prone
Natural slopes
“Engineered” slopes
Status of WVU Appalachian Landslide Risk Assessment Project (if time allows)

Common Mistakes and Prevention of Landslides

D. Sharp

Poor drainage conditions
Improper construction practices

- Soft foundations
- Unsuitable materials
- Improper construction methods (e.g. compaction)
- Sliver fills
- Removing existing hillside support

Recognizing problem areas
Lack of maintenance

Materials for Slope Stabilization

C. Grose

Providing proper drainage and slope reconstruction
Slope buttressing
Slope stabilization options

- Segmental block walls
- Soldier beam and lagging walls
- Reinforced soil slopes

Revegetation and maintenance

Preserving and Restoring Rivers, Streams and Shorelines

J.S. Kite

Broken watersheds lead to broken streambanks
Fixing broken streambanks
Issues on large rivers and lock and dam systems
Dams and lakeshores

Slope Stabilization and Landslide Prevention
Charleston, WV - Friday, December 21, 2018

NON-PROFIT
U.S. POSTAGE PAID
EAU CLAIRE, WI
PERMIT NO. 2016

Halfmoon Education Inc.
PO Box 278
Altoona, WI 54720-0278



Learning Objectives

You'll be able to:

Understand types of slope instability and movement, including rock fall, planar slides and slumps.

Identify stope stability issues on natural and engineered slopes.

Avoid common mistakes that can contribute to landslides, including poor drainage and improper construction practices.

Learn about techniques for slope stabilization, including segmental block walls, reinforced soil slopes and revegetation.

Examine options to preserve and restore rivers, streams and shorelines.



Slope Stabilization and Landslide Prevention

Charleston, WV - Friday, December 21, 2018



Examine types of slope movement and instability

Identify slope stability issues

Review common mistakes and learn about the prevention of landslides

Explore materials for slope stabilization

Discuss the preservation and restoration of rivers, streams and shorelines

Continuing Education Credits

Professional Engineers
6.5 PDHs

Architects
6.5 Cont. Ed. Hours (HSW)
6.5 AIA HSW Learning Units

Landscape Architects
6.5 HSW PDHs
6.5 LA/CES HSW PDHs

Floodplain Managers
6.5 ASFPM CECs

Contractors
Non-Credit Continuing Ed.



HalfMoon Education Inc.
WWW.HALFMOONSEMINARS.ORG



Faculty

J. Steven Kite, PhD *Past-Chair and Associate Professor of Geology & Geography West Virginia University Morgantown*

Dr. Steve Kite’s research interests are in the geomorphology and late Cenozoic history of the Appalachian Mountains and the processes that dominate this ecologically-rich landscape. Surficial geology mapping is a favorite approach to understanding landscapes, relying on a balance of traditional field work techniques with manipulation of LiDAR and other digital data. His current research focuses on landslide risk assessment, cold-air traps that act as floral and faunal refugia, the geomorphic evolution of the Ohio and New River basins, and New World geoarcheology. Professor Kite’s Quaternary geology research includes the evolution of Appalachian slopes, debris fans, terraces and floodplains; the paleohydrology of proglacial lakes and outwash terraces; and the Pleistocene history of Appalachian fluvial systems. This research draws upon understanding of geomorphology, slope process, surface-water hydrology, hydroclimatology, pedology, biogeography, paleoecology, sedimentology, and karst and cave studies. Modern geomorphology research usually includes some focus on man as a geomorphic agent, and Professor Kite’s primary focus is the human activity with the greatest impact in the Appalachian region: surface coal mining, but also includes the effects of agriculture, logging, and other land uses, such as ecological restoration. Several geoarcheological projects have involved grad students, whose contributions have included development of models for landscape genesis, reconstruction of late Quaternary environments, development of archeological testing strategies, and guidance over excavation. His geoarcheological research has covered an array of sites, ranging from Paleo-Indian and Early Archaic sites on the Ohio and Kanawha rivers to 19th century mills.

David B. Sharp, P.E. *Branch Manager/Senior Engineer with Potesta & Associates with offices in Charleston and Morgantown, West Virginia, and Winchester, Virginia*

Mr. Sharp has been involved with many aspects of civil engineering with a special interest in the geotechnical/environmental aspects. His responsibilities have included projects involving civil/site design; geotechnical design; solid waste management facility design, including geosynthetic applications;

hydrologic and hydraulic design; transportation/highway projects, including geotechnical and right-of-way plans; and municipal water and wastewater projects. Mr. Sharp’s geotechnical engineering responsibilities have included performing subsurface investigations, preparing geotechnical reports, coordinating laboratory analysis programs, and providing recommendations for lateral earth pressures, bearing capacities, modulus of subgrade reactions, settlements and construction specifications for multi-story structures. He has served as an expert witness in numerous cases involving geotechnical issues, earthwork construction, and/or drainage issues. Many of these cases involved a review of available information, development of professional opinions, and issuance of expert reports, depositions and expert testimony.

Christopher A. Grose, L.R.S. *Senior Engineering Associate with Potesta & Associates with offices in Charleston and Morgantown, West Virginia, and Winchester, Virginia*

Mr. Grose has geological/geotechnical engineering experience related to subsurface exploration studies, soil and rock slope design, landslide causation studies, foundation system design, surface/subsurface hydrogeology, ground subsidence, contaminant transport and groundwater flow modeling. He has experience in planning, design, and permitting of natural gas production well pads and access roads. Mr. Grose has studied hazardous waste remediation sites, compiled CERCLA/SARA, RI, and FS reports and worked on geological and geotechnical aspects of siting and design of municipal and industrial waste landfills. His civil/site design experience includes slope stability of both cut and fill slopes in soil and rock for various well production pads in northeastern West Virginia associated with natural gas production in the Marcellus well field. Mr. Grose’s work has consisted of the management of a design engineering team including ground survey crews to development site topographic base mapping, and coordination with clients regarding land ownership, access roadway alignments, site drainage control, and number/location of production wells. Additionally, his work has also included gathering and midstream transmission pipeline locations. The scope of services for these projects also included the preparation of permit documents and attachments for submittal to the West Virginia Department of Environmental Protection-Office of Oil and Gas.

Seminar Information

Four Points by Sheraton Charleston
600 Kanawha Blvd. East
Charleston, WV 25301
(304) 344-4092

Tuition
\$279 for individual registration
\$259 for Three or more registrants from the same company at the same time.

Included with your registration: Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the CD/manual package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 6.5 PDHs to professional engineers, 6.5 HSW PDHs to landscape architects, and 6.5 HSW (Public Protection) continuing education hours to architects in most states, including West Virginia. Educators and courses are not subject to preapproval in West Virginia.

This event has been approved by the American Institute of Architects for 6.5 HSW Learning Units (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

The Landscape Architecture Continuing Education System has approved this course for 6.5 HSW PDHs. Only full attendance can be reported to the LA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), New York (NYSED Sponsor No. 35), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York architects and landscape architects.

The Association of State Floodplain Managers has approved this event for 6.5 CECS

This seminar offers a non-credit continuing education opportunity to construction contractors. It has not been reviewed by any state contractor licensing entity for continuing education purposes.

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Can’t Attend? Order the CD/Manual Package:
An audio recording of this seminar is available for \$289 (including shipping). Allow five weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

Slope Stabilization and Landslide Prevention
Charleston, WV - Friday, December 21, 2018

How to Register	
Online: www.halfmoonseminars.org	
Phone: 715-835-5900	
Fax: 715-835-6066	
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278	
Complete the entire form. Attach duplicates if necessary.	
Registrant Information Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____ Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____ Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred. () I need special accommodations. Please contact me.	

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.
() **I am not attending.** Please send me the CD manual package for **\$289.00**. (S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

Credit Card: *Mastercard, Visa, American Express, or Discover*

Credit Card Number: _____

Expiration Date: _____ CVV2 Code: _____

Cardholder Name: _____

Billing Address: _____

City: _____ State: _____ Zip: _____

Signature: _____

Email: _____