

# *GEOBULLETIN*

## *APRIL 11, 2008*

**LECTURE SCHEDULE** ---- All lectures (unless otherwise noted) are held on Fridays at 3:30 PM in AB20 (Laudon Lecture Hall). Coffee & cookies are served in the lobby starting at 3:15 PM.

### **SPRING 2008 WEEKS LECTURE SCHEDULE**

**April 11** ----- Laurie Brown ---- University of Massachusetts ----

#### **FRIDAY, APRIL 11TH, 3:30 P.M., 140 WEEKS HALL EARTH ANALOGS FOR MARTIAN MAGNETIC ANOMALIES**

The crust of Mars is composed in part of rocks that carry a very strong and stable magnetization as detected by the Mars Global Surveyor space probe. The large magnetic anomalies observed must be due to remanent magnetization residing in crustal materials, as Mars no longer has an active magnetic field. Magnetic anomaly models have been presented with average natural remanent magnetizations of 20 A/m, an order of magnitude stronger than remanences commonly measured in terrestrial basalts. Evaluating Earth analogs with the properties of high remanence intensity and high coercivity are important for the understanding of Martian history. Likely candidates are mid-Proterozoic ilmenite ore bodies, ilmenite norites and associated anorthosites. We have studied a suite of such rocks in the Rogaland Igneous Province of southern Norway, dated at ~930 Ma. The Bjerkreim-Sokndal layered intrusion has numerous cumulate layers, with the magmatically more primitive layers having ilmenite with abundant fine hematite exsolution and less than 1% coexisting magnetite. Associated with the hemo-ilmenite bearing layers are distinct negative remanent anomalies. More evolved layers are more magnetite rich with ilmenite without hematite exsolution and corresponding induced anomalies. A recent high-resolution helicopter survey shows a large remanent controlled negative anomaly of -14,000 nT over the Heskestad region of the Bjerkreim-Sokndal layered intrusion. Detailed ground magnetic profiles over the area show local minimum anomalies of -30,000 nT, nearly half the size of the Earth's present field. Oriented samples collected from the Heskestad low have higher remanences (average 25 A/m) than the rocks from the positive induced anomaly (average 1.4 A/m), and steep negative inclinations. Additional samples collected from three associated anorthosites, composed of greater than 90% plagioclase feldspar, also show higher than expected remanences, even though the rocks contain less than 1% oxides. Remanence values are variable, but average as high as 6 A/m for the Håland-Helleren anorthosite. These rocks with high NRM intensity and high coercivity are possible Earth analogs for the strong remanent magnetization observed on Mars, as well as add support to the recently described property of 'lamellar magnetization' whereby exsolved phases in the ilmenite-hematite system produce strong and stable magnetization even with only minor amounts of oxide material present.

**April 18** ----- Christopher Kim – Chapman University

**April 25** ----- Board of Visitors' Meeting ---- date reserved ----

**May 2** ----- Clark Johnson – University of Wisconsin

**May 9** ----- Sean C. Solomon ----- DTM/Carnegie Institution of Washington -----

**May 15** ---- Brian Tucker



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### **FALL 2008 WEEKS LECTURE SCHEDULE**

September 12 ----- Steve Holland --- University of Georgia

### **UW PLATTEVILLE GEOLOGY SEMINAR SERIES**

Geological Society of America Distinguished Lecturer  
Professor John J. Clague  
Department of Earth Sciences, Simon Fraser University, Burnaby, British Columbia

#### **TITLE: Earthquake Hazards and Risk in the Pacific Northwest**

Date: Friday, April 18, 2008

Time: 1:00 p.m.

Place: Doudna Little Theater (Room 103)

Sponsored by the Departments of Social Sciences and Civil & Environmental Engineering, and the College of Liberal Arts & Sciences

Public Welcome  
Refreshments will be provided.

Geological Society of America Distinguished Lecturer  
Professor John J. Clague  
Department of Earth Sciences, Simon Fraser University, Burnaby, British Columbia

#### **TITLE: Tsunamis – Stealth Killers**

Date: Friday, April 18, 2008

Time: 3:00 p.m.

Place: Doudna Little Theater (Room 103)

Sponsored by the Departments of Social Sciences and Civil & Environmental Engineering, and the College of Liberal Arts & Sciences

Public Welcome  
Refreshments will be provided.

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### **POSITION OPENINGS:**

**PALEOCLIMATOLOGY/PALEOCEANOGRAPHY** Research Scientist Positions at the Lamont-Doherty Earth Observatory of Columbia University: Search Number is LD 670 08 009. The Lamont-Doherty Earth Observatory of Columbia University seeks applicants for up to three Doherty Research staff positions: Senior Research Scientist (10 years post PhD experience, Research Scientist (6 years post PhD experience, and Associate Research Scientist (2 years of post PhD experience) in paleoclimatology or paleoceanography. Preference will be given to applicants who have strong analytical skills, particularly in emerging methods in paleoceanography, and who have demonstrated experience in planning and implementing ocean sediment coring or other seagoing sample collection expeditions. Applicants should have an interest in developing collaborative projects across other fields of expertise at Lamont including geochemistry, ocean and atmosphere dynamics, terrestrial ecology, and carbon cycle research. The positions will include affiliation with the Lamont Core Repository, and the successful senior applicant will have an opportunity to assume leadership of this facility. Minimum requirements for the positions are a Ph.D. in related fields, with appointment contingent upon scholarly credentials. Search will remain open for at least 30 days after the ad appears (until May 17th).

Send a 2-3 page statement of research objectives, names of five referees, and full curriculum vitae to: Ms. K. Carlsen, HR Coordinator, Lamont-Doherty Earth Observatory Of Columbia University, 61 Route 9-W, Palisades, NY 10964 or email packet to: [personnel@admin.ldeo.columbia.edu](mailto:personnel@admin.ldeo.columbia.edu) with Search Nbr: LD 670 08 009 in the subject line.

For more information regarding this recruitment, please contact:

Peter deMenocal, Chair of the Search Committee

Lamont-Doherty Earth Observatory,  
61 Route 9W, Palisades NY 10964, USA

or by e-mail to: Peter deMenocal  
[peter@ldeo.columbia.edu](mailto:peter@ldeo.columbia.edu)

Columbia University is an equal opportunity affirmative action employer.

Women and minorities are encouraged to apply.

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**Subject: AZORES - Announcement of Postdoc Grants**

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The Centre of Volcanology and Geological Risks Assessment (CVARG) from the Azores University, Azores islands, Portugal, through the Azores Regional Government, has an open call for 3 post-doctoral positions.

Job description: 3 postdoctoral grants in seismology/geodesy

Job dates: Starting date: June 1st 2008  
Ending date: 6 year contract

Job location: Centre of Volcanology and Geological Risks Assessment (CVARG), Azores University, Azores islands, Portugal

Open call until April 15th 2008

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**OPPORTUNITY FOR UNDERGRADUATE RESEARCH/EMPLOYMENT AT THE WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY.** The research is gathering and entering soft sediment geotechnical data for Wisconsin and entering it into a data base. This is working for Tom Hooyer ([tshooyer@wisc.edu](mailto:tshooyer@wisc.edu)) of the WGNHS. Here is the complete job description:

### **Duties of Position**

Gather and compile geotechnical data on un lithified sediment from Wisconsin. Enter geotechnical data into an existing Microsoft Access database.

The successful candidate should be able to independently conduct a literature review of engineering-related journals and reports to gather the appropriate information. Some familiarity with Microsoft Access is required.

This position is part time (8-20 hours per week) through June, 2008. Hourly pay is \$8 to \$12 per hour depending on experience. Please note that the work will primarily be at the Wisconsin Geological and Natural History Survey located about 1-2 miles west of campus at 3817 Mineral Point Road.

Please direct any questions to Tom Hooyer at [tshooyer@wisc.edu](mailto:tshooyer@wisc.edu).

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**TOWSON UNIVERSITY** has recently been awarded funding by the National Science Foundation to host a Research Experience for Undergraduates site in Urban Environmental Biogeochemistry beginning in Summer 2008. We are now accepting applications for this summer and request your help in recruiting qualified students for this program. Benefits include a \$4500 stipend, room and board, and travel expenses to and from Towson University.

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Students with backgrounds in Chemistry, Biology, Geology and Environmental Science are encouraged to apply.

Complete information and an online application form can be found at [www.towson.edu/chemistry/reu.asp](http://www.towson.edu/chemistry/reu.asp). The application deadline is April 25, 2008 and admissions will be made on a rolling basis.

If you or your students require any additional information, please feel free to contact me.

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F: 410.704.4265  
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**GEOSYNTEC CONSULTANTS** has Ongoing Needs for Engineers and Scientists  
We are seeking motivated, passionate, technical candidates to join us in our offices nationwide.

### **Our ideal candidate...**

- holds an advanced degree in engineering or science,•
- enjoys superior communication and interpersonal skills,•
- demonstrates academic achievement, and•
- preferably possesses the ability to become professionally licensed•

Since 1983, Geosyntec has provided clients with environmental, geotechnical, and hydrological engineering consulting and design services. We are an employee-owned company with offices throughout the United States and in Canada, Malaysia, and the United Kingdom. Nationally known for our practice leadership, client service, and innovation, our professionals continue to develop new technology applications and capabilities. Our applied research partnerships with leading universities, NASA, other Federal Agencies and others are producing better methods for all of our practice areas. We strive to provide a stimulating, progressive, and friendly work environment that will enable us to continue to recruit and retain great staff to provide the best possible service and value to our clients.

### **Our Practice Areas**

Environmental Engineering  
Geotechnical Engineering  
Water & Natural Resources  
Risk Assessment & Toxicology

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Site Investigation & Remediation  
Waste Management  
Construction Management Brownfields/Redevelopment

### **Engineering News-Record Rankings:**

**For 2007, Geosyntec is ranked:**

#18 in the Top  
Environmental Science Firms  
#8 in the Top  
Design Firms in Solid Waste  
#10 in the Top  
Design Firms in Chemical/Soil Remediation  
# 85 in the Top 200  
Environmental Firms

**Multiple openings available. Interested?**

[www.geosyntec.com](http://www.geosyntec.com)

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### **GRADUATE STUDENT PEER MENTOR AWARDS**

*Honor the graduate student in your department who takes the time to help others succeed in graduate school. Nominate them for the...*

- Write a letter detailing how this graduate student exhibited mentorship qualities.
- Include the email address for you and for the nominee.
- Submit the letter to MGN in 408 Bascom Hall, or email it to [MGN@bascom.wisc.edu](mailto:MGN@bascom.wisc.edu) by March 28th.
- Any student or staff can submit a nomination on behalf of a graduate student. Individuals or groups can combine to submit a single letter on behalf of a nominee.

*Recipients will be honored at a reception on April 22th at 5pm at Memorial Union.*

**Questions? Contact [mgn@bascom.wisc.edu](mailto:mgn@bascom.wisc.edu).**

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### **CALIFORNIA STATE UNIVERSITY, LOS ANGELES**

#### **DEPARTMENT OF GEOLOGICAL SCIENCES**

Position: One year Full-Time Temporary Faculty Position in Neotectonics/ Structural Geology  
Starting Date: September 2008  
Application Deadline: April 30, 2008

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## *APRIL 11, 2008*

[http://www.calstatela.edu/univ/hrm/forms/appl\\_emp.xls](http://www.calstatela.edu/univ/hrm/forms/appl_emp.xls)

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### **SUMMER CREDIT FIELD-CAMP COURSE**

#### **Colorado Ecosystem Field Studies**

**Earn 3 undergraduate credits in the foothills of the Rocky Mountains at the spectacular 1,200-acre, private Cal-Wood Education Center (near Jamestown, Colorado, 1 hr nw of Denver, 1/2 hr nw of Boulder) Course 1- June 8-21 Course 2- July 6-19, 2008**

**Explore & survey the concepts, components & conservation of the Colorado Front Range ecosystem:**

- \* Geology, geography & climatology**
- \* Ecology, wildlife & forestry**
- \* Field observation & research methods**
- \* Ecosystem restoration & stewardship**

#### **For course info contact:**

Steve Johnson, Course Director

steve@calwood.org

(303) 859-0173, www.calwood.org

**This outdoor course synthesizes and applies information learned in a classroom context to an authentic, complex, and dynamic environmental setting. Instruction is delivered with direct lecture, hands-on activities, guided exploration, field trips and guest speakers.**

**Students base/tent-camp in a beautiful mountain location, hike daily, and participate in an intensive educational experience. Class size is limited to 16 students so register early to reserve a space.**

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\*\*\*\*\* **HAVE A GREAT WEEKEND!** \*\*\*\*\*