



FOUR CORNERS GEOLOGICAL SOCIETY NEWSLETTER

February 2009

Since 1950

www.fourcornersgeologicalsociety.org

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Four Corners Geological Society

February Meeting and Presentation

DATE: Friday, February 27, 2009

SPEAKER: Wayne Ranney

TOPIC: Grand Canyon

PLACE: Fort Lewis College, 1000 Rim Drive, Durango, Colorado (970) 247-7010

AGENDA:

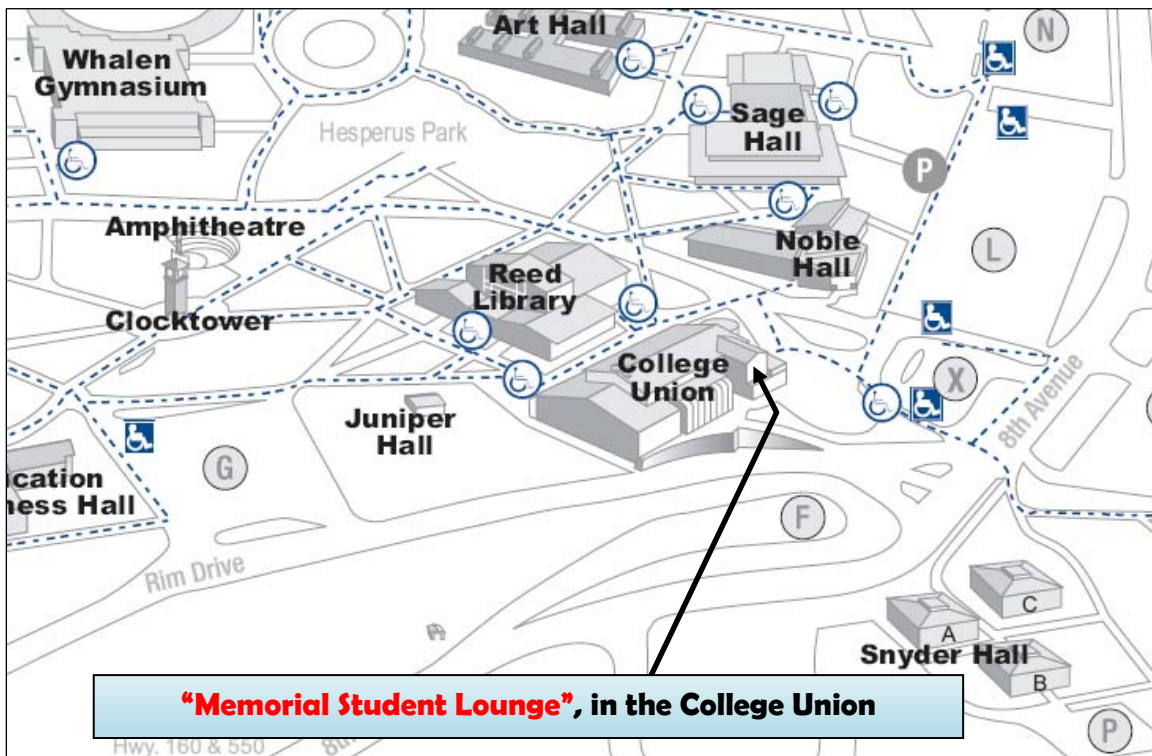
5:30 PM- Social Hour **“Memorial Student Lounge”**, in the College Union Building

6:30 PM- Dinner – New Mexican Buffet

7:30 PM- Presentation

COSTS: \$20.00 per person (dinner and talk), \$2.00 per person (talk only), student’s free (talk only)

Reservations for this month’s meeting and presentation should be made by **Monday, Feb. 23**
Farmington Contact: Jim Hornbeck– email: jhorngco@yahoo.com or phone: 505.326.2401





Greetings FCGS members!

The officers of FCGS wish everyone good health and prosperity in 2009. While you were enjoying the holidays and another click on the calendar, we were busy discussing improvements to our operations, and planning for the Rocky Mountain Section (RMS) meeting to be held in Durango in 2010. So, I'll bring you up to date with the latest from us.

First of all, we ask you to renew your membership online at our website: <http://fourcornersgeologicalsociety.org/>. Using PayPal, you can pay with a credit card, saving time and postage while providing us with your current contact information, and eliminating nuisance renewal reminder notices from us. For those of you who prefer the USPS to the internet, please send us a check and a note with your current contact information, stating your preference for paper over electronic. We will update our files and do our best to accommodate everyone's needs, but we need to hear from you.

Next, you'll notice that we require a RSVP for dinner reservations on the Monday of the week that the dinner meeting will be held. This has been changed from Wednesday, and is necessary to give our food vendors sufficient time to plan for the dinner.

As many of you know, FCGS is the host society for the RMS meeting to be held in June 2010 in Durango. The steering committee met in January to discuss programs and field trips, and we organized various timelines and logistics necessary for the meeting to be a success. I'll share specifics with you in a future newsletter; in the meantime please contact me if you're interested in contributing or participating in this event.

Please remember that the Society officers volunteer time from their busy schedules to recruit speakers, organize dinner meetings, plan the annual picnic, plus manage finances, membership lists and the website in addition to many other chores necessary to run FCGS for all of us. Please help us with your ***timely*** renewals, contact updates and dinner reservations.

Speaking of volunteering, we will have several openings for officer positions for the 2009-2010 year, including newsletter editor and treasurer (at least). Periodic whining aside, working for FCGS is rewarding since it facilitates networking with other geologists and guest speakers, and continues a tradition held since 1950. Please let me know if you can be conned into being a FCGS officer!

Last, please welcome Wayne Ranney as this month's speaker. Wayne is co-author with Ron Blakey on their recent "Ancient Landscapes of the Colorado Plateau" which chronicles the scenery and geology of our region. Ron presented much of this material to a large audience at our May 2008 dinner meeting, and we decided it was worth a reprise.

Regards, Chip



ABSTRACT

Wayne Ranney will present material from his recently published book: *Ancient Landscapes of the Colorado Plateau*, which chronicles the geologic history of the Four Corners area. Wayne collaborated with Ron Blakey (our May, 2008 speaker) in the production of this well-written, beautifully illustrated reference. The subject and materials are presented in a format that is easily understood and appreciated by geologists and non-geologists alike.

Wayne Ranney is a geologist who has worn many “hats” in the Grand Canyon - backcountry ranger (3 years), river guide (9 years), geology instructor (20 years) and trail guide with the Grand Canyon Field Institute and the Museum of Northern Arizona (many years). He received his two degrees in geology from Northern Arizona University and is an instructor of geology at Coconino College, both in Flagstaff.

Wayne is also a published author who loves to share the complexities of earth science with interested non-specialists. His latest book, is called “***Ancient Landscapes of the Colorado Plateau***” which he co-published with one of his admired college professors. “***Carving Grand Canyon***” is another of his award winning publications, as well as “***Sedona Through Time***”. Wayne is an engaging lecturer and storyteller who makes earth science come alive!



1. FCGS MEMBERS LISTEN UP- It is time to update your membership and we are asking that you renew through the FCGS website <http://fourcornersgeologicalsociety.org/> by March 15, 2009. However, I have also included a printable version with the newsletter.
2. We are also seeking members to fill officer positions for the 2009-2010 calendar, currently these positions are **open** (as far as I know) and need to be filled by May 2009:

Past President- Charles Head
President- Jim Hornbeck
Vice President- Jeff Cary
Treasurer- OPEN
Secretary- OPEN
Newsletter Editor- OPEN
Book Chair- Tom Ann Casey
Foundation President- Joe Hewitt
Foundation Treasurer- Jim Hornbeck
Foundation Secretary- Gary Gianniny



**CALLING ALL JUDGES!
WE NEED YOU!
San Juan Regional
Science and Engineering Fair
March 13—14, 2009
Farmington Civic Center**

Join us with 300 students from local schools as they exhibit and compete for top honors in this year's San Juan Regional Science and Engineering Fair.

Judges are needed in both Junior and Senior Division categories to interview students and evaluate their projects in a variety of scientific and engineering categories.

Judging commences Friday evening, March 13th, after a judges dinner and orientation. Student interviews are conducted Saturday morning and early afternoon.

Winners will proceed to the State Science and Engineering Fair on April 3-4, and two Senior Division students will also be selected to compete at the International Science and Engineering Fair in Reno, Nevada, May 10-16th.

This is a great opportunity to support our youth in the scientific creative process and meet some really dynamic students.

Jim Copeland, Head Judge
505-598-0277 (H) or 505-486-2785 (C)
sjregionalsf@dinetah.org

Intel ISEF Categories and Subcategories

The categories have been established with the goal of better aligning judges and student projects for the judging at the Intel ISEF. Local, regional, state and country fairs may or may not choose to use these categories, dependent on the needs of their area.

Please check with your affiliated fair(s) for the appropriate category listings at that level of competition. Please visit our website at http://www.sciserv.org/isef/students/research_categories.asp for a full description and definition of the Intel ISEF categories (subcategories may adjust):

ANIMAL SCIENCES

Development
Ecology
Animal Husbandry
Pathology
Physiology
Populations Genetics
Systematics
Other

BEHAVIORAL & SOCIAL SCIENCES

Clinical & Developmental
Psychology
Cognitive Psychology
Physiological Psychology
Sociology
Other

BIOCHEMISTRY

General Biochemistry
Metabolism
Structural Biochemistry
Other

CELLULAR AND MOLECULAR BIOLOGY

Cellular Biology
Cellular and Molecular Genetics
Immunology
Molecular Biology
Other

CHEMISTRY

Analytical Chemistry
General Chemistry
Inorganic Chemistry
Organic Chemistry
Physical Chemistry
Other

COMPUTER SCIENCE

Algorithms, Data Bases
Artificial Intelligence
Networking and Communications
Computational Science, Computer
Graphics
Software Engineering., Programming
Languages
Computer System, Operating System
Other

EARTH & PLANETARY SCIENCE

Climatology, Weather
Geochemistry, Mineralogy
Paleontology
Geophysics
Planetary Science
Tectonics
Other

ENGINEERING: Electrical & Mechanical

Electrical Eng., Computer Eng., Controls
Mechanical Engineering, Robotics
Thermodynamics, Solar
Other

ENGINEERING: Materials & Bioengineering

Bioengineering
Civil Engineering, Construction Eng.
Chemical Engineering
Industrial Engineering, Processing
Material Science
Other

ENERGY & TRANSPORTATION

Aerospace and Aeronautical Engineering,
Aerodynamics
Alternative Fuels
Fossil Fuel Energy
Vehicle Development
Renewable Energies
Other

ENVIRONMENTAL MANAGEMENT

Bioremediation
Ecosystems Management
Environmental Engineering
Land Resource Management, Forestry
Recycling, Waste Management
Other

ENVIRONMENTAL SCIENCES

Air Pollution and Air Quality
Soil Contamination and Soil Quality

Water Pollution and Water Quality
Other

MATHEMATICAL SCIENCES

Algebra
Analysis
Applied Mathematics
Geometry
Probability and Statistics
Other

MEDICINE & HEALTH SCIENCES

Disease Diagnosis and Treatment
Epidemiology
Genetics
Molecular Biology of Diseases
Physiology and Pathophysiology
Other

MICROBIOLOGY

Antibiotics, Antimicrobials
Bacteriology
Microbial Genetics
Virology
Other

PHYSICS AND ASTRONOMY

Atoms, Molecules, Solids
Astronomy
Biological Physics
Instrumentation and Electronics
Magnetics and Electromagnetics
Nuclear and Particle Physics
Optics, Lasers, Masers
Theoretical Physics, Theoretical or
Computational Astronomy
Other

PLANT SCIENCES

Agriculture/Agronomy
Development
Ecology
Genetics
Photosynthesis
Plant Physiology (Molecular, Cellular, Organismal)
Plant Systematics, Evolution
Other



Call For Papers

2009 Wyoming Geological Association Annual Fall Field Conference

Spectacular Wyoming Geology: Going from Outcrop to Production



Conference To Be Held during the first week of August 2009 in Casper, Wyoming with pre and post-meeting field trips to the Big Horn Basin and areas around Casper

Possible Topics include:

- Heart Mountain Detachment
- Sevier and Laramide Structures
- Yellowstone Geology
- Tight Gas Reservoirs
- Uranium Deposits
- Bighorn Basin
- Wind River Basin
- Economic Mineral Deposits
- Petroleum Geology of Wyoming



2009 AAPG Annual Convention and Exhibition 7-10 June, 2009 • Denver, Colorado

Wyoming Geological Association Tooke Mudlog Collection

The Wyoming Geological Association has mudlogs in the Rocky Mountain areas of Wyoming, Colorado and Utah that have been scanned. We are in the process of scanning other areas with the help of industry that contribute towards this project with their financial contributions. If you would like to see what is available please use our database located on our website at www.wyogeo.org and click on Mudlogs. The logs cost \$12.50 each and can be emailed to you if the log is small enough. Deeper well depths or several logs will require CD or DVD media for an additional fee. For more information contact Mary at info@wyogeo.org or call 307-237-0027.

UPCOMING WORKSHOPS

The 2009 William H. Erickson Distinguished Lecture Wednesday, January 28

Bill Owens

Former Governor of Colorado

"An Optimistic View of Our Tough Times"

12 p.m. – 1 p.m.

Ben H. Parker Student Center, Ballrooms A, B & C, Colorado School of Mines, 1600
Maple Street, Golden, Colorado

Free and open to the public.

RSVP by January 22 to Pat Bohner at 303.273.3135, or patricia.bohner@is.mines.edu.

AWRA Colorado Section January Luncheon Tuesday, January 27, 2008

Coalbed Methane and Ground Water – Competing Resources?

Speaker: Ralf Topper, Senior Hydrogeologist, Colorado Geological Survey

Denver Water - 3rd Floor Board Room

Lunch at 12:00, Program at 12:30

Development of unconventional oil & gas reserves such as production of coalbed methane (CBM) has increased dramatically since the mid 1990s. CBM is a form of natural gas that is trapped within coal seams and held there by hydraulic pressure. CBM now accounts for 10% of total natural gas produced in the U.S., most of which (79%) comes from the Rocky Mountain Region. Colorado contains significant CBM reserves in many structural basins including the world-class San Juan Basin. The shallow exploration targets for CBM require dewatering to extract the gas resource which may impact potable ground water supplies and produce injury to senior water rights holders.

The rapid growth of CBM development has posed difficult challenges for the associated communities. One of those conflicts is in the extraction and disposal of produced water. CBM wells are typically shallow, and are often completed into the same formations that supply ground water to wells. Before CBM can be produced, the hydraulic pressure of the reservoir must be reduced by partial dewatering of the aquifer. The Colorado Oil & Gas Commission has the authority to regulate oil and gas wells within the state, and treats produced water as a waste under Rule 907. Produced water put to beneficial use, however, is subject to Colorado's water rights system under the jurisdiction of the Division of Water Resources.

Recent stream depletion studies commissioned by the Colorado Geological Survey indicate that in some basins the aquifers and coal seams are tributary. In the case of

Vance vs. Simpson, now before the Colorado Supreme Court, the Division 7 Water Court determined that ground water diverted in the process of extracting CBM is a beneficial use and subject to administration by the State Engineer. This presentation will provide an overview of CBM resources, its development, and potential water rights impacts.

Ralf Topper is the current past-president of the Colorado Ground-Water Association and senior hydrogeologist at the Colorado Geological Survey. He has earned advanced degrees in Geology and Hydrogeology and has over 28 years of professional geoscience experience. He is a Certified Professional Geologist, a Geological Society of America Fellow, and an active member of both national and state ground water societies. Ralf has authored numerous papers and publications on Colorado's ground-water resources and is currently studying aquifer recharge/storage opportunities. He is a 22 year resident of Conifer, where he lives with his wife and two sons.

PLEASE RSVP if you plan to attend and please specify whether or not you will be eating the buffet lunch. All lunch orders must be in by 10am Friday. You may brown bag it or a buffet lunch will be provided by Denver Water catering service for a cost of \$10.00 payable at the door. All lunch RSVPs that are no-shows will be charged.

Please contact the Colorado Section at awracosection@bbawater.com or Kim Albright at Denver Water at (303-628-6516) with reservations not later than NOON on **FRIDAY, January 23, 2008**.

PLEASE try to RSVP if you will attend, even if you will not be eating the lunch buffet, by Monday, January 26, so that we may set up the room accordingly.

Uranium Geology and Geochemistry

March 9-10, 2009

8:30 am - 5:00 pm

Colorado School of Mines, Berthoud Hall rm. 243

Fee: \$350 (includes food at breaks, workbook, and PDH certificate)

Instructor: Dr. Sam Romberger (Colorado School of Mines)

Course Content is based on the premise that an understanding of mineralizing processes is important in developing predictive models leading to exploration strategies. Course will include a review of the nuclear energy industry and the nuclear cycle. The Distribution, geology and mineralogy of a wide range of types of uranium deposits will be discussed, including quartz pebble conglomerate, unconformity-related, sandstone-hosted, vein-type, breccia pipe, high grade metamorphic, magmatic deposits associated with alkalic plutons and pegmatites, contact metamorphic, volcanogenic, calcrete, black shale and phosphorite-hosted occurrences. Emphasis will be placed on structural, lithologic and geochemical controls important in their formation. The source of uranium and associated elements, the source of mineralizing fluids, and the mechanisms of

transport and deposition of uranium and associated metals will be discussed. The role of various structural, lithologic and geochemical traps will be discussed in the context of understanding processes responsible for creating metal concentrations. Discussion will include the importance of various geologic structures serving as fluid conduits and mineral depositories, and the role of geochemical traps such as redox interfaces, for the precipitation of uranium and associated elements.

The course offered last Fall was oversubscribed and we had to turn people away, so we decided to offer it again.

Register online: www.pttcrockies.org

For more information, contact Mary Carr, 303.273.3107, mcarr@mines.edu

RMAG Friday Luncheon

Date: **February 6, 2009**

Speaker: **Louis J. Mazzullo**

Topic: **"Applying Reservoir Models to Effective Exploration fo Subtle and Unconventional Traps: Examples from the Permian Basin"**

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.

Please note: All reservations for the Friday Luncheon will need to be pre-paid before the event. You may do this by paying online at Eventbrite, calling or emailing with a credit card number, mailing or dropping of a check to the RMAG office, or, dropping cash off at the office (For the safety of your money, we would prefer that you do not mail in cash).

The price of the luncheon is \$30.00. Checks should be made payable to RMAG If you are using a free ticket for this luncheon, you must state this in your reservation message. No reservation is required for the talk only and the cost is \$5.00.

You can register for lunches Online and pay ahead of time with whatever credit card you would like! Go to www.rmag.org, click on Events, Scroll down to Friday lunches and click on "Online Registration for Friday Lunches". (Remember to "unblock" your pop-ups in order to see the EventBrite Registration Screen)

Reservations must be made prior to 10:30 a.m. on Wednesday, **February 4.**

Checks should be made payable to RMAG.

If you plan to pay by credit card, you must call the office @ 303-573-8621 with your information prior to the lunch. If you are using a free ticket for this luncheon, you must state this in your reservation message

You may e-mail me directly with your reservation information (Please include your Full name, Phone number, and credit card number) – staff@rmag.org – I will send you a confirmation note when I receive it. If you don't get a confirmation within 24 hours of e-mailing me or prior to the Wednesday 10:30am deadline, your reservation is not confirmed; please call the office.

Please Take Note: If you make a reservation and do not attend the luncheon you will be billed for the luncheon. Please call us ahead of time if you know you are unable to attend the lunch...cancellations are not guaranteed, but we will attempt to sell your lunch.

If your reservation is not claimed by 12:00 on the day of the luncheon and you have not called us, we will bill you and attempt to sell your lunch.

USEFUL LINKS

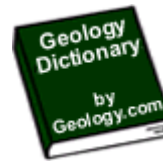
Geoscience Travel & Tours- 2009 Trips Now Under Development



Utah Geological Association



GEOLOGY.COM



Advertising rates for the Four Corners Geological Society newsletter:

Full Page Ad (7½" x 9½") \$100/mo. or \$1000/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. Proceeds will go toward the further development of the Society (i.e., offset meeting costs, publications, etc.).

Four Corners Geological Society

P.O. Box 1501, Durango, CO 81302

www.fourcornersgeologicalsociety.org

2008-09 Officers

President – Charles Head: Phone: 505.320.6045, e-mail: chead1@earthlink.net

President-Elect – Jim Hornbeck: phone: 505.326.2401, email: jhorngco@yahoo.com

Secretary – Stephanie Johnson: Phone: 970.247.1064, e-mail: twilightgeo@frontier.net

Treasurer – Jeff Cary: Phone: 970.247.7620, e-mail: jcary3@hotmail.com

Book Chairperson – Tom Ann Casey: phone: 505-326-3753, email: tcasey@djsimmons.som

Newsletter Editor – Luke Titus: phone: 505.326.4242, email: ltitus@cedarridgellc.com

Past President– Kim Hannula: Phone: 970.247.7463, e-mail: hannula_k@fortlewis.edu

Web Coordinator– Doug Briggs: website: www.rdbriggs.com

Field Trip Coordinator– Kim Gerhardt: Phone: 970.375.2700, e-mail: kd@mydurango.net

Foundation President– Joe Hewitt: phone: 505.599.6365, email: jhewitt@blm.gov

Foundation Secretary – Gary Gianniny: phone: 970.247.7254, email: gianniny_g@fortlewis.edu

Foundation Treasurer –Jim Hornbeck: phone: 505.326.2401, email: jhorngco@yahoo.com



Four Corners Geological Society

MEMBERSHIP RENEWAL or APPLICATION for 2009

PAGE 1

*** Please Print and Complete BOTH Pages***

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

EMPLOYER: _____

Bus. PHONE: (____) _____ Res. PHONE: (____) _____

Fax Number: (____) _____ E-Mail: _____

Web page URL: _____

Please Identify a Membership Category:

- | | | | |
|--------------------------|---------------------------|----------------|--|
| <input type="checkbox"/> | ACTIVE MEMBER 1 | \$20.00 | Person holding a degree in geology or an allied science and receiving the FCGS Newsletter via <u>email</u> |
| <input type="checkbox"/> | ACTIVE MEMBER 2 | \$25.00 | Person holding a degree in geology or an allied science and receiving the FCGS Newsletter via <u>U.S. mail</u> |
| <input type="checkbox"/> | ASSOCIATE MEMBER 1 | \$20.00 | Person whose interests are closely associated with geology or an allied science and receiving the FCGS Newsletter via <u>email</u> |
| <input type="checkbox"/> | ASSOCIATE MEMBER 2 | \$25.00 | Person whose interests are closely associated with geology or an allied science and receiving the FCGS Newsletter via <u>U.S. mail</u> |
| <input type="checkbox"/> | HONORARY MEMBER | no charge | Year Honorarium was awarded _____ (optional) |
| <input type="checkbox"/> | EMERITUS MEMBER | no charge | Year Emeritus status was awarded _____ (optional) |
| <input type="checkbox"/> | STUDENT MEMBER | \$5.00 | Undergraduate student majoring in geology or an allied science
Year you expect to graduate: _____ |

Four Corners Geological Society

MEMBERSHIP RENEWAL or APPLICATION for 2009 PAGE 2

My professional interests are:

I would like to include a Tax Deductible Contribution to the Four Corners Geological Society Foundation.

Amount of Donation: _____
(Please include a separate check made payable to the Foundation.)

In Memory of (optional): _____

To be used for (optional): _____

SIGNATURE: _____ DATE: _____

The dues year begins on January 1.
For dues paid after March 1, add a \$5 late fee (does not apply to new members).

Please print, complete and return **both pages** of this form with your check for dues made payable to:

**Four Corners Geological Society
P.O. Box 1501,
Durango, CO 81302**