

Agenda

Slope Movement Information and Resources

J. Bauer

- Types of slope movements
 - Rock fall and rockslides
 - Debris slides
 - Debris flows
 - Weathered rock slides
- Slope movement causes and triggers
 - Natural slopes
 - Constructed slopes
- Evidence of slope instability
 - Geologic conditions
 - Geomorphology
 - Evaluating surface and groundwater conditions
 - Field-based evidence
- Landslide susceptibility and inventory mappin
 - Inventory
 - Susceptibility maps
 - NC landslide map resources
 - Examples map exercises
- Methods of slope stability monitoring and analysis
 - Surface monitoring - survey
 - Surface monitoring – ground-based and satellite radar (InSAR)
 - Subsurface monitoring – inclinometers

Slope Stabilization Methods

B. Forbes,
R. Moore

- Use of vegetation
- Stormwater management and drainage
- Surface protection
- Unloading
- Buttressing
- Draining
- Reinforcing
- Installing earth retention structures
- Rock slope stabilization
- Geosynthetics

Slope Movement Prevention and Available Resources

B. Forbes,
J. Bauer

- Typical process from project concept to final product
- Available resources
 - Property evaluation
 - Geologists and geotechnical engineers – important team members

Slope Stabilization and Landslide Prevention

Asheville, NC - Friday, November 16, 2018



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Learning Objectives

You'll be able to:

- Identify** types of slope movements, such as rock fall, rockslides, debris slides and debris flow.
- Discuss** slope movement of natural and constructed slopes.
- Explore** surface monitoring using surveys and inclinometers.
- Examine** methods of slope stabilization, including unloading, buttressing, reinforcing and geosynthetics.
- Learn** about slope movement prevention.



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- Examine** slope movement causes and triggers
- Study** evidence of slope instability
- Explore** methods of slope stability monitoring and analysis
- Discuss** slope stabilization methods
- Explore** slope movement prevention and discuss available resources

Continuing Education Credits

- | | |
|--|---|
| Professional Engineers
7.0 PDHs | Landscape Architects
7.0 North Carolina CE Hours
7.0 LA CES HSW PDHs |
| Architects
7.0 HSW Contact Hours
7.0 AIA HSW Learning Units | Floodplain Managers
7.0 ASFPD CECs |



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Jennifer Bauer
Licensed Geologist, Appalachian Landslide Consultants (ALC), PLLC in Asheville, North Carolina

Ms. Bauer is a principal geologist and co-owner of Appalachian Landslide Consultants (ALC), PLLC. She started ALC in December of 2011, after working with the North Carolina Geological Survey’s Landslide Hazard Mapping team since 2005. Prior to working with the state, Ms. Bauer worked with the geotechnical engineering department and construction materials testing lab at MACTEC Engineering & Consulting (now Wood) in Raleigh, North Carolina. She obtained her B.S. degree in Geology with Highest Honors from UNC-Chapel Hill in 2001. Ms. Bauer is past president of the Association of Environmental & Engineering Geologists, an international professional organization dedicated to applied geology. She has over 17 years of engineering geology experience and is passionate about applying that experience to help protect lives, property and infrastructure.

Bob Forbes *Ameritech Slope Constructors, Inc. in Asheville, North Carolina*

Mr. Forbes grew up in the mountains of Western North Carolina and has been involved in geotechnical and environmental consulting since 1996. Part of his role in this field involved conducting forensic landslide investigations and performing steep slope site evaluations for construction feasibility. This experience turned into not only a job but a real passion. After leaving the consulting company, Mr. Forbes and two business partners started Ameritech Slope Constructors, Inc., a geotechnical contracting company that specializes in geohazard mitigation.

Ameritech’s focus on difficult and limited access projects caused the company to quickly grow and expand operations across the United States and the Caribbean. He has worked on projects ranging from small, residential slope failures to multimillion-dollar rockfall projects.

Roger Moore *Professional Geologist, Professional Engineer with Ameritech Slope Constructors, Inc. in Asheville, North Carolina*

Mr. Moore attended North Carolina State University and graduated in 1983 with a B.S. degree in Geology and a minor in Exploration Geophysics. After graduation Mr. Moore went to work for Law Engineering in Raleigh, and then he moved on to Wilson Engineering Associates which became a part of Engineering Consulting Services (ECS) in 1994. In 1995 Mr. Moore joined a small consulting firm in western North Carolina. After many consultations with homeowners and businesses looking for ways to stabilize soil and rock slopes, in 2009 he and two business partners started Ameritech Slope Constructors, Inc. Since then Ameritech has installed many thousands of feet of soil nails, rock bolts and cable anchors as well as many rockfall drapes, rockfall barriers, and thousands of square feet of slope stabilization mesh. The company has removed dangerous loose rock on slopes by manual scaling, nonexplosive rock demolition and trim blasting. Ameritech has worked in 17 states including Hawaii as well as Grenada in the southern Caribbean. Ameritech is DOT prequalified as a contractor in 25 states. Ameritech also works with other clients to stabilize slopes including mines and quarries, railroads, large utilities, and private industry as well as various US government agencies (TVA, NPS, and Corps of Engineers).

Seminar Information

Renaissance Asheville Hotel 31 Woodfin Street Asheville, NC 28801 (828) 252-8211	Registration 8:00 - 8:30 am Morning Session 8:30 - 11:45 am Lunch (On your own) 11:45 am - 12:45 pm Afternoon Session 12:45 - 5:00 pm
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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 7.0 PDHs to professional engineers in all states, including North Carolina. HalfMoon Education is an approved engineer continuing education provider in North Carolina (S-0130).

The North Carolina Board of Landscape Architects has approved this course for 7.0 continuing education hours.

This event is approved by the American Institute of Architects Continuing Education System for 7.0 HSW Learning Units (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 7.0 HSW PDHs. Courses approved by the AIA qualify for North Carolina architects. Only full attendance can be reported to the AIA/CES and the LA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Maryland, New York, and North Dakota. HalfMoon Education is deemed an approved continuing education provider for New York architects and landscapes architects.

The Association of State Floodplain Managers has approved this event for 7.0 CECs.

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.

Additional Learning

Webinar Series

- Construction Cost Estimating**
- **Introduction to Cost Estimating**
Thurs., Oct. 25, 2018, 11:00 AM - 12:30 PM CDT
 - **Cost Components – A Closer Look at the Estimates**
Thurs., Oct. 25, 2018, 1:00 - 3:00 PM CDT
 - **Cost Estimate Organization and Examples**
Fri., Oct. 26, 2018, 11:00 AM - 1:00 PM CDT
 - **Cost Estimating Topics**
Fri., Oct. 26, 2018, 1:30 - 3:00 PM CDT

- Geothermal Heating and Cooling**
- **Thermodynamic Basics of Geothermal Systems**
Thurs., Nov. 1, 2018, 11:00 AM - 12:00 PM CDT
 - **Understanding Earth Loop Systems**
Thurs., Nov. 1, 2018, 12:30 - 2:00 PM CDT
 - **Choosing and Designing Geothermal Systems**
Fri., Nov. 2, 2018, 11:00 AM - 12:00 PM CDT
 - **Evaluating and Maintaining Geothermal Systems**
Fri., Nov. 2, 2018, 12:30 - 2:30 PM CDT

For more information visit:
www.halfmoonseminars.org/webinars/

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

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How to Register	Registrant Information
Online: www.halfmoonseminars.org	Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____
Phone: 715-835-5900	Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____
Fax: 715-835-6066	
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Complete the entire form. Attach duplicates if necessary.	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.

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