THE PREMIER TUNNELING SHORT COURSE FOR INDUSTRY — Discover emerging innovations in tunneling methods, materials and technology. Learn key design and construction principles applicable to all types of ground and across all excavation methods.

Who should attend? Industry professionals including owners, planners, designers, contractors, consultants and suppliers involved in the planning and construction of underground, tunneling and mining projects. Space is limited.

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TUNNELING FUNDAMENTALS, PRACTICE AND INNOVATIONS
SEPTEMBER 18-21, 2017
GOLDEN, COLORADO

MONDAY, SEPTEMBER 18
Overview of the Course and the Global Tunneling Scene
Mike Mooney, Professor and Grewcock Chair of Underground Construction and Tunneling, Colorado School of Mines
Tunnel Project Planning: From Conception through Construction and Operation
Sanja Zlatanic, Senior Vice President and Chair, National Tunnel Practice, HNTB
Geological and Geotechnical Site Investigation and Characterization including GDRs
Red Robinson, Senior Vice President, Shannon & Wilson Inc.
Risk Management
Bob Goodfellow, Senior Vice President, Aldea Services
Contracting Methods and Project Delivery Options
Dan Adams, President, McMillen Jacobs Associates
Geotechnical Baseline Reports
Randy Essex, Executive Vice President, Mott MacDonald
Risk Management through Instrumentation and Monitoring
Allen Marr, CEO, Geocomp

TUESDAY, SEPTEMBER 19
Openings and Support in Rock and Soil
Seth Pollak, Associate, Arup
Gabe Walton, Assistant Professor of Underground Construction and Tunnel Engineering and Geological Engineering, Colorado School of Mines
Mike Mooney, Colorado School of Mines
NATM and SEM
Vojtech Gall, Principal, Gall Zeidler Consultants
Nasri Munfah, Senior Vice President and Director of Global Tunneling, WSP | Parsons Brinckerhoff
Conventional Excavation: Drill and Blast and Roadheaders
Skanska, Speaker(s) to be announced
Shotcrete Temporary and Permanent Lining Design and Construction
Jim Lindsay, Head of UGC North America, BASF Corporation
Martijn Mannott-Russell, Global Technical Manager, Mechanized Shield Tunneling, BASF Corporation
Building Stations from Pilot Tunnels: Innovation from Crossrail London
Speaker(s) to be announced
Principles of Hard Rock TBM Tunneling
Jamal Rostami, Associate Professor and Hadden/Alacer Gold Endowed Chair in Mining Engineering, Colorado School of Mines
Innovations and Trends in Hard Rock TBM Tunneling
Dennis Oliara, Chief Engineer, The Robbins Company

TUESDAY, SEPTEMBER 19 (CONTINUED)
Probe-Hole Drilling and Pre-Excavation Grouting for Groundwater Control
Niels Koefed, Tunnel Manager, Rondout, Kiewit
Hands-On Labs (see sidebar for topics)

WEDNESDAY, SEPTEMBER 20
Principles of Pressurized Face TBM Tunneling: EPB, Slurry and Hybrid
Mike Mooney, Colorado School of Mines
Application, Design and Performance of EPB, SPB and Hybrid TBMs
Werner Burger, Chief Engineer, Herrenknecht AG
Innovative TBM Tunneling in Hong Kong: From Small TBMs for Cross Passage Construction to the 17.6m Largest Mixshield TBM in the World
Bruno Combe, Director of Tunneling, Bouygues Construction
Roger Storry, Technical and Risk Manager, Dragages Hong Kong Limited
Learning from Data
Speaker(s) to be announced
Tunnel-Induced Deformation of Ground, Buildings and Utilities
Speaker(s) to be announced
SR99: Lessons from the Largest EPB TBM Tunnel in the World
Chris Dixon, Project Manager, Seattle Tunnel Partners
Juan Luis Magro, Construction Manager, Dragados USA and Seattle Tunnel Partners
Precast Segmental Liner Design and Construction
Anthony Harding, Regional Practice Leader, Tunnels and Earth Engineering, CH2M
Ground Improvement: Dewatering to Ground Freezing to Grouting
Paul Schmall, Senior Vice President and Chief Engineer, Moretrench
Regional Connector: TBM Tunneling, Deformation Control, Cross Passages and the Cavern
Taylor Bros., Speaker(s) to be announced
Hands-On Labs (see sidebar for topics)

THURSDAY, SEPTEMBER 21
Safety Design and Delivery
Matt Swinton, Senior Vice President and District Manager, Kiewit
Construction Management
Greg Colzani, Tunnel Construction Management Leader, Jacobs
Cost Estimating
Mike DiPinio, Executive Vice President, Jay Dee Constructors
Owners Panel: Specifications, Risk Sharing and the Future of Procurement
John Bednarski, Southern California Metropolitan Water District
Matthew Crow, Los Angeles Metro
Additional panelists to be announced
Visit our website for the most up-to-date program and to register for this course online: underground.mines.edu/tunneling

HANDS-ON LABS AND DEMOS
Break-out lab and demo sessions round out each day of instruction, providing attendees with hands-on experience in these areas:
- EPB Soil Conditioning
- Rock Cutting
- Slurry
- EPB TBM Simulation
- Numerical Modeling
- Shotcrete
- Blasting Design
- Annulus Grout
- Abrasivity and Wear
- Tunneling Geology
- 3D Geotechnical Site Investigation and BIM