



Welcome to Dr. Christophe Dupraz



Geosciences Newsletter

Dr. Christophe Dupraz joined the Geosciences faculty last month. A sedimentologist and geobiologist, working on contemporary carbonate deposits, Dr. Dupraz has chosen the Marine Sciences as his departmental home. Christophe moved with his wife Marie Eve and 2-year old daughter Mathilde from Neuchâtel, Switzerland, where he held a junior faculty position in the Institute of Geology and Hydrogeology. During his time at Neuchâtel, he was involved in the creation of a new Masters in Biogeosciences that built bridges between the disciplines of Geology and Biology. His work on modern microbialites in hypersaline lakes in the Bahamas and modeling efforts of stromatolite growth were projects that received funding from the Swiss National Fund. Christophe now returns to the States, where he spent his post-doc at the Uni-



Christophe with daughter Mathilde

versity of Miami's Rosenstiel School for Marine and Atmospheric Science in the Marine Geology and Geophysics division. Dr. Dupraz worked with Dr. R. Pamela Reid and Dr. Robert N. Ginsburg on reefs in Belize and modern stromatolites in the Exumas, Bahamas. He earned his doctorate from the University of Fribourg, where he worked under the guidance of sedimentologist Dr. André Strasser on the palaeoecology of fossil reefs in the Jura Mountains, Switzerland.

Christophe's research plans include the study of the microbially-mediated carbon cycle at the biosphere-lithosphere inter-

face focusing on the microbe-mineral interaction (especially carbonates), where he will use a combination of microbiological, microscopic and sedimentological techniques. Future research will include studies in both fossil and modern ecosystems. Dr. Dupraz will contribute to the Geosciences' course offers, including the Earth and Life through Time, Sedimentology, and Earth History and Global Change classes. Expect to see Christophe in the field with undergraduate and graduates, most likely in the Bahamas, or elsewhere in the Caribbean. Together with Andrew Bush and Pieter Visscher, Christophe hopes to build a geobiology program. His office is in Beach Hall 242 and his laboratory in Beach Hall 102 is currently under renovation. Join us in welcoming Christophe and his family to Connecticut!

UConn Sustainable Energy Conference

March 31-April 1, 2008

Special Guest Speakers
 Congressman Joseph D. Courtney
 Congresswoman Rosa L. DeLauro
 State Senate President Pro Tempore, Donald E. Williams, Jr.
 State Speaker of the House, James A. Amann
 State House Republican Leader, Lawrence F. Cafero, Jr.

Program Highlights
 In Depth Workshops: Biofuels, Fuel Cells, Investment, and many other topics
 Federal & State Legislative Activity
 Regulatory Policy
 Plant Science & Bioenergy agriculture
 Climate Change & Global Warming
 Engineering, Science and Business
 Public Policy

Registration form can be found here:

[http://
 biodiesel.engr.uconn.edu/
 Registration.pdf](http://biodiesel.engr.uconn.edu/Registration.pdf)

**Register by
 3/24!**
**Sponsored by
 UConn's Bio-
 fuel Consor-
 tium.**



Inside this issue:

Faculty News etc.	2
Upcoming Events	3
Websites of Interest	3
Earth Science Picture of the Day	4
Burgess Shale Mystery Solved	6

In the News for Geosciences:

- *Under the spotlight of its museum setting, the famed Hope Diamond shines with a brilliant blue sparkle. When exposed to ultraviolet (UV) rays, however, the blue diamond glows a deep red. For years, scientists were puzzled by this fiery glow, as its red color is apparently unique among blue diamonds, which tend to glow in shades of bluish-green or white light under UV rays. But an unusual study gathering data from dozens of the extremely rare gems now suggests that every natural blue diamond actually possesses its own unique glow — and that that glow can both distinguish individual diamonds, and tell the real from the fake.*

Announcements, Awards, Publications, etc.

Publications:

Xu, L., Ding, Y-S, Chen, C-H, Zhao, L., Rimkus, C., Joesten, R., and Suib, S. L., 2008, 3D flowerlike alpha-nickel hydroxide with enhanced electrochemical activity synthesized by microwave-assisted hydrothermal method. *Chemistry of Materials*, 20, 308-316.

Grad Student Announcements:

Congratulations to **Denise Burchsted** who passed her prospectus exam in February!

Congratulations to **Yongping Chen** who successfully defended her PhD dissertation in January!

IRIS Summer Graduate Internship:

U.S.-Russia-Japan Partnership for Research and Education in Volcanology

The University of Alaska Fairbanks (UAF) announces the availability of paid summer internships for U.S. graduate students from U.S. universities in seismology, crustal deformation, igneous petrology, and physical volcanology. Complete announcement and application forms can be obtained at <http://gps.alaska.edu/PIRE>.

Free Water Career Seminar: CT Department of Public Health Drinking Water Section presents "Careers in Drinking Water" A 1/2 day forum. April 23rd, 2008. 9:00am-1:15pm at the Farmington Club, Farmington CT. Panel discussions and hands on demos! Questions can be directed to Vicky

Carrier— vicky.carrier@ct.gov

Congratulations to Dr. Garv Robbins

who received a grant from the US Navy. The grant will help the Navy develop and test new cone penetrometer tool and a method for extending its permeability range. It will involve conducting a tracer test, conducting statistical comparisons of permeability and soil type measurements, using a Markov chain probability approach to describe the 3D hydrostratigraphy and conducting groundwater modeling. The off campus work will be in California, North of LA at the Port Hueneme Navy facilities engineering command test site (check out the test site on google earth (34° 9'42.63"N; 119°12'31.10"W).

Congratulations to Dr. Sally McBrearty,

Anthropology Professor and member of Geosciences Faculty Advisory Board, who was elected a fellow of the American Association for the Advancement of Science, and will be inducted at the annual AAAS meeting in Boston on February 16th.

Northeastern GSA! There's more than just hot wings in Buffalo! 27-29 March, Buffalo, NY. Early registration deadline: 25 Feb.

http://www.geosociety.org/GSA_Connection/0802/secNE-Reg.asp

New Green Careers Resource Guide:

Download the free *Green Careers Resource Guide* - designed to assist career development professionals, but also of use to self-directed students, career explorers, job seekers, and career changers. This downloadable 40+ page document was originally developed by Jim Cassio for

attendees of the 2007 International Career Development Conference, and in response to positive feedback, Cassio has made it publicly available. [http://www.cassio.com/publications/GreenCareersResourceGuide\(v1\).pdf](http://www.cassio.com/publications/GreenCareersResourceGuide(v1).pdf)

SAGEEP 2008: 21st Annual Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP)

April 6-10, 2008 in Philadelphia, Pennsylvania For your convenience, you can [register online](#) for the conference. You can also fax or mail your registration form (it is available as a [printable form](#) by accessing EEGS' website -www.eegs.org then clicking the green SAGEEP button), but do so quickly. **Early Bird conference rates apply until March 14!**

AGI Minority Geoscience Scholarships:

The American Geological Institute announces that applications are now being accepted for the 2008-2009 AGI Minority Geoscience Scholarships.

Please forward this announcement to any African American, Hispanic/Latino or Native American students who are declared majors in your department. If you are enrolled in an earth science education or geoscience degree program and would like to apply for a scholarship for the 2008-2009 school year, please review the qualifications and procedures outlined at <http://www.agiweb.org/mpp>. **All application materials must be received by *March 14, 2008*.**

Geoscience Currents

The American Geological Institute (AGI) Workforce Program has initiated Geoscience Currents, a new series covering geosciences workforce and educational data snapshots, that are expected to be released on a near-weekly basis.

To subscribe to these free data snapshots, go to <http://www.agiweb.org/workforce/> and click "Register."

From the latest edition #4: *Leading States by Geoscience Enrollment.*

This issue looks at the states which have the largest percentage of current geoscience enrollment, both graduate and undergraduate. At both levels, California and Texas are leading centers of geoscience student enrollments, but particularly for undergraduates, the northeast also plays a major role.

California leads the nation in the number of students enrolled in bachelors programs in geoscience departments. Texas and New York follow closely behind with 7.4% of geoscience students enrolled in each state at this level.

More than 13% of geoscience graduate students are enrolled in programs in Texas.

Geoscience Websites of Interest

For each newsletter that comes out, we will try to feature a few great sites related to geosciences that may be of interest to students and faculty associated with the Center. Please feel free to send any sites you find along to Abi, to be included in this section in future editions!



- **PREDICTING VOLCANO ERUPTIONS.** - This presentation uses data from several eruptive episodes of Mount St. Helens in the 1980's to show the way in which a series of eruptions were accurately predicted by USGS scientists as far as 3 weeks before eruptive activity occurred. Several modules demonstrate the use of earthquakes and deformation of a volcano for predicting eruptions and allow you to predict an actual eruption of Mount St. Helens using data collected by scientists of the USGS Cascades Volcano Observatory. Several activities are designed especially for kids.

<http://volcanoes.usgs.gov/edu/predict/>

- **WATER-A WORLDWIDE PANORAMA.** - This site provides remarkable 360 degree views of rivers, lakes, and oceans throughout the world (a kind of on-the-ground Google Earth for water). Click on each dot from the world map and it will bring up one or more panoramas that can be enlarged to full screen size (requires Quick Time plug in).

<http://geoimages.berkeley.edu/wwp605/map/index.html>

- **LANDSAT IMAGE MOSAIC OF ANTARCTICA (LIMA).** The coldest continent on Earth comes alive in greater detail than ever before through this virtually cloudless, seamless, and high resolution satellite view of Antarctica. Zoom in on stunning detail with this Natural-Color image. The mosaic and all of the LIMA products can be downloaded at no charge.

<http://lima.usgs.gov>

More to come in the next edition!



Upcoming Events

- **Tuesday Feb. 26th—Geosciences Seminar Series** Presents Dr. Tim Byrne, UConn Geosciences. *“Looking for earthquakes with the Integrated Ocean Drilling Program”* **3:30pm Beach Hall 233. Refreshments served!**
- **Friday Feb. 29th—MARN Seminar Series** presents Peter Siver; Botany Dept., Connecticut College *“Arctic Lake Paleolimnology”* **3:00pm 103 MARN, Avery Point.**
- **Friday Feb. 29th—ENVE Seminar** presents Dr. Dennis Grub, Schnabel Engineering: *“Sustainable Geotechnics: From Initial Concepts to implementation”* **12 noon CAST 212.**
- **Tuesday March 4th—Geosciences Seminar Series** Presents Dr. Dana Royer, Wesleyan University. Title TBA. **3:30pm Beach Hall 233. Refreshments served!**
- **Friday March 7th—MARN Seminar Series** presents Alta DeWaal; Council for Scientific & Industrial Research Pretoria, South Africa. *“Environmental Applications of Bayesian Networks”* **3:00pm 103 MARN, Avery Point.**
- **Friday March 7th—ENVE Seminar** presents Yogesh Sharma, UConn CEE, *“Optimizing Hydrogen Production from Organic Wastewater”* **12 noon CAST 212.**
- **Friday March 14th—MARN Seminar Series** presents Clive Dorman; Scripps Institution of Oceanography, *“California Coastal Up-Welling Studies”* **3:00pm 103 MARN, Avery Point.**
- **Thursday March 20th—Teale Lecture Series** presents Dr. Roger Gottlieb, WPI, *“Hope in a Dark Time: The Promises of Religious Environmentalism”* **4:00pm Dodd Center.**
- **Tuesday March 25th—Geosciences Seminar Series** Presents Dr. Heidi Dierssen, UConn MARN. Title TBA. **3:30pm Beach Hall 233. Refreshments served!**
- **Friday March 28th—ENVE Seminar** presents Dr. Peter Groffman, Cary Institute for Ecosystem Studies, *“The Bio-Geo-Socio-Chemistry of Urban Watershed”* **12 noon CAST 212.**
- **Tuesday April 1st—Geoscience Seminar Series** presents Dr. Peter Schultz, Brown University. Title TBA. **3:30pm Beach Hall 233. Refreshments served!**

Earth Science Picture of the Day



EPOD from 2/6/2008— When mud dries out, it cracks and forms polygonal structures. Most of them have six sides but owing to the distribution of subsurface stresses, they can have as few as three or as many as nine. It's often difficult to count the sides and in many cases the polygons have concave boundaries on part of their peripheries. Curiously, the major cracks that define adjacent polygons tend to meet at right angles. This photograph shows a one meter (3 ft) square section of a dry seasonal pond near the Salton Sea in southern California. In addition to the obvious cellular structures, each polygon is itself broken into a family of smaller tiles. For some reason, there are two size regimes: ~20 cm (about 8 in) and ~3 cm (a little over an inch) diameter cells. Mud cracks have been well studied in the laboratory as well as in theory. Their regularity is related to the formation of columnar basalt as it cools, shrinks and cracks from the molten state. Yet, much remains unknown about such processes and research is still underway. On an artistic level, mud cracks are appealing for their geometrical regularity. Potters go out of their way to produce similar patterns in their glazes. To "craze" a pot is to develop a fine network of cracks in the glaze or surface *Photo taken by David Lynch*

Summer Opportunities Abound!

Undergraduate:

LDEO Summer Internship: Columbia University REU. Analyzing Global Databases. Deadline: March 1. <http://eesc.columbia.edu>

Colorado Field Course: Colorado Ecosystem Field Studies. <http://www.calwood.org>

Summer REU El Verde: Undergraduate summer program at El Verde Field Station in Puerto Rico. Tropical Ecology and Evolution research. Deadline for applications is February 28th. More information at: <http://ites.upr.edu/REU/>

ation at: <http://ites.upr.edu/REU/>

Undergraduate Internships with IRIS: Interested in working on seismological research? Interns get paid a weekly stipend, and conduct research using state of the art equipment with leading researchers in the field! Also covered: travel expenses, and travel to a professional meeting to present the results of your research over the summer—usually the AGU meeting in the fall. Find out more about IRIS internships here:

<http://www.iris.edu/internship/appl>

[y/intern#downloads](#)

For a complete listing of Earth Science related REU's (Research Experience for Undergrads) visit the NSF site: http://www.nsf.gov/crssprgm/reu/list_result.cfm?unitid=5050

Did You Know?

A feature for our Geoscience Newsletter that reminds us of past Earth events and milestones that occurred around the time our newsletter comes out!

- ⇒ **Did You Know? February 11th, 1933**—Death Valley National Park is proclaimed.
- ⇒ **Happy Birthday! February 12, 1809**—Charles Darwin is born. Father of the theory of evolution.
- ⇒ **Did you know? February 26, 1919**—Grand Canyon National

Park is established.

- ⇒ **Did You Know? March 1, 1872**—Yellowstone National Park becomes the first National Park in the United States.
- ⇒ **Happy Birthday! March 14, 1870**—Albert Einstein is born. Father of the 'theory of relativity'



Grand Canyon National Park in Arizona.

GeoTrivia!

Fun with Geoscience Trivia

1. What term is used for the plains that occur at a water depth of below 6000 feet in the Earth's oceans?
2. Scheelite is an ore mineral of which metal (hint: see photo!)?

3. What term is given for a spot where water or oil oozes from the ground, often forming a small stream?

Check your answers:

http://www.geosociety.org/GSA_Connection/0802/trivia.htm



Scheelite and metal ore of scheelite.





UNIVERSITY OF CONNECTICUT

Center for Integrative Geosciences
354 Mansfield Road, U-2045
Storrs, CT 06269-2045

Phone: 860-486-4435

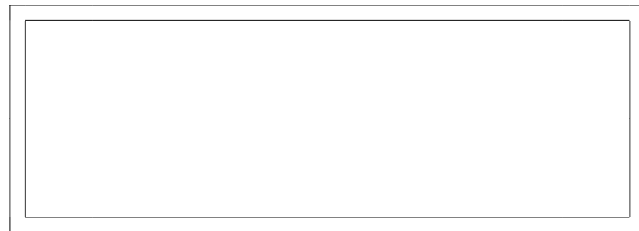
Fax: 860-486-1383

E-mail: geology@uconn.edu

<http://www.geosciences.uconn.edu>

The Center for Integrative Geosciences mission is to offer transdisciplinary programs of instruction and research that advance understanding of the interaction of biological, chemical, geological, and physical processes, including feedback mechanisms, at all spatial and temporal scales that have shaped Earth through geologic time, continue to shape the environment today, and which provide the basis for understanding the present and future impact of human activity on this planet.

We will be issuing these newsletters monthly throughout the academic year to keep associated students, staff, alumni, and faculty up-to-date on the Center's activities!



Ancient Burgess Shale Mystery Solved

Geologists at the University of Leicester have solved a puzzle found in rocks half a billion years old.

Some of the most important fossil beds in the world are the Burgess Shales in the Canadian Rockies. Once an ancient sea bed, they were formed shortly after life suddenly became more complex and diverse – the so-called Cambrian explosion – and are of immense scientific interest.

Normally, only hard parts of ancient animals became fossilized; the bones, teeth or shells. Soft parts were rarely preserved: many plants and invertebrate animals evolved, lived for millions of years and became extinct, but left no trace in the



Burgess Shale reconstruction

fossil record. The Burgess Shales preserved soft tissue in exquisite detail, and the question of how this came to happen has troubled scientists since the discovery of the fossils in 1909.

Now, painstaking work by Sarah Gabbott and Jan Zalasiewicz of the University of Leicester, with Des-

mond Collins of the Royal Ontario Museum, has provided an answer. The research has been published in the *Journal of the Geological Society*.

They analyzed the shales millimeter by millimeter, and found that unlike most rocks of this type, they weren't slowly deposited, mud flake by mud flake. Instead, a thick slurry powered down a steep slope and instantly buried the animals to a depth where normal decay couldn't occur.

Dr Gabbott said, "Not a nice way to go, perhaps, but a swift one- and one that guaranteed immortality (of a sort) for these strange creatures."

(02/18/2008. Story from the Journal of the Geological Society 2008, vol.165, pp. 307-318)