

15th Sinkhole Conference Detailed Program

Monday 2 April 2018			
Start	End		
6:30 AM	8:00 AM	Breakfast	Commons Dining Room
7:30 AM		Registration Opens	
8:00 AM	12:00 PM	Short Courses Short Course 1: (Room 105) Geologic Site Characterization in a Karst Setting (4 hrs); Instructors: Lynn Yuhr, P.G., President of Technos, Inc., Miami, Florida (retired); Richard C. Benson, P.G., C.P.G., Founder and Sr. Engineering Geologist of Technos, Inc., Miami, Florida (retired)	Instructional East Building Short Course 2: (Room 103) Grouting in Karst (4 hrs); Instructors: Joseph A. Fischer, P.E., Geoscience Services; Michael J. Miluski, P.E., Compaction Grouting Services
12:00 PM	1:00 PM	Lunch	Commons Dining Room
1:00 PM	5:00 PM	Short Course 3: (Room 103) Stormwater Management in Karst – A Regional Perspective (4 hrs); Instructor: Robert K. Denton Jr., CPG, LPSS (GeoConcepts Engineering Inc.)	Short Course 4: (Room G30-GIS Lab) Identifying Closed Depressions from Lidar-Derived Digital Elevation Models (4 hrs); Instructors: Daniel H. Doctor, Ph.D., Research Geologist, U.S. Geological Survey; John Wall, Ph.D. Candidate, North Carolina State University
5:30 PM	7:30 PM	Dinner	Commons Dining Room

Tuesday 3 April 2018			
Start	End		
6:30 AM	7:30 AM	Breakfast	Commons Dining Room
7:00 AM		Registration Opens	
7:30 AM	5:30 PM	Karst of the Appalachian Valley Field Trip	Buses for field trip will leave from the parking lot/turnaround loop outside of the Commons Dining area
5:30 PM	6:30 PM	Dinner	Commons Dining Room
6:30 PM	9:00 PM	Welcome Reception	Roosevelt Room

Wednesday 4 April 2018			
Start	End		
6:30 AM	8:00 AM	Exhibitor Setup	Hallway outside of Auditorium
6:30 AM	8:00 AM	Poster Setup	Commons Dining Room
6:30 AM	8:00 AM	Breakfast	Commons Dining Room
7:00 AM		Registration Opens	
8:00 AM	8:10 AM	Opening Session Introductory Remarks from George Veni (NCKRI) and Dan Doctor (KWI)	Auditorium
8:10 AM	8:20 AM	Remarks from Mitch Blake - West Virginia Geological and Economic Survey	

8:20 AM	8:30 AM	Remarks from Stephen Sites - Division of Highways, West Virginia Department of Transportation	
8:30 AM	9:15 AM	Keynote - Chester F. (Skip) Watts , Radford University & Virginia Tech	An Appalachian Mystery: The hydrogeology of Mountain Lake in Giles County, Virginia. Leaky landslide or covered karst
9:20 AM	9:40 AM	Karst Hydrogeology I - James Lolcama John D. Barry , <i>Minnesota Department of Natural Resources</i> ; Jeff A. Green , <i>Minnesota Department of Natural Resources</i> ; Joseph W. Rutelonis , <i>Minnesota Department of Natural Resources</i> ; Julia R. Steenberg , <i>Minnesota Geological Survey</i> ; and E. Calvin Alexander Jr. , <i>University of Minnesota</i>	Coupling dye tracing, water chemistry, and passive geophysics to characterize conduit flow in a siliciclastic pseudokarst aquifer, Southeast Minnesota, U.S.A.
9:40 AM	10:00 AM	Brian A. Smith , <i>BSEACD</i> ; Brian B. Hunt , <i>BSEACD</i> ; Doug A. Wierman , <i>Blue Creek Consulting</i> ; and Marcus O. Gary , <i>Edwards Aquifer Authority</i>	Groundwater flow systems in multiple karst aquifers of central Texas
10:00 AM	10:30 AM	Break & Exhibits	Hallway outside of Auditorium
10:30 AM	Noon	Sinkhole Litigation and Liability; A Panel Discussion - Michael Byle, TetraTech and Ira Sasowsky, Akron University	Auditorium
		Jesse Richardson , <i>West Virginia University</i>	Karst, scientific uncertainty, and the law
		Steven Miano , <i>Hangley Aronchick Segal Pudlin & Schiller</i>	When sinkholes become legal problems
		Larry Madrid , <i>Madrid Engineering Group, Inc.</i>	Litigation and the complexities of sinkhole insurance claims in Florida
		Michael Byle , <i>TetraTech</i>	Engineering assessment of karst sinkhole causation and prediction in litigation
12:00 PM	1:00 PM	Lunch	Commons Dining Room
1:00 PM	2:00 PM	Planning Session for the Next Sinkhole Conference	Auditorium
2:00 PM	2:20 PM	Karst Hydrogeology II - James Lolcama James L. Berglund , <i>Temple University</i> ; Laura Toran , <i>Temple University</i> ; and Ellen Herman , <i>Bucknell University</i>	Auditorium Using stable isotopes to distinguish sinkhole and diffuse storm infiltration in two adjacent springs
2:20 PM	2:40 PM	Liu Hong; Cui Dang; Yang Liu; and Mengmeng Wang , <i>International Joint research Center for Karstology, Yunnan University</i>	The hydro-chemical characteristics of karst faulted basin: case study of Baiyi Basin, Kunming, China
2:40 PM	3:00 PM	Amaël Poulain , <i>Department of Geology - University of Namur</i> ; Geert De Sadelaer , <i>Royal Meteorological Institute of Belgium</i> ; Gaëtan Rochez , <i>Department of Geology - University of Namur</i> ; Lorraine Dewaide , <i>Department of Geology - University of Namur</i> ; and Vincent Hallet , <i>Department of Geology - University of Namur</i>	Surface to cave dye tracing: lessons learned from the Belgian karst
3:05 PM	3:30 PM	Break & Exhibits	Hallway outside of Auditorium

3:30 PM	3:50 PM	GIS-Mapping-Management of Karst - Clint Kromhout & John Barry Michael C. Alfieri , <i>Water Resource Associates, LLC</i> ; Sam B. Upchurch , <i>SDII Global Corporation</i> ; and Thomas L. Dobecki , <i>Dobecki Geosciences, LLC</i>	Auditorium Photolinears, fractures, and fallacies: A case study of a "ground-truthed" photolineament assessment study, Hillsborough County, Florida
3:50 PM	4:10 PM	Clint Kromhout , <i>Florida Geological Survey</i> and Michael C. Alfieri , <i>Water Resource Associates, LLC</i>	Assessment of historical aerial photography as initial screening tool to identify areas at possible risk to sinkhole development
4:10 PM	4:30 PM	Lasha Asanidze , <i>Ivane Javakishvili Tbilisi State University, Vakhushti Bagrationi Institute of Geography</i> ; Zaza Lezhava , <i>Ivane Javakishvili Tbilisi State University, Vakhushti Bagrationi Institute of Geography</i> ; Nino Chikhradze , <i>(Ivane Javakishvili Tbilisi State University, Vakhushti Bagrationi Institute of Geography. Ilia State University, School of Natural Sciences and Engineering.</i> ; George Gaprindashvili , <i>Department of Geology, National Environmental Agency, Ministry of Environment Protection and Agriculture of Georgia</i> ; and Guranda Avkopashvili , <i>Ivane Javakishvili Tbilisi State University, Elephter Andronikashvili Institute of Physics.</i>	Mapping of potential show caves in the Racha Limestone Massif (Country of Georgia)
4:30 AM	4:50 PM	Yongje Kim , <i>University of Central Florida</i> and Boo Hyun Nam , <i>University of Central Florida</i>	A comparative study of karst sinkhole hazard mapping using frequency ratio (FR) and artificial neural network (ANN) for east Central Florida
5:30 PM	6:30 PM	Dinner	Commons Dining Room

Wednesday 4 April 2018 (continued)

6:30 PM	9:00 PM	Karst Hydrology and Geochemistry Posters - Jack Hess Mohammad Shokri , <i>West Virginia University</i> ; Dorothy Vesper , <i>West Virginia University</i> ; Ellen Herman , <i>Bucknell University</i> ; Ljiljana Rajic , <i>Northeastern University</i> ; Kimerly Hetrick , <i>Northeastern University</i> ; Ingrid Y. Padilla , <i>University of Puerto Rico - Mayaguez</i> ; and Akram Alshawabkeh , <i>Northeastern University</i>	Roosevelt Room Bulk chemistry of karst sediment deposits
		Emily Bausher ; Autum R. Downey , <i>West Virginia University</i> ; and Dorothy J. Vesper , <i>West Virginia University</i>	Geochemical comparison of karst and clastic springs in the Appalachian Valley & Ridge Province, southeastern WV and central PA
		William K. Jones , <i>Karst Waters Institute</i> and Philip C. Lucas , <i>Virginia Speleological Survey</i>	An Unusual Spring in the Jackson River, Bath County, Virginia

6:30 PM	9:00 PM	<p>Long Jia, <i>Institute of Karst Geology, CAGS</i></p>	Study on early recognition methods of cover-collapse sinkholes in China
		<p>Amaël Poulain, <i>Department of Geology - University of Namur</i>; Geert De Sadelaer, <i>Royal Meteorological Institute of Belgium</i>; Gaëtan Rochez, <i>Department of Geology - University of Namur</i>; Lorraine Dewaide, <i>Department of Geology - University of Namur</i>; and Vincent Hallet, <i>Department of Geology - University of Namur</i></p>	Advances in ultra-portable field fluorometry for dye tracing in remote karst
		<p>Kimberly Hetrick, <i>Northeastern University</i>; Ljiljana Rajic, <i>Northeastern University</i>; Akram Alshawabkeh, <i>Northeastern University</i>; Dorothy Vesper, <i>West Virginia University</i>; and Mohammad Shokri, <i>West Virginia University</i></p>	The role of suspended sediments on the electrochemical remediation of karst groundwater
		<p>Binggui Cai, <i>Institute of Geography, Fujian Normal University</i> and Hong Liu, <i>International Joint Research Center for Karstology, Yunnan University</i></p>	The water chemical characteristics of Qinglongdong karst spring, Kunming China
		<p>Zong Yuan Pan, <i>Institute of karst geology, Chinese Academy of Geological Sciences</i>; Xiao Zhen Jiang, <i>Institute of karst geology, Chinese Academy of Geological Sciences</i>; Ming Tang Lei, <i>Institute of karst geology, Chinese Academy of Geological Sciences</i>; Jian Ling Dai, <i>Institute of Karst Geology, Chinese Academy of Geological Sciences</i>; Yuan Bing Wu, <i>Institute of Karst Geology, Chinese Academy of Geological Sciences</i>; and Yongli Gao, <i>Department of Geological Sciences, Center for Water Research, University of Texas San Antonio</i></p>	Review of monitoring and early warning technologies for cover-collapse sinkholes
		<p>Jeffery A. Green, <i>Minn. Dept. Natural Resources</i>; Robert G. Tipping, <i>Minn. Geol. Survey</i> ; John D. Barry, <i>Minn. Dept. Natural Resources</i> ; Gregory A. Brick, <i>Minn. Dept. Natural Resources</i>; Betty J. Wheeler, <i>Univ. of Minn., Earth Sciences Dept.</i> ; Joseph W. Rutelonis, <i>Minn. Dept. Natural Resources</i>; Bart C. Richardson, <i>Minn. Dept. Natural Resources</i>; and E. Calvin Alexander Jr., <i>Univ. of Minn., Earth Sciences Dept.</i></p>	Electronic Access to Minnesota Springs, Karst Features and Dye Traces Information

Thursday 5 April 2018			
Start	End		
6:30 AM	8:00 AM	Breakfast	Commons Dining Room
7:30 AM		Registration Begins	
8:00 AM	8:10 AM	Announcements	Auditorium
		Appalachian Karst - Dave Weary & Dan Doctor	Auditorium
8:10 AM	8:30 AM	Ernst H. Kastning , <i>Radford University</i>	Studies of the Appalachian Karst: 1770 – Present
8:30 AM	8:50 AM	David K. Brezinski; Johanna Gemperline; Rebecca Kavage Adams; and David W. Bolton , <i>Maryland Geological Survey</i>	Factors affecting karst spring turbidity in eastern Washington County, Maryland
8:50 AM	9:10 AM	Wil Orndorff , <i>Virginia Dept. of Conservation and Recreation</i> ; Daniel H. Doctor , <i>U.S. Geological Survey</i> ; Thomas E. Malabad , <i>Virginia Dept. of Conservation and Recreation</i> ; Katarina Kosič , <i>Virginia Dept. of Conservation and Recreation</i> ; Zenah W. Orndorff , <i>Virginia Tech</i> ; and Andrea Futrell	Patterns of heterogeneity within phreatic karst aquifers of the Great Valley, Virginia and West Virginia: evidence from time series hydrologic monitoring, groundwater chemistry, and stygobite site occupancy
9:10 AM	9:30 AM	J. Steven Kite and John Tudek , <i>West Virginia University</i>	Cold-air trap temperature records support simple high-density air-flow mechanisms at an Appalachian limestone cave entrance sinkhole
9:30 AM	10:00 AM	Joshua R. Benton and Daniel H. Doctor , <i>U.S. Geological Survey</i>	Investigating vadose zone hydrology in a karst terrain through hydrograph and chemical times-series analysis of cave drips at Grand Caverns, VA
10:00 AM	10:30 AM	Break & Exhibits	Hallway outside of Auditorium
10:30 AM	10:50 AM	Gheorghe M. Ponta , <i>Geological Survey of Alabama</i>	Geologic framework of karst aquifer systems in Alabama
10:50 AM	11:10 AM	Joel P. Maynard and Brad White , <i>Virginia Department of Environmental Quality</i>	Packer testing and borehole geophysical characterization of observations wells in a vertically integrated karst aquifer in Augusta County, Virginia.
11:10 AM	11:30 AM	Brent B. Waters , <i>Golder Associates Inc.</i> ; Daniel H. Doctor , <i>U.S. Geological Survey</i> ; and Joel P. Maynard , <i>Virginia Department of Environmental Quality</i>	Using geophysics to map bedrock faults, dikes, and surficial geology in relation to karst features in the Briery Branch Quadrangle, Rockingham County, Virginia
11:30 AM	11:50	Jacob A. Gochenour; R Shane McGary; Gregory J. Gosselin; and Ben S. Suranovic , <i>James Madison University</i>	Investigating Subsurface Void Spaces and Groundwater in Cave Hill Karst Using Resistivity
12:00 PM	1:00 PM	Lunch	Commons Dining Room

		Formation of Karst and Sinkholes - Eric Peterson & Douglas Aden	Auditorium
1:00 PM	1:20 PM	Gildas Noury , BRGM; Jérôme Perrin , BRGM; Li-Hua Luu , IRSTEA; Pierre Philippe , IRSTEA; and Sébastien Gourdiér , BRGM	Role of floods in the sinkholes outbreak in covered karst contexts. Case study of the Orléans area (France) during the 2016 meteorological event and perspectives in other karst environments.
1:20 PM	1:40 PM	Douglas Aden , Ohio Department of Natural Resources, Division of Geological Survey	Quantitative comparison of sinkhole geomorphology of four karst regions in Ohio
1:40 PM	2:00 PM	Valeria Ramirez , Knight Piésold Consultores S.A., Lima, Peru; Olimpio Angeles , Knight Piésold Consultores S.A., Lima, Peru; and Michael W. West , Wiss, Janney, Elstner Associates, Inc., Lakewood, Co, USA	Assessment of the karstification degree in the Copacabana Group for a tailings dam foundation, south Andes, Peru
2:00 PM	2:20 PM	Andrew Francis , Illinois State University; Eric Wade Peterson , Illinois State University; and Toby Dogwiler , Missouri State University - Springfield	Lithology as an erosional control on the Cave Branch and Horn Hollow fluviokarst watersheds in Carter County, Kentucky
2:20 PM	3:00 PM	Shuning Dong , Xi'an Research Institute of China Coal Technology & Engineering Group Corp. Xi'an, Shaanxi 710054, China; Hao Wang , Xi'an Research Institute of China Coal Technology & Engineering Group Corp. Xi'an, Shaanxi 710054, China; and Wanfang Zhou , ERT, Inc.	Comprehensive investigation and remediation of concealed karst collapse columns in Renlou Coal Mine, China
3:00 PM	3:30 PM	Break & Exhibits	Hallway outside of Auditorium
3:30 PM	3:50 PM	Ros Fatimah Muhammad , Department of Geology, University Malaya	The Extreme Karstification of the Kinta Valley, West Malaysia
		Karst Geophysics I - Charlotte Krawczyk & Lewis Land	Auditorium
3:55 PM	4:15 PM	Sonja H. Wadas , Leibniz Institute for Applied Geophysics; Saskia Tschache , Leibniz Institute for Applied Geophysics; Ulrich Polom , Leibniz Institute for Applied Geophysics; and Charlotte M. Krawczyk , GFZ German Research Centre for Geosciences	Sinkhole imaging and identification of fractures with SH-wave reflection seismic
4:15 PM	4:35 PM	Charlotte M. Krawczyk , GFZ German Research Centre for Geosciences and SIMULTAN Research Group	Joint project SIMULTAN - Sinkhole characterization and monitoring with supplementing geophysical methods
4:35 PM	4:55 PM	James Lolcama , KCF Groundwater, Inc.	Remedial investigation of large scale karstic flow conduits with brine-enhanced resistivity imaging and downhole colloidal borescope methods

4:55 PM	5:15 PM	Saskia Tschache , <i>Leibniz Institute for Applied Geophysics</i> ; Sonja H. Wadas , <i>Leibniz Institute for Applied Geophysics</i> ; Ulrich Polom , <i>Leibniz Institute for Applied Geophysics</i> ; and Charlotte M. Krawczyk , <i>GFZ German Research Centre for Geosciences</i>	Combination of 2d shear wave reflection seismics and travel time analysis of borehole geophone data for the investigation of a sinkhole area
5:15 PM	5:35 PM	David Harro , <i>The G3 Group</i> and Henok Kiflu , <i>Dept. of Geology, University of South Florida</i>	Imaging of deep sinkholes using the Multi-Electrode Resistivity Implant Technique (MERIT) case studies in Florida
6:30 PM	9:30 PM	Banquet Speaker - E. Scott Bair	Commons Dining Room The science beneath the Ohio State geothermal field fiasco: A cool story about a hot topic
		Introduction to the Next Sinkhole Conference	Ingrid Padilla/Brian Smith

Friday 6 April 2018			
Start	End		
6:30 AM	8:00 AM	Breakfast	Commons Dining Room
7:30 AM		Registration Begins	
8:00 AM	8:10 AM	Announcements	Auditorium
8:10 AM	8:30 AM	Karst Geophysics II - Charlotte Krawczyk & Lewis Land Peter Hutchinson , <i>THG Geophysics, Ltd.</i>	Auditorium Avoiding caverns in the Arbuckle Mountains using electrical imaging methods
8:30 AM	8:50 AM	Lewis Land , <i>NCKRI</i> ; Colin Cikoski , <i>New Mexico Bureau of Geology and Mineral Resources</i> ; and George Veni , <i>NCKRI</i>	Sinkholes as transportation and infrastructure geohazards in mixed evaporite-siliciclastic bedrock, lower Pecos Region, southeastern New Mexico
8:55 AM	9:15 AM	Geotechnical and Modeling Investigations in Karst - Joe Fischer & Pierre-Yves Jeannin Joseph A. Fischer , <i>Geoscience Services</i> ; Joseph Jeffrey Fischer , <i>Geoscience Services</i> ; and Justin Terry , <i>Compaction Grouting Services, Inc.</i>	Auditorium Remediation of the Centenary College president's house
9:15 AM	9:35 AM	Walter G. Kutschke , <i>DiGioia Gray & Associates</i>	Case histories: Karst successes and failures in the eastern United States
9:35 AM	9:55 AM	Randall C. Orndorff , <i>U.S. Geological Survey</i> ; Michael A. Knight , <i>Gannett Fleming, Inc.</i> ; Joseph T. Krupansky , <i>Gannett Fleming, Inc.</i> ; and Khaled M. Al-Akhras , <i>Qatar Ministry of Municipality and Environment</i>	Linking geology and geotechnical engineering in karst: The Qatar Geologic Mapping Project
10:00 AM	10:30 AM	Break & Exhibits	Hallway outside of Auditorium

10:30 AM	10:50 AM	<p>Boqin Zhu, <i>National Astronomical Observatories of China (NAOC), Chinese Academy of Sciences;</i> Yongli Gao, <i>Department of Geological Sciences, Center for Water Research, University of Texas San Antonio;</i> Wenjing Cai, <i>National Astronomical Observatories of China (NAOC), Chinese Academy of Sciences;</i> and Xiaoan Shi, <i>National Astronomical Observatories of China (NAOC), Chinese Academy of Sciences</i></p>	Site selection of the world's largest radio telescope within the Dawodang karst depression
10:50 AM	11:10 AM	<p>Ryan Shamet, <i>University of Central Florida;</i> Boo Hyun Nam, <i>University of Central Florida;</i> and David Horhota, <i>Florida Department of Transportation</i></p>	Development of a sinkhole raveling chart based on cone penetration test (CPT) data
11:10 AM	11:30 AM	<p>Moataz Soliman, <i>University of Central Florida;</i> Adam Perez, <i>University of Central Florida;</i> Boo Hyun Nam, <i>University of Central Florida;</i> and Ming Ye, <i>Florida State University</i></p>	Physical and numerical analysis on the mechanical behavior of cover-collapse sinkholes in central Florida
11:30 AM	11:50 AM	<p>Pierre-Yves Jeannin and Arnauld Malard, <i>Swiss Institute for Speleology and Karst Studies</i></p>	A way to predict natural hazards in karst
12:00 PM	1:00 PM	Lunch	Commons Dining Room
1:00 PM	6:00 PM	Karst of the Urban Environment Field Trip	Buses for field trip will leave from the parking lot/turnaround loop outside of the Commons dining area