



# Graduates Get CESE Grants

Center for Environmental Sciences and Engineering

**Congratulations** to geoscience graduates who have received a few of the recently awarded CESE grants: **Denise Burchsted, David Hoover, Kristen Myshrrall, and Piyumi Obesekara.**

As part of its mission to enhance multidisciplinary research, the Center for Environmental Sciences and Engineering (CESE) funded several awards to support multidisciplinary environmental research by graduate students. These awards provide support during the summer to encourage multidisciplinary collaborative research in environmental sciences and engineering by graduate students (either

Masters or Doctoral) and faculty at UConn.

These awards are intended to provide supplemental support for new collaborations and activities that are not being supported by current funding.

This was the first year these awards have been offered, and we are very pleased to find our graduates among the list of award winners.

Kristen Myshrrall also received a Steven Jay Gould Award from the American Paleontological Society. These awards are

granted to undergraduates and graduates pursuing study in the various files of paleontology and who belong to the American Paleontological Society.

## Geobiology Symposium

On May 14th, the Yale University Department of Geology and Geophysics, in conjunction with the Yale Institute for Biospheric Studies, will be holding a one day symposium on

*A world in transition: Geobiology of the Proterozoic-Cambrian*

- A symposium featuring the

research of young scientists on old rocks

**When: Monday, May 14th**

**Time: 8:45 AM - 5:30 PM**

**Where: Yale University**

**Kline Geology Laboratory 123**

More information regarding directions, parking, and other matters will be posted on

<http://earth.geology.yale.edu/ProtCambrian/>

as the date of the symposium approaches.

**The symposium is free and open to the public.**

### Inside this issue:

Faculty News etc.	2
Upcoming Events	3
Websites of Interest	3
Earth Science Picture of the Day	4
News Note	6

### In the News for Geosciences:

- *The family tree of an infamous dinosaur is coming to life before researchers' eyes. Scientists say they extracted protein from a 68-million-year-old Tyrannosaurus rex leg bone that supports a genetic link between dinosaurs and birds.*



# Announcements, Awards, Publications, etc.

## **IMPORTANT ANNOUNCEMENTS!**

### **Courses:**

#### **New Offering for Fall 07: GEOL 257 Field Problems with Jean Crespi**

Come learn more about geology in the field with Dr. Jean Crespi. In a series of field trips you'll learn much more about field mapping, structural geology, and proper techniques used in geology. See Dr. Crespi to find out more! 1 Credit. 2 weekend field trips and 2 hours of classroom work.

**Rock of Ages Display:** If you take a look by office 244 in Beach Hall, you will see a new display set up by adjunct professor Susan Nagel. It highlights work she has done with her 103/105 class examining gravestones in the old Storrs Congregational Church cemetery. Stop by and take a look!

**Sed/Strat Search Update:** The Search Committee has selected five candidates from a total of 74 applicants. Candidates are here interviewing, so please take time to meet them and attend their seminars! Listed in the upcoming events section.

#### **Field Assistant Position in North Dakota and Montana**

Duration: June 20-August 20, 2007

Project Title: Floral transitions in the North American Paleocene: from mass extinction to thermal maximum (PhD

project).

**Job Description:** Field assistants will help with all aspects of summer fieldwork in paleobotany, stratigraphy, and paleomagnetism. Fieldwork involves surveying for vertebrate and leaf fossils, collecting fossil leaves and geologic rock samples, digging stratigraphic trenches, and hiking through badlands terrain. An ideal candidate should have some background in geology and/or paleontology and be interested in contributing to an ongoing field based projects.

**Housing and Transportation:** Room and board provided. Housing involves camping approximately 50% of the time, and assistants must supply his/her own camping gear. Field assistants who live in the Connecticut, Massachusetts, Rhode Island, and New York area may have the opportunity to ride with PhD student to the field site. Assistants from other areas will need to provide their own transportation to North Dakota. **Deadline to apply for this position is May 15, 2007.** If interested, please submit a resume/CV, a cover letter and a list of two references to Daniel Peppe via email at [daniel.peppe@yale.edu](mailto:daniel.peppe@yale.edu)

**NESETAC Meeting: Society for Environmental Toxicology and Chemistry.** Annual meeting in Rhode Island! June 13-15 2007— find out more here: [http://www.nacsetac.org/Annual\\_meeting.htm](http://www.nacsetac.org/Annual_meeting.htm)

**Dr. Zoe Cardon** published a new edited volume with co-editor Dr. Julie Whitbeck of University of New Orleans titled "The Rhizosphere -- An Ecological Perspective" (published by Elsevier). With funding from the Connecticut Institute of Water Resources, Zoe also began work with Dr. Shawn Burdette in UConn's chemistry department on development of new fluorescence-based sensors for monitoring compounds in soil solutions, and she received a new \$59,000 grant from an anonymous donor to continue her investigations of water use in sagebrush rangelands of northern Utah. Zoe also received \$6000 from the National Science Foundation to support the summer work of one undergraduate through NSF's "REU" (Research Experience of Undergraduates) program; the REU student will work with Zoe in the field in Utah from early May until late August, 2007.

**Dr. Greg McHone** has been working with geosciences at UConn for 15 years now, and this is his last semester of service for us before he moves to Canada. We wish him the best of luck, and many thanks to him for years of teaching here at UConn!

## NEIGC 2007 Meeting

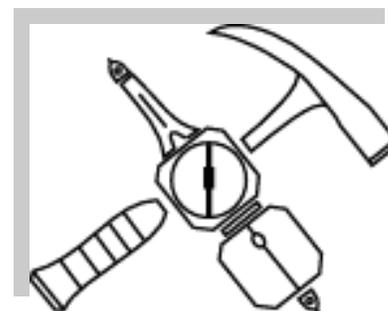
The 2007 meeting of the **New England Intercollegiate Geological Conference** will be held jointly with the Friends of Grenville and the Association Québécoise des Sciences de la Terre

<http://neigc.org/NEIGC/>

**5th to 7th of October, 2007 in Quebec City, Quebec, Canada**

The New England Intercollegiate Geological Conference (NEIGC) began in

1901 with a field trip led by William Morris Davis to terraces of the Westfield River in south-central Massachusetts. The conference has met annually since that time, with exceptions during World Wars I and II, and a two-year gap during 1913 and 1914. The NEIGC may be the oldest "nonorganization" in North America whose sole purpose is to organize and present field trips in areas of recent geologic mapping and topical studies.



# 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!



- **Life Through Time**, a photographic story of Earth's evolution, from the birth of the planet's elements more than 4 billion years ago, to the current generation of human exploration.  
<http://www.lifethroughtime.com/>
- **Earth Interactions—Climate Patterns in past centuries**  
The publication *Global Temperature in Past Centuries*, by the National Oceanic and Atmospheric Administration and several university scientists, can be found online through the journal *Earth Interactions*. The focus here is on some of the more unusual climate phenomena of the past several centuries. Data were collected from tree rings, ice cores,

corals, historical records and lake sediments.  
[http://www.ncdc.noaa.gov/paleo/ei/ei\\_cover.html](http://www.ncdc.noaa.gov/paleo/ei/ei_cover.html)

- **Next Wave:** Billed as “the career development resource for scientists,” Science’s Next Wave, produced by the American Association for the Advancement of Science, is one of the most comprehensive on the Web devoted to careers in science and the needs and frustrations of young scientists.  
[http://sciencecareers.sciencemag.org/career\\_development/](http://sciencecareers.sciencemag.org/career_development/)
- **Geology by Lightplane:** through 36 years of aerial photographs, organized geographically by flight. Maher has made his copyrighted photos available to the public for geological education. View the photographs on the main site and then download detailed, 2000-pixel-wide JPEG versions from an FTP site.  
<http://www.geology.wisc.edu/%7Emaher/air.html>

More to come in the next edition!



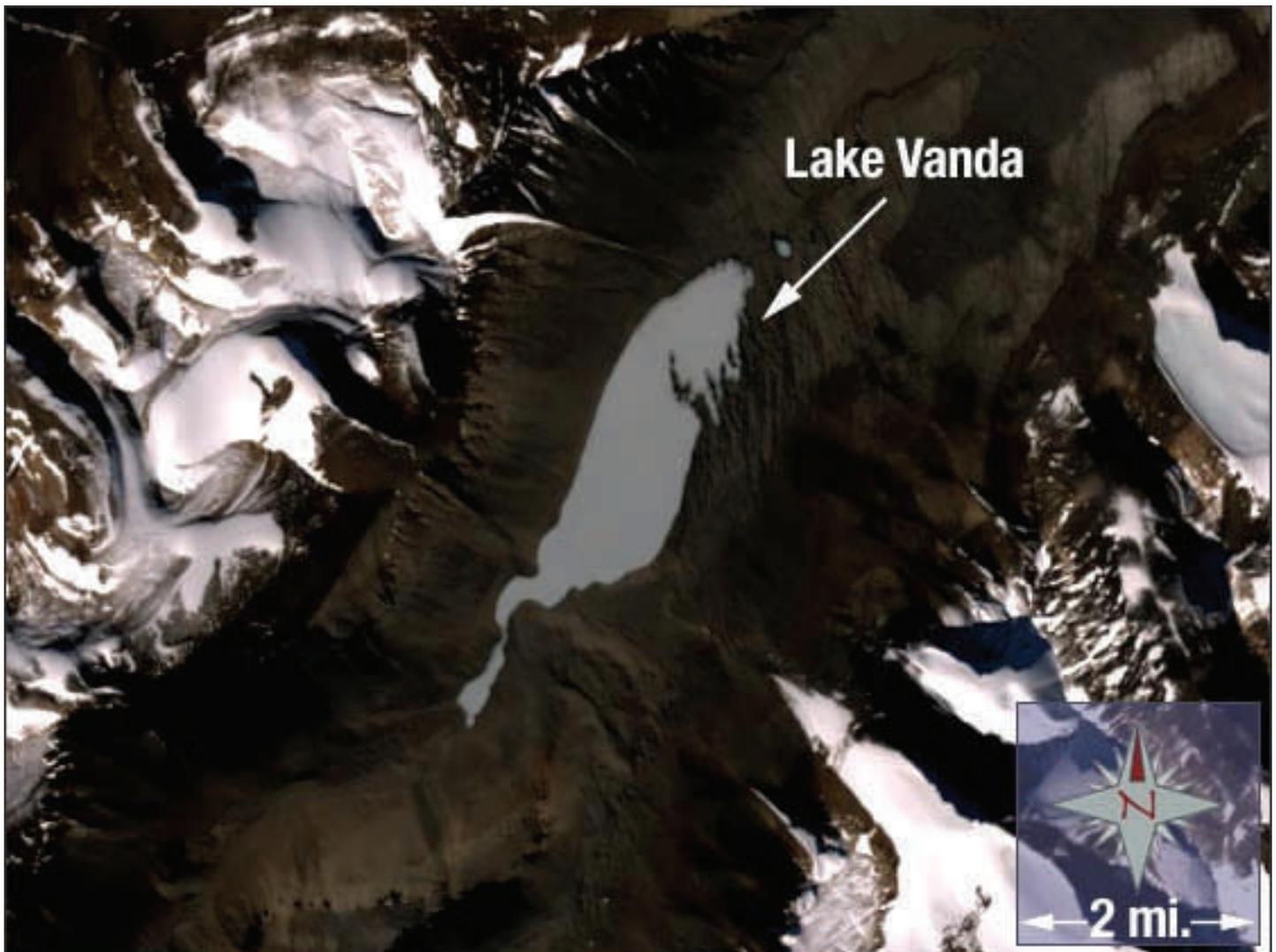
## Upcoming Events

- **Sunday April 22nd—Earth Day! Celebrate!**
- **Tuesday April 24th Geoscience Seminar Series** Presents: Frank Pazzaglia, Lehigh. ‘*The geomorphic record of active tectonics in the Apennines and its implications for the geodynamics of Mediterranean subduction*’, **3:30pm Beach Hall 233**. Reception to follow!
- **Thursday April 26th: EEB Seminar Series** presents Gene Hunt, National Museum of Natural History, ‘*Climate change and the evolution of body size in deep-sea ostracodes*’ **4:00PM in BSP 130**
- **Thursday April 26th: Geoscience Faculty Candidate Seminar:** Dr. Michael Tice, Caltech ‘*Who created the worlds oldest microbial mats?*’, **11:30am Beach Hall 233**. Grad luncheon to follow.
- **Friday April 27th, MARN seminar:** Guiling Wang—UConn CEE: ‘*Response of the Terrestrial Ecosystem to Projected Climate Changes and its Hydrological Impact*’. **3:00pm, Marine Sciences 103, Avery Point campus**.
- **Monday April 30th: Geoscience Faculty Candidate Seminar:** Dr. Miriam Katz, Rutgers, ‘*Biogeochemical consequences of phytoplankton evolution*’, **11:30am Beach Hall 233**. Grad luncheon to follow.
- **Thursday May 3rd: Geoscience Faculty Candidate Seminar:** Dr. Christophe Dupraz, Neuchatel, ‘*Title TBA*’, **11:30am Beach Hall 233**. Grad luncheon to follow.
- **Friday May 11th: Geoscience Faculty Candidate Seminar:** Dr. Elias Samankassou, Fri-borg, ‘*Title TBA*’, **11:30am Beach Hall 233**. Grad luncheon to follow.



## Earth Science Picture of the Day

---



**EPOD from 4/12/2007: Lake Vanda, Antarctica.** The above Landsat satellite image features Lake Vanda, which is located in the central region of Wright Valley in Antarctica -- flanked by the Transantarctic Mountains. This frozen lake is approximately 3 miles (5 km) long and up to 250 feet (76 m) deep in places. While the surface waters of Lake Vanda are perennially ice-covered, a thermal inversion caused by the hypersaline nature of the deeper water enables water temperatures to reach nearly 80° F (27 C) at the lake's bottom! Lake Vanda has no outlet to the sea but is fed by the Onyx River, Antarctica's longest river (~19 miles or 30 km). During the short summer season, the Onyx carries glacial meltwater to Lake Vanda. *Photo by NASA.*

# EPA STAR Fellowships Call for Proposals

Environmental Protection Agency's (EPA) Science to Achieve Results (STAR) Program and the U.S. Department of Agriculture's (USDA) National Research Initiative (NRI) Competitive Grants Program are seeking applications for research on the ecological impacts from interactions of climate change, land use change, and invasive species. An invasive species is an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

The purpose of this joint solicitation is to quantitatively investigate how climate change, climate variability, and land use change: (1) influence the establishment, abundance and distribution of invasive species; (2) interact with invasive species to create feedbacks



that increase their success; (3) interact with invasive species to cause threshold responses in natural and managed systems; or (4) affect the chemical, biological and mechanical management of invasive species. The EPA is interested in proposals addressing aquatic ecosystems and the USDA in proposals addressing managed terrestrial systems,

both of which can be used to enhance decision support tools used by decision makers to respond to invasive species.

Deadline: June 26, 2007.

More details can be found here:

[http://es.epa.gov/ncer/rfa/2007/2007\\_star\\_ecoimpacts.html](http://es.epa.gov/ncer/rfa/2007/2007_star_ecoimpacts.html)

## Did You Know?

*A new 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? April 12, 1929**, Arches National Park is established. This park contains the worlds highest concentration of natural arches.
- ⇒ **April 16-22** is National Environ-

mental Education Week.

- ⇒ **Did you know? April 18, 1906.** The great 1906 San Francisco Earthquake with an estimated magnitude of 7.8, occurs. The earthquake tore a 270-mile rift along the San Andreas Fault.
- ⇒ **Did you know? April 19, 1971**, USSR launches Salyut 1, the first space station.

- ⇒ **Did you know? April 21, 1927**, the great Mississippi Flood. This flood of the Mississippi River Valley inundated 27,000 square miles of land.

## GeoTrivia!

### Fun with Geoscience Trivia

\*\*\*\*\*

1. What term is given to processes that take place under the atmosphere but above water?
2. How many faces does a deltohedron crystal have?
3. What is the mineral name for com-

mon Epsom Salts (hint: See photo!)?

Check your answers:

[http://www.geosociety.org/GSA\\_Connection/0703/trivia.htm](http://www.geosociety.org/GSA_Connection/0703/trivia.htm)



*This mineral is used to make Epsom Salts.*



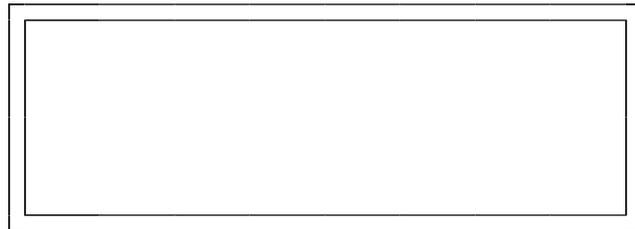
## UNIVERSITY OF CONNECTICUT

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](mailto: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!*



## Massive Antarctic Lakes Found

Ice flow dynamics in Antarctica is a key understanding that is lacking in effective modeling of the impact of climate change. The recent discovery of a massive “plumbing” system of linked reservoirs 1,000 meters beneath two major ice streams of the West Antarctic Ice Sheet, however, may help fill out those models.

Ice streams are the principal conveyor of ice from the interior of a continental ice sheet to the ocean. The ice streams, which typically reach a width of 100 kilometers and move at a non-glacial pace of up to 1.5 meters per day, lubricate the ice sheet to allow it to slide piecemeal into the ocean. In recent years, researchers have discovered lakes beneath the giant ice sheets, but until now they had not realized how interconnected they are, says Helen Amanda Fricker of Scripps Institution of Oceanography. Understanding the relationships between the ice streams, lakes and ocean discharge, she says, “would help tremendously our understanding of how much sea levels will rise” with global climate change.

Using NASA’s ICESat weather satellite, Fricker and her team analyzed changes in ice stream thickness and topographic changes between 2003 and 2006. Those ice stream surface changes are due to the movement of water deep beneath the ice, the team reported Feb. 15 in *Science Express*.

The under-ice lake system works like a series of cascading pools at varying heights, Fricker says, with copious amounts of water flowing beneath the ice streams toward the ocean. “Previously, we thought the water under the ice flowed as a thin sheet, a millimeter thick or less,” says Robert Bindshadler of NASA Goddard Space Flight Center, a co-author on the study. The team was also surprised to find a series of large subglacial lakes beneath the ice streams, with one lake alone holding water volumes equal to that of Lake Ontario, Fricker says. Additionally, the researchers were shocked at the volume of discharge: One subglacial lake discharged about 2 cubic kilometers of water in just three years. “We didn’t realize that the water under these ice streams was moving in such large quantities, and on such

short timescales,” she says. “We thought these changes took place over years and decades, but we are seeing large changes over months.” Indeed, Bindshadler says, “every time we think we have a handle on the timescales we’re dealing with, they end up changing faster than we think.”

Although this study will allow researchers to improve their physical models of the water’s movement, researchers are still not clear on how the lakes affect the rates of glacial melting and whether they cause ice streams to move faster or slow down. Antarctic ice streams require subglacial water to activate their fast flows, says Garry Clarke, a glaciologist at the University of British Columbia. Thus, “anything that affects the distribution of water [under] ice streams should affect” the flow. This study “is drawing a lot of attention,” Clarke says. “It is truly splendid to discover that we can learn a lot about subglacial [water] processes without actually drilling through the ice.” The new research provides glaciologists with new tools that make possible measurements that used to require dangerous and expensive drilling.