



FOUR CORNERS GEOLOGICAL SOCIETY NEWSLETTER

Since 1950

www.fourcornersgeologicalsociety.org

Afternoon sun on Fajada Butte in Chaco Canyon. The butte consists of interbedded units (tongues) of the Mesaverde Group, including the cliff-forming Cliff House Sandstone and slope-forming shaly beds of the Menefee Formation. These units were deposited along the western margin of the Western Interior Seaway during Late Cretaceous time.



November Newsletter

November FCGS Meeting and Presentation in Farmington – p.2

The Prez Sez – p. 3

Meeting Presentation – p. 4

***Abstract:* Recognition and Successful Development of Fractured Tight Navajo Sandstone Aquifer, Southeastern, Utah**

Dr. Clay Conway, Consulting Geologist

Calendar of Events and Happenings – p. 5 - 9

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American Association of Petroleum Geologists

Rock Mountain Section Meeting hosted by Four Corners Geological Society – p. 11

Prez Sez.

Hello to all of our FCGS members! Thank you to the members who made time to attend our October meeting and listen to a great talk. My schedule has cleared up and I am planning on attending the remainder of our meetings to catch up with everyone on what's going on.

Our November speaker meeting will be held in Farmington at the Best Western. Please come and enjoy the evening with our membership and please remember to make a reservation early to help us in planning for the meals.

FCGS Publications Digitization and Sale:

As previously stated in the October newsletter, a vote to approve the offer from the AAPG/Datapages to digitize and market our publications – at no cost to the FCGS is scheduled at our November meeting. A summary of the highlights of the proposal are:

AAPG/Datapages will provide 2 digital versions of the publications for sale; CD/DVD's and Internet.

The procedure is consistent with that used for other affiliated society's publications (RMAG, Tulsa, New Orleans, Gulf Coast Geol Soc's, SEPM and others) in which FCGS publications are incorporated into AAPG/Datapages virtual library.

The publications will be accompanied by a search engine for rapid search/retrieval via words in text, figure captions with PDF-format files of all page images.

Two products will be available: 1) CD-ROM/DVD version of all FCGS technical publications, and 2) an Internet version (library) incorporated into one or more search services (with AAPG, SEPM, GCAGS, CSPG, NOGS, TGS, and others) provided by AAPG/Datapages for sale to corporate and library clients, or individually at a pay-per-view website.

AAPG/Datapages will pay FCGS will pay a royalty on: 1) 50% of receipts from single copy sales, 2) 50% of receipts from sale of CD-ROM/DVD sets, 3) 50% of receipts of FCGS's proportional share of derived product compilations and 4) 50% of receipts from the corporate sales royalty pool. FCGS is guaranteed a minimum of \$125/quarter in return for the availability of their published materials.

FCGS can purchase (at AAPG/Datapages cost) the CD-ROM product for non-exclusive sale to customers.

The initial term of this agreement is five(5) years after completion of the digitization process or 2015, whichever is sooner.

I have discussed this arrangement with Jim Mullarkey, RMAG president, regarding their experience with this. His feedback was positive regarding their initial experience with the program (RMAG has only just completed their formal agreement within the last year). As mentioned previously, I have also run an informal straw poll of executive committee members and some additional FCGS members whose experience in these matters I value. The overall result is very positive support of this endeavor. After reviewing the offer, I personally believe it is in the best interest of the Society and seek its approval from the membership.

To that end, a vote is scheduled to approve this measure by the membership at our November meeting to be held in Farmington. This is in accordance with our By-Laws, Article II, Section 2b which states that any project involving >10% of the society's financial assets by voted on and passed by simple majority at a meeting which "is announced in a newsletter sent to the full membership at least five (5) weeks prior to a regular meeting...."

Please feel free to contact me if you have questions.

An electronic version of the complete AAPG/Datapages proposal can be received by emailing me at the below address.

Regards,
Jim Hornbeck
jhorngeo@yahoo.com

Calendar of Events and Happenings

AIPG

Upcoming Colorado Section - AIPG Elections

The Colorado Section of the American Institute of Professional Geologists (AIPG) is actively seeking interested geologists to run for election and serve a one-year term on the Executive Committee. All positions are open: Secretary, Treasurer, VP & several advisor positions. Also, several committees are looking for volunteers as well. Please contact Matt Rhoades, President-Elect, at mjrhoades@comcast.net ASAP for more information.

CO-AIPG October Luncheon

Date: **Tuesday, October 20, 2009**

Speaker: **Roy Savage**, Rifle, CO

Title: **"Oil and gas leasing—The landowner/royalty holder viewpoint"**

Time: **11:30 AM** social gathering; Noon luncheon and subsequent speaker presentation

Hydraulic Fracturing Conference

Hydraulic Fracturing Conference

November 12-13, 2009

Denver, Colorado

Red Lion Hotel

CALL FOR ABSTRACTS

Registration Form

Conference Details

Exhibitor Form

Sponsor Form

Exhibitors and Sponsors are Welcome!

For details contact Cathy Duran (303) 412-6205 or cld@aipg.org

RMAG

RMAG Friday Luncheon

Date:

Speaker:

Topic:

Rocky Mountain Association of Geologists luncheons are held in downtown Denver at the **Marriott City Center** at California and 17th St. Please check the event listing in the lobby for the room. Lunch is served at 12 Noon and the Program begins around 12:20 pm. Rocky Mountain Association of Geologists luncheons are held at 12:00 Noon. Program begins around 12:20 pm. The price of the luncheon is \$30.00.

San Juan College Career Day in November

San Juan College is hosting a Career Day for high school seniors and enrolled San Juan College Students on November 12 from 9:00 a.m. until noon. This is an opportunity to encourage 500 to 700 students making career choices to consider earth science. Four Corners Geological Society with the City of Farmington is sponsoring a booth. If you would be available to share with students your experiences and provide information about a career as a geologist, please contact Paul Montoia at 505 599-1393 or Jim Hornbeck at 505 320-2167.

Society of Economic Geologists (SEG) Field Course

Geology and Geochemistry of Uranium Deposits of the Southwestern Colorado Plateau Region

When: 21-26 October, 2009

Where: Course begins and ends in Albuquerque, New Mexico, USA

Registration Fees: \$USD Early (On or before Sept. 15, 2009) SEG Members \$675; Non-Members \$775; Students \$300; After Sept. 15, 2009 SEG Members \$775; Non-Members \$875; Students \$400.

Registration form and course description may be downloaded from the SEG Events page at <http://www.segweb.org/activities/>

UPCOMING WORKSHOPS

2009 – The AAPG has announced a number of fascinating workshops & field trips. For further information:

http://aapg.informz.net/aapg/archives/archive_220170.html

CBM and Shale Gas Upstream Facilities

Nov 17-18, 2009 - Houston, USA

Early Bird Pricing:

A 10 % discount for all registrations received & paid by credit card 45 days prior to the course start date. Early Bird pricing is available **until October 3** for this course. To Register/Enroll for this course, see http://www.peice.com/eventdetails.aspx?event=10_5619&dep=100635ndo1yS8lCh%2fR6aw54lwCjw%3d%3d&dfi=1165

DIPS

DIPS October Luncheon

DENVER INTERNATIONAL PETROLEUM SOCIETY

Friday, October 9, 2009

Title: “Correcting, Improving, Synthesizing, and Editing Western and Russian Wireline Log Data (from 1935 to the Present) and Relating them to Seismic and Production Data using Resistivity Modeling, SP Modeling, and Neural Networks”

Speakers: **Jeff Arbogast**, Petroleum Software Technologies, Denver, CO

Where & When: Wynkoop Brewing Company, 1634 18th Street, Denver

Gather at 11:30 am; Lunch served at Noon; Price: \$15 for members and \$18 for non-members for lunch. It is \$3 for just the talk

Call for Posters

ASD Inc. is accepting poster abstracts for the **Art, Science and Applications of Reflectance Spectroscopy** scientific symposium taking place in Boulder, Colorado, **February 23-25, 2010**. The symposium is a one-of-a-kind scientific event highlighting advances in the use of reflectance spectroscopy, new and different applications and techniques, and provides the opportunity for a diverse community to gather and interact. The symposium is co-sponsored by the Geoscience and Remote Sensing Society (GRSS), a member organization of the Institute of Electrical and Electronic Engineers (IEEE). Poster abstracts are due **no later than December 1, 2009**, with the proceedings paper due by **January 15, 2010**. On line registration is now open, with Early Bird discounted rates **ending January 15, 2010**. For more information visit the website:

www.ReflectanceSpectroscopySymposium.com



Albuquerque Geological Society Newsletter

Topic: Hydrogeology of the Southern Sacramento Mountains
Speaker: Geoff Rawlings – New Mexico Tech.
Date: November 4, 2009
Time: 11:30 to 13:00
Place: Golden Coral @ NE Corner of Eubank and Central
Please RSVP if possible to wturner@waterbank.com

AGS – December 2, 2009 – Pete Balleau – Aquifer Sustainability

AGS – January 7, 2009 – Ralph Gonzalez – How To Write A 43101 Report and How They Are Evaluated.

AGS – February 3, 2010 AGS – Sean Connell – Sediment Magnetism and Isotopes: Dating the Albuquerque Basin and dawn of the Rio Grande Valley

Evening Meeting

Topic: Socorro Tire Fire
Speaker: Kelly Collins
Date: November 18, 2009
Time: 6:30 PM
Place: Fiesta Restaurant Carlisle and Montgomery
Please RSVP if possible to wturner@waterbank.com

FIELD TRIPS

October 11, 2009 – Hidden Passage to Copper Canyon, Abiquiu –To be Led by Kirt Kempter through Santa Fe Community College. Visit www.sfccnm.edu looking under Continuing Education then Southwest Explorations.

October 24, 2009 – Exploring Bisti Badlands and De Zin. , Led by Kirt Kempter through Santa Fe Community College. Visit www.sfccnm.edu looking under Continuing Education then Southwest Explorations.

November 13, 2009 – Geologic Hike of Otowi Peak and Buckman Mesa, Led by Kirt Kempter through

USEFUL LINKS

Four Corners Geological Society – www.fourcornersgeologicalsociety.org

Wyoming Geological Society – www.wyogeo.org

Utah Geological Association – www.geology.com

National Ground Water Association - www.ngwa.org Training courses

Park County Mining Association Meeting

Park County Mining Association meets at 10:00 AM at Alma Town Hall, 59 East Buckskin Road.

October 31. Timothy R. Brown, Cripple Creek and Victor Mining Company. “3D Modelling and Visualization in the Cripple Creek Mining District.”

GEOLOGY SEMINARS AT NEW MEXICO UNIVERSITIES:

New Mexico State University Geological Sciences Colloquium — Wednesdays at 4:00 PM in Room 189 Breland Hall (BD), University Department of Geological Sciences. Refreshments are served at 3:45 PM. To be announced. To ensure a seat. E-mail geology@nmsu.edu or call 646-2708 for

Oct. 7 No Colloquium (New Mexico Geological Society Fall Field Conference)

Oct. 14 Jeffrey Amato (NMSU): *Subduction Accretion and Subduction Erosion in the Mesozoic Chugach Terrane, Alaska*

Oct. 21 No Colloquium (Geological Society of American Meeting)

Oct. 28 Dennis W. Powers (Consulting Geologist): *Preservation of Biomolecules in Permian Salt*

Nov. 4 Ryan Bright (NMSU): *Proterozoic Magmatism in the American Southwest: The Diabase Chronicles*

Nov. 11 **TBA**

Nov. 19 Stephen T. Hasiotis (University of Kansas): *Traces of Life on Land: Using Trace Fossils to Interpret Biodiversity, Environment, Hydrology, Ecology, and Climate in Continental Settings*

Dec. 2 Matt Jones (NMSU): *Origin of Authigenic Opal/Carbonate Beds in Axial-Fluvial Strata of the Pliocene-lower Pleistocene Camp Rice Formation, Rincon Hills, New Mexico*

New Mexico Tech Bureau/EES Seminar Series — usually Thursdays at 4:00 pm during the spring and fall semesters sponsored by the Bureau and the Department of Earth & Environmental Science See the schedule at(<http://www.ees.nmt.edu/seminar.html>)

University of New Mexico 401/501 Colloquium Series — Department of Earth & Planetary Sciences Friday afternoons at 2:00 PM in Northrop Hall, Room 122 (the large Lecture Hall at the east end of the building). Refreshments are available before the talks beginning at 1:45 PM. Upcoming talks are: To be announced.

OCTOBER	2	GREG TUCKER, UNIVERSITY OF COLORADO, NATURAL EXPERIMENTS IN TRANSIENT LANDSCAPE EVOLUTION
9		ALAN GILLESPIE, UNIVERSITY OF WASHINGTON, <i>CASWELL SILVER DISTINGUISHED SPEAKER. Topic: CENTRAL ASIA GLACIATION</i>
16		<i>FALL BREAK NO COLLOQUIUM</i>
23		GRAHAM BEGG, SEG INTERNATIONAL EXCHANGE LECTURER INTERNATIONAL EXCHANGE LECTURER, TECTONICS, PLUMES, SUPERCONTINENTS AND ORE SYSTEMS
30		SHERRY NELSON, UNIVERSITY OF NEW MEXICO, ANTHROPOLOGY MIOCENE: DAWN AND DEMISE OF THE APES
NOVEMBER	6	RICK HERVIG, ARIZONA STATE UNIVERSITY SECONDARY ION MASS SPECTOMETRY
13		CATHY SNELSON, NEW MEXICO TECH, IMAGING THE PLUMBING SYSTEM OF EREBUS VIA CONTROLLED-SOURCE SEISMOLOGY: INITIAL RESULTS
20		STEVE CATHER, NEW MEXICO BUREAU OF GEOLOGY & MINERAL RESOURCES CLIMATE FORCING BY IRON FERTILIZATION FROM REPEATED IGNIMBRITE ERUPTIONS: THE ICEHOUSE/SLIP HYPOTHESIS
27		<i>THANKSGIVING HOLIDAY, NO COLLOQUIUM</i>
DECEMBER	4	ERIC LEONARD, COLORADO COLLEGE, GLACIATION ALONG THE CREST OF THE CONTINENT: LAST GLACIAL MAXIMUM (LGM) GLACIERS AND CLIMATE IN THE ROCKY MOUNTAINS
11		DAVID GUTZLER, UNM, EARTH AND PLANETARY SCIENCES, DROUGHT EPISODES IN NORTH AMERICA

CSM Executive Lecture Series

Colorado School of Mines
Green Center, Metals Hall
924 16th Street, Golden, Colorado
Email patricia.bohner@is.mines.edu, Phone 303.273.3135

Subject: CO-AIPG: 5 Items □ VanTuyl Lectures, PCMA, UC Lectures, RMR-ASPRS Scholarships, and AIPG Computer
Colorado School of Mines Van Tuyl Lecture Series

Thursdays, 4-5 p.m. Berthoud Hall Room 241, Golden, CO.
Food will be served prior to the lecture. For more information call - 303-273-3800.

October 29. Dr Jim Burnell, Colorado Geological Survey; Critical and Strategic Minerals in the 21st Century

ABSTRACT

The term *critical and strategic* minerals was developed in the mid-twentieth century by the U.S. military to describe commodities necessary to the war effort whose supply was susceptible to interruption by foreign sources. The Pentagon recognized that U.S. military and economic well-being requires a reliable supply of many mined commodities. The concern ultimately resulted in the Defense National Stockpile system to accumulate and store supplies of the materials for emergency use. In the mid-1990s, the decision was made to sell off the stockpiles, resulting in a growing U.S. dependence on foreign imports for many mineral commodities important for our national economy and/or national defense.

The traditional list of critical and strategic minerals has grown as our modern economy has evolved with new technological developments utilizing new and different materials. A large number of these commodities are indispensable for military and aerospace applications and for the "new energy economy." For example, solar power technologies, both photovoltaic and thermal solar, wind power generation, new battery technologies and hybrid vehicles all require a steady supply of mineral commodities, nearly all of which are imported.

The U.S. probably can't take advantage of a manufacturing role in the modern economy without providing our own raw materials. Already, some nations with developing economies, intent on expanding their own industrial base, are severely restricting the export of key mineral materials. For the U.S. to assume a leading role in alternative energy technology, as well as retaining a viable military stockpile, a reliable supply of critical minerals should be secured.

November 5. Karin Hoal, Director, Advanced Mineralogy Research Center - CSM. "Characterizing Geological Materials: Mineralogy and Texture and the AMRC."

November 12. David Noe, CSM, Ph.D. (2006), Colorado Geological Survey. "New Discoveries: Examples from Colorado's Geologic Mapping Program."

November 19. Dean M. Peterson, Sr. Vice President- Exploration, Duluth Metals Limited. "The Nokomis Cu-Ni-PGE deposit, Minnesota."

November 26. No Lecture - Thanksgiving.

UNIVERSITY OF COLORADO LECTURE SERIES

Benson Earth Sciences lecture hall (380), Boulder, CO; Wednesdays, 4 pm; refreshments are served at 3:30 on the 3rd floor. For more information see: <http://www.colorado.edu/GeolSci/>.

October 28. Joe Galewsky, University of New Mexico. "Orographic precipitation isotopic ratios in stratified atmospheric flows: Implications for paleoelevation studies."

November 4. Derek Schutt, Colorado State University. TBA.

November 11. Matt Fouch, Arizona State University. "Hotsheets and Cool Drips: New Views of Western United States Crust and Mantle Dynamics."

November 18. Steve Martel, University of Hawaii. TBA.

November 25. Thanksgiving Break.

RMR 2010 Scholarship Announcement

In its continuing efforts to support and build awareness for the Remote Sensing and GIS sciences, the Rocky Mountain Region of ASPRS is proud to announce its academic scholarships for 2010. The ASPRS-RMR offers scholarships to deserving undergraduate and graduate students every year. There will be at least two scholarships awarded, of at least \$1000 each. The scholarships are intended for students throughout the Rocky Mountain Region (Colorado, Montana, New Mexico, and Wyoming) who demonstrate excellence while pursuing careers in the fields of Photogrammetry, Remote Sensing, and Geographic Information Systems (GIS) or related disciplines. Both undergraduate and graduate students of any thirdlevel educational institution within the four-state region who are pursuing careers in these disciplines are encouraged to apply.

Application deadline is November 20, 2009. Download the application from <http://www.asprsrmr.org/news.html>

Awards will be presented at the ASPRS-RMR Annual Dinner Meeting in January 2010. We've consistently offered thousands of dollars in annual scholarships and this year will be no different! Preference will be given to those studies that apply sound scientific principles to practical applications and/or to those presenting their work at an ASPRS-sponsored conference. Awards at both the undergraduate and the graduate levels are based on academic merit; that is, the application form does not request any personal financial data.

For more information, please contact **Ramesh Sivanpillai**, Vice-President, ASPRS-RMR at 307.766.2721 or at sivan@uwyo.edu (preferred).

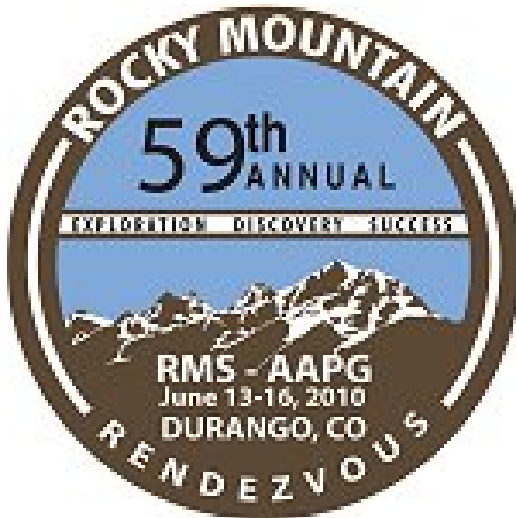
Advertising rates for the Four Corners Geological Society Newsletter:

Full Page Ad (7½"x 9½") \$100/mo or \$1,000/yr. Half Page Ad (7½"x 4½") \$50/mo or \$500/yr
¼ Page Ad (3½"x 4½") \$25/mo or \$250/yr. Business Card (3½"x 2") \$10/mo or \$100/yr
Odd sizes are \$3.50 per column inch per month, minimum \$10.00

For more information, please contact the FCGS Treasurer. Tom Staatz (505) 325-8531. Proceeds will go toward the further development of the Society (i.e. offset meeting costs, publications, etc.)

For Sale:

Map Cabinet, upright, for rolled maps, ca. 1950s, from old Continental Oil Bldg in Denver, 1' deep X 5' long X 5' high, solid wood w/ flip-up top and drop-down front. \$350. Contact Bill Freeman 505-368-1041 (w); 505-334-1673 (h) for details/pics.



59TH ANNUAL CONVENTION

Rocky Mountain Section

of the

American Association of Petroleum Geologists

JUNE 13-15, 2010

DURANGO, COLORADO

For more information, go to:

www.fourcornersgeologicalsociety.org

Technical Sessions - Oral and Poster

- Shale Gas and Fractured Shale Plays of the Rockies
- Tight Gas Sands and Fractured Sandstone Reservoirs
- New Insights into the Paradox Basin
- San Juan Basin – Mature Basin?
- New Concepts and New Discoveries in the Rocky Mountain Overthrust Belt
- Uranium Geology in the Rockies
- CO₂ Sequestration - What Have We Learned So Far?
- Geothermal Energy – From Hot Springs to Produced Water
- Advances in Completion Technologies & Microseismic Monitoring
- Geomechanics / Deformation Styles in the Rockies
- Multi-scale Observations and the Application of Remote Sensing and Lidar to Rocky Mountain Petroleum Exploration
- Sedimentology and Stratigraphy of Rocky Mountain Basins
- Structure of Rocky Mountain Basins
- Student Papers

Abstract Deadline:

February 1, 2010

FIELD TRIPS

- Pennsylvanian Hermosa Fm., from Shelf to Basin
- Upper Cretaceous Reservoirs of the San Juan Basin
- From the San Juan Basin to the San Juan Mountains:
 - Pt. I: Paleozoics of the Animas Valley North
 - Pt. II: Cretaceous to Paleogene of Animas Valley South
- Aeolian Reservoir Analogs

SHORT COURSES

- Source Rocks 101
- Geology and Geochemistry of Uranium Deposits
- Geological Interpretation of LWD Logs and Images

Hosted by:



**The Four Corners
Geological Society**