**Symposium Program**47th U .S. Rock Mechanics / Geomechanics Symposium 21-27 June, 2013, San Francisco, CA

Friday, 21 June 2013					
TIME	EVENT				
8:00 am - 10:00 am	Registration2nd Floor Marble Registration Desk				
8:30 am - 5:00 pm	Workshop 1Metropolitan I  3rd Workshop on Geomechanics Solutions for Environmental and Technical Challenges in Unconventional Resources				
Saturday, 22 Jur	Saturday, 22 June 2013				
7:30 am - 10:00 am	Registration2nd Floor Marble Registration Desk				
8:00 am - 5:00 pm	Workshop 2Metropolitan I ISRM-ARMA Workshop on Petroleum Geomechanics Testing				
8:30 am - 4:30 pm	Short Course 1Commonwealth Reliability Engineering for Tunnel Construction				
8:30 am - 5:00 pm	Short Course 2City Room  Geomechanical Considerations for Unconventional Hydrocarbon Developments: Evaluating the Role of Natural Fractures and Microseismicity				
9:30 am - 6:30 pm	Technical Tour 1Assemble in 1st Floor Hotel Lobby Santa Cruz Geology				

Sunday, 23 June 2013			
7:30 am - 9:00 pm	Registration and Speakers Ready Room2nd Floor Marble Registration Desk		
8:30 am - 4:00 pm	ARMA Board of Directors Meeting Victorian Room, Westin St. Francis on Union Square		
8:00 am - 5:00 pm	Technical Tour 2Assemble in 1st Floor Hotel Lobby San Francisco Bay Geological Engineering Tour		
9:00 am - 4:00 pm	Short Course 4City Room Numerical Modeling of Cave Mining		
10:00 am - 11:00 am	ASCE Rock Mechanics Committee MeetingBoardroom		
11:30 am - 3:30 pm	Special Activity 1Assemble in 1st Floor Hotel Lobby Tour of Alcatraz		
2:00 pm - 5:00 pm	Exhibit Set UpMetropolitan III		
6:00 pm - 6:20 pm	Opening SessionMetropolitan I & II		
6:20 pm - 7:00 pm	MTS LectureMetropolitan I & II Peter Flemings, "The Science of Pore Pressure Prediction in the Deepwater"		
7:00 pm - 9:00 pm	Opening Reception and ExhibitsMetropolitan III  Sponsored by MTS Systems Corporation		

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Monday, 24 Jur	ne 2013			
TIME	EVENT			
7:00 am - 6:45 pm	Registration and Speakers Ready Room–2nd Floor Marble Registration Desk			
7:00 am - 7:50 am	Speaker's BreakfastCity, Commonwealth, Cornell			
8:00 am - 9:30 am	Technical Session 1Metropolitan I	Technical Session 2Stanford	Technical Session 3Metropolitan II	Technical Session 4Franciscan
	Experimental Rock Mechanics I - Shale and Mudrocks	Mine Seismicity	CO2 Sequestration and Utilization	Rock Slopes I
9:30 am - 4:30 pm	Exhibits OpenMetropolitan III			
9:30 am - 10:00 am	Coffee Break, ExhibitsMetropolitan III Sponsored by Metarock Laboratories, Inc.			
10:00 am - 10:50 am	Plenary AddressMetropolitan I & II  Larry Myer, "Geological Carbon Sequestration"			
11:00 am - 12:30 pm	Technical Session 5Metropolitan I	Technical Session 6Stanford	Technical Session 7Metropolitan II	Technical Session 8Franciscan
	Reservoir Geomechanics I	Deep Mine Rock Mechanics	Transport and Coupled Processes in Fractures	Rock Slopes II
12:30 pm - 2:00 pm		Lunch on your own		
12:30 pm - 2:00 pm		Lunch Meeting of the ARMA Publications CommitteeBoardroom		
12:30 pm - 2:00 pm	Special Activity 2Assemble in 1st Floor Hotel Lobby Multi-course Lunch at M.Y. China			
2:00 pm - 3:30 pm	Technical Session 9Metropolitan I	Technical Session 10Stanford	Technical Session 11Metropolitan II	Technical Session 12Franciscan
	Wellbore Stability	Numerical Modeling In Coal Mines	Thermal, Hydrological, Mechanical, Chemical and Biological Influences upon Rock	Constitutive Models
3:30 pm - 4:30 pm	First Poster Session, Career Corner, Exhibits, Coffee and Light RefreshmentsMetropolitan III and Olympic, Concordia  Coffee Break Sponsored by Golder Associates Tunnel and Grouting Group  Poster Session Sponsored by ConocoPhillips			

## Monday, 24 June 2013 4:30 pm -6:00 pm Technical Session 13--Metropolitan I Technical Session 14--Stanford Technical Session 15--Metropolitan II Technical Session 16--Franciscan Geomechanical Challenges Associated with Geothermal Drilling, Stimulation and Geologic Repository Issues for Nuclear Waste Coupled Process Models I Laboratory-Scale Rock Mechanics Disposal Production I Career Corner--2nd Floor Prefunction Lobby 6:00 pm - 6:30 pm Student Trivia Contest (Cash Award)--2nd Floor Prefuction Lobby 6:30 pm - 7:30 pm Itasca 3DEC Reception--Metropolitan III 6:30 pm - 7:30 pm By Invitation ARMA Fellows Dinner and Meeting 7:00 pm - 9:45 pm Farallon Restaurant, 450 Post Street

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7:00 am - 6:30 pm	Registration and Speakers Ready Room2nd Floor Marble Registration Desk			
7:00 am - 7:50 am	Speaker's BreakfastCity, Commonwealth, Cornell			
8:00 am - 9:30 am	Technical Session 17Metropolitan I	Technical Session 18Stanford	Technical Session 19Metropolitan II	Technical Session 20Franciscan
	Unconventionals I	Ground Control I	Rock Physics and Geophysics	Discrete Geomechanics I
9:00 am - 1:00 pm	Special Activity 3Assemble in 1st Floor Hotel Lobby San Francisco Highlights			
9:30 am - 4:30 pm	Exhibits Open <i>Metropolitan III</i>			
9:30 am - 10:00 am	Coffee Break, ExhibitsMetropolitan III Sponsored by Golder Associates Mining Services			
10:00 am - 10:50 am	Plenary AddressMetropolitan I & II Chris Breeds, "History of the Mediterranean Sea to Dead Sea Canal Project and Current Concepts for Restoration of the Dead Sea and Lower Jordan River"			
11:00 am - 12:30 pm	Technical Session 21Metropolitan I	Technical Session 22Stanford	Technical Session 23Metropolitan II	Technical Session 24Franciscan
	Fracture Mechanics I	Ground Control II	Rock Heterogeneity and Scaling	Discrete Geomechanics II
12:30 pm - 2:00 pm		Lunch or	your own	
12:30 pm - 2:00 pm	Lunch Meeting of the ARMA Future LeadersCommonwealth  "The Changing Energy Picture: The Role of Rock Mechanics and ARMA", Sid Green, ARMA Fellow/Schlumberger Senior Advisor/Univ. of Utah Research Professo  Sponsored by TerraTek, a Schlumberger Company			
2:00 pm - 3:30 pm	Technical Session 25Metropolitan I	Technical Session 26Stanford	Technical Session 27Metropolitan II	Technical Session 28Franciscan
	Pore Pressure and Stress	Coal Mine Rock Mechanics	Acoustic Emissions	Rock Mass Characterization and Ground Improvement
3:30 pm - 4:30 pm	Second Poster Session, Career Corner, Exhibits, Coffee and Light RefreshmentsMetropolitan III and Olympic, Concordia  Sponsored by ConocoPhillips			
4:30 pm6:00 pm	Technical Session 29Metropolitan I	Technical Session 30Stanford	Technical Session 31Metropolitan II	Technical Session 32Franciscan
	Experimental Rock Mechanics II - Sand	Coupled Process II	Geomechanical Challenges Associated with Geothermal Drilling, Stimulation and Production II	Tunnels and Caverns I
7:15 pm - 9:30 pm	ARMA Awards Banquet  San Francisco Marriott Marquis Hotel, 780 Mission Street (one block from Westin)  President's Address, Antonio Bobet; Awards; Minneapolis 2014, Joe Labuz  Sponsored by Agapito Associates, Inc.			

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Washing alary 00 June 0040				
Wednesday, 26 June 2013				
TIME	EVENT			
7:00 am - 2:00 pm	Registration and Speakers Ready Room2nd Floor Marble Registration Desk			
7:00 am - 7:50 am	Speaker's BreakfastCity, Commonwealth, Cornell			
8:00 am - 9:30 am	Technical Session 33Metropolitan I	Technical Session 34Stanford	Technical Session 35Metropolitan II	Technical Session 36Franciscan
	Fracture Mechanics II	Production in Weak Rock, Evaporites and Caving	New Developments in Computational Rock Mechanics	Dams and Foundations
9:30 am - 12:00 noon	Exhibits Open-Metropolitan III			
9:30 am - 10:00 am	Coffee Break Sponsored by Golder Associates FracMan Technology Group			
10:00 am - 10:50 am	Plenary AddressMetropolitan I & II Erik Eberhardt, "Large Slope Failures; Monitoring Failures Over Time"			
11:00 AM - 12:30 PM	Technical Session 37Metropolitan I	Technical Session 38Stanford	Technical Session 39Metropolitan II	Technical Session 40Franciscan
	Reservoir Geomechanics II	Tunnels and Caverns II	High Performance Computing: The Challenge of Harnessing HPC for Rock Mechanics	Fracture Statistics and Rock Mass Measures
12:30 pm - 2:00 PM	Technical Session 41Metropolitan I	Technical Session 42Stanford	Technical Session 43Metropolitan II	Technical Session 44Franciscan
	Unconventionals II	Experimental Rock Mechanics III - Novel Rocks and Testing Methods	Uncertainty Quantification and Parameter Estimation in Geomechanics	Rock Mass Strength and Deformability
2:00 PM - 2:15 PM		Closing Session	nMetropolitan I	
7:00 pm - 10:00 pm	Special Activity 4Assemble in 1st Floor Hotel Lobby Beach Blanket Babylon			
Thursday, 27 June 2013				
7:30 am- 6:00 pm	Technical Tour 3Assemble in 1st Floor Hotel Lobby The Geysers / Napa Valley			
8:30 am - 5:00 pm	Workshop 3Stanford Workshop on Spall Prediction			