GeoBulletin is distributed weekly, by E-mail. Contributions are requested! If you have a news item, a request, an announcement etc. email it to geodept@geology.wisc.edu or leave it at the office, Room 225 by Noon on Monday.

Weeks Lecture

Speaker list – Spring 2012

Date      Speaker                              Faculty Sponsor
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Friday, Mar 23, 2012:  Marin Clark, Univ of Michigan (Host: Goodwin)

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Dr. Marin Clark
University of Michigan
Earth & Environmental Sciences

Friday, March 23rd, 2012, 3:30 PM, Weeks Hall – Room AB20

Slowing of continental collision: Implications for the forces that resist plate motion

A decrease in convergent rate at the inception of continental collision is expected due to the greater buoyancy of continental than oceanic lithosphere. Post-collisional convergent rates are less well understood and have been generally attributed to crustal thickening or mantle foundering that increases gravitational potential energy and further resists convergent motion. However, the role of deforming continental mantle lithosphere on plate motions has not been previously considered. Using a combination of field data and plate motions, I show that India-Eurasia convergence has decreased exponentially since their collision, which has kept the bulk strain rate across Tibet constant at a rate of 7 x 10^-16 s^-1 equal to the modern GPS rate. A constant bulk strain rate of the orogen suggests that convergent motion is resisted by constant stress (or constant force) applied to a relatively uniform layer or interface at depth. These results demonstrate how the deforming continental mantle lithosphere creates a type of viscous resistance that affects plate motion irrespective of how topography evolved.
Friday, Apr 13, 2012:

BOV

Friday, Apr 27, 2012:

Tim Masterlark, U. Alabama (Host: Feigl)

Friday, May 4, 2012:

Carl Jacobson, IOWA State (Host: Goodwin)

Friday, May 11, 2012:

Margaret Fraiser, UW-Milwaukee (Host: Peters)

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**Colorado Scientific Society**

**STUDENT RESEARCH GRANTS AVAILABLE**

The Colorado Scientific Society, a nonprofit earth-science organization, invites students enrolled at an accredited college or university to apply for research grants to be awarded in late April 2012. Grants are generally awarded to students in a Masters or Ph.D. program, however applications from undergraduates conducting senior-level research will also be considered and are encouraged.

General grant categories:

- Field-oriented research on geology, geochemistry, and geophysics of the Rocky Mountain region
- Engineering geology research (with no restriction on geographic area of interest)
- Studies on the Heart Mountain fault in northwestern Wyoming or a Quaternary study with no geographic restriction

The grant amounts actually awarded may vary depending on the number of applicants, however typical amounts from past years have ranged from $600 to $1200.

Students can obtain application forms and grant policy and procedure information directly from the Society website at [http://www.coloscisoc.org/grants/grants.html](http://www.coloscisoc.org/grants/grants.html)

Completed applications must be emailed or post-marked by March 30, 2012.

Applications should be submitted via email to:

lisa.fisher@escalantemines.com

Applications sent via regular mail are permitted only as a last resort:

Colorado Scientific Society
C/O Lisa R. Fisher
1530 Alkire Street
Golden, CO 80401
The Department of Earth Sciences at IUPUI is hiring an Instrumentation and Academic Specialist to manage research instrumentation, provide departmental laboratory safety compliance, and support teaching. The primary purpose of this position is to provide assistance to the Department and faculty through oversight of the Earth Science research infrastructure, with particular focus on managing and maintaining the efficient operation of the Department’s instruments (e.g. GCs, HR-ICP-MS, GS-MS, gas-source irMS, ICP-ES, XRD, CHN analyzer and computer interfaces). The Academic Specialist will provide general laboratory research support, such as user training, overseeing sample preparation and analyses, instrument troubleshooting, and instrument Maintenance. Laboratory support also includes ensuring departmental and building safety by serving as laboratory safety coordinator. In addition, this position will provide teaching support including maintaining the rock and mineral collections for course instruction as well as helping students to coordinate laboratory and field activities. Depending on the person’s qualifications, duties may include occasional course instruction in the Department of Earth Sciences and/or leading occasional fieldtrips. Finally the Academic specialist may be responsible for providing general departmental support by performing administrative and other miscellaneous tasks such as coordinating maintenance of vehicles, equipment and property. This is a full-time position, renewable on a 12-month basis. Analytical and instrumentation experience is required. Applicants must have an M.S. degree or higher in earth science, environmental science, chemistry, biology or a related field. IUPUI is an Equal Opportunity/Affirmative Action educator and employer and affords reasonable accommodations to persons with disabilities.

http://www.iupui.edu/~oeo/academicjobs/acad_jobs.htm

Postdoctoral Research Associate - University of Utah

A postdoctoral research associate position in isotope hydrology and hydroecology is available through the University of Utah Department of Geology and Geophysics (http://www.earth.utah.edu/). We are seeking a candidate with experience in stable water isotope (H and O) systematics to conduct observational and modeling studies of artificial water distribution systems in the western USA and their impact on local to regional hydro- and eco-systems. The position is available starting mid-late summer, 2012, with an initial appointment of 1 year...
and potential for renewal for one additional year. Applications will be reviewed on receipt and until the position is filled.

The postdoctoral researcher will have access to a wide range of analytical and modeling resources, including a cluster of new field-deployable isotope ratio infrared spectroscopy instruments for liquid and vapor-phase water measurements, traditional mass spectrometric instruments at the UU-SIRFER facility (http://sirfer.utah.edu/), and spatial analysis tools developed as a component of the IsoMAP project (http://isomap.org). A wide range of opportunities for collaboration and project and career development will be available in association with efforts such as the campus-wide Global Change and Ecosystems Center (http://environment.utah.edu/) and a newly funded NSF-Macrosystems Biology program in continental-scale isotope ecology (http://wateriso.eas.purdue.edu/itce/). Examples on ongoing research activities in our group are available at http://www.eas.purdue.edu/ireh/.

A strong background in isotope geoscience or a related area is required, and previous experience with spectroscopic measurement of water isotope ratios and/or GIS would be beneficial. This position is limited to applicants who are U.S. citizens. To apply, please send a current CV, brief description of your research experience and interests, and a list of 3 potential letter-writers to Gabe Bowen (gabe@purdue.edu).

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ARCADIS is seeking a detail oriented, well organized, graduate geologist with less than 2 years of related experience to join our Midland, Texas office.

Candidate will be responsible for assisting Project Managers and Task Managers to complete a variety of tasks including developing and implementing site investigation work plans, installation of monitoring wells, collection of soil and/or groundwater samples, and lithologic logging of borings.

Basic and Required Qualifications:
* Minimum years of experience: 0
* Education required: BA/BS Degree in Geology or expect to earn in the next 3-6 months

Additional and Preferred Qualifications:
* Education preferred: BS Degree in Geology
* Registrations/Certifications preferred: 40-hr. HAZWOPER
* Years experience preferred: 0-6 months
* Skills preferred: Microsoft Access, EXCEL, PowerPoint
* This position does require travel. Travel amount is greater than 50%.
* A valid driver's license and clean driving record is required for this position.
* This position does not manage others.

ARCADIS is an Equal Opportunity Employer M/F/D/V

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Postdoctoral position: Studying diffuse uranium release from mine waste rocks

Uranium ore has been mined in France for nearly 50 years from about 200 sites. This exploitation, which began right after World War II, ended in 2001 with the closure of Jouac site (Haute-Vienne). The evolutions of uranium mining industry in France led to the fact that AREVA is nowadays in charge of the reclamation and the radiological and environmental survey of all these 200 sites. During the exploitation, 52 Mt of ores have been processed to produce about 76 000 t of uranium, 52 Mt of process mining residues and 200 Mt of waste rocks.

Waste rocks are overburden rocks overlying the ore or rocks not processed for their low uranium content. As they are initially located in contact with mineralized uranium zones, their uranium concentration is usually
higher than the geochemical background. Either stocked in heaps or used to fill up open pits during restoration work (as cover of mine process residues storages), these rocks undergo a meteoritic alteration which has to be evaluated.

Indeed, weathering by meteoritic waters at the surface and through mine tailings can lead to mechanical fracture and mobilization of some components, such as uranium. At the same time or later on, secondary minerals neoformation can also concentrate these elements by sorption or precipitation processes, and thus impact on the kinetics of geochemical transfers. Some waste rocks heaps are vegetalized, even with the development of protosoils, creating a critical zone with specific characteristics. All these phenomena can lead to mass transfers that should be quantified to be able to limit uranium migration downstream of waste rocks heaps.

The goal of this study is to trace and identify reaction pathways controlling uranium mobility in waste rocks. As most of uranium orebodies that have been mined in France are located in granitic areas, the present study will focus on the sugergene evolution of granite from Limousin region. For this purpose, rock samples and water samples will be collected from several sites. A thorough study of the weathering alteration processes will be performed through the identification of the uranium-bearing phases, whether inherited or neoformed. These observations and characterizations will be performed by XRD, spectrometry techniques, ICP-MS, electron microscopy techniques (SEM and TEM), electron microprobe. Thorough spectroscopic characterizations on synchrotron beamline will bring information on uranium speciation. Last, aging experiments in the laboratory can be performed in order to focus on the most reactive mineral phases. The whole set of data will be used and integrated to geochemical modelings that take into account the main phenomena controlling uranium mobility.

Among the required competencies: Mineralogy
Petrology
Geochemistry of trace elements and/or uranium
Knowledge of synchrotron analytical techniques
Geochemistry and mineralogy of low temperature conditions and critical zone

Duration: 18 months (renewable)
Localization: IMPMC – UPMC (University of Paris VI) & AREVA (Paris)

Contacts: Please send CV and application letter to:
IMPMC – UPMC
Martine GERARD, martine.gerard@impmc.upmc.fr
Georges CALAS, georges.calas@impmc.upmc.fr

AREVA
Michael DESCOSTES, michael.descostes@areva.com;
Vannapha PHROMMAVANH, vannapha.phrommavanh@areva.com

University of Helsinki: POST-DOCTORAL RESEARCHER in the field of structural geology and metamorphic petrology for two years starting from the 1st of August 2012. The position is funded by the Finnish Academy funded MIDCRUST-research consortium. The consortium studies 3D evolution of thickened Precambrian continental crust and focuses on post-collisional processes. PDR is expected to take part in the ongoing field work in central and southern Finland. Applications should be at the Department of Geosciences and Geography by 16th of April.

For further information please see the web page http://www.helsinki.fi/recruitment/index.html?id=54228

Contact
Dr. Annakaisa Korja,
Department of Geosciences and Geography, POB 68
GEOLOGY FACULTY POSITION - Arkansas Tech University
Arkansas Tech University invites applications for a tenure-track Assistant Professor of Geology to begin August, 2012. The successful applicant will have a Ph.D. (ABD considered) at the time of employment and demonstrated ability to perform teaching duties to include Mineralogy, Petrology, introductory geology courses, and other courses as assigned totaling 12 credit hours per semester. Preferred candidates will have a background in Subsurface Geology and experience in Petroleum Exploration. Successful candidates will also demonstrate the potential for developing a vibrant research program and service to the University and community. The ATU Geology Program has approximately 50 undergraduate majors and is located within 1 hour of world-class field opportunities in the Ouachitas and Ozarks. Send letter of application including curriculum vita, official transcripts, teaching philosophy, and description of research interests and goals that involve undergraduates along with three letters of reference prior to April 13, 2012 to Dr. Jeff Robertson, Dean, College of Natural and Health Sciences, Arkansas Tech University, 1701 N. Boulder Ave., Russellville, AR 72801-2222 or jrobertson@atu.edu. EOE http://www.atu.edu/nhs

HAVE A GREAT WEEKEND

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tel: +358-9-191 51606

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HAVE A GREAT WEEKEND********