



Colorado Scientific Society

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

“Dust—Past, Present, and Future”

by Rich Reynolds, U.S. Geological Survey



“An Excursion to the Karakoram Range in Northern Pakistan”

by Russell Dubiel, U.S. Geological Survey

Thursday, April 19, 2001

Colorado Mountaineering Center
710 10th Street (NE corner with Washington)
Golden, Colorado
Social half-hour – 7:00 pm
Meeting time – 7:30 pm



An Excursion to the Karakoram Range in Northern Pakistan

by Russell F. Dubiel, USGS

In 1997 Russ and four friends trekked in the Karakoram Range of Baltistan in northern Pakistan to visit climbers from Colorado who were attempting to climb Gasherbrum II, one of the world's fourteen 8000-meter peaks. On the way, they passed five of those 8000-meter peaks, including K2, second in height only to Mt. Everest in the Himalayas. The trip covered 28 days, over 200 miles of hiking, and traversed a 20,000-ft pass. The Karakoram Range contains the greatest concentration of high peaks in the world, along with spectacular examples of alluvial fans, braided rivers, and glacial geology. Russ will present an overview of the trip, general geology, and the intriguing Muslim culture.



Dust—Past, Present, and Future

by Rich Reynolds, USGS

Each year, about 2 billion metric tons of eolian dust (windblown silt and clay) is transported in the atmosphere, mainly from sources in east-central Asia and the Sahel-Sahara region of Africa. Today's dust, however, pales in comparison to the amount of atmospheric dust during the Last Glacial Maximum. How much dust will be generated in the future, and why do we care?

Dust in Quaternary geologic deposits such as loess, deep-sea sediments, and ice provides outstanding records of climatic change that enable comparisons of climatic signals among terrestrial, marine, polar, and high-altitude settings. Dust even affects climate—it may warm or cool the surface depending on various factors. For this reason, atmospheric general circulation models to simulate past and future climates are being improved by incorporating estimates of dust flux and sources based on geologic and ice-core studies.

Dust emissions today from the world's arid regions affect human health, damage equipment and infrastructure, impede transportation, diminish air quality, and play important roles in ecosystem health and dynamics. The largest dust plumes travel across oceans. North America commonly receives African dust in the Caribbean basin and along the southeastern states, while the Pacific Northwest sometimes receives Asian dust typically mixed with industrial pollutants. Although minor on a global scale, dust emissions from our southwestern deserts produce many of the same effects regionally and locally, as do larger dust storms elsewhere. New methods to detect southwestern dust emissions, track transport paths, and identify eolian dust in soils are leading to a detailed picture of dust flux over time and its critical role in the evolution of the Colorado Plateau ecosystem, where far-traveled dust provides essential plant nutrients. Related field and modeling studies are underway to enable forecasts of southwestern dust emissions under future climate scenarios.

INCLUDE (Integrated Science and Community-based values in Land-Use DEcision making) SERIES

April 13th, 1:30 P.M., Denver Federal Center, Building 810 auditorium (King and Hayden Conference Rms)

GETTING AGENCIES AND COMMUNITIES TO WORK TOGETHER:

It Takes More Than Luck

Dr. Todd Steelman, University of Colorado at Denver, Professor of Environmental and Natural Resource Policy, Graduate School of Public Affairs

This talk will use a case study of a watershed group to illustrate the complexities that impact the ability of communities and agencies to work together to address environmental problems. General wisdom leads many to believe that agency-collaborative efforts can occur anywhere. In recent years there has been growing interest in (and mandates for) agency and community collaboration. However, as this presentation makes clear, there are certain conditions that can facilitate or hinder the ability of agencies to work with the public.



USGS is hosting the 2001 National Ground Water Association McEllhiney Distinguished Lecturer. Dr. Hans-Olaf Pfannkuch will present his talk “Pump Tests for Practical People” April 27 at 10 AM in the Eugene Foord Room, Building 20. For those without a key card, you will need to enter the building via Door W3; the guard will direct you to the Foord Room.



Dinosaur Discovery Days at Dinosaur Ridge

Dinosaur Discovery Days are scheduled each month starting Saturday, May 5 at Dinosaur Ridge located at W. Alameda Parkway and Rooney Rd. The section of Alameda Parkway that runs over the ridge is closed to automobiles on these special Saturdays thus making it safer and quiet. Guides at each point of interest talk about that stop and answer questions. A bus will be available to transport visitors across the ridge and runs every 15 minutes from 10 a.m. to 3 p.m. Call 303-697-DINO for details. The schedule for 2001 is as follows:

Saturday, June 2
Wednesday, July 4
Saturday, August 11
Saturday, September 1
Saturday, October 6



Interesting Factoid: Surprise! Our Secretary of State is a *geologist*! Here’s a note on General Colin Powell’s education, extracted from a biography (last updated 1997) on the website:

<http://ww4.webbnet.net/~herman/colin/colinbio.html>

“General Powell was educated in the New York City Public Schools, graduating from Morris High School and City College of New York (CCNY), where he earned a bachelor’s degree in geology.”

It’s also fun to note that the parents of our SoS are originally from Jamaica. Ya ‘mon!
(thanks to the Geological Society of Nevada for this tidbit. Mar. 2001 issue.)



2000 Contributions to Memorial & Endowment Funds

The Society thanks its members & friends who contributed a total of \$38,052 to our Memorial and Endowment Funds during 2000. The Trust of William and MayBell Pierce contributed \$30,000 to complete their \$50,000 contribution to the Bill Pierce-Heart Mountain Fund. (Memorial fund contributions in the memory of others are shown in brackets, whereas an asterisk indicates those contributing \$100 or more.) As of December 31, 2000, the total value of our Memorial Funds investments was approximately \$185,000 (this includes about \$10,700 in interest reserved for the 2001 awards).

Memorial Fund

- Ogden Tweto (1984): Field-based earth-science research in Colorado & adjacent areas
 Stephen Oriel (1986): Geologic studies of the Idaho-Wyoming thrust belt & associated topics
 Edwin Eckel (1990): Engineering geologic studies in the United States
 William Pierce (1994): Studies of the Heart Mountain fault, Wyoming, & associated problems
 George Snyder (1998): Studies of Precambrian geology & basement tectonics, Rocky Mountain region.

Primary research objective

Since the Memorial Fund Program started in 1984, the Society has awarded 121 student research grants in Earth Sciences for an aggregate value of about \$89,300. Please remember that your **entire** contribution goes towards generating interest for the grants & that your contribution is 100% tax deductible (the Society is a non-profit Section 501 (c)(3) organization).

Memorial Funds (\$36,790)

Adler, Frank J.*
 Ball, Theodore T.
 Barclay, C.S. Venable
 Birkeland, Peter W.
 Bloom, Adam*
 Bloome, Claire* [Steven Oriel]
 Boland, Maeve A.
 Bradley, William C.*
 Bryant, Bruce H.* [Art Butler, George Pipingos, Felix Mutschler, & Frank Canney]
 Bush, Alfred L. [Richard P. Fischer]
 Carr, Wilfred J.
 Chisholm, Hazel I.* [Marguerite & Paul Tweto]
 Christiansen, Ann C.*
 Constenius, Kurt N.*
 Davis, Robert E.*
 Day, Warren C.
 Eberle, Mary C.
 Elliott, James E.
 Ellis, William L.
 Finch, Warren I. [Richard P. Fischer]
 Fleming, Robert W.*
 Freeman, Val L.
 Grose, Thomas L.T. [Edwin D. McKee]
 Hadley, Richard F.
 Hall, Robert B.
 Hamilton, Warren B.
 Hansen, Wallace R.
 Hester, Karen K.
 Holmes, Kenneth H.
 Kinkel, Robert A.
 Kirkham, Robert M.
 Kish, Stephen A.
 Kluth, Charles F.
 Kopf, Rudolph W.
 Leonard, Benjamin F. III*
 Lowell, James D.
 Machette, Michael N.*
 Mackenzie, David B.*
 Madole, Richard F.
 Mark, Anson
 McCallum, Malcolm E.*
 Moench, Robert H.*
 Moore, David W.
 Moore, William R.
 Mytton, James W.
 Nelson, Karl R.
 Nichols, Donald R.*

Ohl, Jane P.
 Oriel, Esther*
 Osterwald, Doris B.
 Palmer, Allison R.*
 Patton, Priscilla C.*
 Pearson, Robert C.
 Personius, Stephen F.
 Pierce, Kenneth L.
 Pillmore, Charles L.* [Robert Tschudy]
 Pitkin, James A.
 Poland, Michael
 Poole, Forrest G.* [Bob Zimmerman, Charley Maxwell, Mike Duncan, George Pipingos, Keith Robinson, Russ Needham, Leigh Price]
 Post, Edwin V.*
 Ratté, James C.
 Reheis, Marith C.
 Reynolds, Mitchell W.*
 Robertson, Jacques F.*
 Robinson, Charles S.*
 Robinson, Peter
 Royle, Frank*
 Savage, William Z. [Alice Van Horn]
 Sawyer, Michael B.
 Scanniello, Mark A.
 Schmoll, Henry R.
 Schnabel, Diane C.
 Scott, Glenn R.* [Arthur P. Butler & Robert U. King]
 Shannon, James R.
 Shaw, Colin A.
 Sheppard, Richard A.
 Shropshire, K. Lee
 Sims, Paul K.
 Skipp, Betty A.*
 Smith, Marjorie C.*
 Swayze, Gregg A.
 Thordarson, William
 Van Gosen, Bradley S.
 Weitz, Joseph L.
 Wobus, Reinhard A.
 Zeller, Howard D.
 Zerkle, Aubrey L.
 Zielinski, Robert A.

Endowment Fund (\$1,262)

Adler, Frank J.*
 Baker, Donald R.
 Baltz, Elmer H.
 Barclay, C.S. Venable

Brunstein, Frederick C.
 Bush, Alfred L.
 Calkin, Parker E.
 Camp, Nancy Ann
 Christiansen, Ann C.*
 Clebsch, Alfred Jr.
 Davidson, Claire B.
 Duke, H. Benjamin III
 Edwards, John D.
 Ellis, William L.
 Emerson, Mark
 Evanoff, Emmett
 Friedman, Irving
 Gaskill, David L.
 Grose, Thomas L.T.
 Hadley, Richard F.
 Hancock, Dean
 Hannah, Judith L.
 Hansen, Wallace R.
 Kleinkopf, M. Dean
 Kluth, Charles F.
 Kopf, Rudolph W.
 Lidke, David J.
 Lowell, James D.
 Mackenzie, David B.*
 Madole, Richard F.
 McCarthy, J. Howard Jr.
 McGrew, Jay L.
 Murphy, John F.
 Pitkin, James A.
 Poole, Forrest G.
 Post, Edwin V.
 Ratté, James C.
 Redmond, John
 Rice, Cynthia
 Robertson, Jacques F.
 Robinson, Charles S.
 Royle, Frank
 Scanniello, Mark A.
 Schmoll, Henry R.
 Shropshire, K. Lee
 Siebert, Harry L.
 Sims, Paul K.
 Smith, Marjorie C.
 Stanton, Mark R.
 Thordarson, William
 Van Gosen, Bradley S.
 Wright, Kenneth R.
 Zerkle, Aubrey L.





A View Through the Brown Cloud

It's April tax time but our next talk is *after* the 15th so you can't use that as an excuse to avoid our gracious company! It's also time to leap into the garden and hurriedly plant the dubious Colorado garden. Will a heat wave wilt your baby lettuce? (probably) Will it snow in June? (natch...especially if you scheduled your daughter's wedding *al fresco*) Will a hail storm transform your tomatoes to spaghetti sauce before they see the inside of your kitchen? (assuredly...but I've learned to take the sting out of my grief by hosting a yearly garden-side wake with LOTS of homemade red wine *and* a Martha Stewart dart board. *Salud!*)



Science Fairs

The Colorado Scientific Society proudly supports several science fairs around the State. In March, Bob Kirkham represented the Society in presenting award certificates to three young scientists in the San Luis Valley Regional Science Fair. The winners and titles of their projects are:

Chelsea Oden: "Magnetite Concentrations and Dune Elevation", Bill Metz Elementary School, Monte Vista

Krystal Albert: "Does Porosity Change with Different Soil Types", Sierra Grande Middle School, Blanca

Louise Sierra: "Are All Stars the Same Color", Del Norte High School, Del Norte

We congratulate these students for their excellent projects and wish them luck in their future scientific endeavors. The Society also presented 140 certificates of participation to students in the Denver Metropolitan Regional Science Fair. In the future, the Society plans to present specific awards to exceptional geoscience projects at this important fair. Stay tuned, the Colorado Science Fair takes place on April 12th in Fort Collins. Chuck Weisenberg and Eric Erslev will be presenting awards (including cash awards) at this event. We will list the winners in May's newsletter.



A NEW MAP FOR COLORADO NATIONAL MONUMENT

In May, the U.S. Geological Survey will release a new geologic map of Colorado National Monument and the surrounding area (Map I-2740) that is being published in partnership with the National Park Service and the Colorado National Monument Association. The authors are Bob Scott, Ralph Shroba, and Bob Dickerson of the USGS; Anne Harding, USGS volunteer; Bill Hood, director of the Colorado National Monument Association; and Rex Cole, Rick Livaccari, and Jim Johnson (emeritus), all professors at Mesa State College. The creative artwork for the layout was done by Carol Quesenberry, and the map was edited by Craig Brunstein (both with the USGS Central Publications Group).

The 56 x 40-inch map sheet was designed to appeal to people with a casual interest in geology and includes a colorful display of scenery, human history, and wildlife. In addition to the map are the cross sections, short descriptions of map units, and correlations. A pamphlet includes thorough unit descriptions, sections on geologic history, geochronology, stratigraphy, structure and tectonics, geologic hazards, geologic resources, references, and a glossary. The first part of each map-unit description will meet the needs of the interested public, while the heart of the unit descriptions and the accompanying sections will satisfy the most ardent geologist. One of Eric Erslev's students at Colorado State University is already working with a preprint of the map to interpret rock deformation mechanisms in the monoclines at the Monument that are interpreted as fault-propagation folds.





Earth Science Meetings and Talks

Newsletter items must be received by the 4th of each month. This may include special events, open houses, etc...thanks!



Colorado Scientific Society's regular meetings are held the third Thursday of the month at the Colorado Mountaineering Center in Golden (unless otherwise advertised). Social time begins at 7:00 p.m. and talks start at 7:30 p.m. For info., contact Michele Tuttle at (303) 236-1944 or mtuttle@usgs.gov

Colorado School of Mines Lectures For Heiland Lectures at 4:00 p.m. on Fridays, contact Michelle Szobody (303) 273-3451. For Van Tuyl Lectures at 4:30 p.m. on Thursdays, call the Dept. of Geology at (303) 273-3800. **April 12**, Dr. Don Macalady, Chemistry and Geochemistry Dept., CSM, *Topic in organic geochemistry to be announced*; April 19, Rich Healy, USGS, *Water and Radionuclide Movement through the Unsaturated Zone at Two Low-Level Radioactive-Waste Disposal Sites*.

Colorado State University Geology Lectures Mondays, 4:10 p.m., room 316 of the Natural Resources Bldg. Call the Dept. of Earth Resources at (970) 491-5661 for details, or go to: <http://www.cnr.colostate.edu/ER/> (main page, click *seminars*).

Denver International Petroleum Society (DIPS) meets the 2nd Friday of each month at the Wynkoop Brewing Co., 18th and Wynkoop Sts. Reception begins at 11:30 a.m., lunch at 12 p.m., program at 12:30 p.m. Make reservations (required) by leaving message at (303) 623-5396. Reservations accepted after 8 a.m. on Friday until 10:30 a.m. on Wednesday prior to the meeting. Cancellations accepted until 11:00 am Wed. prior to the meeting. Cost: \$15 for lunches; talk only is available for \$2 (make checks payable to "D.I.P.S."). Contact Keith Murray at (303) 986-8554 for information.

Denver Mining Club meets every Thursday (except when noted) at Country Harvest Buffet at Villa Italia, 7200 W. Alameda Ave., Lakewood, 11:30 a.m.–1:00 p.m. **April 12**, Don Ranta, President NRX Global Corp., *An Introduction to Business-to-Business E-Commerce in the Mining Industry*; **April 19**, Irv Parris, President, DMBW Inc., *Pre-Columbian Gold, Part 2: Sources of Gold Production from 1000 B.C. to 500 A.D.*; **April 26**, Tommie Ann Gard, USGS Chief Librarian, Denver, *Services from the USGS Library*.

Denver Region Exploration Geologists' Society (DREGS) meets in the Consolidated Mutual Water Company Building, 12700 West 27th Avenue, Lakewood. Social hour 6:00-7:00 p.m. Technical presentation at 7:00 p.m. Meetings are normally scheduled for the first Monday of each month. For info. contact Jim Piper, (303) 932-0134, or the website <http://www.dregs.org>. Next meeting: May 7.

Denver Well Logging Society (DWLS) meets on the third Tuesday of each month, Sept. through May. Lunch and a technical talk at the Wynkoop Brewery begins at 11:30 a.m., 18th and Wynkoop Sts. in Denver. Subject matter usually deals with the application of well logs to oil and gas exploration. Call Elice Wickham at 303-573-2781 for reservations. Web page: <http://dwls.spwla.org>

Friends of Dinosaur Ridge and the Morrison Natural History Museum Lutheran Church of the Master @ Jewell and Alameda, 7:00 p.m. **Tuesday, April 17**, Vicky Cowart, State Geologist and Director, Colorado Geological Survey, *The Colorado Geological Survey, and Geologic Hazards in Colorado*; **Tuesday, May 8**, Chris Carroll, Colorado Geological Survey, *History of Coal Mining in Jefferson County, Colorado*. Call 303-697-DINO for more information.

Rocky Mountain Association of Geologists (RMAG) Reception at 11:30 a.m., lunch at 12:00 p.m., talk at 12:25 p.m. Reservations taken by recording at 303-623-5396 until 10:30 a.m., Wed. before the luncheon. Cancellations are taken until 11:00 a.m. on Wed. at 303-573-8621. Luncheon cost is \$20 payable to RMAG at the door. Reservations are not required for talk only---cost is \$3. Meeting location: Denver Petroleum Club, Anaconda Tower, 555-17th St., 37th floor. **April 20**, William Eustes, Colorado School of Mines, *Drilling on Mars*; **May 4**, Robert A. Lamarre, Texaco, *The Ferron Coal Bed Methane Trend: a partially breached giant stratigraphic trap?*



USGS Geologic Division Colloquium Thursday, 1:30 p.m., Foord Rm., Building 20, Denver Federal Center. For information call Pat Poole at 303-236-5438, or email: ppoole@usgs.gov

University of Colorado at Boulder, Geological Sciences Colloquium Wednesdays, 4:00-5:30 p.m., Rm. 180. Refreshments at 3:30 p.m on the 3rd floor. For info., call 303-492-8141. **April 11**, Dr. Becky Bendick, Dept. of Geological Sciences–Univ. of Colorado, *The Bhuj (India) Earthquake of 2001: field observations and ongoing analysis*; **April 18**, Dr. John Bartley, Dept. of Geology and Geophysics–Univ. of Utah, *Thin Interpluton Wallrock Screens and Pluton Emplacement Processes, Sierra Nevada, Calif.*; **April 25**, Dr. Mike Ritzwoller, Dept. of Physics, Univ. of Colorado, *TBA*; **May 2**, Dr. John Humphrey, CSM, *Application of Oxygen Isotope Fractionation to Studies of Dolomitization*.

University of Northern Colorado, Greeley, Earth Science Seminar Fridays, 4:00-5:00 p.m., Ross Hall, Rm. 3310. For a schedule, call UNC Dept. of Earth Sciences: 970-351-2647.

Spring Show in the Rockies Attend the Rocky Mountain's 2nd largest gem and mineral show, **April 20-22** at the Holiday Inn-Denver North and Best Western-Central (where I-25 meets I-70). Free admission. For info.: www.mineralshow.com; GeoExpositions, Karen Wenrich: 303-278-1218.



The Denver Pick and Hammer Club would like to thank everyone that showed up for the decadal skewering of USGS management. There was enough material for 2 or 3 shows, but a talented group of script writers and song manglers managed to winnow it down and pack it in. All that practice rewriting proposals came in handy! A VHS copy of the show will be available for viewing soon. Stay tuned for details.



Geokty's Book of the Month Club

When space allows, *your* editor will give a book recommendation. These will rarely be scientific, and will hopefully remind you to get your snooter out of your journals and abstracts, off your rocks (not to be confused with getting your rocks off), and into that cold, cruel world of non-facts.

This month's offering: *Modern Manners—An Etiquette Book for Rude People*, by P.J. O'Rourke.
An excerpt:

The Importance of Being on Time: Whatever type of event you're attending, it's important to be on time. Being on time should not be confused with being prompt. Being prompt means arriving at the beginning. Being on time means arriving at the most interesting moment. Excepting love affairs, that moment is rarely the beginning. "On time" is between midnight and four A.M. in New York, even for an eight o'clock play. Between midnight and four A.M. the actors will be getting drunk in a bar, and they'll be much more fun to talk to than when they're up on the stage. In most other urban areas, "on time" is between twenty minutes and an hour late. This gives everyone else time to be late, too, and they'll appreciate it. In the country being on time more nearly approximates being prompt. But don't overdo it. Being early is an unpardonable sin. If you are early, you'll witness the last-minute confusion and panic that always attend making anything seem effortlessly gracious. In California, "on time" doesn't mean anything at all. An appointment for a meeting at three o'clock on Tuesday indicates there won't be a meeting and there might not be a Tuesday. Few words and no numbers have any meaning west of the Nevada border.

(Editor's note...many years ago the Director of the USGS decided to visit Menlo at the ungodly hour of 9:00 A.M. and was heard to exclaim, "Where *is* everyone?").

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

<http://shell.rmi.net/~css/>



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