

# Colorado Scientific Society

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

## 2011 CSS Annual Student Night Competition



Pizza and  
drinks  
served at the  
break!



*Come support our next generation of scientists!!*

Thursday, October 20, 2011

Colorado School of Mines—Dept. of Geology and Geological Sciences

Berthoud Hall, Room 243, Golden, Colorado

**ROOM CHANGE!!**

Social half-hour – 6:00–7:00 p.m., Poster session viewing 6:30–7 p.m., Meeting time – 7:00 p.m.

## **2011 STUDENT NIGHT—PIZZA NIGHT!!— by Lisa Fisher**

Our Thursday, October 20 meeting will feature presentations by students from area universities. There is a competition for cash prizes, with approximately \$700 to be awarded among those chosen for presentations. We have received a record-breaking amount of abstracts, and there will be some very interesting talks!

Finalists in this competition are announced in this newsletter. Abstracts will be published online on our website. Our members have been pleasantly surprised when attending student night talks—these young scientists work hard, and present very interesting material. Several discussions, between and after these talks, turn into some great mentoring sessions, and everyone comes out the better for it.

This is an important part of the CSS mission—the encouragement and support of students and young professionals in our field. PLEASE come and let these students know that they are important to us. Attendance at this important function has been slowly dwindling over the past few years, but we know that members' interest in education has not lessened, so please make the extra effort to cheer these “youngsters” on, and participate in this learning process!

**\*\*As an added bonus, we will be providing our hungry students and audience with FREE pizza and drinks at the break. We look forward to seeing you there!**

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### **Colorado Scientific Society Annual Student Night Participants:**

(in alphabetical order)

1. Noble gas recharge temperatures and residence times of three aquifers in Libya  
Mohamed Al Faitouri, Colorado State University
2. A well-preserved sequence of high elevation Ice Age ecosystems: Can the Siegler Reservoir site be dated with Optically Stimulated Luminescence?  
Harrison Gray, Shannon Mahan, Jeff Pigati, Kirk Johnson, Ian Miller, University of Cincinnati
3. Tertiary cooling history of a northern Rio Grande Rift flank uplift, Central Colorado  
Rachel L. Landman, University of Colorado
4. Buoyancy sources in the western U.S.: Two case studies at different scales  
Will Levandowski, University of Colorado
5. Hydrodynamic fractionation of minerals and textures in submarine fans  
Jane Stammer, Colorado School of Mines
6. Receiver function imaging of mantle discontinuities beneath the Colorado Rockies from the CREST Project: Seismic evidence for upwelling mantle  
Zhu Zhang, Ken Dueker, and the CREST Group, University of Wyoming

### **Posters (to be viewed from 6:30–7:00, and during mid-evening break)**

1. New insights on the timing and extent of Cretaceous exhumation in the West Antarctic Rift system, from U-Pb and (U-Th)/He zircon analysis  
Ashley A. Contreras, Christine S. Siddoway, Peter W. Reiners, George E. Gehrels, Colorado College
2. Use of stereoscopic satellite imagery for 3D mapping of bedrock structure in West Antarctica: Examples from the Ford Ranges and Neofene volcanoes of Marie Byrd Land  
Eleanor Emery and Ashley Contreras, Colorado College
3. Structural controls on mineralization, Boseto Copper Deposits, northwest Botswana  
Wesley Hall, Eric Nelson, Murray Hitzman, Wallace G. MacKay, Colorado School of Mines

### **Alternate Speakers (in case of withdrawal of finalist speakers)**

1. Dating sub-20 micron zircons in a granulite-facies mafic dike from SW Montana: a new approach using automated mineralogy and in situ SIMS U-Pb geochronology  
Alexis K. Ault, Rebecca M. Flowers, Kevin H. Mahan, University of Colorado
2. Variability in CO<sub>2</sub> exchange in a topographically complex black spruce boreal forest  
Kathy Kelsey, Kimberly Wickland, Robert Striegl, Jason Neff, University of Colorado
3. Evidence for an ancient supercraton using detrital zircons from the Beartooth Mountains, MT  
Analisa C. Maier, Nicole L. Cates, Dustin Trail, Stephen J. Mojzsis, University of Colorado

### **Semi-Finalists:**

1. Log jamming: Quantifying the relationship between forest and streams in the Colorado Front Range  
Natalie Beckman and Ellen Wohl, Colorado State University
2. Deformational state of a Paleoproterozoic seafloor exhalative complex exposed at Pactola Dam, South Dakota Black Hills  
Peter Brice, Jeffrey K. Greenberg, Colorado School of Mines
3. The use of OpenStreetMap data for registering Night-time International Space Station Photographs  
Qing Liu, University of Denver, Department of Geography
4. Determining the change of pH in the under-sampled Southern Ocean  
Andrew R. Margolin, Nicole S. Lovenduski, Cortlandt Pierpont, University of Colorado
5. Colorado's large snow events' impact on tree ring growth and Dillon Reservoir  
Katrina Marzetta, University of Denver, Department of Geography
6. The influence of interface friction and W/H ratio on the violence of coal specimen failure—a comparison from a bump and non-bump prone mine  
Simon Heru Prasetyo, Colorado School of Mines
7. The impact of beetle-induced conifer death on stand-scale canopy snow interception  
Evan Pugh and Eric E. Small, University of Colorado

## President's Message from Lisa R. Fisher



Greetings to all! As fall sets in, only a few are still out in the field—myself included—although the break from the summer heat out there in the SW desert is welcome. Some of you, no doubt, attended GSA last week. Our President-elect, Pete Modreski, was there representing CSS for the Associated Societies Meeting.

Our September talk by Dr. Julien Riel-Salvatore, presenting new research on Neanderthal, was well attended with approximately 84 in attendance. The talk was certainly interesting and informative. I'm looking forward to following his research, and I suppose I will have to finally start networking and learn to follow his blog.

Those of you in attendance at our last meeting are no doubt aware that CSS is looking for a new meeting place. Availability of appropriate space is dropping, prices are rising, and the council is looking into new alternatives. Please bear with us as we try places. Our aim is to find a meeting room that meets our needs, will be available on a regular/monthly basis, and doesn't empty our bank account. Anyone wishing to serve on a search committee, please email me! (lisa.fisher@escalantemines.com)

Many thanks to Cal Ruleman, our Field Trip Chair, for arranging the Fall Field Trip to the Western San Juans on Sept 30–Oct 2. We look forward to a report and photos!

Our October 20 meeting is Student Night!! Several students will present their research, and compete for cash prizes. I urge our members to attend! I do believe that it is important for CSS members to show support for student research on this important night. Come for the talks, the students, and the PIZZA!



**The following USGS online publication was made available to the public on October 11, 2011:**

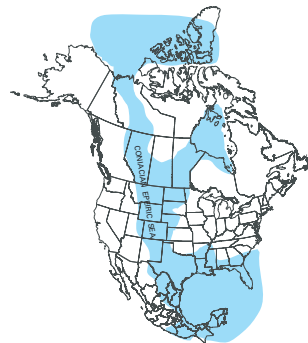
### **Scientific Investigations Map 3175: Biostratigraphic Data from Upper Cretaceous Formations—**

**Eastern Wyoming, Central Colorado, and Northeastern New Mexico,**

By E.A. Merewether, W.A. Cobban, and J.D. Obradovich

<http://pubs.usgs.gov/sim/3175/>

(This publication is online only.)



**Nov. 4–6, Denver Area Mineral Dealers Public Show**, Jefferson County Fairgrounds, 6th Ave. Frontage Rd. and Indiana St., Golden, CO. 10–5 Fri. & Sat., 11–4 Sun. Open to the public; eighteen dealers, free admission, free parking. For more information call 303-279-5504.

**Nov. 19, Littleton Gem and Mineral Club Annual Silent Auction**, Sat., Noon–5 p.m. at Columbine Hills Church, 9700 Old Coal Mine Avenue, Littleton. Set-up will begin at 11:30 a.m. with the auction beginning at 12:00 p.m. Non-members are asked to not bring more than 12 specimens to sell. The club

retains twenty (20) percent of the selling price. The verbal auction and a short business meeting will start at 12:30 p.m. There will be minerals, gems, jewelry, fossils, books and much more available for bidding at the silent auction. Food and drinks will be provided by the club and its members. For more information please email [info@littletongemandmineralclub.com](mailto:info@littletongemandmineralclub.com) or call (303) 840-1177.



**Dec. 9–11, Flatirons Mineral Club Show**, Boulder County Fairgrounds, Main Exhibits Building at Hover Road & Nelson Road, Longmont, CO; 10–6 Fri., 9–5 Sat., 10–5 Sun.; for more information see <http://bcn.boulder.co.us/community/fmc/>



## Historical Map Collection Now Online— Richard Huffine, Director, USGS Libraries Program

Nearly 90,000 high-resolution scans of the more than 200,000 historical USGS topographic maps, some dating as far back as 1884, are now available online from the USGS. The Historical Topographic Map Collection includes published U.S. topographic maps of all scales and editions, and are offered as a georeferenced digital download or as a printed copy from the USGS Store.

“I applaud your continuing effort to digitize the entire set of USGS quadrangle maps and we anxiously await the completion of the project. This effort is of great consequence for the research community” said Dr. John R. Hebert Chief, Geography and Map Division, Library of Congress. Not all of the historical collection resides in any one location or in any one catalog. In a partnership with the Library of Congress and other map depositories, the USGS will build a complete master catalog and provide access to maps that may be missing from any one collection.

Historical maps are an important national resource as they provide the long-term record and documentation of the natural, physical and cultural landscape. The history documented by this collection and the analysis of distribution and spatial patterns is invaluable throughout the sciences and non-science disciplines. Genealogists, historians, anthropologists, archeologists and others use this collection for research as well as for a framework on which a myriad of information can be presented in relation to the landscape. For more than 130 years, the USGS topographic mapping program has accurately portrayed the complex geography of our nation through maps using the lithographic printing process. The historical collection contains high resolution scanned images from the USGS legacy series and other sources.

Historical maps are available to the public at no cost in GeoPDF format or as a printed copy for \$15 plus a \$5 handling charge from the USGS Store. The electronic maps are georeferenced and can be used in conjunction with the new USGS digital topographic map, the US Topo.

The entire historical collection is being loaded into the USGS Store at a rapid pace. Check the website for continuous updates: <http://nationalmap.gov/historical>

The project is part of the USGS National Geospatial Program (NGP) continuing efforts to support the mapping and location-based data needs of the Nation.



### CALL FOR CSS VOLUNTEERS!

CSS, like most non-profit societies, runs on the time and energy of its volunteers. We have 5 officers (President, Past-President, President-Elect, Secretary, Treasurer) and 6 councilors, which make up the council. We also have chairs for several necessary functions, such as newsletter, field trips, outreach, and much much more—see the back of your newsletter for complete list of these very important people! They have all worked hard, and we greatly appreciate their efforts and everything they have accomplished. However, we have many important tasks to be done, and there just aren't enough of us to cover the needs of the society. We need your help! We can't do it without you!

Each year we have openings to fill for Officers, Councilors, and Chairs—plus volunteers—to make possible all of our efforts and activities. I am calling for volunteers and/or nominations for the following positions:

President-elect for 2012

Councilors for 3-year terms (we are losing 2 due to health considerations)

Volunteers and/or Chairs/Co-Chairs for projects with outreach, membership, mentoring, publicity, Web site remodel, Pillmore grants, program, activities, and more.



Get involved in your Society! Help us meet our goals. Contact Lisa Fisher for more info.



**Spring 2011 Glenwood Canyon Field Trip**, *photographs by Scott Minor*



What goes up....



...must come down.





## Earth Science Meetings and Talks

*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 Lisa Fisher, at 303-215-0480, [lisa.fisher@escalantemines.com](mailto:lisa.fisher@escalantemines.com)

**Café Scientifique<sup>2</sup> Mon., Oct. 24**, *Jeffrey Kieftl, Ph.D., and James DeGregori, Ph.D., University of Colorado Medical School, Aurora*, "Evolution 101 and Why it Matters." Meets at: Brooklyn's at the Pepsi Center, 901 Auraria Parkway, Denver, evening science talks 6:30–8 p.m. Arrive early to get a seat. Free, except for beer. <http://www.cafescolorado.org>

**Colorado School of Mines, Van Tuyl Lectures** Thursdays from 4–5 p.m. in Berthoud Hall room 241. **Oct. 27** *Norbert Maerz, Program Head Geological Engineering, University of Missouri-Rolla*, "TBA." **Nov. 3** *Kati Tanavsuu-Milkeviciene, Post-Doctoral Fellow, Dept. of Geology and Geological Engineering, CSM*, "Evolution, sequence stratigraphy, and organic richness of the Green River Formation Piceance Creek lake basin—Implications for the Eocene lake history, Colorado, Utah, and Wyoming." [http://geology.mines.edu/calendar/Van\\_Tuyl.html](http://geology.mines.edu/calendar/Van_Tuyl.html)

**Colorado State University, Dept of Geosciences**, Rm 320 Warner College of Natural Resources Bldg., Mondays, 4:00 pm. 970-491-5661. **Nov. 7** *Dr. Cal Ruleman, USGS*, "Tectonics and Geomorphic Evolution of the Rio Grande Rift." <http://warnercnr.colostate.edu/geo-training/>

**Denver Mining Club Oct. 24** *Allan Breitenbach, Principal Geotechnical Engineer, Ausenco Vector Engineering Inc.*, "Use of Geomembrane Liners in the Mining Industry." **Oct. 31** *Paul C. Jones, Sovereign Management Group and Lane White, NMHF&M Nominations Chair*, "National Mining Hall of Fame & Museum Tribute to Chuck Morris." 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 buffet lunch required. <http://www.denverminingclub.org>

### **Four Corners Geological Society October Field Trip: Paleocene Dinosaurs Of The San Juan Basin**

Trip Leader: Jim Fassett, Independent Research Geologist

Time/Date/Cost: 9:00 a.m., Saturday, October 29, 2011—FREE !!

Meet At: Parking area just west of the Farmington Inn & Suites (formerly the Best Western Hotel), 700 Scott Avenue, Farmington, NM, RSVP by Oct. 20 to Dave Johnson, 505-324-6169, [David.Johnson@conocophillips](mailto:David.Johnson@conocophillips)

This field trip will start at the Farmington Inn & Suites hotel. Our auto caravan will proceed west and up the Bisti road to the base of the Ojo Alamo Sandstone for our first stop and a discussion of the stratigraphy, geochronology, and dinosaur fossils of the Paleocene Ojo Alamo Sandstone in the San Juan Basin. We will then proceed south on the Bisti Hwy. (Hwy. 371) for about 45 miles where at stop 2 we will examine an altered volcanic ash bed in the lowermost Fruitland Formation with a  $40\text{Ar}/39\text{Ar}$  age of  $75.56 \pm 0.41$  Ma. From here we will proceed east on County Road 7500 for about 13 miles where we will park and walk about one-half mile into the Bisti De-na-zin Wilderness Area to see dinosaur bones weathering out of the Paleocene Ojo Alamo Sandstone. Our trip will end at this stop. A detailed road log will be provided to all participants at the beginning of the trip. Please bring a lunch, and wear sturdy hiking shoes for the hike at the last stop. Soft drinks and water provided by the FCGS. Contact Jim Fassett at [jimgeology@qwest.net](mailto:jimgeology@qwest.net) if you need more information about this field trip.

**Friends of Dinosaur Ridge Fri., Nov. 11, Rock Out For the Ridge!** Join the Friends of Dinosaur Ridge for their annual fundraiser, *Rock Out For the Ridge!* Starting at 7 p.m. at the Ship Rock Grille at the Red Rocks Visitor Center, with dinner, live music, a presentation about Mesozoic Crocodiles, a live auction and a silent auction, and awards presentations. \$75 per seat. Contact Clare Marshall at 303-697-3466 x105 or [dinodiscovery@dinoridge.org](mailto:dinodiscovery@dinoridge.org) for tickets or more information.

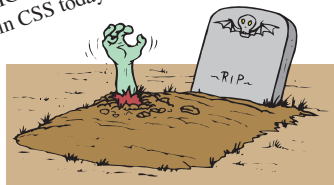
**Univ. of Colorado, Boulder, Geol. Sciences Colloquium Oct. 19** *Andy Freed, Purdue*, "Implications of Post-seismic Surface Displacements for the Nature of the Mantle and Earthquake Triggering." **Oct. 26** *Caspar Ammann, NCAR-Boulder*, "TBA." **Nov. 2** *Eric Kirby, Penn State*, "TBA." Weds., 4:00 p.m., Benson Earth Sci. Auditorium, Rm. 180. Refreshments at 3:30 p.m. on the 3rd floor. <http://www.colorado.edu/geolsci/>

**Western Interior Paleontological Society WIPS meets the first Monday of every month, Sept. to May, except for the December holiday auction that is held on a Saturday.** Doors open at 6:30 p.m., talk at 7 p.m., Ricketson Auditorium, Denver Museum of Nature & Science (all welcome, no admission charge). <http://www.westernpaleo.org/events.php>

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

<http://www.coloscisoc.org>

We DIG new members!  
Join CSS today!!!!



## OFFICERS

President:	Lisa Fisher, EMI, 303-215-0480 (w), <a href="mailto:lisa.fisher@escalantemines.com">lisa.fisher@escalantemines.com</a>	2008–2011: Lee Shropshire, UNC, 970–352–8778, <a href="mailto:leeshrop@comcast.net">leeshrop@comcast.net</a>
President-Elect:	Pete Modreski, USGS, 303-202-4766, <a href="mailto:pmodreski@usgs.gov">pmodreski@usgs.gov</a>	2008–2011: Sue Ellen Hirschfeld, <a href="mailto:eqdoc@ix.netcom.com">eqdoc@ix.netcom.com</a>
Treasurer:	Don Sweetkind, USGS, 303-236-1828, <a href="mailto:dsweetkind@usgs.gov">dsweetkind@usgs.gov</a>	2009–2012: Jim Burnell, CGS, 303–866–2611, <a href="mailto:jim.burnell@state.co.us">jim.burnell@state.co.us</a>
Secretary:	Libby Prueher, 720-260-0350, <a href="mailto:lprueher@umich.edu">lprueher@umich.edu</a>	2010–2013: Liz Pesce, CSM, <a href="mailto:epesce@mines.edu">epesce@mines.edu</a>
Past President:	Scott Minor, USGS, 303-236-0303, <a href="mailto:sminor@usgs.gov">sminor@usgs.gov</a>	2011–2013: Matt Sares, CDWR, 303–866–3581, <a href="mailto:matt.sares@state.co.us">matt.sares@state.co.us</a>
		2011–2013: Jeremy McCreary 303–744–0907 <a href="mailto:jeremy@cliffshade.com">jeremy@cliffshade.com</a>

## COUNCILORS

## COMMITTEE CHAIRPERSONS

Best Paper Award:	Scott Minor, USGS, 303–236–0303, <a href="mailto:sminor@usgs.gov">sminor@usgs.gov</a>
Database Manager:	Emily Taylor, USGS, 303–236–8253, <a href="mailto:emtaylor@usgs.gov">emtaylor@usgs.gov</a>
Field Trips:	Cal Ruleman, USGS, 303–236–7804, <a href="mailto:cruleman@usgs.gov">cruleman@usgs.gov</a>
Graphics:	Lisa Rukstales, USGS, 303–236–5547, <a href="mailto:lrukstales@usgs.gov">lrukstales@usgs.gov</a>
History:	Beth Simmons, <a href="mailto:cloverknoll@comcast.net">cloverknoll@comcast.net</a>
Hospitality:	Ben Harrison, 303-417-9633, <a href="mailto:benjh@earthlink.net">benjh@earthlink.net</a>
Membership/Mentor:	Mitchell Reese, 575-317-4864, <a href="mailto:mreese83@gmail.com">mreese83@gmail.com</a> ; Liz Pesce, CSM, <a href="mailto:epesce@mines.edu">epesce@mines.edu</a>
Memorial Funds:	Scott Minor, USGS, 303–236–0303, <a href="mailto:sminor@usgs.gov">sminor@usgs.gov</a>
Newsletter Editor:	Lisa Rukstales, USGS, 303–236–5547, <a href="mailto:lrukstales@usgs.gov">lrukstales@usgs.gov</a>
Outreach:	Sue Hirschfeld, 720–565–9302, <a href="mailto:eqdoc@ix.netcom.com">eqdoc@ix.netcom.com</a>
Pillmore Fund:	Lee Shropshire, UNC, 970–352–8778, <a href="mailto:leeshrop@comcast.net">leeshrop@comcast.net</a>
Program:	VOLUNTEERS NEEDED! CONTACT LISA FISHER FOR MORE INFO.!
Publicity:	
Science Fair:	Chuck Weisenberg, 303–238–8806, <a href="mailto:cweisnbrg@msn.com">cweisnbrg@msn.com</a>
Webmaster:	Table Mountain Web Design, 303-278-2701, <a href="mailto:bwarden@tablemntn.com">bwarden@tablemntn.com</a>



**\*\* 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!**