

Colorado Scientific Society

The objective of the Society is to promote the knowledge and understanding of Earth science, and its application to human needs



A Bad Day in the Field: Things To Do and Not To Do During a Field Emergency

By Emmett Evanoff,
University of Northern
Colorado,
and
Terry Hiester,
Wheat Ridge, Colorado

Note: this talk is co-sponsored by the Western Interior Paleontological Society (WIPS) (www.westernpaleo.org)

Emmett Evanoff hanging below a Blackhawk helicopter, July 31, 2009.

NOT at CSM!!

**
NOT Thursday or March!!

Monday, April 5, 2010

Denver Museum of Nature and Science, Ricketson Auditorium (Use after-hours entrance on west side of museum; see map on p. 2)

Social half-hour—6:30 p.m. Meeting time—7:00 p.m.

A Bad Day in the Field: Things To Do and *Not* To Do During a Field Emergency by

Emmett Evanoff, University of Northern Colorado, and Terry Hiester, Wheat Ridge, Colorado

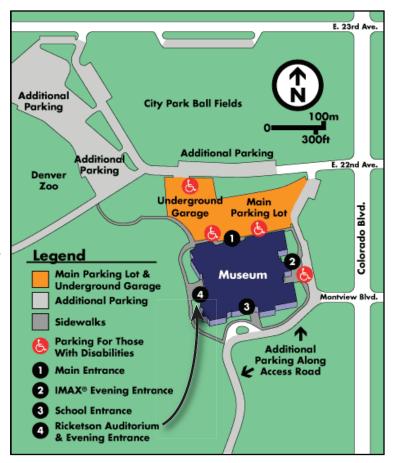
I was involved in a major accident in Badlands National Park, South Dakota, on the last day of the summer field season of 2009. While walking out of the field, I was on a narrow game trail above a steep badlands drainage when a gust of wind of over 60 miles per hour hit me on the side, picked me up, and I fell about 60 feet into the drainage. I ended up in a hole formed by a pipe, an underground drainage system that forms at the headwaters of gullies in the badlands. I incurred a broken left arm, several cracked left ribs, a cracked left lower pelvis, and several broken right ribs. I was not able to get out of the drainage unaided.

My field assistant, Terry Heister, helped me get to a stable position in the gully and then went for help. He returned two hours later with over 50 rescuers from Badlands National Park and three local search-and-rescue teams. Because of the steepness of the topography in the area, the rescuers decided to call in a helicopter from the South Dakota Army National Guard to pick me up and fly me the half mile to near where the Flight-For-Life helicopter was waiting. Five hours after the

accident, and only three hours after the rescue teams arrived, I was in the hospital at Rapid City, South Dakota. The efficiency of the rescue parties was quite remarkable, and the rescue was one of the most involved in the history of Badlands National Park.

My perspective on the accident and rescue was quite limited while it was happening, but during my recovery, I was able to learn about the details of what Terry experienced and what was the Park Services' role in the rescue. From this experience, Terry and I will give you our perspectives on not only what happened, but what you need to think about and do during an emergency. I will also give you the rescuers' perspective on what information they need and what you should do to help the professionals during a rescue in the field.

I extend my greatest appreciation to all those members of the Colorado Scientific Society who contacted me in the weeks following the accident. Your cards and e-mails of support gave me great comfort during the two weeks I was in the hospital at Rapid City and the month I was recovering at home. Thankfully, my recovery has been relatively swift, and this is in large part from the support from all the many people who contacted me. Thank you for your support!





An Evening with Warren Hamilton

Warren will give two talks at the Colorado School of Mines, Berthoud Hall, Room 241, on Wednesday, April 21.

- Talk 1: "Mechanism and 3-D circulation of plate tectonics."
- Talk 2: "Before plate tectonics--Earth's first 3.5 billion years."

President's Message from Scott Minor

Dear Society Members,



March 2010 President's Message

The gradually lengthening days and warming temperatures we have been experiencing lately are reminders that Spring is just around the corner. Just as these changes beckon us with the promise of blossoming flowers, green foliage, and balmy days, they also seem to be spurring Society committee members into action planning exciting and stimulating events for the year.

You probably noticed from the front page of the newsletter that the "March" meeting will actually be in early April at the Denver Museum of Nature and Science instead of our usual CSM venue. This is a result of the Program Committee's decision to join forces with the Western Interior Paleontological Society (WIPS) to co-sponsor CSS past-president Emmett Evanoff's talk about his "bad day in the field." Besides the opportunity to jointly learn about, and learn from, Emmett's harrowing field experience last year in the Dakota Badlands, I hope that the event will promote collegial engagement and interaction between CSS and WIPS members as well as increase public awareness of our organization. You also will not want to miss our "official" April meeting, which will be devoted entirely to scientist-extraordinaire Warren Hamilton, who will give back-to-back talks comparing and contrasting modern plate tectonics with the physical world in the Proterozoic. As a structural geologist I'm also excited about our May meeting and Spring field trip, both of which will focus on structural and tectonic aspects of the Front Range basement rocks. Rounding out our Spring activities will be Family Day in May (date TBA), this year taking place at the Denver Museum of Nature and Science and tentatively featuring a behind-the-scenes tour of the museum's paleontology labs led by Kirk Johnson, followed by a picnic/BBQ in adjacent City Park. Be sure to mark on your calendars the dates (listed elsewhere in this newsletter) of these exciting upcoming CSS events!

President-elect Lisa Fisher has put some extra time and energy into planning and organizing CSS participation in two additional events occurring later in the year. The first is "Colorado Day" on August 1st, which Lisa describes elsewhere in this newsletter. Secondly, CSS will be convening a session at the annual GSA Denver meeting in late October titled "The Colorado Scientific Society and 150 Years of Geologic Research in Colorado." Look for more information on this GSA session in an upcoming newsletter.

By the way, you may be wondering why some of our recent (and planned) meetings were (are) not on the traditional third Thursday of the month. Sorry for all the confusion! The scheduling of some meetings on Wednesday evenings has been required due to occasional scheduling conflicts for our regular meeting place on the CSM campus in Berthoud Hall as a result of student priorities. We have, and will continue to, try to schedule as many future meetings as possible on the usual third Thursday evening of the month. Having said that, please let me or Program chair Christine Turner know if you would prefer that our future regular monthly meetings be held on a different evening of the week and (or) week of the month.



Upcoming Events

May 20 (Thursday!!!) meeting and May 22 (Saturday) Spring field trip, both led by Jonathan Caine (USGS) and Zachary Wessel, CSU, and focusing on structure of the Front Range Proterozoic rocks (look for the field trip sign-up sheet in the April CSS newsletter).

Family Day at the **Denver Museum of Nature and Science** featuring a tour led by Kirk Johnson in early to mid-May (date TBA), followed by picnic in adjacent City Park (near Denver Zoo).

August 1 (Sunday), Colorado Day outreach event. (see page 4 for description)

Sept. meeting and following-weekend field trip to Aspen area (dates TBA) honoring the career accomplishments of past-president, **Bruce Bryant**, USGS.

Colorado Day 2010--Submitted by Lisa Fisher, CSS President-elect

On February 12, State Legislators Nancy Todd, Suzanne Williams, and State Treasurer Kerry Kennedy announced a special celebration of **Colorado Day, August 1, 2010**. All Colorado-based groups are being asked to plan activities to join in the celebration.

In honor of "Rocky Mountain High" being adopted as Colorado's State Song last year, the day will culminate in a John Denver tribute concert given by John Adams & Friends at Red Rocks, which will be held as a fundraiser for Children's Hospital. Adams has been performing John Denver music for over 30 years, and gives a wonderful rendition of Denver's music. (www.johnadamsmusic.com)

This special celebration came about through the efforts of my friend Willie Hoevers, bassist & percussionist for John Adams & Friends, who has been hard at work for more than 2 years to arrange this day.

Colorado Scientific Society is certainly an important Colorado group, and the CSS council agreed that we should take part in this Colorado Day, both because it is a worthy outreach program, and for better recognition as a respected Colorado institution.

With Red Rocks amphitheatre being right in our neighborhood AND in the middle of great geology, I suggested that CSS co-sponsor a geologic outreach activity for the public with Morrison Natural History Museum. Matt Mossbrucker (director MNHM) suggested that he could run a field trip around the Red Rocks-Morrison area. If large crowds will be heading to Red Rocks for the evening concert, we might attract some of them to come a little earlier for such an activity. Members who wish to volunteer to help with this plan or who have additional ideas for programs for Colorado Day are encouraged to speak up and help out!

The better the four-wheel drive, the farther off the road you'll be when you get stuck.

News from CSM Geology Museum—

by Beth Simmons, Ph.D.

Sue Ellen Hirshfeld and Beth Simmons are leading the crew to reorganize the CSM Geology Museum's fossil collection and redesign the fossil displays. Although the winter weather and new semester's teaching have cut down on the time we have spent in the collections room, now we can really work anytime because we have a new computer dedicated to the fossil database. A crew of volunteers comes in on the second Saturday of the month to go through the drawers, correct, edit, and then re-sort the fossils—then the data for each specimen has to be edited in the database. This is job security for volunteers and we are glad to have such talent as Sue and Beth working with the museum.

CALL FOR PAPERS/PROPOSALS

In 2011, the Mining History Association will meet on the campus of the University of Montana-West in Dillon, near the historic gold rush towns and districts of Bannack, Virginia City, and Alder Gulch. The MHA Program Committee invites proposals for papers, presentations and panels on any aspect of mining history in any era or location around the world. Related fields may include science and technology, law and governance, labor and social history, industrial archaeology, business history, preservation, reclamation, and environmental history. In celebration of the Idaho-Montana gold rush, 1860–1865, proposals on any mining-related aspect of that era are especially encouraged.

Each proposal should be submitted by e-mail, and contain an abstract of no more than 500 words, along with a brief c.v. that includes the address, phone number, and e-mail for each participant. The Program Committee assumes all listed individuals in a session proposal agree to participate. Deadline for submissions is December 1, 2010.

Proposals and inquiries should be sent by email directly to either of the following members of the Program Committee:

Ronald H. Limbaugh, limbaugh@mcn.org

William W. Culver, william.culver@plattsburgh.edu

Dear CSS Folks:

Me an my lady Elsie just returned from the wild west after a summer of prospectin' for good ol Bent Pick Minin' Company and thought you folks wud like ta hear bout our trip. They don't pay much, but they's a lotta fun to work for, an ol Elsie's gettin ta be a purt fair field geologist. Still can't drive that ol' truck worth a darn tho! Never know what's gonna happen!

We started out from Denvr in the usual early summer snow storm in the old Defender that left a trail of oil from Golden to about Green River before we had to pull over for the night. S'Ol Elsie and me went ourselves to dinner over at Ray's. They's got the best burgers in the state o' Utah! Course they got some good beer too. All that fancy microbrewn stuff. Fraid the news is still the same out there and ol Ray's still dead, like he's been for the past 30 years, so said the bartender! Not many prospectors aroundn Green River these days. Mostly them crazy river rat rafters with'n a buncha turists followin em round. Elsie says t me, right there in Ray's: "Ol Pard ya'll gotta quit starin' at them young gals like that er yer gonna blow them there iballs of yourn!" Well, I had to rent one o them fancy mo-tel rooms with runnin water and all that jes to make Ol Elsie happy after that! It was that or I had to sleep in the ol Defender with all that minin' quipment and dynomite. Fella cud get hurt a doin that! On the tuther hand, I fell down them motel steps and dang near busted a nee, so I limpin round these days, kinda hard on prospectin bizniz.

Well, we finally made it out ta those there hills and promptly encountered a nest o them Mojave sidewinders that weren't too happy bout my puttin up a discovery monument in the middle o their nest. So we decided we didn't need that claim after all and moved over a ways. I put y'all picture o one the snakes we adopted as a pet, in this here letter. I think he's cuzzin to the ones that rode home with us last year hangin off the bottom o' the Defender. We called him Floyd just like they did in that ol radio comedy skit bout the miners up from Central City them comedian fellers Hudson and Landry did.

Gold price dun gone through the roof and got me and Elsie all excited agin. We kept hopin one them big mining outfits wud come out n buy us out, but it ain't a happened yet. Sumthin mus be goin on cause fore the season was over we had dang claim jumpers on the property and we had to run em off with the local sheriff behind em. Ain't no tellin what them boys was a plannin! You just wait intillin we let um know we dun found that Lost Dutchman Mine out there, better stockpile those ole shotgun shells.

Found lots a new gold this year and we're gettin ready to mine. And, now, wudn't ya know them green folks dun gone and got all excited bout buildin themselfs solar cells out them tellurides. More excite bout that stuff than gold. We got sum o that for em too iffin they wan it. Now, dang it theys building sum dern windmill lookin thingys outin the valley. Shure otta have enuff wind to turn them things. The politicians round these parts got enuff hot air for everybody, jus like back in Washinton.

Well me an' Elsie gotta go and that's all fur now. Gotta go pack the Defender fur the next trip. That's all the news they is from the folks at Bent Pick Minin'. Hope y'all like the pichure o' old Floyd!

Y'all keep on a prospectin'

Pard 'n Elsie Chief Proprieters Bent Pick Minin' Company Bedrock, Colorado





A book worth reading: Many of you may be familiar with author Sarah Andrews, geologist, who has written a series of mystery novels that focus on the theme of forensic geology. Sarah's second-to-latest book, Dead Dry, (2007) is set in the Denver area, and is about declining aquifer levels in Douglas County, which (no surprise?) have led to a murder of a prominent geologist, no less. The protagonist, geologist Em Hansen, is trying to figure out whodunnit and prevent any additional murders, including hopefully her own. One real local geologist, Bob Raynolds, well known for his research and public presentations about declining Front Range aquifers, appears prominently in this book both as an acknowledged resource person and an actual character in the story.

Sarah Andrews has many links to Colorado in her background, including her B.A. in geology from Colorado College and an M.S. at CSU, as well as once having worked at the USGS in Denver on sedimentology with Edwin McKee. One often has the chance to meet Sarah at the GSA and other professional meetings in Denver or elsewhere, at their authors' booksigning events. "Dead Dry" is not her only novel set in Denver; you can read all about Sarah and her books at her website, http://www.sarahandrews.net/. Oh, and yes—her books are well written, exciting, and worth reading!—Pete Modreski



To pay your membership dues or donate to the Memorial Fund and Endowment Fund, go to: http://www.coloscisoc.org/membership/dues.html You can use "snail-mail" or PayPal. Thanks!!

Boy Scout Day at Dinosaur Ridge

Hello Scientists, Engineers, Educators and Others,

I invite you to help Boy Scouts earn their badges in Geology at Dinosaur Ridge on Saturday, May 1, 2010. We expect about 2,000 people to visit in the hopes of learning about geology. We need your assistance to make this day enjoyable for everyone. All day schedule is 9–3, half day schedules are 9–12:30 and 12:30–3. Please let me know if you will be available. The scouts need your support! Clare Marshall, dinodiscovery@dinoridge.org, 303.697.3466 ext. 15.

Dinosaur Ridge, 16831 W. Alameda Pkwy., Morrison, CO 80465

Now available online:

Abstract volume from the 2007 CSS Symposium honoring Thomas A. Steven, "The Volcanoes of Colorado." The PDF is available at: http://www.coloscisoc.org/symposium/special.html

EarthTrek—Calling Earth Scientists!

EarthTrek is a global citizen science program developed by the Geological Society of America (GSA) in partnership with organizations across America and around the world. We are seeking research projects that could use datacollection help from the general public. These projects need to have good scientific protocols that a layperson can follow using basic equipment and GPS. If you would like to see your research be part of EarthTrek (http://www.goearthtrek.com), contact GSA's Education & Outreach director, Gary Lewis (glewis@geosociety.org).

"The only function of economic forecasting is to make astrology look respectable."

—from the late Stanford economist Ezra Solomon



News from the DGMG show—Beth Simmons set up the CSS trifold advertisement and a showcase of CSS fossils from the CSM Geology Museum at the recent Denver Gem and Mineral Guild Show at Jefferson County Fairgrounds. Showgoers picked up many brochures, so maybe we'll see some new faces at meetings. Certain paleobotanists from the Denver

Museum REALLY liked the fossil leaves we displayed from the Green River Formation, and Florissant and the Gunnison coal measures.



Saturday, April 3, the Colorado School of Mines Geology Museum will hold a "Garage Sale" from 9 a.m. until 4 p.m. in the conference room across the hall from the Museum entrance, at 1310 Maple St. (southwest corner of 13th and Maple Streets), Golden, CO. "There will be a wide assortment of rocks and minerals by the flat, fossils, equipment, printed material, and miscellaneous items. Prices will drop by the hour." For further information please call 303-273-3815.





Newsletter items must be received by the 25th of each month.

Colorado Scientific Society's regular meetings are held the 3rd Thursday of the month at the Colorado School of Mines in Golden (unless otherwise advertised). Social time begins at 6:30 p.m. and talks start at 7:00 p.m. For more information, contact Scott Minor, at 303-236-0303, sminor@usgs.gov

Café Scientifique Wynkoop Brewery, evening science talks at 6:30. Free, except for beer. http://www.cafescicolorado.org

Colorado School of Mines, Van Tuyl Lectures —March 25, J. Frederick Sarg/ Kati Tanavsuu-Milkeviciene, Research Professor/Post-Doc, CSM, Dept. of Geology & Geological Engineering, TBA. April 1, Dr. Samuel B. Romberger, Emeritus Professor, CSM, Dept. of Geol. & Geol. Engr., TBA. Berthoud Hall room 241, 4–5 P.M. http://www.mines.edu/academic/geology

Denver Mining Club—March 22, Paul C. Jones, Treasurer, and Betty Gibbs, Executive Director, Mining & Metallurgical Society of America, "Minerals in a Green Society: Summary of an MMSA Symposium in Washington, D.C." March 29, David M. Abbott, Jr., Consulting Geologist, and Jim Reed, Necrosearch. "The Source of Isinglass Shades, Insulators, etc.: A Tour Through a Mica Factory." The DMC meets every Monday at the Littleton Country Buffet near Bowles and Wadsworth (8100 W. Crestline Ave., in the shopping center) 11:30–1:00. Purchase of lunch required. http://www.denverminingclub.org

Denver Museum of Nature and Science—"The Science Lounge," Entertainment, Science, and Cocktails. \$8 member, \$10 non-member, cash bar. For schedule see: http://www.dmns.org/sciencelounge

Denver Region Exploration Geologists' Society (DREGS) meets in the Mutual Consolidated Water Building, 12700 West 27th Avenue, Lakewood. Social 6:00-7:00 p.m. Presentation at 7:00 p.m. Meetings are normally scheduled for the first Monday of each month. For information contact Jim Piper, (303) 932-0137, or the website http://www.dregs.org

Denver Well Logging Society (DWLS) meets on the third Tuesday of each month, Sept. through May. Lunch and a technical talk at the Wynkoop Brewery begins at 11:30 a.m., 18th and Wynkoop Sts. in Denver. Call Sarah Voight at 720-946-1374 by prior Thursday for reservations. Web page: http://dwls.spwla.org

Lookout Mountain Nature Center and Preserve—Sat., Mar. 20, 9 a.m., "Rocks and Minerals": Enjoy an auto tour with Jack Reed, Emeritus Scientist at the U.S. Geological Survey (USGS), to see and learn about typical outcrops of sedimentary, volcanic, metamorphic and intrusive rocks in the local area. Discuss what we can learn from examining rocks in outcrops. Sun., Apr. 11, 1:30 p.m., "Colorado's Changing Climate": Join Robert Thompson and Laura Strickland from the USGS for a discussion on methods scientists use to unravel the history of climate changes in Colorado over the last 15,000 years and how these changes have affected ecosystems in the Colorado Mountains. Ages 13 to adult. These are free programs but registration is required. Please visit http://lmnc.jeffco.us to register.

Rocky Mountain SEPM —Mar. 30, Robert Amerman(1) with Michael H. Gardner(3), Eric P. Nelson(2), and Bruce Trudgill(2), (1) Noble Energy, Inc.,(2) Colorado School of Mines, Department of Geology and Geological Engineering, Golden, Colorado (3) Montana State University, Department of Earth Sciences, Bozeman, Montana, "Stratigraphy of a mass-transport dominated deepwater carbonate interval, Permian Cutoff Formation, west Texas." Reception at 11:30, lunch at noon, speaker at 12:30. Reservations: luncheons@rmssepm.org, or call Steve Stancel 720-929-6536, before noon of preceding Friday. \$20.00 lunch, \$3 talk only. Wynkoop Brewing Company, 1634 18th St., Denver. http://www.rmssepm.org/luncheons.shtml

Univ. of Colorado, Boulder, Geol. Sciences Colloquium—**March 31**, *Joel Blum, University Of Michigan, CIRES Visiting Fellow*, "From Quicksilver to Sushi: Teasing apart the mercury cycle using isotopes." **April 7**, *Brian Hynek, University of Colorado–Boulder*, "The scientific utility of meteorites and the Antarctic Search for Meteorites Program." **April 14**, *Gareth Funning, UC Riverside*, "InSAR in California." Weds., 4:00 p.m., Benson Earth Sci. Auditorium, Rm. 180. Refreshments at 3:30 p.m. on the 3rd floor. http://www.colorado.edu/geolsci/

2010 Lufkin Field Trips: Geology & Wildlife of the Black Hills, SD (July 22-25); Northwest Wyo. (Aug. 23-28); Denver to Durango, CO (Sept. 20-25); Southern Spain (Oct. 10-17); and Costa Rica (Nov. TBA). For more info, contact Dr. John Lufkin, 303-997-7365, email: lufk3@comcast.net.

Colorado Scientific Society P.O. Box 150495 Lakewood, CO 80215-0495

http://www.coloscisoc.org



OFFICERS

COUNCILORS

President: Scott Minor, USGS, 303-236-0303, sminor@usgs.gov President-Elect: Lisa Fisher, CSM, 303-478-9427 (c), lfisher@mines.edu Treasurer:

Lisa Fisher, CSM, 303-478-9427 (c), lfisher@mines.edu Secretary:

Past President: Don Sweetkind, USGS, 303-236-1828, dsweetkind@usgs.gov 2009-2012: Jim Burnell, CGS, 303-866-2611, jim.burnell@state.co.us

2007–2010: Jeremy McCreary 303–744–0907 jeremy@cliffshade.com Don Sweetkind, USGS, 303-236-1828, dsweetkind@usgs.gov 2008-2011: Lee Shropshire, UNC, 970-352-8778, leeshrop@comcast.net

2008-2011: Sue Ellen Hirschfeld, eqdoc@ix.netcom.com

COMMITTEE CHAIRPERSONS

Best Paper Award: Don Sweetkind, USGS, 303-236-1828, dsweetkind@usgs.gov

Database Manager: Emily Taylor, 303–236–8253, emtaylor@usgs.gov

Field Trips: Cal Ruleman, USGS, 303-236-7804, cruleman@usgs.gov; Karl Kellogg, kkellogg@usgs.gov

Graphics: Lisa Rukstales, USGS, 303-236-5547, lrukstales@usgs.gov

History: Beth Simmons, cloverknoll@comcast.net

volunteer needed!! Membership:

Memorial Funds: Don Sweetkind, USGS, 303-236-1828, dsweetkind@usgs.gov Newsletter Editor: Lisa Rukstales, USGS, 303-236-5547, lrukstales@usgs.gov Outreach: Sue Hirschfeld, 720–565–9302, eqdoc@ix.netcom.com Pillmore Fund: Lee Shropshire, UNC, 970-352-8778, leeshrop@comcast.net Christine Turner, USGS, 303-236-1561, cturner@usgs.gov Program: Publicity: Libby Prueher, 720-260-0350, lprueher@umich.edu Science Fair: Chuck Weisenberg, 303-238-8806, cweisnbrg@msn.com

Webmaster: Table Mountain Web Design, 303-278-2701, bwarden@tablemtn.com



** STOP! Do NOT recycle this until after the talk! Please help us with publicity by posting at least the front page of this Newsletter on a bulletin board. Thank you!