

Abstracts and Details

SATURDAY

AMAZING CAVES MOVIE

Room 1203, Auditorium
Saturday 1900-2000 Open to Public

Room 1203, Auditorium
Saturday 2100-2200 NSS Members & Friends

Celebrate the tenth anniversary of the iconic documentary that brought National Speleological Society members Dr. Hazel Barton and Nancy Aulenbach to breathtaking caves in the depths of the Grand Canyon, Greenland's frozen ice cap and the jungles of Mexico's Yucatan. Featuring the music of the Moody Blues and narration by actor Liam Neeson, the 2001 film helped launch popular fiction films such as *The Cave* and *The Descent*, as well as the 2011 James Cameron feature *Sanctum*. No admission charge.

In person: Dr. Hazel Barton and Nancy Aulenbach.

Presented in cooperation with the Glenwood Springs Chamber Resort Association.

MONDAY

OPEN BOARD OF GOVERNORS MEETING

Room 1212, Choral Room
Monday 0800-1200 Board of Governors

Everyone is welcome to attend the Open Board of Governors meeting.

GEOLOGY

Room 1203, Auditorium
Monday 0800-1200 Paul Burger

- 0800 **POSTER:** High Resolution Temperature Sampling of Cave Climate Variation as a Function of Allogenic Recharge, Coldwater Cave, Iowa, USA, [Abstr: p. 34] Patricia Kambesis, John Lovaas, Michael J. Lacey
- POSTER:** Determining Landscape Evolution Using Isotope Data from Pre-Pleistocene-aged Speleothems in the Guadalupe Mountains, New Mexico, [Abstr: p. 32] D. Decker, V. Polyak, C. Hill, Y. Asmerom
- 0820 **Caves of the Qingkou Tiankeng Area, South China Karst: An Overview,** [Abstr: p. 34] Erin M. Lynch
- 0840 **Temperature and Airflow Studies in the Big Room of Carlsbad Cavern, New Mexico,** [Abstr: p. 37] M. Schwabe, A. Pflitsch

0900 **Investigations of the Airflow Regime in Carlsbad Cavern National Park,** [Abstr: p. 36] A. Pflitsch, M. Schwabe, J. Ringeis

0920 **An Isotopic Calibration Study of Precipitation, Cave Drip-water, and Climate, in West-Central Florida,** [Abstr: p. 36] Jason S. Polk, Philip van Beynen, Jonathan Wynn

0940 BREAK and POSTERS

1000 **Karst Resource Inventory and Proposed Cave and Karst Resource Management, Reserva de la Biosfera Selva El Ocote, Chiapas,** [Abstr: p. 34] Johanna L. Kovarik

1020 **Preliminary Observations on the Geology and Mineralogy of Shoshone Canyon Conduit Cave, Cody, Wyoming,** [Abstr: p. 32] Donald G. Davis

1040 **Geology of the Elephant Mountain Caves, Pitkin County, Colorado,** [Abstr: p. 35] R. Mark Maslyn, Frederick Luiszer, Donald G. Davis, Richard J. Rhinehart

1100 BREAK and POSTERS

1120 **Resource Documentation and Recharge Area Delineation of a Large Fluvial Karst System: Carroll Cave, Missouri,** [Abstr: p. 34] Robert N. Lerch, Benjamin V. Miller, Chris G. Groves

1140 **Identifying Source Mixing and Examining Water Chemistry Variations: The Carroll Cave – Toronto Springs System,** [Abstr: p. 35] Benjamin V. Miller, Robert N. Lerch, Chris G. Groves

OPENING CEREMONY

Atrium
Monday 0815-0900 Convention Staff

Join the early risers Monday morning at 0815 in the school's atrium for an inspiring opening ceremony.

SURVEY & CARTOGRAPHY

Room 1144, Small Group Stage
Monday 0900-1200 Howard Kalnitz

- 0900 **Opening,** Howard Kalnitz
- 0910 **Ledge Symbology in Profile Views,** [Abstr: p. 46] Dwight Livingston
- 0940 **Terrestrial LIDAR Scanning in Mammoth Cave National Park,** [Abstr: p. 45] Aaron Addison
- 1010 **BREAK**
- 1030 **Regional Cave Survey and Urban Development; Karst Surveys for Public Consumption in Quintana Roo, Mexico,** [Abstr: p. 46] Simon Richards, James G. Coke

Daily				
		Registration		1700
1008 DECA		Artificial Cave Displays; SIMcave		1700
1130a Aux. Gym		Weights and Cardiovascular Training		1700
1154 Fitness		Internet Cafe		
2003 TechLab		Video Salon Viewing	1400	1500
2504	800	Lunch	1400	1600
Cafeteria		Snacks		1700

1008 DECA
1130a Aux. Gym
1154 Fitness
2003 TechLab
2504
Cafeteria

Monday				
1130 Aux. Gym	800	900	Vertical Contest	1700
1144 SmGrp Stg	800		Survey/Cartography Lunch	1700
1203 Auditorium	700	1200	Cave Conservation & Mgmt Geology	1700
1212 Choral Rm	700	1100	Board of Governors Lunch and Closed Meeting	1700
1222 Band Rm	800	1000	Commun. & Elec. Lunch	1700
2001 Media	800	1000	Communication and Electronics	1700
2220 Corridor	700	1100	Fine Arts Salon Reception	1700
2403	800	900	Cartography Salon	1700
2502	800	1000	Conservation & Mgmt Lunch	1500
2601	800	900	Vertical Meeting and Session	1700
2702	800	900	Vertical Meeting and Session	1700
Atrium	800	1100	Geology & Geography Lunch	1700
Glenwood Cav'ns	800	1000	Geology & Geography Lunch	1700
Glenwood Cav'ns	800	1100	Howdy Party	1700

1130 Aux. Gym
1144 SmGrp Stg
1203 Auditorium
1212 Choral Rm
1222 Band Rm
2001 Media
2220 Corridor
2403
2502
2601
2702
Atrium
Glenwood Cav'ns
Glenwood Cav'ns

Tuesday				
1130 Aux. Gym	800	900	Vertical Contest and Rebelay Workshop	1700
1144 SmGrp Stg	700		Cave Cons/Mgmt Special Session, Part I	1700
1203 Auditorium	800	1200	Stereo Photograph Slide Show	1700
1212 Choral Rm	800		Spelean History Lunch	1700
1222 Band Rm	800	1200	Future Convention Planning	1700
2001 Media	800	1200	Biography Lunch	1600
2220 Corridor	700	1100	Print, Symbolic, T-shirt, Fine Arts, and Cover Salon	1700
2502	800	1200	Cartography Salon	1700
2601	800	1300	NSS Finance Forum	1700
2702	800	1300	SpeleoArt Workshop	1700
Camp Tent	800	1000	Speleophilatelic Society	1700
Multiple	800	900	SpeleOlympics	1700

1130 Aux. Gym
1144 SmGrp Stg
1203 Auditorium
1212 Choral Rm
1222 Band Rm
2001 Media
2220 Corridor
2502
2601
2702
Camp Tent
Multiple

Wednesday				
1144 SmGrp Stg	700	1200	Cave Cons/Mgmt Special Session WNS: A Western Perspective	1700
1203 Auditorium	700	1200	Dist. Lecture	1700
1222 Band Rm	800	1100	U. S. Exploration	1700
2001 Media	800	1200	Vert Biz Mtg	1600
2220 Corridor	700	1300	Print, Symbolic, T-shirt, Fine Arts, and Cover Salon	1700
2502	800	900	Cartography Salon	1700
2601	800	1200	Medical	1700
Glenwood Cav'ns	700	1300	Cave Diving	1700
Glenwood Cav'ns	800	1500	SpeleoArt Workshop	1700
Glenwood Cav'ns	800	1600	Cave Photography Workshop	1700

1144 SmGrp Stg
1203 Auditorium
1222 Band Rm
2001 Media
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Glenwood Cav'ns
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Daily										
1008 DECA	700	800	900	1000	1100	1200	1300	1400	1500	1700
1130a Aux. Gym	700	800	900	1000	1100	1200	1300	1400	1500	1700
1154 Fitness	700	800	900	1000	1100	1200	1300	1400	1500	1700
2003 TechLab	700	800	900	1000	1100	1200	1300	1400	1500	1700
2504 Cafeteria	700	800	900	1000	1100	1200	1300	1400	1500	1700
Thursday										
1130 Aux. Gym	700	800	900	1000	1100	1200	1300	1400	1500	1700
1144 SmGrp Stg	700	800	900	1000	1100	1200	1300	1400	1500	1700
1203 Auditorium	700	800	900	1000	1100	1200	1300	1400	1500	1700
1212 Choral Rm	700	800	900	1000	1100	1200	1300	1400	1500	1700
1222 Band Rm	700	800	900	1000	1100	1200	1300	1400	1500	1700
2001 Media	700	800	900	1000	1100	1200	1300	1400	1500	1700
2220 Corridor	700	800	900	1000	1100	1200	1300	1400	1500	1700
2403	700	800	900	1000	1100	1200	1300	1400	1500	1700
2502	700	800	900	1000	1100	1200	1300	1400	1500	1700
2601	700	800	900	1000	1100	1200	1300	1400	1500	1700
2604	700	800	900	1000	1100	1200	1300	1400	1500	1700
2702	700	800	900	1000	1100	1200	1300	1400	1500	1700
Glenwood Cav'ns	700	800	900	1000	1100	1200	1300	1400	1500	1700
Friday										
1144 SmGrp Stg	700	800	900	1000	1100	1200	1300	1400	1500	1700
1203 Auditorium	700	800	900	1000	1100	1200	1300	1400	1500	1700
1212 Choral Rm	700	800	900	1000	1100	1200	1300	1400	1500	1700
1222 Band Rm	700	800	900	1000	1100	1200	1300	1400	1500	1700
2001 Media Ctr	700	800	900	1000	1100	1200	1300	1400	1500	1700
2220 Corridor	700	800	900	1000	1100	1200	1300	1400	1500	1700
2403	700	800	900	1000	1100	1200	1300	1400	1500	1700
2502	700	800	900	1000	1100	1200	1300	1400	1500	1700
2702	700	800	900	1000	1100	1200	1300	1400	1500	1700
Complab	700	800	900	1000	1100	1200	1300	1400	1500	1700

Evenings									
SAT 1900 & 2100	Amazing Caves Movie	TUE 2030-0000	NSS 70th Anniversary Dance						
MON 1700-0000	Howdy Party	WED 1900-2200	Auction						
MON 1730-1830	New Members Reception	WED 1900-0000	Campground Party						
TUE 1800-1900	Fellows Reception	THU 1600 & 2000	Photo Salon						
TUE 1800-2000	Geology & History of Glenwood Caverns	FRI 1800	Banquet						

1100 How We Measure Caves, Pat Kambesis

1120 Wrap-up/Quick topics

GET DOWN

Room 2601

Monday 0930-1130

Bunnell, Lindberg, Neemann, Shrewsbury

Join us as we explore connections between education and conservation and how to make it all happen through art. Create a watercolor painting! \$5 fee.

VERTICAL CONTEST

Room 1130, Auxiliary Gym

Monday 1000-1700

Bill and Miriam Cuddington

VIDEO SECTION

Room 2502

Monday 1000-1200

Dave Socky

CAVE CONSERVATION AND MANAGEMENT LUNCH

Room 2403

Monday 1200-1400

Rod Horricks

COMMUNICATION AND ELECTRONICS LUNCH

Room 1222, Band Room

Monday 1200-1400

Dave Larson

GEOLOGY AND GEOGRAPHY LUNCH

Room 2702

Monday 1200-1400

Paul Burger

SURVEY & CARTOGRAPHY LUNCH

Room 1144, Small Group Stage

Monday 1200-1400

Howard Kalnitz

BOARD OF GOVERNORS LUNCH AND CLOSED MEETING

Room 1212, Choral Room

Monday 1200-1700

Board of Governors

CAVE CONSERVATION AND MANAGEMENT

Room 1144, Small Group Stage

Monday 1400-1700

Jim C. Werker
and Val Hildreth-Werker

1400 Case Study: Great Smoky Mountains National Park, Daniel C. Nolfi [Abstr: p. 26]

1430 Investigating the Role of Guided Show Cave Experiences in Karst Understanding, [Abstr: p. 26] Leslie A. North, Philip van Beynen

1500 Karst Groundwater Outreach and Education Efforts at Ling Shui Spring in Rural China, [Abstr: p. 26] Jason S. Polk, Leslie A. North, Guo Fang, Chris Groves

COMMUNICATION AND ELECTRONICS

Room 1222, Band Room

Monday 1400-1700

David Larson

1400 Sign-in and Discussion about Future of C&E section

1420 Cave Radio Tests at Carlsbad Caverns, [Abstr: p. 25] Bob Buecher

1440 Very High Power Radio Beacons, [Abstr: p. 25] Brian Pease

1500 Using Amateur Radio Underground, Paul Jorgenson

1520 BREAK

1530 Demonstration and Discussion of Total Station, Wired and Wireless Cave to Surface Communications.

VERTICAL MEETING AND SESSION

Room 2502

Monday 1400-1700

Dick Mitchell

GEOLOGY

Room 1203, Auditorium

Monday 1400-1700

Paul Burger

1400 About the Use of Thermal Cameras in Cave Micrometeorological Studies, [Abstr: p. 36] A. Pflitsch, C. Grebe, T. Stasch, J. Ringeis

1420 Electrical Resistivity Prospecting for Karstic Cavities in Resistivity-Adverse Conditions, [Abstr: p. 37] George Veni, Lewis Land

1440 Electrical Resistivity Tomography Surveys in an Alluviated Karst Valley in Southeast Kentucky, [Abstr: p. 33] Lee J. Florea, Chasity L. Stinson, Nicholas Lawhon, William D. Walden, Junfeng Zhu, Steven Webb

1500 BREAK and POSTERS

1520 Geochemical Characterization of the Redmond Creek Karst Aquifer, Southeast Kentucky, [Abstr: p. 32] Lee J. Florea, Nicholas Lawhon, Chasity L. Stinson, William D. Walden

1540 Storm Event Impacts on Epikarst Storage and Transport of Organic Soil Amendments in Kentucky, [Abstr: p. 37] Sean M. Vanderhoff, Jason S. Polk, Chris G. Groves, Benjamin Miller, Carl Bolster

1600 Models of Cave Development in 'Constrained' Stress Release Systems of Isolated Karst Ground Water Basins: Examples from Rockcastle and Jackson counties, Kentucky, [Abstr: p. 33] Howard Kalnitz

1620 The State of Karst Hydrogeology in the Volunteer State, [Abstr: p. 33] Sid Jones

1640 Ground Water Tracing in Smyrna, Tennessee, to Help Solve Sinkhole Flooding Problems and to Aid in Chemical Spill Response, [Abstr: p. 35] Albert Ogden

HOWDY PARTY

Glenwood Caverns

Monday 1600-0000

Bonnie Armstrong

While the party officially starts at 1800, the bottleneck of transportation up the mountain requires some folks to begin their transit as early as 1600. Keep an eye on the transit buses to make sure that each of them is full as it begins its journey to the base of the tram.

NEW MEMBER RECEPTION

Glenwood Caverns

Monday 1730-1830

Convention Committee

Note that you'll need to leave for the party at 1630 or so to ensure arrival by 1730 (since you're liable to be delayed at the tram base).

TUESDAY

**CAVE CONS/MGMT SPECIAL SESSION
for AGENCIES and CAVERS, Part I**

**Room 1144, Small Group Stage
Tuesday 0830-1700 Sandeno, Werker,
Hildreth-Werker, Gillespie**

This special session will combine formal paper presentations and informal, topic-focused discussions.

0830 Introduction/Cave and Karst Resources Overview, Cindy Sandeno, Val Hildreth-Werker

0900 Federal Cave Resources Protection Act of 1988
This important piece of legislation outlines the framework for managing caves on federal lands.

0930 Significant Cave Designation Process, Cindy Sandeno
Learn to identify and evaluate the significance of natural, cultural, and social values of various cave and karst systems.

1000 BREAK

1015 Cave Management

Tools such as gates, cave permits, decontamination, research permits, and outreach/education opportunities can be important to protect caves and their resources.

1100 Cave Conservation and Restoration Jim Werker, Val Hildreth-Werker

Field-proven techniques for cave restoration, speleothem repair, and low-impact conservation ethics.

1200 Lunch with Special Presentation

Orders for a delivered lunch will be taken in the morning session in the same room.

1200 Linking Cave Exploration and Documentation to Conservation and Poverty Reduction in Laos, [Abstr: p. 27] Terry Bolger

1300 Cave Management Plans

Learn to develop and implement specific strategies to protect, conserve, and restore cave and karst resources, in accordance with appropriate laws, policy, regulations and best management practices.

1330 Inventory and Monitoring

Cave inventory and monitoring are necessary tools for resource managers.

1400 Incorporating Photos and Surveys into a Cave and Karst GIS for Tongass National Forest, Southeast Alaska, Erin Lynch, Johanna Kovarik

1430 Temperature Dataloggers Reveal Patterns in Great Basin National Park Caves, [Abstr: p. 27] Gretchen M. Baker

1500 BREAK

1515 Restoration of Lower Passage at Timpanogos Cave National Monument, [Abstr: p. 27] Andy Armstrong

1545 Candlelight Cave: For Sale on eBay, Cami McKinney

1615 Walk to Surveying and Mapping Salon

1630 Surveying and Mapping Presentation and Salon, Colorado Cave Survey

Description of cave survey and cartographic processes.

CONGRESS OF GROTTOS

**Room 1203, Auditorium
Tuesday 0900-1200 Carol Jackson**

The Congress of Grottos is the annual meeting of the grottos, sections, regional associations, and surveys of the NSS and provides a voice for these Internal Organizations (IOs).

BIOLOGY

**Room 1222, Band Room
Tuesday 0900-1200 Megan Porter**

0900 Why? Heliomyzid Flies and Cricket ‘Marshmallows’: What We Know and Don’t Know, [Abstr: p. 24] K. H. Lavoie, M. Bukhari, K. Helf

0915 Strip Adaptive Cluster Sampling with Application to Cave Crickets (*adenoecus subterraneus*), [Abstr: p. 23] K. Helf, K. Lavoie, T. Philippi

0930 Distribution and Diversity of Vertebrate Species using Caves and Abandoned Mines as Habitat Resources, [Abstr: p. 25] T. R. Strong

0945 The Cave Fauna of Toledo District of Belize: A Preliminary Assessment, [Abstr: p. 25] S. J. Taylor, M. E. Slay, G. B. Hoese, J. K. Krejca, C. M. Slay, J. Jacoby

1000 Evidence for a Non-terrestrial Food Web Base in the Edwards Aquifer, Texas, [Abstr: p. 22] A. S. Engel, B. Hutchins, B. Schwartz, C. Gray, J. E. Birdwell

1015 The SYNCH-75 Index Concept for the Qualitative Assessment of Dissolved Organic Matter in Cave and Karst Waters, [Abstr: p. 22] K. Brannen, A. Engel, J. Birdwell

1030 BREAK

1045 Isolation and Analyses of Dissolved Organic Matter to Identify Microbial Processes in Karst Aquifers, [Abstr: p. 22] T. Brown, A. S. Engel, J. Birdwell

1100 Diversity of Sulfide Oxidation Pathways in Sulfidic Cave and Karst Spring Microbial Mats, [Abstr: p. 24] A. Paterson, B. Headd, A. S. Engel

1115 Evolutionary Insights Related to Carbon Metabolism from *Epsilonproteobacteria* at Glenwood Hot Springs, Colorado, [Abstr: p. 23] A. S. Engel, B. Headd, K. Rossmassler, B. Campbell

1130 Bacterial Participation in Calcite Precipitation in New Mexico Cave Pools, [Abstr: p. 23] K. J. Hughes, M. Moya, A. C. Clement, D. E. Northup

1145 Lava Cave Microbial Communities Within Mats and Secondary Mineral Deposits, [Abstr: p. 24] D. E. Northup, M. N. Spilde, J. J. M. Hathaway, M. G. Garcia, M. Moya, F. D. Stone, M. L. N. E. Dapkevicius, C. Riquelme

NATIONAL CAVE RESCUE COMMISSION

**Room 2502
Tuesday 0900-1200 Anmar Mirza**

This is the NCRC Board of Regional Coordinators annual summer business meeting. Visitors are welcome.

SPELEOPHILATELIC SOCIETY

**Room 2702
Tuesday 0900-1200 Larry Cohen**

SPELEAN HISTORY

Room 1212, Choral Room
Tuesday 0900-1200 Dean Snyder

This session presents papers on the study, interpretation, and dissemination of information about spelean history, which includes folklore, legends, and historical facts about commercial and wild caves throughout the world, and the people who are associated with them. The American Spelean History Association's annual Business Meeting will follow the session's presentations.

0900 Sulfur Galleries: The Historic Caves of Wyoming's Shoshone Canyon, [Abstr: p. 45] Richard Rhinehart

0925 Sauta Cave, Carlisle and Henderson, and the U. S. Supreme Court, [Abstr: p. 44] Charles Lundquist, Elinor Kates

0950 Which End is Up? Mysteries of Weasts/Fountain Cave, Augusta County, Virginia, [Abstr: p. 45] Jim McConkey

1015 The "Lost" Third Reel to Russell T. Neville's *In the Cellars of the World*, [Abstr: p. 45] Dean Snyder

1040 Photographer Ben Hains at Cave Hill, Augusta County, Virginia, Jim McConkey

1105 Investigations at Cheeks Stand Cave, Tennessee: History, Folklore, and Archaeology, [Abstr: p. 44] Joseph Douglas

The annual Business Meeting of the American Spelean History Association will follow the last presentation (including any late submissions that didn't make it into the *Program*).

SPELEOART WORKSHOP

Room 2601
Tuesday 0900-1700 Carolina Shrewsbury

\$5 fee for entire day.

Morning: Introduction to materials and other requirements to work underground sketching caves.

Afternoon: Trip to Glenwood Caverns to practice what was learned in the morning.

VERTICAL CONTEST AND REBELAY WORKSHOP

Room 1130, Auxiliary Gym
Tuesday 1000-1700 Bill and Miriam Cuddington

Note that the gymnasium is not air-conditioned. If the weather is running warm, climbers might wish to climb earlier in the day to avoid overheating.

SPELEOLYMPICS

Multiple
Tuesday 1000-1500 Rick Speaect

Earlier is generally less-hot weather. Look for signs to find the various venues.

SPELEAN HISTORY LUNCH

Room 1212, Choral Room
Tuesday 1200-1400 Dean Snyder

BIOLOGY LUNCH

Room 1222, Band Room
Tuesday 1230-1400 Megan Porter

FUTURE CONVENTION PLANNING

Room 1212, Choral Room
Tuesday 1400-1630 Carol Tiderman

NSS FINANCE FORUM

Room 2502
Tuesday 1400-1600 Debra Young

This is a chance to meet with the NSS Treasurer to ask any questions and learn more about NSS finances.

STEREO PHOTOGRAPH SLIDE SHOW

Room 1203, Auditorium
Tuesday 1400-1630 Peter Bosted and Norm Thompson

This session is devoted to 3D multi-media productions featuring caves and caving. Caves of Colorado and New Mexico will be featured in many of the shows. Artists will include Peter and Ann Bosted, Daniel Chailoux, David DeRoest, Michel Renda, and Norm Thompson. Shows will vary in length from 7 to 20 minutes, with a short break between each show. John Hart will be loaning his very high-quality HD projectors for this event, as well as providing a large 3D screen.

Glasses will be provided.

FELLOWS RECEPTION

Campground Tent
Tuesday 1700-1800 Convention Staff

All NSS fellows are invited to mingle and enjoy light drinks and snacks at the campground activity tent commencing 1700 on Tuesday.

GEOLOGY & HISTORY OF GLENWOOD CAVERNS

Glenwood Caverns
Tuesday 1800-2000 Harvey DuChene

On Tuesday, July 19, from 6 pm until 8 pm, there will be a special geology and history tour of Glenwood Cavern. Experts on history, regional and local geology, geochemistry, biology, and microbiology will be stationed throughout the cave to discuss their work and answer questions. The tour is limited to 40 participants. All participants must be at the General Store Gift Shop at the top of the Iron Mountain Tram by 6:00 PM. Fee: \$20.

NSS 70th ANNIVERSARY PARTY

Campground Tent
Tuesday 2030-0000 Paul Burger

WEDNESDAY**U. S. EXPLORATION**

Room 1203, Auditorium
Wednesday 0800-1200 Mike Frazier

0800 Sea Caves in Southeast Alaska on the Tongass National Forest, [Abstr: p. 47] Patricia Kambesis, Johanna L. Kovarik, Andrea Croskrey, Dave Bunnell, and Jim Baichtal

0845 2010 Adventures in Lechuguilla Cave, [Abstr: p. 46] John Lyles, Andy Armstrong

0930 BREAK

- 1000 Recent Lava Cave Exploration and Findings on Mauna Loa, Hawai'i, [Abstr: p. 47]** Dave Bunnell, Doug Medville, Steve Smith, Bob Richards, Ted Lappin
- 1115 The Discovery and Exploration of Wishing Well Cave in Highland County, Virginia, [Abstr: p. 48]** Phil Lucas, Mark A. Minton, Nathaniel C. Farrar

CAVE PHOTOGRAPHY WORKSHOP

**Glenwood Caverns
Wednesday 0830-1600
Peter Jones & John Woods**

Meet at the base of the Glenwood Caverns tramway at 0830 to commence this schedule:

- 830- 900 To Cave; Dress
- 900-1030 Classroom session in cave
- 1030-1200 Classroom outside cave
- 1200-1300 No host lunch at Caverns
- 1300-1600 Pictures inside cave

**CAVE CONS/MGMT SPECIAL SESSION
for AGENCIES and CAVERS, Part II**

**Room 1144, Small Group Stage
Wednesday 0900-1200
Sandeno, Werker, Hildreth-Werker, Gillespie**

This special session will combine formal paper presentations and informal, topic-focused discussions.

0900 Photo Inventory, Photo Documentation, Photomonitoring, Val Hildreth-Werker

Know the essential components and various applications for these common differing photographic tasks.

0930 Education Resources: Project Underground Intro, Carol Zokaites

An educational program to create and build responsible attitudes toward caves and karst systems.

1000 Cave and Karst Outreach: How to do your own PR, Diane Gillespie

Cave managers need tools to tell their stories.

1030 Partnerships & Agreements

Collaboration among cave and karst specialists and volunteers are vital for effective inventory, monitoring, and management of caves and systems.

1100 Cave Rescue Pre-planning at Wind and Jewel Caves, South Dakota, [Abstr: p. 28] Marc Ohms, Rene Ohms, Anmar Mirza, John Punches

1120 Cave Rescue Packs in Wind and Jewel Caves, South Dakota, [Abstr: p. 28] Marc Ohms, Rene Ohms

1140 Current Cave Management Projects at Jewel Cave National Monument, South Dakota, [Abstr: p. 28] Rene Ohms, Mike Wiles

1200 Session Wrap-up

HUMAN SCIENCES

**Room 1222, Band Room
Wednesday 0900-1030
Jennifer Neemann**

There are no formal presentations scheduled but discussions will cover studying and encouraging leadership and leadership mentorship/training within caving groups for safety reasons, studying and encouraging

the recruitment of younger cavers into formal caving groups, as well as other topics appropriate to this section brought by participants. All are welcome. The annual Human Sciences Section meeting and elections will follow the discussion.

SPELEOART WORKSHOP

**Room 2601
Wednesday 0900-1700
Carolina Shrewsbury**

Group study on collaborative creativity via hands-on construction. Fee: \$5.

MEDICAL

**Room 2502
Wednesday 1000-1200
Stephen Mosberg**

1000 Atmospheric Oxygen and Carbon Dioxide Levels in Caves: What is Normal? Preliminary Results, [Abstr: p. 41] Jessica Deli, Anmar Mirza

DISTINGUISHED LECTURE

**Room 1203, Auditorium
Wednesday 1300-1400
Geary Schindel**

1300 Hydrogeology of the Dinaric Karst – 40 Years of Research in the Classic Karst of the World, Petar Milanovic

VERTICAL SECTION BUSINESS MEETING

**Room 1222, Band Room
Wednesday 1300-1400
Dick Mitchell**

**CAVE CONS/MGMT SPECIAL SESSION
WNS: A WESTERN PERSPECTIVE**

**Room 1144, Small Group Stage
Wednesday 1300-1750
Carl R. Bern**

Since it was first identified in 2006, White Nose Syndrome (WNS) has had a devastating impact on bats in the eastern United States. Mortality rates in some hibernacula have approached 100%. The response and planning for the expected arrival of WNS in the western United States has been uneven and often controversial.

1300 Caver Relationships with Government Agencies: A Colorado Perspective, [Abstr: p. 28] Carl R. Bern

1310 Colorado Division of Wildlife Response Planning For White-Nose Syndrome, [Abstr: p. 29] Tina Jackson

1325 Monitoring Bats for White-Nose Syndrome in Colorado: On the Ground Efforts, [Abstr: p. 31] Dan Neubaum

1340 The Use of Abandoned Mines by Bats in Colorado: The Other Part of the WNS Issue, [Abstr: p. 30] Kirk W. Navo

1355 A Temperature-Based GIS Model Suggesting Risk for White-Nose Syndrome in the West, [Abstr: p. 30] Lara M. Juliusson

1410 Microclimate Conditions in Ft. Stanton Cave – A Hibernaculum for Townsend's Big-eared bat, [Abstr: p. 29] Debbie C. Buecher

1425 BREAK

1440 WNS Impact Evaluation for 2011 NSS Convention Caving Trips, [Abstr: p. 31] Phil Nyland

- 1455 BLM State Offices Respond Differently to WNS Threat**, [Abstr: p. 31] Marikay A. Ramsey
- 1510 Friends of the Cave?** [Abstr: p. 30] Michael McEachern
- 1525 The U. S. National Park Service Responds to White-Nose Syndrome in Bats**, [Abstr: p. 29] Kevin T. Castle
- 1540 Current Status of the Research and Management of Bat White-Nose Syndrome**, [Abstr: p. 29] Jeremy Coleman
- 1555 Eastern Lessons for Western Consideration**, [Abstr: p. 31] Peter D. Youngbaer
- 1615 Panel discussion**
 Kevin Castle – National Park Service
 Paul Cryan – U. S. Geological Survey
 Marikay Ramsey – Bureau of Land Mgmt, NM
 Elaine Rybak – U. S. Forest Service
 Peter Youngbaer – National Speleological Survey
 TBA – U. S. Fish and Wildlife Service

U. S. EXPLORATION

Room 1203, Auditorium
 Wednesday 1400-1730 Mike Frazier

- 1400 The Resurvey of an Alpine River Cave: P-Bar Cave, Bighorn Mountains, Wyoming**, [Abstr: p. 48] Benjamin Miller
- 1445 Exploration and Findings From a New Cave in Grand Canyon, Arizona**, [Abstr: p. 46] Jason Ballensky
- 1530 Gap Cave: Cumberland Gap National Historic Park, Virginia**, [Abstr: p. 48] Dave Socky, Mike Crockett
- 1600 BREAK**
- 1615 The Kipuka Kanohina Cave System, Ka'u District, Big Island, Hawai'i**, [Abstr: p. 47] Don Coons, Ric Elhard
- 1700 The Discovery and Ongoing Exploration of Arizona's Trout Cave**, [Abstr: p. 47] Tom Gilleland

CAVE DIVING

Room 2502
 Wednesday 1400-1600 Gene Melton

SPELEOAUCION

Room 1203, Auditorium
 Wednesday 1900-2200 Craig Hindman

Stuff of all sorts! Check it out and be ready to bid for the best gear.

CAMPGROUND PARTY

Campground Tent
 Wednesday 1900-0000 Convention Staff

Terminal Syphons, rock and blues; beverages of all sorts; merriment for all!

THURSDAY

PROJECT UNDERGROUND

Room 2403
 Thursday 0800-1200 Carol Zokaites

Learn about the development of karst topography and the impacts of human activity on the water resources in karst areas. Discuss public policy decisions relating

to watersheds and the unique karst environment. Learn about the unique biodiversity in karst systems. Participate in some activities geared to teach about karst in your classroom. Receive the Project Underground curriculum guide and many supporting resource materials, including great posters. Learn about topographic maps and how to delineate watersheds using these maps. Learn about these things and more. Registration required.

PSEUDOKARST SPECIAL SESSION

Room 1144, Small Group Stage
 Thursday 0900-1200 Susan Holler

- 0900 Caves in Rock Towns of Lookout and Pigeon Mountains, Georgia, USA**, [Abstr: p. 42] Brent T. Aulenbach
- 0920 Sandstone Caves of Lula Lake Land Trust, Lookout Mountain, Georgia, USA**, [Abstr: p. 43] Brent T. Aulenbach, Nancy H. Aulenbach
- 0940 Caves and Related Structures of Mammoth Hot Springs, Yellowstone National Park, Wyoming**, [Abstr: p. 43] William R. Halliday
- 1000 BREAK**
- 1020 Origin of Boulder and Talus Caves Based on Particle Physics and Clastic Sedimentology**, [Abstr: p. 43] Ernst Kastning
- 1040 Some Observations on Cave Development in Venezuela's Roraima Quartzites**, [Abstr: p. 43] Cato Holler, Jr.
- 1120 Piping Cave Pseudokarst in Western Colorado**, [Abstr: p. 44] Douglas Medville, Hazel Medville

FOURTEENTH ANNUAL CAVE CONSERVANCY ROUNDTABLE

Room 2702
 Thursday 0900-1100 John Wilson

This meeting is primarily an educational and networking session for people interested in cave management and cave conservancies. The impact of the recession and white nose syndrome on the functioning of cave conservancies will be the main topic discussed at the roundtable. A representative from each conservancy may make a short presentation relevant to the main topic or describe a success or failure that became a learning experience for the organization. Each conservancy speaker may also make a short presentation on cave management or cave conservancy administration. Total presentation time for each presenter is 10 minutes. A general discussion of cave conservancies will conclude the session.

A work session will follow the roundtable.

PHOTOGRAPHY

Room 1222, Band Room
 Thursday 0900-1200 Bob Stucklen

- 0900 Introduction & Announcements**, Bill Frantz
- 0905 3D Lechuguilla Cave Photography Exhibit**, [Abstr: p. 41] Gosia Kosior
- 0930 Flash Modification Devices**, [Abstr: p. 41] Kenneth Ingham

- 0945 **Hard and Soft Light for Speleothems and People** [Abstr: p. 41] Kenneth Ingham
- 1000 **Preparing Photos for Publication** [Abstr: p. 41] Art Palmer
- 1030 **BREAK**
- 1045 **3D Fuji W1 and W3 cameras**, [Abstr: p. 42] Peter Bosted
- 1105 **Comparison of Two Twin Lens Digital Cameras** [Abstr: p. 42] Dave Bunnell
- 1125 **Using the Flashwave 3 Radio Slave System** [Abstr: p. 42] Dave Bunnell
- 1135 **Working in LAB Color Space** Peter Jones

CONVENTION DEBRIEFING

Room 2502
Thursday 0900-1200 **Carol Tiderman**

SAFETY AND TECHNIQUES

Room 1212, Choral Room
Thursday 0900-1200 **Aaron Bird**

This session will discuss progress of the cave skills training project and to discuss close-calls and near misses in caving.

CARTOGRAPHY WORKSHOP

Glenwood Caverns
Thursday 0800-1300 **Kambesis & Kalnitz**

Set aside a day of Convention to sharpen your survey and/or Cartography skills! Join us to learn or brush up on your sketching and map-making skills. This will be a two part-workshop. For those interested in sketching, we will have a half day of sketching practise in a local cave. We will lay out a few survey shots and then go over the basics of how to sketch what you see around you, and how to sketch to scale. With our help you will produce an accurate sketch of the cave passage. Fee: \$20/Thursday.

The second half of the workshop (on Friday) we will teach basic computer cartography skills. This will include a demonstration on data reduction programs, and how to reduce your data to a line plot. We will look at some drawing programs, learn how to import sketches into them and who how to transform survey notes and sketches into a cave map. Bring your computer, loaded with a drawing program, and we will guide you through the first steps. Fee: \$20/Friday.

Time may keep us from going much further, but we will have complete course material available to those who bring a thumb drive.

SPELEOART WORKSHOP

Room 2601
Thursday 0900-1700 **Carolina Shrewsbury**

Continuation of collaborative creativity and hands-on construction. Fee: \$5.

VERTICAL WORKSHOP

Room 1130, Auxiliary Gym
Thursday 1100-1700 **Terry Clark**

This workshop is conducted at every NSS Convention. The students are given a basic overview of climbing

equipment, techniques, and safety considerations for American-style Single Rope Techniques. They experience hands-on sessions on knot tying, belaying, rappelling, and several ascending systems: the Gibbs and Mitchell ropewalkers, the Frog, and Prusik knot systems. The workshop is conducted by experienced instructors of the Vertical Section.

While not an alternative to a thorough training course, this intense workshop will give the novice climber a good exposure to different systems. The student can try different systems in a controlled environment, with ample opportunities to ask questions of the instructors, while actually performing the different techniques.

PHOTOGRAPHY LUNCH

Room 1222, Band Room
Thursday 1200-1400 **Bill Frantz**

FINE ARTS LUNCH

Room 2604
Thursday 1200-1400 **Paul Stewart**

CAVE WRITERS WORKSHOP

Room 2604
Thursday 1400-1700 **Michael Ray Taylor**

Have you considered writing a book about the discovery and exploration of your favorite project cave? Or even an article for your local newspaper on your grotto's conservation work?

Bring your ideas and manuscripts to a mini- workshop on writing cave-related stories for general audiences, taught by the author of *Cave Passages* and other popular caving books and articles. Despite the generally poor state of the publishing industry, great cave stories still manage to find and touch readers, if writers are willing to put in the required effort.

Topics covered will include: defining your audience, choosing story length and format, pitching ideas to periodicals, writing book proposals, writing and editing techniques, dealing with copyright issues, and the benefits and risks of electronic and self-publishing options.

This is a year-long writer's workshop crammed into one morning.

Since the class will be tailored to the needs of participants, those interested are encouraged to contact the workshop leader in advance of the convention to describe the sort of project they wish to pursue.

Michael Ray Taylor is a journalism professor with 25 years experience teaching writing, as well as the author of popular caving books and cave- related articles in *Audubon*, *Sports Illustrated*, the *Houston Chronicle* and many other publications.

DIGGING

Room 1144, Small Group Stage
Thursday 1400-1700 **Kathy Peerman**

This section will have their annual member's meeting then we will follow with reports/presentations of members and activities they may be involved with. There will

be a moment of silence for our past president: Bob Handley.

This year we will have a presentation on the the 50 ft. vertical shaft at Fort Stanton Cave in New Mexico where members of the Fort Stanton Cave Study Project hand dug the shaft, putting wooden shoring in to make the dig stable, then three years later the wood was taken out and a stainless steel and high density polyethylene permanent shaft support structure was put in. Come and see this amazing feat.

The section is open to anyone who would like to share his or her dig, and show us some new tools and/or techniques that they use.

NATIONAL CAVE AND KARST MANAGEMENT SYMPOSIUM PLANNING COMMITTEE

Room 1212, Choral Room
Thursday 1400-1700 Mike Warner

LIGHTNING TALKS

Room 1222, Band Room
Thursday 1400-1700 Jim Washington

Short-form talks and presentations. Bring your own five (or so) minute talk on any subject interesting to cavers. No preregistration required. Last-minute efforts encouraged. We will be set-up to handle Powerpoint from your USB flash drive if you have anything that needs projecting.

NATIONAL SPELEOLOGICAL FOUNDATION

Room 2702
Thursday 1400-1700 Roger McClure

NSS AWARDS COMMITTEE CLOSED MEETING

Room 2502
Thursday 1400-1600 Scott Fee

PHOTO SALON

Room 1203, Auditorium
Thursday 1600-1800 Cady Soukup & Ray Cole

Room 1203, Auditorium
Thursday 2000-2200 Cady Soukup & Ray Cole

The world-renowned NSS Photo Salon has two seatings this year. Be sure to get the proper ticket for the seating you wish! The Thursday evening Photo Salon will be held in in the 500-seat Glenwood Springs High School Auditorium (each attendee, of course, should attend just one session).

The first seating will be at 4:00 pm, the second seating at 8:00 pm. Cavers should choose (or trade for) a ticket that admits them to their preferred seating. Designate your preference on the website at least a week before the convention. Trade tickets with anyone or at the convention registration office prior to the Salon.

FRIDAY

OPEN BOARD OF GOVERNORS MEETING

Room 1212, Choral Room
Friday 0800-???? Board of Governors

SKETCH WORKSHOP

Computer Lab
Friday 0800-1300 Kambesis & Kalnitz

The second half of the cartography workshop (see Thursday's Cartography entry, above), we will teach basic computer cartography skills. This will include a demonstration on data reduction programs, and how to reduce your data to a line plot. We will look at some drawing programs, learn how to import sketches into them and who how to transform survey notes and sketches into a cave map. Bring your computer, loaded with a drawing program, and we will guide you through the first steps. Fee: \$20/Friday.

Time may keep us from going much further, but we will have complete course material available to those who bring a thumb drive.

INTERNATIONAL EXPLORATION

Room 1203, Auditorium
Friday 0900-1200 Mark Minton, Yvonne Droms

- 0900 Survey and Inventory of Caves near Ben's Bay on North Eleuthera, the Bahamas, [Abstr: p. 40] Lee Florea
0930 Reconnaissance for Caves in Curaçao, [Abstr: p. 39] Pat Kambesis
1000 The World's Longest River-Cave Traverse. Recent Developments in Sistema del Río Encantado, Puerto Rico, [Abstr: p. 40] Mark Minton
1030 BREAK
1045 Tham Khoun Xe of Khammouane Province, Lao People's Democratic Republic, [Abstr: p. 38] Dave Bunnell
1115 Reconnaissance of a Large River Cave in Northern Laos, [Abstr: p. 38] Terry Bolger
1145 Deep Ones in the Desert, Coahuila, Mexico, [Abstr: p. 40] Philip Rykwald

ARCHAEOLOGY

Room 1222, Band Room
Friday 0900-1200 Joe Douglas

- 0900 Welcome Joe Douglas
0905 Ancient Sticks in the Mud: The Prehistoric Exploration of Caney Hollow Cave, Tennessee, [Abstr: p. 21] Joseph C. Douglas
0925 Archaeology of the Kipuka Kanohina Cave System Hawaii Co., Hawaii, [Abstr: p. 21] Don Coons, Ric Elhard
1000 Descriptions and Chronologies of Three New Prehistoric Deep Cave Exploration Sites in Central Tennessee, [Abstr: p. 21] Joseph C. Douglas

CAVE BALLAD CRITIQUE

Room 2502
Friday 0900-1200 Barb amEnde

VIDEO CRITIQUE

Room 1144, Small Group Stage
Friday 0900-1200 Dave Socky

PHOTO & SLIDE SALON CRITIQUE
 Room 2403
 Friday 0900-1200 Cady Soukup, Ray Cole

PRINT and FINE ART SALONS CRITIQUE
 Room 2001, Media Center
 Friday 0900-1100 Carolina Shrewsbury,
 Brian Killingbeck, Kim Fleischmann

CARTOGRAPHY CRITIQUE
 Room 2220 Corridor
 Friday 0900-1200 Dave Bunnell

SPELEOLOGY FOR CAVERS
 Room 2702
 Friday 0900-1600 Steve Stokowski

Come learn the difference between strike and the dip, vadose and phreatic, and the birds and the bats. Bring home with you the geologic reason why there are two parallel passages in Sinnett's Big Room, the meaning to cavers of Bogli's mixing corrosion, and the difference between the lifestyles of *Riparia riparia* and *Pipistrellus subflavious*.

Experts in Speleology will lecture on Geology, Meteorology, Chemistry, Hydrology, Biology, and Paleontology. Registration is required. The course will go the full day, cost \$40, and includes extensive printed course notes and lunch.

INTERNATIONAL EXPLORATION
 Room 1203, Auditorium
 Friday 1345-1700 Mark Minton, Yvonne Droms

- 1345 **The Quintana Roo Speleological Survey: Recent Advances in Underwater Cave Exploration in Quintana Roo, Mexico, [Abstr: p. 38]** Jim Coke
- 1415 **Dry Cave Discoveries in Quintana Roo, Mexico, [Abstr: p. 40]** Peter Sprouse
- 1445 **Proyecto Sierra Mazateca, Oaxaca, Mexico, [Abstr: p. 37]** Tony Akers, Mike Frazier
- 1515 **BREAK**
- 1530 **Recent Exploration in the Qingkou Tiankeng Core Zone of the South China Karst World Heritage Site, [Abstr: p. 39]** Erin Lynch
- 1600 **Tongzi 2011 – China, [Abstr: p. 38]** Mike Futrell, Andrea Futrell, Hazel Barton
- 1630 **Hong Meigui Cave Exploration Society's 2010 Tianxing Expedition, Wulong, China, [Abstr: p. 39]** Johanna Kovarik

VERTICAL CONTEST AWARDS
 Room 1222, Band Room
 Friday 1400-1600 Bill and Miriam Cuddington

NSS 2011 BANQUET
 Campground Tent
 Friday 1800-0000 Gaylene Speaect

The final big event for the 2011 NSS Convention. Join us at the campground tent for food and friends. Awards ceremony after dinner!



Emi Crady

Gorgeous aspens in northern Colorado.