

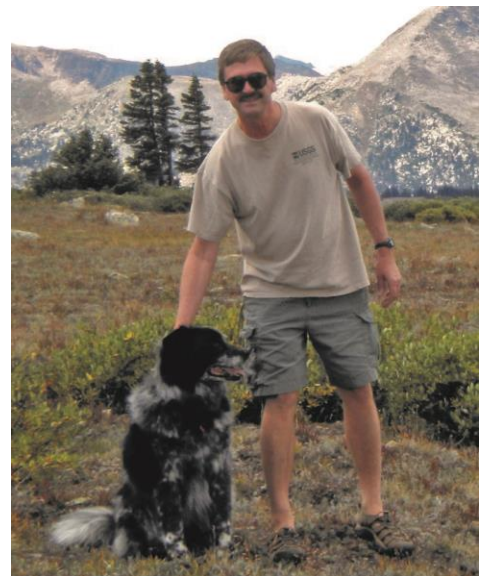


Colorado Scientific Society

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

***Thursday, December 18 meeting: 2014 CSS President's Address,
Annual Business Meeting, and Holiday Pot-luck Dinner
Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood***

***Program: Continental glaciation: some remarkable
impacts on the geomorphic and geologic record
by Scott Lundstrom, U.S. Geological Survey, 2014 CSS President***



***Holiday Pot-luck Dinner: Bring an appetizer, side dish, or dessert.
Main dish and beverages provided.***

Dinner time – 6:00 p.m.

Meeting time – 7:00 p.m.

(you are welcome to come early to help set up)



Continental glaciation: some remarkable impacts on the geomorphic and geologic record

Scott Lundstrom, U.S. Geological Survey

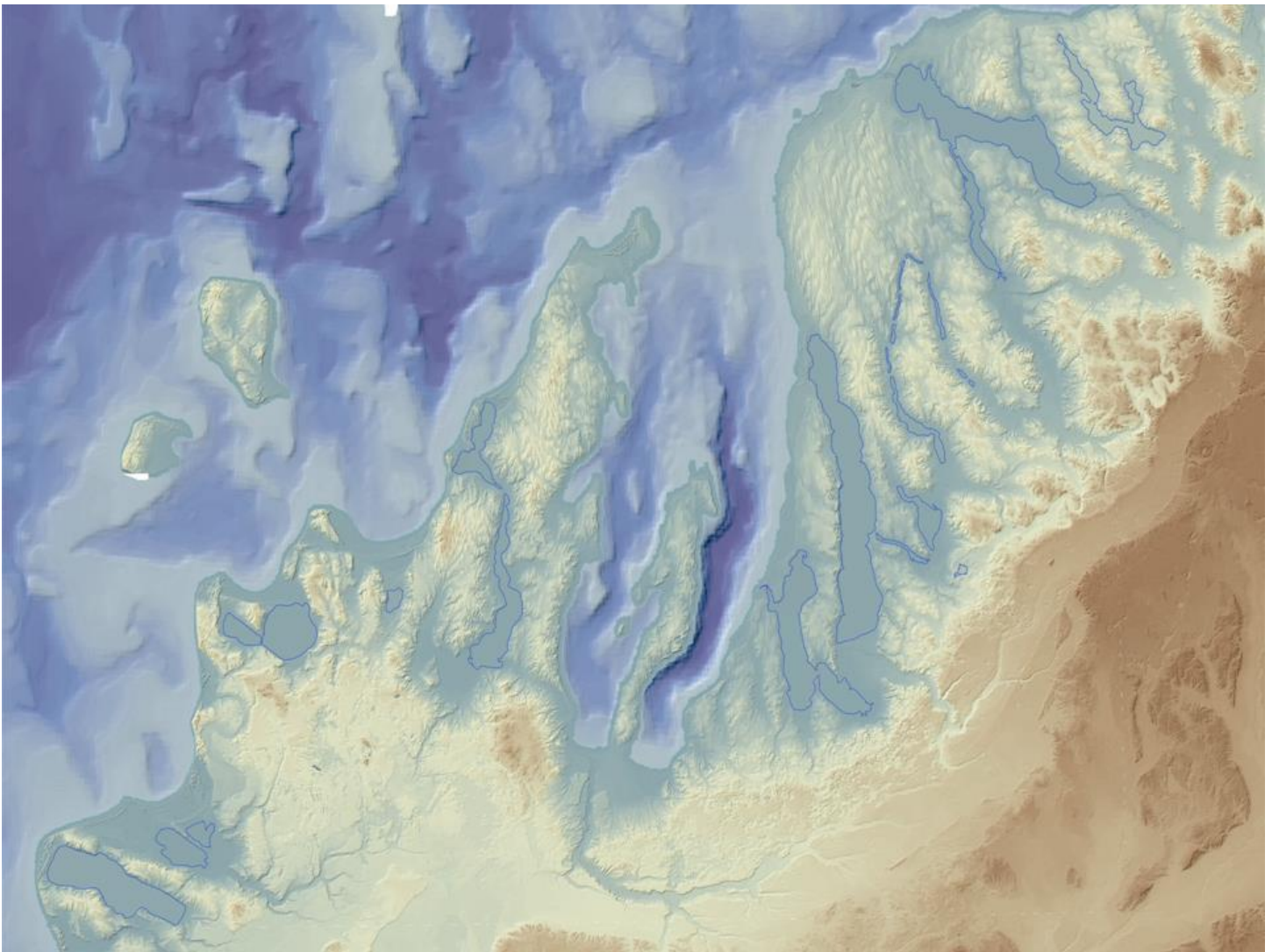
Glaciation has produced significant effects in the geologic record and has left a remarkable, extensive, and varied legacy on landscapes of North America and other glaciated regions. Largely since the mid-19th century, the geologic and geomorphic effects of Pleistocene ice ages have been readily recognized and extensively studied, but basic aspects of the glacial geologic record remain yet to be well-understood. Such aspects thus represent an important scientific frontier to the extent that improved understanding could potentially lead to better predictive capabilities. Major glacial intervals recognized in the Cenozoic, Paleozoic (Gondwanaland glaciations), Late Proterozoic (Cryogenian), and early Proterozoic (and possibly Archaean) are known to have profoundly affected sea-level (eustatic, isostatic, and other effects on the geoid), ocean chemistry, sequence stratigraphy, biologic evolution, paleoenvironments and mineral resources. In this address, I will discuss some enigmatic geomorphic and stratigraphic aspects of the late Pleistocene glacial geologic record from the Great Lakes and Great Plains regions.

Tunnel valley networks and subglacial flow-field bedforms, including drumlin/flute fields, form common and overlapping elements within landscape records of deglaciated Pleistocene ice sheets, yet the origins of these landforms and associated glacial geologic frameworks are not well understood. Analysis of geologic maps, subsurface framework, and surface morphology from North American glacial records show relations between forms and geology that (along with geophysics and continuity) constrain processes relevant to the subglacial origin of these features. For example, the morphologically concordant occurrence of bedrock-cored drumlins within drumlin fields provides evidence that subglacial erosional processes are necessary to their development. Aligned with similar orientations as bedrock-cored forms, drumlins and fluted forms with cores of unconsolidated sediment are a combination of erosional remnants of preexisting substrate (similar to bedrock cores) and later secondary accretionary mantle. Such a mantle is not essential to the drumlin form, but was accreted from debris-rich basal ice and/or advected subglacial sediment after the erosion of the swales that surround and created the core of the drumlins. In many areas, inter-drumlin networks of swales have a more deeply incised tunnel valley network superimposed upon them. Morphologic relations provide evidence that tunnel valley formation occurred during relatively late stages of glaciations and after drumlin formation. Drumlin form and dimensions generally do not vary in relation to proximity to tunnel valley margins, except for individual drumlins that adjoin and appear to be truncated at the margins of larger tunnel valleys. These relations indicate a transformation of erosional subglacial hydraulic conditions from a partially but not entirely distributed system (possibly linked cavity; but not sheetflow) to a more channelized regime of the tunnel valley network. Such relations are common within large areas beneath the southern sector of the Laurentide ice sheet, especially within the Great Lakes region, and exemplified by the glaciated landscape of the Grand Traverse Bay region, Michigan.

Along the glaciated areas and margins of the Great Plains, we have morphologically contrasting records produced during late Pleistocene timing that overlaps that of the Great Lake region. One notable example is that of the latest Pleistocene record of the James lobe of South Dakota. Here, the late Pleistocene Laurentide ice sheet advanced southward across eastern South Dakota to within 6 km of its maximum Wisconsin extent along the modern Missouri River valley. This significant glacial advance occurred during latest Pleistocene time of the latter part of the Bølling/Allerød interstadial warm period. Maximum ages on the southward advance of at least 160 km are on 14C dates (12,880 – 12,050 14C yrs BP; ~14.5 ka cal) on wood that was deeply buried (up to 58 m) by late Wisconsin glacial deposits (mainly till). These dates are from 12 sites in 10 counties, and are consistent with paleoecologic studies that indicate that spruce parkland occupied the region that was partially

overridden by the glacial advance. Close minimum ages on the glacial advance are provided by $^{230}\text{Th}/\text{U}$ dates ranging from 13.02 ± 0.23 to 10.48 ± 0.57 on travertine laminae of groundwater discharge deposits that overlie the glacial deposits; as well as ages on younger Laurentide moraines of readvances to positions 300 km to the northeast and that preceded Lake Agassiz. Consistent with geochronology, loess cover is largely absent to very thin on till surfaces in the James River lowland except for areas near postglacial sources such as the Missouri River valley. The sparsity of loess contrasts with thick loess mantles in adjacent glaciated areas of southeastmost SD, eastern Nebraska, and northwest Iowa. The ^{14}C dates span the Bølling time interval that ice core records show was markedly warmer than preceding glacial conditions. Thus, the late Wisconsin readvance of the James lobe, and similarly timing of readvances of the Des Moines and Lake Michigan lobes, may be complex dynamic responses of the Laurentide ice sheet to climatic warming, and increased meltwater production.

Though located outside of the footprint of the Laurentide ice sheet, the nonglaciated river systems of the Great Plains have been markedly influenced by continental glaciation through controls on base level, as exemplified by the late Quaternary geomorphic history of the Niobrara River.



(Instant geo map quiz! Can you recognize the area depicted in this physiographic and bathymetric map? If not—you may be able to pick up the answer from Scott's abstract, or, wait until you hear his talk and all will be explained!)

Outgoing President's message

As we enter the last month of 2014, my term as CSS President is nearly done. -:) ! 2014 has been another very good year for our Society's showcase activities: excellent geoscience presentations and discussions at its monthly meetings; and excellent, well-run geological field trips. I would like to express my sincere Thanks! to each and all of the people who made and make these wonderful activities happen:

- Each of our speakers who generously volunteered their substantial effort and time to make presentations and share their expertise. We had a great variety of topics (not unusual for CSS) representing state of the science work (ditto) in glaciology (Pfeffer, Emmons Lecture); geochronology and isotope geochemistry applied to paleo-hydrogeology (Paces); flood hydrology (Pitlick); the temporal frontier of North American Paleo-anthropology (the Holens); exploring evidence for historic surveys across the Great Divide (Modreski); and to document key paleontologic sites, stratigraphy, and geomorphic change (Evanoff); and global telluride mineralization (Geller). Our speakers hailed from CU, CSM, UNC, USGS, and the Center for American Paleolithic Research. In addition, our five Student Night speakers represented the next generation of active research in environmental and engineering geology, flood hazards, hydrochemistry, and economic geology. Regions featured included the American West, Great Plains, Greenland, and global considerations. Please refer to our website and newsletter archive for details on the titles, authors and abstracts of these presentations.
- Our outgoing Newsletter Editor Linda Barton Cronoble, who dedicated her talent and time in the early part of each month to produce each of the wonderful pdf editions you have received during 2013 and 2014.
- Our incoming Newsletter Editor Pete Modreski has taken on this key job in his characteristically generous way for CSS. Throughout 2014 and previous year, Pete has done so much for CSS including: leading great field trips; as our active liaison to our very pleasant and practical meeting venue and setting of Shepard of the Hills Church; Councilor: 2012 president; more than occasional refreshments (also very much Thanks! to his wife Jane Dianich) and much more.
- Don Sweetkind, our Treasurer for many years, does much in his fiscal duties to process the dues income, pay our many bills necessary to all of our CSS activities and manage our Memorial Funds to support Grants for grad-level geoscience research. Don is also generously taking on management of our member database in 2015. As a colleague a few doors away, Don has been a valued advisor when asked about CSS matters.
- Lisa Fisher, our Secretary for many years, produces timely notes of our Council discussions, but moreover, she is a great resource of ideas and interest for most Society activities. She and Pete organized our Past Presidents dinner at White Fence Farm; and Lisa and Tom Fisher brought two beautifully decorated cakes for CSS. We also had the great unplanned pleasure there of meeting Barb Tweto, daughter of Ogden Tweto.
- Matt Sares, our most recent Past President, lead the committee (with Lisa and Pete) to evaluate and award proposals for 2014 Memorial Fund Grants.
- Paul Morgan, our 2015 President, made time within his very full CGS work and fieldwork schedule for our most recent Council meeting largely about the continuity of CSS activities into 2015.
- Our Councilors: Celia, Peter, Marieke, Liz, Pete, and Becky (and 2010 President Scott Minor) are not only active and helpful in Council discussion, but have also contributed in various other ways as Presenters, Field Trip leaders, Student Night Organizers, Refreshment contributors and more.
- Our Webmaster Barb Warden expeditiously updated our present website when each edition of the newsletter was made available; AND she is creating a great new website structure and functionality with the leadership of Don Sweetkind and Scott Minor.
- Cal Ruleman has done a great job again this year as Field Trip Chair to organize great trips with the Field trip Leaders – Marieke Dechesne and Jim Cole for our 2-day spring trip to North and Middle Park; and Sue Hirshfeld, Rich Madole and others for our Fall Trip to Boulder flood geomorphology.
- Lisa Rukstales has contributed to our publicity this year with her graphical expertise, just as she has done so much for CSS through many previous years.

- Jack Krajewski has graciously volunteered to organize and bring refreshments to some of our meetings, as he and Jane did to our last meeting. (It also needs to be noted that on our budget, refreshment costs need to be covered by donations to a bucket/kitty from those enjoying them in the future.)

All of these people have made my job this year that much easier, including my arranging and running the program for our meetings. It does amount to a large amount of volunteered time, both individually and collectively. So what keeps us going? It is the entire active membership – active through attendance and participation in meetings and field trips, through all of the above work, and through paying dues and donating other contributions. (I don't know how much longer we can continue this level of activity on \$20/year dues.) In attending to meeting necessities, I have not been able to talk individually to each person there, though I would have liked to. But each encounter that way has been a pleasure and part of what makes the meetings enjoyable, in addition to learning about new areas of scientific research. I hope the active membership grows and continues to support our next President Paul Morgan and all of the officers, councilors and chairpersons of 2015. During our last Council meeting in November, a Program Committee was created – I wish them well in that substantial and important job. With that, but especially based on you all, I am optimistic that 2015 will be another good year for CSS. I hope to see you at the business meeting and potluck. Best wishes to each of you in 2015.

--- Scott Lundstrom



***Where is this Rock?
by Pete Modreski --
November***

Our November “Where is This Rock” showed two pictures; no guesses were received. They are stone posts lining the circle drive at the parking area at Genesee Park, located off I-70 exit 254. The posts are made of two types of stone; a coarse, pink, porphyritic granite, probably Pikes Peak Granite (left photo), and, adding a nice extrusive contrast, the Wall Mountain Tuff (a.k.a. “Castle Rock Rhyolite”; right photo— here’s a closer view than the one in our last newsletter). Genesee Park was Denver’s first Mountain Park (acquired 1912, with additions in 1937 and 2006) and the largest, at 2413 acres. “Genesee is reported to be a Native American term for “shining valley.” Cut by I-70, the Park is in two parts. To the south of I-70, Genesee Mountain offers a 360-degree view from its 8,284-foot summit, with Mount Vernon Canyon below. Bald Mountain, at 7,988 feet, is a prominent point on the north side of the park. On the north, the Park reaches all the way to Clear Creek Canyon, with its lowest elevation of 6,280 feet at the bottom.” (<http://mountainparkshistory.org/Parks/genesee.html>)

December’s Where is this Rock, you will find on the following page (keep reading!).



Where is this Rock?

For December we have a guest contributor; this picture is from Jim Cole of the USGS. It, clearly, also depicts an artificially-constructed rock structure. If you think you know what or where it is, please send your guess to pmodeski@usgs.gov, or you may write to Jim at jimcole@usgs.gov. For the answer that will appear in our next newsletter, Jim promises to tell us the “rest of the story” concerning the complete background and history behind this picture.



Hope to see you at...

*Our Annual Meeting,
President's Address, and
Holiday Potluck Dinner!*

Please come! All welcome!

December 18, 2014, 6:00 pm





Colorado Scientific Society

The CSS Past Presidents' Best Paper Award

Since 1997, the Society has presented an annual award for the Best Paper of the Year given at Society meetings (excluding the annual Emmons Lecture, student presentations, and Presidential Address). The award is presented at the Society's Annual Meeting in December.

Our awardees for 2014 are
Steven & Kathleen Holen
of the
Center for American Paleolithic
Research,
for their paper given at the April
2014 CSS meeting:
"The Mid-Wisconsin Human
Colonization of North



The awardees' names are inscribed and memorialized on a special plaque containing all the historical awardees, which they can keep and display proudly until the next year's meeting.

*– Matt Sares, 2014 Past President
Chair, Best Paper Award Committee*

I-70 “Point of Geologic Interest” Signs Badly in Need of Repair

In July, 2014 an article in the Denver Post’s “Your Hub” described the sad condition of the interpretive geologic signs along the walking trail at the I-70 roadcut, “Point of Geologic Interest”. Here’s the link to the article, “Dinosaur Ridge trails near Morrison showing signs of vandals, neglect”

http://www.denverpost.com/portal/golden/ci_26194768/dinosaur-ridge-trails-near-morrison-showing-signs-vandals?_loopback=1

I visited the roadcut in October—the trail and signs are on the north side of the cut—and indeed, several (not all) of the signs are in terrible shape. There are 13 signs, and the first three are defaced with paint as well as having holes smashed in two of them, so that they are almost illegible. A 4th sign is somewhat damaged (possibly from equipment that plowed dirt/rocks off the path) but readable. The remaining 9 signs are basically in good condition; the vandalism is confined to the four closest to the parking area.

The signs were originally created and installed by the Colorado Scientific Society, in cooperation with other institutions. Sign #2 (see picture below, on left) says this, to the extent that it’s readable:

“... _____ Scientific Society, ... _____ Geological Survey... and the Colorado School _____”

The Hub article showed a picture of how considerable mud and rocks had washed or fallen down on to the trail, making it difficult to walk. This has actually been remedied; it appears to have been plowed/scraped recently, and the trail has basically been cleared of the mud that had been covering the walkway.

I invite you all to stop and take a look at the roadcut and signs, and to let one or more of the Sci Soc officers know if you support our doing something, and are interested in helping to organize a project to replace/repair the signs. This is going to be discussed by the CSS Council, and we will see about enlisting other appropriate organizations (CDOT; Friends of Dinosaur Ridge; Rocky Mountain Association of Geologists; others?) to help replace the signs. ---- Pete Modreski



Example of one of the undamaged signs.



Calendar of Coming Events

Steps in Stone: Walking Through Time, a new exhibition at the University of Colorado Museum of Natural History, CU campus, Boulder, features fossil tracks and trackways from the museum collections. Interactive exhibits invite children and adults alike to explore how animals, from insects to dinosaurs, moved across the earth, how their tracks became fossils, and how we study tracks to learn more about ancient landscapes and animals. The exhibit features never before exhibited trackway fossils from the collection of paleontologist Martin Lockley. Open 9-5 weekdays, 9-4 Saturdays, 10-4 Sundays; closed on university holidays. See <http://cumuseum.colorado.edu/>.

Brilliant: Cartier in the 20th Century is a special exhibition at the Denver Art Museum, November 16, 2014 – March 15, 2015. “The DAM will host the world-exclusive exhibition of Brilliant: Cartier in the 20th Century, featuring stunning jewelry, timepieces, and precious objects created between 1900 and 1975. This exhibition highlights Cartier’s rise to preeminence—and the historical events pushing the brand’s evolution—as it transformed itself into one of the world’s most prestigious names in jewelry and luxurious accessories. Organized by the DAM, the exhibition will be on view in the Anschutz and Martin and McCormick galleries on level two of the Hamilton Building. See: <http://www.denverartmuseum.org/exhibitions/brilliant-cartier-20th-century>

The **Van Tuyl lecture series** (Colorado School of Mines), **University of Colorado Geological Sciences Colloquium**, and **CSU Department of Geosciences Seminar** have all concluded for the Fall term. See their respective websites for the schedule when they resume in January: http://inside.mines.edu/GE_Lecture-Series, <http://www.colorado.edu/geolsci/colloquium.htm>, and <http://warnercnr.colostate.edu/geo-news-and-events/departments-seminars>.

Wed., Dec. 10, 4:00 p.m., A relic of late accretion in highly siderophile element abundance trends from Eoarchean komatiite protoliths, by Steve Mojzsis, CU-Boulder; Benson Earth Sciences Building 180. Last seminar for the Fall term. (*This seminar has already taken place as you read this, but, email pmodreski@usgs.gov and he’ll send you a copy of the abstract.*)

Fri.-Sat.-Sun., Dec. 12-14, Flatirons Gem and Mineral Show, sponsored by the Flatirons Gem and Mineral Club, Boulder; held at Boulder County Fairgrounds, Exhibit Building, 9595 Nelson Rd. (Nelson & Hover), Longmont, CO. Combined with the Boulder Model Railroad Show on Sat. and Sun. Open 10-5 each day; admission \$5 adults, age 12 and under free. For more info see <http://bcn.boulder.co.us/community/fmc/fmcshow.htm>

Sat., Dec. 13, 5:30-9:30 p.m., Annual Holiday Silent Auction and Potluck Dinner of the Western Interior Paleontology Society (WIPS), at Lutheran Church of the Master, 14099 West Jewell Ave., Lakewood. All interested in paleontology are welcome to attend; “a major fundraising event for WIPS’ scholarships and grants program”. For more information see the WIPS website, <http://www.westernpaleo.org/>.

Wed., Dec. 17, 3:00 p.m., DMNS Seminar Series, VIP Room, "On the trail of Colorado's newest, oldest sedimentary rock formation: Eluded at every turn by the Tava sandstone", Christine Siddoway (Colorado College). See <http://sites.coloradocollege.edu/csiddoway/> for background info on the speaker, and <http://news.sciencemag.org/earth/2014/09/strange-formation-colorado-rockiessheds-light-earths-past> for a news story about this interesting research topic—the “sandstone dikes” of the Ute Pass region, now interpreted as being of late Proterozoic age, and possibly deposited beneath an ice sheet. Enter the museum through the staff/security door; no museum admission charge to attend this seminar in the VIP Room. A schedule will soon be posted on the DMNS website for the Spring 2015 DMNS Seminar Series.

Thurs., Dec. 18, 7:00 p.m., **Colorado Scientific Society**, monthly and annual meeting, holiday potluck dinner (starting at 6:00 p.m.) and Presidential Address by 2014 President Dr. Scott Lundstrom, USGS, “Continental glaciation: some remarkable impacts on the geomorphic and geologic record”, Shepherd of the Hills Church, 11500 W. 20th Ave. (20th Ave., just east of Simms St.), Lakewood; all are welcome.

Tues., Jan. 6, 10:30-11:30 a.m., the biweekly USGS Rocky Mountain Science Seminar Series begins for 2015. First seminar: **Paleotopography: From tectonics to the evolution of landscapes and life**, by Andreas Mulch, Stanford and Univ. of Frankfurt. Building 25 lecture hall (use east entrance E-14), Denver Federal Center, Lakewood CO. Next seminar: Jan. 20, **Megatsunami triggered by giant flank collapse of Fogo volcano, Cape Verde archipelago**, by Ricardo Ramalho, Lamont-Doherty Columbia Univ. See following in this newsletter for the complete USGS Seminar schedule for winter-spring 2015.

Thurs., Jan. 8, 7:30 p.m., monthly meeting of the Colorado Chapter, Friends of Mineralogy; **Mining and collecting amethyst at the Blue Point mine, Pearl, Ontario, Canada**, by Ian S. Merkel. In the VIP Room, Denver Museum of Nature and Science; all are welcome.

Thurs., Jan. 15, 7:00 p.m., monthly Colorado Scientific Society meeting; topic TBA.

Science Fairs: Several schools and organizations are seeking science fair judges in the coming months:

(1) Jan. 24 2015: school science fairs within Denver Public Schools are coordinated by the non-profit foundation, Community Resources, Inc.:

Jan. 24, DPS District Science Fair (at Denver Zoo), 9:00 a.m. to 3:00 p.m.

To volunteer to be a judge please contact Debbie Turner, 720-424-2300, debbie_turner@dpsk12.org

(2) Jan. 13: Free Horizon Montessori Public School in Golden "Invites you to participate as a judge at its annual science and engineering fair on the morning of Tuesday, January 13th, (approximately 8:30 a.m. to 12:30 p.m., plus about thirty minutes in advance reviewing the rubric with you – which could be done in person or via phone.) for 4th to 8th grade children." Please contact Jeannie Collopy-Bach, jcbach@mymail.mines.edu, phone 303.766.0872.

(3) Wed., Feb. 25, Denver Metropolitan Regional Science & Engineering Fair 10:00 a.m.-5:00 p.m. at the Denver Museum of Nature & Science. Lunch will be provided. To register as a judge please visit the website at <http://denversciencefair.com/>. For more information on judging contact Meredith Tennis at meredith.tennis@ucdenver.edu.

(4) Thurs., Apr. 9: The 60th Colorado Science and Engineering Fair, at Colorado State University in Fort Collins. “Now that the Lory Student Center remodel is complete, there will be 100 more projects than in the past.” The sign-up deadline for judges is Feb. 28; register online at <http://www.csef.colostate.edu/Judges.htm>.

Special Advance Note! We have just confirmed that our 2015 Emmons Lecture will take place on Thursday, April 16, at the American Mountaineering Center auditorium, 710 10th St., Golden, at approx. 7 p.m. Our speaker will be Dr. Tom Barclay, NASA Ames Research Center and the Bay Area Environmental Research Institute; his topic will be “The Search for Earth-like Planets”. Tom was recently named Director of the Kepler K2 mission, to continue the search for exoplanets using the Kepler spacecraft.

Time to pay dues for 2015! Membership dues are now being accepted; a dues form is in this newsletter and on our website, www.coloscisoc.org/membership.dues.html. Dues payments are \$20 for regular members, \$10 for corresponding members (outside the Colorado Front Range area) and **only** \$5 for students. You may pay dues by mailing a check to the CSS, or pay with a credit card using PayPal on the CSS website. Please contact CSS Treasurer Don Sweetkind if you are uncertain of your dues and membership status; contact Don at 303-236-1828 or at dsweetkind@usgs.gov.

USGS Rocky Mountain Science Seminars - 2015

All take place in the Building 25 auditorium, 10:30-11:30 a.m. Tuesdays. Visitors are always welcome. Enter the Federal Center via Gate 1 on Kipling St., park in the big lot east of Building 25, and enter the building via the main entrance by the security guard, Entrance E-14.

January 6, Andreas Mulch (Stanford/Univ. of Frankfurt), Paleotopography: From tectonics to the evolution of landscapes and life

January 20, Ricardo Ramalho (Lamont-Doherty Columbia Univ.), Megatsunami triggered by giant flank collapse of Fogo volcano, Cape Verde archipelago

February 3, Peter Larson (Washington State University), Alteration and fluid flow in large continental hydrothermal systems

February 17, Christine Smith-Siddoway (Colorado College), Cryogenian sandstone in Colorado: A new terrestrial record for Rodinia revealed through detrital zircon provenance analysis

March 3, James Jones (USGS Anchorage), Late Cretaceous through Oligocene magmatic and tectonic evolution of the western Alaska Range

March 17, Marty Goldhaber (USGS Denver), Critical zone science and global societal challenges

March 31, Alexis Templeton (Univ. Colorado) Seeking subsurface biospheres sustained bywater/rock interaction

April 14, Jake Lowenstern (USGS Menlo Park), Magma intrusion rates and crustal degassing at Yellowstone: Insights from gas chemistry, isotopes, and emissions

April 28, Bob Raynolds (Denver Museum of Nature and Science). Colorado's stratigraphy: Do all the pages fit into 8 chapters?

May 12, Kate Scheiderich (USGS Denver), Investigating stable isotope fractionation in rare earth elements: a case study with cerium

May 26, John Wakabayashi (CSU Fresno), Anatomy of a subduction complex: Architecture of the Franciscan at multiple length and time scales

2014 CSS Elected Officers

President.....Scott Lundstrom, 303-917-2849, pslundstrom@msn.com
President Elect.....Paul Morgan, 303-384-2648, morgan@mines.edu
Treasurer.....Don Sweetkind, 303-236-1828, dsweetkind@usgs.gov
Secretary.....Lisa Fisher, 303-215-0480, lisa.fisher@escalantemines.com
Past President.....Matt Sares, 303-866-3581 x8290, matt.sares@state.co.us

Councilors

2013-2015: Marieke Dechesne, 303-236-1289, mdechesne@usgs.gov
2013-2015: Liz Pesce, pesce.e@gmail.com
2014-2016: Celia Greenman, celia.greenman@earthlink.net
2014-2016: Peter Barkman, 303-384-2642, barkmann@mines.edu
2012-2014: Rebecca Flowers, 303-492-5135, rebecca.flowers@colorado.edu
2014 (filling remaining year of a vacant position): Pete Modreski, 303-202-4766, pmodreski@aol.com

Committee Chairpersons

Best Paper Award: Matt Sares, 303-866-3581 x8290, matt.sares@state.co.us
Database Manager: Paul Morgan, 303-384-2648, morgan@mines.edu
Field Trips: Cal Ruleman, 303-236-7804, cruleman@usgs.gov
History: Beth Simmons, cloverknoll@comcast.net
Hospitality: Jack Krajewski, gijack08@gmail.com
Membership/Mentor: Liz Pesce, pesce.e@gmail.com
Memorial Funds: Matt Sares, 303-866-3581 x8290, matt.sares@state.co.us
Newsletter Editor: Pete Modreski, 303-202-4766, pmodreski@aol.com (*taking over from Linda Barton-Cronoble as of December*)
Outreach: Linda Barton Cronoble, 720-338-1237, lbarton1611@gmail.com
Program: Open
Publicity: Open
State Science Fair: Chuck Weisenberg, 303-238-8806, cweisenbrg@msn.com
Webmaster: Barb Warden, 303-278-2701, bwarden@tablemtn.com

2015 Officer and Councilor Nominees

President: Paul Morgan
President Elect: *position not yet filled*
Treasurer: Don Sweetkind
Secretary: Lisa Fisher
Councilor 2015-2017: Pete Modreski
Councilor 2015-2017: Bruce Geller

These nominees, as well as any other nominations from the floor, will be presented to our members for a vote at our Annual Meeting, December 18, 2014.

Please know that we will gladly accept new volunteers to serve on any and all of our standing committees or our vacant committee chair positions. If you have any questions regarding the duties of these positions, please contact your favorite officer, councilor, or chair! Consider volunteering—many hands make lighter work and we would love to have a larger pool of ideas and contacts.

**Colorado Scientific Society, P.O. Box 150495, Lakewood CO 80215-0495
<http://www.coloscisoc.org>**



Colorado Scientific Society

Application and Membership Update Dues and Funds Contributions

Date _____

New Member _____

Renewing Member _____

(email address)

(Telephone)

(Last Name)

(First Name)

(Initial)

(Address)

The success of most Society activities depends on volunteer help. Please circle any activities for which you can provide assistance. We will pass your name on to the appropriate Committee Chairperson.

Field Trips
Fund Raising

History
Newsletter

Outreach
Program/Talks

Annual Dues (January – December)

Regular Members \$20 _____

Corresponding Members \$10 _____

Student Members \$5 _____

Memorial Funds: These funds support research grants to graduate students in the Earth Sciences throughout the nation. *Please note if contribution is made in the memory of an individual.*

Ogden Tweto Memorial Fund _____

Steven Oriel Memorial Fund _____

Edwin Eckel Memorial Fund _____

Bill Pierce-Heart Mountain Fund _____

George Snyder Memorial Fund _____

Chuck Pillmore Memorial Fund _____

Endowment Fund:

This fund is used to support the Society's monthly meetings and newsletter, field trips, family night, annual Emmons Lecture, invited speaker honorarium, and special activities.

TOTAL CONTRIBUTIONS (DUES AND FUNDS): _____

Please make your checks payable to the:

Colorado Scientific Society

Send this form & your check to:

Colorado Scientific Society

P.O. Box 150495

Lakewood, CO 80215-0495

Or register and pay on-line using PayPal at:

<http://www.coloscisoc.org/membership/duespaypal.htm>