

NORTHERN CALIFORNIA GEOLOGICAL SOCIETY



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MEETING ANNOUNCEMENT

DATE: TUESDAY, October 16, 2007 EARLY DATE !!!

LOCATION: Holiday Inn, 2730 N Main St., Walnut Creek

NOT the Orinda Masonic Center in Orinda!!

Link to Meeting Location – See Following Page!

Please note NCGS will NOT be able to supply refreshments; however, you will be able to purchase them at the hotel's bar!

TIME: 7:00 p.m. social; 7:30 p.m. talk (no dinner) Cost: \$5 per regular member; \$1 per student, and \$1 per K – 12 teachers (new!)

RESERVATIONS: Leave your name and phone number at 925-424-3669 or at danday94@pacbell.net before the meeting.

SPEAKER: Dr. Kirk Johnson, Denver Museum of Nature and Science

2007-2008 AAPG Distinguished Lecture

Crocodiles in Greenland and Hippos in London: A Fossil-Fueled Tour of Past and Future Climates

Earth's climate is driven by the interaction of solar energy with land, sky, and oceans. While this has always been the case, shifting positions of continents and the ever-changing chemistry and currents of oceans and air have created a world with a complex history. Most of Earth history has occurred during greenhouse conditions when there were no polar ice caps. Less common were icehouse conditions when there were polar ice caps that waxed and waned between glacial and interglacial periods. This history is written in stone and told by fossils. Fossil plants from 50 million years ago show that the polar regions were ice free and densely forested and that tropical rainforests reached middle latitudes. The talk will take you from the Amazon Basin to the High Arctic and into Deep Time as he explains our planet's history by visiting fossil sites on different continents and using them to reconstruct lost worlds, extinct biomes, and ancient climates. Recent advances in geochronology allow the fossil record to be dated with increasing precision, thus providing some context for understanding climate change and global warming in the present and future.

This month's meeting location is at the following web link:

http://local.live.com/default.aspx?wip=2&v=2&style=r&tp=~&cp=37.92291~-122.06377&sp=aN.37.92291_-

122.06377.2730%20N%20Main%20St%2c%20Walnut%20Creek%2c%20CA%2094597&lvl=14&msnurl=DirectionsFind.aspx?%26redirect%3dfalse&msnculture=en-US

Biography: Dr. Kirk Johnson studies fossil plants, terrestrial stratigraphy, geochronology and dinosaur extinction and works in a museum environment where good science and public communication of science are equally valued. He has published many popular and scientific articles on topics ranging from fossil plants and modern rainforests to the ecology of whales and walrus. He is best known for his research on fossil plants that is widely accepted as some of the most convincing support for the theory that an asteroid impact caused the extinction of the dinosaurs. Since 1997, he has supervised the Denver Basin Project, a multidisciplinary NSF-funded effort to understand and interpret the paleontology, geology, and hydrology of the rocks beneath Denver. This work has led to the discovery and analysis of a 64 million-year-old tropical rainforest in Colorado. His research has also taken him to Alaska's Bering Sea, the Brazilian Amazon, the Canadian High Arctic, the rainforests of New Zealand, the Gobi desert, India, China, Patagonia, and the American West.

He is presently working on research projects in Patagonia, Manchuria, Wyoming, and Denver. Between 1990 and 1995, he led a team that planned, and built the Museum's award-winning exhibition Prehistoric Journey and he continues to design museum exhibits and other media to popularize Earth Sciences. Kirk loves to work with closely with artists to create accurate paintings, murals, and dioramas of prehistoric landscapes. The Ancient Denvers series of 14 images can be seen at the Denver Museum of Nature & Science and the Ancient Colorado series of ten paintings can be seen in the Colorado Convention Center. He is now involved in the initial stages of designing a new Hall of the Earth at the Denver Museum of Nature & Science.

Links: Ancient Denvers <http://www.dmns.org/main/minisites/ancientDenvers/index.html>
Ancient Colorado: <http://www.dmns.org/main/en/General/Exhibitions/content/ancientColorado.html>

Northern California Geological Society
c/o Mark Detterman
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It's a New Year at NCGS - Please Renew Your Membership!!
(See September Newsletter or Website for Form)

NCGS 2007 Calendar

TUESDAY October 16, 2007 Early Date !!

Visiting AAPG Distinguished Lecturer

Dr. Kirk Johnson, Denver Museum of Nature and Science

Crocodiles in Greenland and Hippos in London: A Fossil-Fueled Tour of Past and Future Climates

7:30 pm at Holiday Inn, 2730 N Main St., Walnut Creek

Wednesday November 28, 2007

Flooding hazards Associated with Sea Level and Climate Change (TBC) – Dr. Jeffrey Mount,

U.C. Davis

7:00 pm at Orinda Masonic Center

Wednesday January 30, 2008

TBA

7:00 pm at Orinda Masonic Center

Wednesday February 27, 2008

Impacts and Evolution – Dr. David Morrison, NASA Ames Research Laboratory

7:00 pm at Orinda Masonic Center

Wednesday March 26, 2008

7:00 pm at Orinda Masonic Center

Wednesday April 30, 2008

7:00 pm at Orinda Masonic Center

Wednesday May 28, 2008

7:00 pm at Orinda Masonic Center

Wednesday June 25, 2008

7:00 pm at Orinda Masonic Center

As Usual – Our Summer Break!

Upcoming NCGS Events

May 2008

Field Trip

Point Lobos to Point Reyes:

Evidence of ~180 km Offset of the San Gregorio & Northern San Andreas Faults, Kathleen Burnham, Independent

Researcher

Do you have a place you've wanted to visit for the geology? Let us know. We're definitely interested in ideas. For those suggestions, or for questions regarding, field trips, please contact Rob Nelson at:

rlngeology@sbcglobal.net

Peninsula Geologic Society

Upcoming meetings

For an updated list of meetings, abstracts, and field trips go to <http://www.diggles.com/pgs/>. The PGS has also posted guidebooks for downloading, as well as photographs from recent field trips at this web address. Recent field trips include: *The 1906 Earthquake and the San Andreas Fault on the San Francisco Peninsula* (2006), *Granites in the Franciscan* (Fall 2005), *San Andreas Fault - Carrizo Plain* (Spring 2005), *Panoche and Tumey Hills* (2004), *White-Inyo Range* (2002), *Napa Wine County* (December 2001), *Mount Shasta and the Klamath Mountains* (May 2001), *Big Sur (Salina / Nacimiento Amalgamated Terrane, Big Sur coast Central California, 2000)*, and the *Northern Sierra Nevada (Geologic Transect of the Northern Sierra Nevada Along the North Fork of the Yuba River, 1982)*. Posted upcoming meetings include the following topics and dates:

- All Dates TBA

Association of Engineering Geologists

San Francisco Section

Upcoming meetings

Meeting locations have been rotating between San Francisco, the East Bay, and the South Bay. For further meeting details go to: <http://www.aegsf.org/>.

- **November 13, 2007;** *Ferguson Rockslide on Highway 140 Near Yosemite* Tim Beck & Bruce Hilton, Kleinfelder
- **December 11, 2007;** *Liquifaction*; Ross Boulanger, UC Davis
- **January 8, 2008;** TBA
- **February 12, 2008;** *Dam Removal and River Restoration*; Leonard Sklar, San Francisco State University

Evidence from a Greener Greenland

This Week in SCIENCE

July 6 2007

At present, glaciers cover about 10% of Earth's terrestrial surface, but there is only limited knowledge about the biota that occupied these vast areas before the ice formed; most fossil evidence is either deeply hidden or has been scoured away during periods of glacial expansion. **Willerslev et al.** (p. 111; see the news story by [Curry](#)) were able to extract and amplify ancient DNA

reproducibly from plants and insect remains from the silty sections of deep ice cores from just above the bedrock. At the time when this ice formed, southern Greenland was covered by a diverse boreal forest consisting of pine, spruce, alder, and yew and inhabited by insects such as butterflies and moths. These results could be indicative of either extensive deglaciation of southern Greenland during the last interglacial (Eemian) or DNA survival over longer time scales of up to 1 million years.

Rethinking Coral Composition

This Week in SCIENCE

October 5 2007

Modern coral reefs are built primarily by scleractinian corals, which arose in the Triassic after the Permian extinction. Today, all of these corals form skeletons of aragonite, and this composition has been thought to be typical of fossil scleractinians as well. **Stolarski et al.** (p. [92](#)) now have identified a Cretaceous scleractinian coral with a primary calcite skeleton. The fine preservation of internal structures and the Mg and Sr chemistry show that the calcite is primary, not diagenetic. This result tightens the evolutionary connection between these corals and rugose corals, which formed calcite skeletons but were eliminated in the Permian extinction. These results suggest that corals may be able to alter their biochemistry in response to changes in seawater chemistry.

Missing Jigsaw Piece

The Pacific tectonic plate apparently underwent a shift about 50 million years ago, as evidenced in the changing of the track of the Hawaiian-Emperor chain of seamounts. Why this happened has not been clear. **Whittaker et al.** (p. [83](#)) show that additional plate movement between Australia and Antarctica around this time can be gleaned from magnetic and satellite gravity data, which would indicate that a major plate reorganization occurred between 50 and 53 million years ago. Revised Pacific Ocean-floor reconstructions suggest that subduction of the Izanagi spreading ridge and subsequent Marianas/Tonga-Kermadec subduction initiation may have been the ultimate causes of these events.

Cooling North But Not South

Around 13,000 years ago, during the last transition from glacial to warm conditions, a severe cooling event called the Younger Dryas plunged the North Atlantic region

into 1500 years of low temperatures. Whether the Younger Dryas also was expressed in the Southern Hemisphere has been a topic of considerable debate. **Barrows et al.** (p. [86](#)) present a pair of records that show an absence of Younger Dryas cooling in the Southern Hemisphere in and near New Zealand. By dating a moraine in South Island, New Zealand, and by constructing a sea-surface temperature record of nearby Pacific Ocean waters, the authors show that this region remained warm during the Younger Dryas interval. The moraine that the authors dated is one that was previously thought to have recorded Younger Dryas cooling.

A Tribute to Russia's "Poets of the Soil"

Submitted by Dan Day

On February 28th Dr. Paul Belasky, Associate Professor of Geology at Ohlone College, spoke to the NCGS on Russia's geopoets. His presentation *The Real Geopoetry and the "Poets of the Soil": The Geological School of 20th Century Poetry in St. Petersburg, Russia, Explores Why We Are Geologists* provided insight into the lives and passions of geologists in Post World War II Soviet Union. Moreover, it revealed the deeply cultural side of the Russia people who utilize music and literature as tools to express the joys and hardships of their professions. The Russian geopoets, particularly those associated with the Leningrad (now St. Petersburg) Mining Institute, penned romantic verses describing the beauty of nature, both living and mineral, that they encountered in the often harsh field conditions of unexplored Siberia and Central Asia.

Russia and the Former Soviet republics of Central Asia and the Caucasus are for the most part sparsely populated frontiers previously serving as trade routes between the Orient and Europe. The Central Asian republics of Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, and Tajikistan reflect the remote, barren beauty of these mountainous countries. The communist regime in post-Stalin Russia was eager to explore the mineral resources of these uncharted lands, and of Siberia. At this time many young Soviet men and women perceived geological field work the ultimate outdoor adventure. Since the USSR was closed to foreign travel, field geology was perceived as romantic, physically challenging, and a way to see some of the most breathtaking scenery on earth. And it was one of the few secure professions in the Post-War Soviet Union, albeit the salaries were not the best in the Soviet

scientific community. But they were adequate enough to persuade the adventurous to join expeditions to the heart of Central Asia and the Russian Far East.

Dr. Belasky himself was drawn to geology through his association as a young boy with the son of the late Russian marine geologist Alexander Ainemer. Paul has written a touching tribute to Ainemer in the November 2003 issue of *Geotimes*, *The Romance of Geology in Russia: A Tribute to Alexander Ainemer*. This article describes how Paul and his young friends were awestruck by the artifacts and stories that Ainemer brought back with him from field excursions to the deserts of Turkmenistan. This experience led Paul to a career in geology and paleontology. The tribute also gives the reader a glimpse of the harsh field life in the Siberian wilderness, commingled with the sheer beauty of sites unseen by human eyes. Inspired by this grand geologist, who passed away in 2001, Paul embarked on a career in geology, studying at San Jose State University, UCLA, and U.C. Berkeley. His specialty is Late Paleozoic Paleobiogeography. Now an Associate Professor of Geology at Ohlone College in Fremont, Paul has worked in Russia, Kazakhstan, and other former Soviet republics. His ties to Russia and St. Petersburg, where he was born, remain strong. And so is his deep love for song and poetry, the mainstay of a school of Russian geopoets from the Leningrad Mining Institute who flourished after World War II.

The post-Stalin era saw the promotion of science in the Soviet Union, including the earth sciences. The government established the Geologicheskaya Shkola or “Geological School” to promote mineral exploration and overall characterization of geology in the Central Asian republics, the Caucasus, and the vast uncharted expanses of Siberia. The government was eager to exploit mineral resources in the USSR to fuel its military aspirations. Uranium was highly coveted for weapons development, but other important metal ores were also quite desirable. The government sponsored field expeditions to remote areas. Eighty rubles a month was a typical salary, but it was only two-thirds that of an engineer. In the 1950’s and 1960’s geology was perceived as the ultimate field adventure. Many idealistic youths, particularly those in western (European) Russia, saw this as an opportunity to seek freedom and adventure. The glamour, the beauty of nature – and the veritable risk of life – brought romance and excitement to the pursuit of science. For emphasis, Paul displayed pictures from Siberia showing some of the hardships a geologist had to face.

Russians crave the liberal arts—music and literature are a passion of their society. So it is not unexpected that these daring youths shared their field experiences in

song and verse. The St. Petersburg school was the founding group of geopoets. In recent years Dr. Belasky has collaborated with the U.C. Berkeley Slavik Department and has translated many geopoems. As the geopoetry movement gained popularity, so did its literary contributions. Geologists gradually came to the forefront of Russian poetry. In their ranks are many world class poets, including Nobel Laureate Joseph Brodsky. All across Russia students in geological institutes dedicated themselves to prose and poetry. But the St. Petersburg group from the Leningrad Mining Institute was central to this movement. They were the leading “pochvenniks” or “poets of the soil” in Russia.

Paul began reading poems penned by various geoscientists, some still living, and others deceased. The poems described the beauty of nature, the hard life in Siberia, and the anguish of dealing with the death of a partner who fell victim to the treacherous terrain. The poems and songs are their impressions of regions far from the population centers, remote, and often unseen by modern man. Arboreal forests stretched as far as the eye could see, uninhabited save for aboriginal tribes once ruled by Mongolian warlords. This union of man and nature afforded a sense of freedom, a spiritual liberation that could not be achieved in European USSR where political oppression flourished. It was an escape from conventional life, and it bred friendship and camaraderie. Indeed this Spartan field life emboldened the St. Petersburg clan, who published a book of their poetry in 1956. This book was not sanctioned by the Soviet government, yet it sold out. Some of the poems were subtly critical of the government, which was not overlooked by the authorities. In 1957 the KGB banned the book, ironically coinciding with the Soviet invasion of Hungary. The group was undaunted and continued to meet on a regular basis to share poems and songs of their adventures.

Paul’s recital included poems that related the death of a field partner, the slaying of a mountain sheep for food, and the breathtaking scenery. Women also entered the geological sciences during the Post-Stalin era. Consequently, both men and women shared their experiences in verse. Not all remained loyal geologists throughout their careers. Composer Giya Kancheli tried geology as a young man, but after a particularly trying field season, chose music over rocks as his vocation. Some geologists, like Alexander Gorodnitzsky, have continued to pursue their passion. He participates in a songwriters convention that meets in the countryside—a “back to nature” experience that promotes the lifestyle of classic Russian field geology. Gorodnitzsky is still a vibrant, recognized, and well-respected geoscientist. Some geologists have become literary critics, and others

are writers and abstract artists. Not all their careers have had happy endings. Alcoholism has claimed several key geopoets.

The poems that follow celebrate classic Russian geology and the passing of a generation devoted to exploring the far reaches of the former Soviet Union.

ALEXANDER GORODNITSKY
The Uzon Crater

The Martian colors of the Uzon cone,
Where mud's alive with spit and bubbles,
Where light is motionless and shadows long,
And sky's a bowl filled to the rim with crimson.

I try not to surprise a flock of geese,
That found a distant home on the hot scoria
Here cinnabar is born, deep in the murk,
And soil is bloody from the deadly mercury.

The newborn Earth sports a severe face,
Pockmarked by vesicles and lingering boils,
Here geysers spout and fountains spray the sky
Out of the blowholes of the subterranean whales.

Here I see clearly that my time is short,
And firmament is anything but firm,
Since continents, like ice floes, screech and float,
Only to fold and melt under the overload.

While we live here, undaunted, as we must
Claim from the Earth our 15-minute glory,
On an unsteady, thin as a paper, crust,
Over the slowly churning, glowing slurry.

LEONID AGEYEV
Caves

We crawled into the ground into gray stones,
toward the caves - into the sleepy realm.
But those were no caves at all,
instead they were a magic ballroom hall.

The multitude of icicles,
and flowery meadows on the ceiling...
Who sculpts them? Paints them?
Animates them? Who?!

There is no ordinary earth here
to squeeze between your palms and roll,
but here you find the clearest water
that just appears beneath your sole.

No, you can't see it, eyes are useless
(the lights shine on the rocky floor),
And only with my own reflection
the water comes alive once more...

Yes, I have flown above the earth.
Like all the rest I live on earth.
I now stand beneath the earth
And I drink water from within it.

What more can possibly occur?
There's only one thing left to try,
I will become the earth once more,
When it's my time to die.

VLADIMIR BRITANISHSKY
Rocks

Indeed, a mineral's alive. Once as a brine or gas
it boiled as raging magma in the earth's interior.
But carbon turned to diamond as the centuries passed,
and now it's safe before me, under the class cover.

So don't tell me that the stone has no soul,
that most of them aren't much fun to look at,
I won't believe you, rocks and stones are swell,
and I will write dozens of songs about them.

And don't you tell me that the mineral's got no life,
and to be cold and dead is in the mineral's nature.
I won't believe you, and my words will be upheld
by the example of the Urals Range.

I'll gaze at jasper or a cubic pyrite crystal,
the reddish limonite or garnet, breathing fire,
and think about how much was really witnessed
by many of the rocks that here before me lie.

The Siberian taiga, gently swaying in the wind, silently
beckons the next pochvenniks.

The NCGS gratefully acknowledges Dr. Paul Belasky's
touching description of the harsh yet romantic life of
geologists in the former Soviet Union. Their
experiences in remote corners of the USSR are
poignantly reflected in their poetry and songs. Science
and art delicately woven into literature that celebrates
nature, and shares adventures in distant lands east of the
sun.

NORTHERN CALIFORNIA GEOLOGICAL SOCIETY



2007-2008 COLLEGIATE SCHOLARSHIP PROGRAM

The Northern California Geological Society is pleased to announce the availability of scholarships for undergraduate and graduate students for the 2007-2008 academic year.

Undergraduate Scholarship Award of \$ 500

For candidates working toward completion of a senior thesis or honors research program.
Funding is provided for projects implemented during the 2007-2008 academic year.
*Application deadline is **October 31, 2007** with an award date of December 1, 2007.*

The Richard Chambers Memorial Scholarships for Graduate Degree Programs

\$ 1,000 scholarships for students working towards the Masters degree

\$ 2,000 scholarships for students working towards the Doctorate degree

Funding is provided for projects scheduled for completion during the 2007-2008 calendar years. Application deadline is **December 15, 2007** for an award date to be January 31, 2008.

Funding priorities for these scholarships will be directed towards research focused on topics including geologic mapping, structural, economic, engineering and environmental geology, geophysics, stratigraphy, paleontology or paleoecology implementing in (northern) California or immediately adjacent states. Winners will be invited to speak or otherwise present their research at an evening NCGS meeting in Orinda, California.

Individual scholarship announcements with instructions can be requested from and proposals submitted to:

Phillip Garbutt, Chair
NCGS Scholarship Committee
6372 Boone Drive
Castro Valley, CA 94552-5077

Voice: (510) 581-9098
email: plgarbutt@comcast.net

Issue date: September 19, 2007

For further information: <http://www.ncgeol.org>

NORTHERN CALIFORNIA GEOLOGICAL SOCIETY



NORTHERN CALIFORNIA GEOLOGICAL SOCIETY and
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

K-12 EARTH SCIENCE TEACHER OF THE YEAR AWARD

\$750 Northern California Geological Society
\$500 Pacific Section AAPG
\$5,000 National AAPG

Call for Nominations for the Year 2007 - 2008 NCGS Competition

The Northern California Geological Society (NCGS) is pleased to announce that it will accept applications from candidates in the Northern California region for the Year 2007 - 2008 competition for the Earth Science Teacher of the Year Award. The \$750 NCGS award is intended to recognize pre-college earth science programs already in place, and to encourage their organization in districts where they have not been fully developed. Nominations of qualified K-12 teacher candidates are solicited from teachers, school administrators, teacher outreach programs, and other interested parties.

The NCGS awardee's application will be submitted to a regional competition sponsored by the American Association of Petroleum Geologists (AAPG) Pacific Section. The Pacific Section winner will receive a \$500 award at the joint national and Pacific Section regional meeting in Bakersfield, California in March / April 2008, plus up to \$250 toward meeting expenses. The regional winner's project will be submitted to AAPG headquarters for the national contest. The national winner will receive an expense-paid trip to attend the national AAPG meeting in Denver, Colorado in June 2009 to receive the national award.

At the national level, the AAPG Foundation presents an annual \$5,000 award to a K-12 teacher for *Excellence in the Teaching of Natural Resources in the Earth Science*. The award recognizes balanced incorporation of natural resource extraction and environmental sustainability concepts in pre-college Earth science curricula. It includes \$2,500 to the teacher's school for the winning teacher's use, and \$2,500 for the teacher's personal use.

The deadline for application submittal by candidates for the \$750 NCGS award is Friday, February 15, 2008

Interested candidates or nominators can request Application Information and an Entrant Application Form, or submit an application, by contacting:

John Stockwell, Chair, K-12 Geoscience Education Committee

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