GEOBULLETIN
APRIL 17, 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

Julia Cole
University of Arizona

THURSDAY, APRIL 17TH, 4:00 P.M., 140 WEEKS HALL
A BAT'S-EYE VIEW OF CLIMATE CHANGE IN THE SOUTHWEST:
NEW RESULTS FROM ARIZONA SPELEOTHEMS

In the desert Southwest, climate and water are fundamental regulators of human and natural activity. The Southwest is among the regions likely to be mostly heavily impacted by ongoing and future climate change, with significant warming and drying projected by nearly all climate modeling groups. Our long-term perspective on Southwest climate variability is relatively limited as we have few continuous paleoclimate records in the region. We expect that a better understanding of past climate will help address basic questions about how long-term droughts develop and persist in this region, and about the relationship between the wintertime westerly and summer monsoon precipitation regimes. Here I will discuss a growing effort to develop paleoclimate records from cave deposits (speleothems) in the Southwest US, with the goal of understanding regional patterns and mechanisms of climate variability. Isotopic monitoring of cave dripwaters help us constrain our interpretations. Our reconstructions thus far target three time intervals: Marine Isotope Stage 3 (20-55 ky BP); the mid-Holocene (3.2-6.4 ky BP), and the last 1-2 millennia. During MIS3, we find evidence that the abrupt millennial changes known from North Atlantic records have a strong signature in the hydroclimate of the Southwest, such that a warm North Atlantic corresponds with dry/warm conditions in the Southwest. We compare our record with others in the western US/Pacific region and infer an annular mechanism for these changes (latitudinal shifts in storm tracks), rather than an ENSO-related pattern of change. During the mid-Holocene, we find strong support for an intensified summer monsoon, along with a nonstationary signature of multidecadal to century-scale variability. Over the past millennium, initial results also show substantial decade-century scale variations. Planned work will expand these results to westerly and monsoon end-member regimes.

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

SPECIATION OF MERCURY USING SYNCHROTRON RADIATION" (RM A257, BROWN BAG AT 12:00PM):

Characterizing the chemical form of mercury in geological, synthetic, or biological samples is arguably one of the most important factors in assessing its potential toxicity and bioavailability. In recent years,

the use of high powered X-rays generated from synchrotron facilities has evolved as one of the most direct methods by which to identify the species of mercury present and their relative abundances in such samples. Such X-ray techniques, which are transferable to other metals as well, have been applied to characterize the speciation of mercury in mine tailings samples from the California Coast Range, identifying effects of geological background, ore roasting, and particle size among other factors.

"PARTICLE SIZE EFFECTS ON HEAVY METAL CONCENTRATION, DISTRIBUTION AND AVAILABILITY IN MINE TAILINGS" (WEEKS LECTURE, RM. 140, 3:30P):

Decades of mining have left a legacy of metal-contaminated mine wastes across California. Characterizing trends in metal concentration, metal speciation, and correlations between metals as a function of particle size can provide insight into the physical and chemical processes that distribute metals in the environment and also affect their bioavailability. A combination of mechanical size separations, bulk chemical analyses, and X-ray spectroscopic methods aids the identification of such trends as well as pathways that control metal transport from mine-impacted sites, with specific focus on arsenic contamination in gold mine tailings from the Mojave desert in Southern California.

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

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:

University *of* Wisconsin-Eau Claire
Department of Geology

POSITION:
The Department of Geology at the University of Wisconsin-Eau Claire invites applications for a 100% one-year Instructional Academic Staff position with a title of ***Visiting Assistant Professor or in the Lecturer series.*** *The appointment will begin on* ***August 18, 2008****.*

QUALIFICATIONS:
An M.S. is required but preference will be given to individuals that have a Ph.D. or are ABD in geology or a closely related discipline at the time of appointment. A demonstrated ability to teach a laboratory and field intensive introductory Earth Science course for education majors and success in teaching at the undergraduate level may be considered an asset. The ability to enhance the diversity of the department and serve as a role model and mentor for women and/or minorities may also be considered an asset.

RESPONSIBILITIES:

Applicants will be expected to participate in teaching laboratories and field intensive introductory Earth Science course for education majors.

DEPARTMENT:

The Department of Geology currently has eight faculty, seventy two majors/minors, and offers a bachelor's degree in geology. Students are given an opportunity to choose an emphasis in general geology, hydrogeology and water chemistry, environmental science, or marine geology. The department is well equipped for collaborative research. Our laboratory facilities include a modern electron microscope laboratory (SEM-EDS and JEOL 2010 analytical TEM), Bruker SRS 3000 XRF spectrometer, Thermo-Finnigan Element 2 ICPMS, Rigaku – automated powder diffractometer, 8-station computer laboratory, complete geophysical instrumentation, a high P/T experimental petrology laboratory, micro – FTIR spectrometer, and a hydrogeology laboratory with on-campus water table observation wells, piezometers, and lysimeters. The department has access to other sophisticated equipment through collaborations.

UNIVERSITY & EAU CLAIRE COMMUNITY:

The University of Wisconsin-Eau Claire campus community consists of 10,500 students and 700 faculty and administrative/professional staff. As the UW System's only Center of Excellence for Faculty and Undergraduate Research, faculty and students regularly work side-by-side on original research. Often described as Wisconsin's most beautiful campus, UW-Eau Claire's campus spans the banks of the Chippewa River in the heart of Eau Claire, western Wisconsin's largest city. Eau Claire and the surrounding countryside have many scenic rivers, lakes, parks, bike trails and wooded areas where students and community members enjoy seasonal sports, camping and a variety of other recreational activities. A community of 60,000, Eau Claire is a safe, friendly, and affordable community with employment opportunities for family members and outstanding schools for children. Eau Claire is just 90 miles from Minneapolis-St. Paul which offers world-class theater, symphony and chamber orchestras, opera, and restaurants as well as professional sports, shopping, and cultural diversity.

APPLICATION PROCEDURE:

Send materials to:

Office of Affirmative Action
P.O. Box 4004
University of Wisconsin-Eau Claire
Eau Claire, WI 54702-4004

For priority consideration, submit application materials by May 9th, 2008; however, applications will be considered until the position is filled. The university reserves the right to contact additional references with notice given to the candidates at an appropriate time in the process. Applicants' names are subject to public release unless confidentiality has been requested in writing. Names of all finalists must be released. A criminal background check will be required prior to employment. UW-Eau Claire is an AA/EEO employer.

To learn more, visit our Web site: http://www.uwec.edu/acadaff/jobs/.

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Shaw® Shaw Environmental, Inc.

ENTRY-LEVEL GEOLOGIST, HYDROGEOLOGIST OR ENGINEER

Shaw Environmental, Inc. is one of the largest providers of environmental and infrastructure services in the world. "A World of Solutions" characterizes our culture and the broad range of our capabilities, products, services and expertise. It is a most exciting period in our history; our 25,000 employees tackle environmental challenges throughout the U.S. and internationally. We are currently seeking dedicated professionals for our office located in St. Charles, Illinois.

JOB DESCRIPTION –ENTRY-LEVEL PROFESSIONAL:

Perform various aspects of project-related work including:

- ❑ Soil and groundwater sampling
- ❑ Field inspection
- ❑ Monitoring well installation and testing
- ❑ Oversight of subcontractors
- ❑ Modeling
- ❑ Potential for project management – project and budget tracking, client relations, etc.
- ❑ Project activity coordination
- ❑ Technical proposal and report writing

QUALIFICATIONS:

- ❑ BS/MS Geology, Hydrogeology, or Civil, Environmental or Geological Engineering
- ❑ 0-2 years experience
- ❑ OSHA 40-hour training
- ❑ Knowledge of federal and state environmental regulations, a plus
- ❑ Knowledge of solid waste projects or remediation systems, a plus
- ❑ Ability to work on multidisciplinary project work
- ❑ Excellent oral & written communication skills
- ❑ Ability to work in a team environment
- ❑ Self-starter and problem solver
- ❑ Excellent organizational skills

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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 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

Columbia University is an equal opportunity affirmative action employer.

Women and minorities are encouraged to apply.

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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) of the WGNHS. Here is the complete job description:

Duties of Position
Gather and compile geotechnical data on unlithified 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.

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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.
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. 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.

Ryan E. Casey, PhD
Associate Professor of Chemistry
Environmental Science and Studies Program Towson University 8000 York Rd.
Towson, MD 21252-0001
T: 410.704.3051
F: 410.704.4265
racasey@towson.edu

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SUMMER CREDIT FIELD-CAMP COURSE

Colorado EcosystemField 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 intensiveeducational experience. Class size is limited to 16 students so register early to reserve a space.

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********** **HAVE A WONDERFUL WEEKEND!** **********