

GEOBULLETIN

SEPTEMBER 12TH 2014

*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 Wednesday.

WEEKS LECTURE – FALL 2014

Date	Speaker	Institution	Host
Weeks Lecture - 12-Sep-14 – Room AB20 – 3:30 PM Prof. Brad Singer University of Wisconsin-Madison			
Is the next rhyolitic super eruption brewing in the Southern Andes?			
<p>Explosive eruptions of large volume rhyolitic magma systems are common in the geologic record and pose a major potential threat to society. Unlike other natural hazards such as earthquakes and tsunamis, a large rhyolitic volcano may provide warning signs long before a caldera-forming eruption occurs. Yet, these signs—and what they imply about magma-crust dynamics—are not well known. This is because we have learned how these systems form, grow, and erupt mainly from the study of ash flow tuffs deposited tens to hundreds of thousands of years ago or more, or from the geophysical imaging of the unerupted portions of the reservoirs beneath the associated calderas. The Laguna del Maule Volcanic Field, Chile, includes an unusually large and recent concentration of silicic eruptions. Since 2007 the crust here has been inflating at an astonishing rate of 25 cm/yr. This unique opportunity to investigate the dynamics of a large rhyolitic system while magma migration, reservoir growth, and crustal deformation are actively underway is stimulating a new international collaboration. Findings thus far lead to the hypothesis that the silicic vents have tapped an extensive layer of crystal-poor, rhyolitic melt that began to form atop a magmatic mush zone that was established by ~20 ka with a renewed phase of rhyolite eruptions during the Holocene. Modeling of surface deformation, magnetotelluric data, and gravity changes suggest that magma is currently intruding at a depth of ~5 km. The next phase of this investigation seeks to enlarge the sets of geophysical and geochemical data and to use these observations in numerical models of system dynamics.</p>			
19-Sep-14	Joanne Stubbs	University of Chicago	Xu (F)
26-Sep-14	Patricia Gregg	University of Illinois	Feigl (F)
3-Oct-14	Jean Bahr	University of Wisconsin-Madison	Cardiff (F)
10-Oct-14	Patrick Fulton	UC Santa Cruz	Tobin (F)
17-Oct-14	NONE (GSA)		
24-Oct-14	Tomochika Tokunaga	University of Tokyo	Wang/Hart
31-Oct-14	Jay Zambito	WGNHS	Carroll (F)
7-Nov-14	Jessi Meyer		Cardiff (F)

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14-Nov-14	Francis Macdonald	Harvard University	Peters (F)
21-Nov-14	Rusty Riese		
5-Dec-14	Larry Band	UNC-Chapel Hill (GSA Birdsell-Dreiss Distinguished Lecturer)	Wang/Bahr
12-Dec-14	NONE (AGU)		

JOB OPENINGS:

- Assistant Professor Structural Geology and Tectonics – University of Missouri
- Assistant Professorship in Geochemistry - New Mexico Institute of Mining and Technology
- Postdoctoral Scholar Positions in Geodynamics – Caltech
- Head of Department, Tectonophysics – GNS Science, Wellington, New Zealand
- Head of Department, Volcanology – GNS Science, Taupo, New Zealand

- Tenure-Track Faculty Position in Structural Geology/Tectonics - Department of Geological and Atmospheric Sciences, Iowa State University
- Tenure Track Assistant Professor: Geophysics California State University Northridge
- Sandia National Laboratories- Geosciences Engineer (Senior or Principal) - Carlsbad, New Mexico
- The Department of Earth, Planetary & Space Sciences seeks an assistant professor in geology- The University of California
- Assistant Professorship in Geochemistry - The New Mexico Institute of Mining and Technology
- Tenure-Track Faculty Position in Chemistry of Earth Materials-University of Southern California
- Postdoc opportunity at USGS

JOB OPENINGS:

Assistant Professor Structural Geology and Tectonics – University of Missouri

The Department of Geological Sciences at the University of Missouri invites applications for a tenure-track, Assistant Professor position beginning in August 2015 in the broadly defined area of Structural Geology and Tectonics. The successful candidate's research will ideally complement and expand upon one or more of the areas of departmental expertise in solid-earth processes including geodynamics, igneous and metamorphic petrology, neotectonics, and

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seismology. Completion of the PhD at the time of appointment is required. Applicants should be prepared to prove eligibility to work in the United States. The successful applicant will be expected to teach across the curriculum, i.e., introductory classes, advanced undergraduate courses, and graduate courses in his/her area of expertise. The applicant will also be expected to develop an active, externally funded research program and to direct graduate student research at the M.S. and Ph.D. levels.

Please apply on-line at: <http://hrs.missouri.edu/find-a-job/academic>

In addition to a curriculum vitae (CV), applicants should include a letter describing their geologic interests and qualifications for the position, a teaching portfolio, and a list of three references (including contact information). Items other than the CV should be uploaded in the Attachments section of the application system. Initial screening of applicants will begin October 1, 2014 and will continue until a suitable candidate is hired. Information about our department is available at: <http://geology.missouri.edu>. The University of Missouri is an EO/AA/ADA employer.

[Assistant Professorship in Geochemistry - New Mexico Institute of Mining and Technology](#)

The New Mexico Institute of Mining and Technology (NMT) invites applications for a tenure-track assistant-professor position in Geochemistry. Applicants should have a Ph.D. in Earth Sciences, Environmental Engineering, or a related field at the time of appointment. We seek candidates with interests in igneous petrochemistry (especially volcanic rocks), metamorphic petrology, sedimentary geochemistry, geochemistry of ore deposits, or radiogenic isotope geochemistry. Potential for excellence in teaching and research are the most important qualifications.

Applicants should submit a letter of interest, resume, a statement of teaching and research interests, one representative publication, and the names of three references to Geochemistry Search, Human Resources, New Mexico Institute of Mining and Technology, 801 Leroy Pl., Socorro, New Mexico 87801. College transcripts will be required if selected to interview. Review of application material will begin on October 1, 2014. The search will remain open until the position is filled. Email applications are not accepted. New Mexico Tech is an equal opportunity/affirmative action employer.

For inquiries, contact the search committee chair, Fred Phillips (phillips@nmt.edu). Read more about these positions on the AGU Career Center, search "Assistant Professors of Hydrology and Geochemistry."

[Postdoctoral Scholar Positions in Geodynamics - Caltech](#)

The Division of Geological and Planetary Sciences at the California Institute of Technology (Caltech) invites applications for one or more postdoctoral positions in the Seismological Laboratory. For one position we seek an individual who would link computational models of surface processes with lithosphere and mantle dynamics with an emphasis on North America. The goal of the work is the use of stratigraphic and rock uplift observations to better constrain mantle dynamics and sedimentary basin evolution. An individual with a geology background well versed in the development and use of computational software is preferred. For the other position we seek an individual to work on the development and application of: (1) forward and inverse approaches to understand the dynamics of plate motions; (2) models of the initiation of subduction; or (3) geodynamic models of the deep mantle linked to seismic observations and mineral physics experiments. A recent Ph.D. in computational geodynamics or a related discipline is

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required. Experience in finite element analysis, inversion and/or optimization and use of GPlates & GMT are highly desired; good programming skills in C, C++ or Python are essential. Initial appointments are for one year. Starting dates for these positions are flexible, and applications will be considered until filled. For additional information, please contact Prof. Michael Gurnis, gurnis@gps.caltech.edu. Applicants should send a CV, a brief statement of research interests and experience, and arrange to have three letters of recommendation sent electronically to Marcia Hudson at: marcia@gps.caltech.edu.

Caltech is an equal employment opportunity and affirmative action employer and will, whenever possible, actively recruit and include for employment members of underrepresented minority groups, females, disabled veterans, other eligible veterans and otherwise qualified persons with disabilities. Caltech will hire, transfer, and promote based on the qualifications of the individual to ensure equal consideration and fair treatment of all. Caltech is a VEVRAA Federal Contractor.

<http://www.gps.caltech.edu/content/postdoctoral-scholar-positions-geodynamics>

Head of Department, Tectonophysics – GNS Science, Wellington, New Zealand

Are you an experienced leader in geophysics?

GNS Science is seeking a person who has both people leadership and scientific experience.

You will be responsible for a team of 26 staff with expertise in seismology, geophysics, geodesy, crustal geodynamics, earthquake and volcano deformation modelling, hazard assessment, and tsunami modelling. Scientists in the department work closely with the GeoNet Project, and are funded from natural hazards and plate tectonics core-funded research programmes, by the Earthquake Commission biennial grants programme and through Marsden Fund research grants. Through this research and linked technology transfer activity across the Natural Hazards Division we are working towards reducing the impact of natural hazards and making New Zealand more resilient.

The Head of Department is responsible for:

- Strategic leadership of the Department,
- Management of people, with an emphasis on creating a culture of high performance;
- Management of assets, intellectual property and information;
- Developing and maintaining excellent relationships with clients and stakeholders;
- Developing the Department's budget and tracking financial performance; and
- Contributing to and, where appropriate, leading research and consultancy projects.

To be successful in this role, you will bring:

- A PhD or equivalent postgraduate degree in earth sciences or a closely related discipline;
- Excellent people leadership and relationship management skills;
- Business acumen and the ability to identify and capitalise on new research and technology transfer opportunities; and
- An excellent track record of success in geological hazards research.

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Applications close on 30 September 2014.

For more information on both positions, see the website:

<https://careers.sciencenewzealand.org/gns-science/about-us>

Head of Department, Volcanology – GNS Science, Taupo, New Zealand

Are you an experienced leader in volcanology?

GNS Science is seeking a person who has both people leadership and scientific experience. You will be responsible for a team of 15 staff with expertise in volcano monitoring and research and volcanic hazard and risk assessment. Scientists in the department work on the GeoNet Project, and are funded from natural hazards core-funded research programmes, by the Earthquake Commission biennial grants programme and through other research grants. Through this research and linked technology transfer activity across the Natural Hazards Division we are working towards reducing the impact of volcanic hazards and making New Zealand more resilient.

The Head of Department is responsible for:

- Strategic leadership of the Department;
- Management of people, with an emphasis on creating a culture of high performance;
- Management of assets, intellectual property and information;
- Developing and maintaining excellent relationships with clients and stakeholders;
- Developing the Department's budget and tracking financial performance; and
- Contributing to and, where appropriate, leading research and consultancy projects.

To be successful in this role, you will bring:

- A PhD or equivalent postgraduate degree in volcanology or a closely related discipline;
- Excellent people leadership and relationship management skills;
- Business acumen and the ability to identify and capitalise on new research and technology transfer opportunities; and
- An excellent track record of success in geological hazards research.

Applications close on 30 September 2014.

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Tenure-Track Faculty Position in Structural Geology/Tectonics - Department of Geological and Atmospheric Sciences, Iowa State University

The Department of Geological and Atmospheric Sciences at Iowa State University, Ames, Iowa, invites applications for a tenure-track faculty position at the assistant professor level beginning in August 2015. The position will be in the broad area of structural geology/tectonics. The selected candidate is expected to demonstrate a commitment to teaching and establish a successful, externally funded research program. It would complement existing strengths in the department, including geophysics, economic geology, sedimentary geology, groundwater and surface-water hydrology, paleoclimatology, isotope geochemistry, weather and climate modeling, glacial and Quaternary geology, surficial processes, and geoscience education. Opportunities exist for participation in the Iowa State University Geology Field Camp, located in the Bighorn Mountains near Shell, Wyoming. We also encourage interactions with researchers and faculty in other units on campus, including but not limited to the Department of Energy Ames Laboratory, ISU Bioeconomy Institute, and departments of Civil, Construction and Environmental Engineering, and Materials Science and Engineering. In addition, this faculty member will be expected to teach at the undergraduate and graduate levels and to develop courses in her/his specialty area. Information about the Department may be found at <http://www.ge-at.iastate.edu/>.

Candidates must hold a Ph.D. by the time of appointment. All applications must be submitted electronically at www.iastatejobs.com (search vacancy ID#: 140762). Please be prepared to attach a letter of application, including concise teaching and research statements, curriculum vitae, and the names, addresses, e-mail addresses, and phone and fax numbers of at least three references. Questions regarding this vacancy should be directed to the Search Chair (Alan Wanamaker; adw@iastate.edu) or the Department Chair (Bill Simpkins; bsimp@iastate.edu).

The position will remain open until filled. Full consideration will be given to applications received by October 31, 2014. Iowa State University is an EO/AA employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability, or protected veteran status.

Tenure Track Assistant Professor: Geophysics California State University Northridge

The Department of Geological Sciences at California State University, Northridge invites applications for a full-time tenure-track faculty position at the level of Assistant Professor in Solid Earth Geophysics or Earthquake Processes. The successful candidate must have a Ph.D. at the time of appointment. Experience in post-doctoral research and/or University-level lecture instruction is desirable. We seek an innovative geophysicist with technical expertise in passive or active source seismology, geodynamics, numerical modeling, or earthquake geophysics. We particularly seek candidates who both complement our current research program and integrate across tectonics and geophysics. We offer B.Sc. and M.Sc. degrees in Geology and in Geophysics. The successful candidate is expected to develop a vigorous research program, which includes seeking extramural funding, publishing peer-reviewed papers, and involving undergraduate and M.S. students. Furthermore, the successful candidate is expected to demonstrate teaching excellence and provide effective instruction to students of diverse backgrounds in a multicultural setting. A successful candidate will enthusiastically contribute to teaching courses that provide rigorous preparation for students in our geophysics program at a range of levels. Course offerings include: an introductory course Living with Earthquakes in California, a new undergraduate core course in Earth Tectonics and Structure, undergraduate courses in geophysics, and elective offerings at the upper-division and/or graduate level in the candidate's research specialty.

Applicants should submit a cover letter, CV, three letters of recommendation, statement of teaching philosophy and experience, and statement of research interests. Electronic submissions are strongly encouraged and should be sent to: geophysics.search@csun.edu. Materials can also be sent to: Geophysics Search Committee, Department of Geological

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Sciences, California State University Northridge, 18111 Nordhoff Street, Northridge, CA 91330-8266. Review of applications will begin on 1 January 2015. Priority will be given to applications received by this date, but the position remains open until filled. For additional information, see <http://www.csun.edu/geology>. The University is an EO/AA employer.

Sandia National Laboratories- Geosciences Engineer (Senior or Principal) - Carlsbad, New Mexico

JOB ANNOUNCEMENT: Geosciences Engineer (Senior or Principal)

JOB ID: 647115

LOCATION: Carlsbad, New Mexico

ABOUT SANDIA

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation. Our mission: *Exceptional Service in the National Interest.*

DEPARTMENT DESCRIPTION

Sandia National Labs is the Scientific Advisor to the Department of Energy's Carlsbad Field Office. The WIPP Performance Assessment and Decision Analysis Department is responsible for performing probabilistic system assessments and related uncertainty/sensitivity analyses for implementing WIPP recertification and/or modification strategies.

JOB SUMMARY

This opening is for a full-time staff member in the areas of high performance and highly parallelized computing and code development on multiple platforms for coupled heat transfer, multiphase flow, and multicomponent reactive transport simulated within the open source code PFLOTRAN. The successful applicant will be expected to conduct innovative research, develop and manage open-source software, apply novel methods to challenging coupled flow and transport problems, and collaborate with geoscience and repository science research groups. The successful applicant will also be expected to develop and apply scientific and engineering methods through lab- and field-scale experimentation to develop or demonstrate new designs, concepts, materials, processes, or systems. This position is for a motivated and enthusiastic individual with a background in engineering, geoscience, mathematics, statistics, hydrology, and computer science, or related areas.

REQUIRED

A Ph.D. in engineering or applied mathematics from a leading post-graduate institution
Thorough understanding of two-phase flow in porous media as well as experience modeling groundwater flow and reactive transport in a subsurface environment
Extensive experience in the application of scientific programming in C, C++, Fortran, and the Python scripting language
Other requirements as described on Sandia's Careers website and application process

DESIRED

Established experience with development, management, and application of an existing open-source high performance computing multiphase flow and transport code
Expertise in setting up and maintaining continuous integration systems for automated software build, test, and deployment workflow
Ability to function effectively independently, but also be able to communicate and collaborate within an interdisciplinary research team

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Ability to obtain and maintain a DOE security clearance

BENEFITS

At Sandia you will receive many benefits as a valued employee of a premier national multi-program engineering and science research laboratory. In our Total Rewards package you will enjoy competitive pay, great benefits, a stimulating, positive environment and learning opportunities that will help build your career. More information may be found on our Careers website.

LEARN MORE AND APPLY ONLINE

Explore career opportunities at www.sandia.gov/careers. To be considered for this position, apply online to the Job ID number listed above.

The Department of Earth, Planetary & Space Sciences seeks an assistant professor in geology- The University of California

Recruitment Period

Open Aug 15, 2014 through Nov 15, 2014

Next review date: October 1st, 2014

Apply by this date to ensure full consideration by the committee

Description

The Department of Earth, Planetary & Space Sciences seeks an assistant professor in geology. We encourage applicants from all sub-disciplines of geology but preference may be given to candidates with experience on both sides of the cover/bedrock interface or who complement existing strengths in tectonics, paleoclimate, geochronology, and sedimentology. Applicants should have a Ph.D. or equivalent in geological sciences or a related field. Selection will begin on October 1, 2014. Please include a curriculum vitae, list of publications, statement of teaching and research, names and email addresses of three referees, electronic copies of up to five significant publications, and a cover letter addressing how your experience fits the job description. Electronic applications should be directed to the Chair of the Geology/Surface Processes Search Committee at <https://recruit.apo.ucla.edu/apply/JPF00331>. Inquiries may be directed to geologysurfaceprocesses_search@epss.ucla.edu.

The University of California is an Equal Opportunity/Affirmative Action Employer and has a commitment to enhance diversity in the geosciences at UCLA (see <https://faculty.diversity.ucla.edu>). Women and underrepresented minorities are encouraged to apply. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability, age or protected veteran status. For the complete University of California nondiscrimination and affirmative action policy see: UC Nondiscrimination and Affirmative Action Policy.

Documents

- Curriculum Vitae - Your most recently updated C.V.
- Cover Letter
- Statement of Research

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- Statement of Teaching
- Electronic Copies of Publications - Please send links if possible.
- Misc / Additional - List of publications

Assistant Professorship in Geochemistry - The New Mexico Institute of Mining and Technology

The New Mexico Institute of Mining and Technology (NMT) invites applications for a tenure-track assistant-professor position in Geochemistry. Applicants should have a Ph.D. in Earth Sciences, Environmental Engineering, or a related field at the time of appointment. We seek candidates with interests in igneous petrochemistry (especially volcanic rocks), metamorphic petrology, sedimentary geochemistry, geochemistry of ore deposits, or radiogenic isotope geochemistry. Potential for excellence in teaching and research are the most important qualifications.

Applicants should submit a letter of interest, resume, a statement of teaching and research interests, one representative publication, and the names of three references to Geochemistry Search, Human Resources, New Mexico Institute of Mining and Technology, 801 Leroy Pl., Socorro, New Mexico 87801. College transcripts will be required if selected to interview. Review of application material will begin on October 1, 2014. The search will remain open until the position is filled. Email applications are not accepted. New Mexico Tech is an equal opportunity/affirmative action employer.

For inquiries, contact the search committee chair, Fred Phillips (phillips@nmt.edu). Read more about these positions on the AGU Career Center, search "Assistant Professors of Hydrology and Geochemistry."

Tenure-Track Faculty Position in Chemistry of Earth Materials-University of Southern California

The **Department of Earth Sciences** in the Dana and David Dornsife College of Letters, Arts and Sciences of the University of Southern California (<http://dornsife.usc.edu/earth/>) in Los Angeles, California, wishes to appoint a tenure-track Assistant Professor with research interests in the application of geochemical techniques to the evolution and dynamics of the solid Earth, including the crust and lithosphere. The anticipated start date would be in the 2015-2016 academic year. The appointee will be expected to establish a vigorous research program supported by extramural funding and to contribute to the Department's overall research effort in Lithospheric System Dynamics. Candidates must hold a Ph.D. in Earth Sciences or a related field and have the ability to develop and support laboratory facilities in their research area. The successful appointee will also be expected to contribute to undergraduate and graduate teaching, particularly in the areas of mineralogy, petrology, and geochemistry. Applications should include a curriculum vitae, publication list, statement of teaching and research interests, and three or more names of individuals familiar with the applicant's work who could be contacted by USC for letters of reference. In order to be considered for this position, applicants are required to submit an electronic USC application; follow this job link or paste in a browser: <http://jobs.usc.edu/postings/30497> . Review of complete applications will begin November 1, 2014. Inquiries can be directed to: Chair, Search Committee, c/o Karen Young (kayoung@usc.edu).

USC is an equal-opportunity educator and employer, proudly pluralistic and firmly committed to providing equal opportunity for outstanding persons of every race, gender, creed and background. The University particularly encourages women, members of underrepresented groups, veterans and individuals with disabilities to apply. USC will make reasonable accommodations for qualified individuals with known disabilities unless doing so would result in an undue hardship. Further information is available by contacting uschr@usc.edu .

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Postdoc opportunity at USGS

We are seeking applications for a 2-year position as a postdoctoral research scientist to design and conduct experimental rock deformation tests related to earthquake physics. Experiments will be conducted at the USGS Rock Physics Laboratory located in Menlo Park, California. The Rock Physics Laboratory has a broad range of research interests related to brittle deformation and earthquake and faulting processes. These interests include the measurement of fracture and frictional sliding strength at elevated pressure and temperature, fluid-rock interactions, measurement of transport and poroelastic properties, as well as acoustic emission and wave-speed studies.

The Rock Physics Laboratory has a number of triaxial deformation machines (general capabilities can be found on our web site: <http://earthquake.usgs.gov/research/rockphysics/>), including a large test rig that accommodates 76 mm-diameter cylindrical samples. A high speed/low normal stress rotary machine is also available for high speed friction studies.

For this Mendenhall Research Opportunity we seek a postdoctoral fellow who can make fundamental contributions to experimental rock mechanics, addressing, in particular, fundamental questions related to earthquake processes and brittle deformation.

Application deadline: October 31, 2014

Further information is available at the USGS Mendenhall Fellowship Program website:

<http://geology.usgs.gov/postdoc/> under 'Research Opportunities'

Opportunity S6: 'Laboratory Research in Earthquake Processes and Fluid-Rock Interactions'

Interested applicants are encouraged to contact

David Lockner dlockner@usgs.gov

Nick Beeler nbeeler@usgs.gov

Diane Moore dmoore@usgs.gov

to discuss and develop research proposal plans.

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