

January 12, 2009

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## THE HEAD'S PERSPECTIVE

### Happy New Year!

Welcome back to campus for the Spring 2009 semester, and Happy New Year to EAS students, staff, faculty and alumni! I hope that you had a happy holiday season and semester break and that the new semester and new year will be interesting, productive and enjoyable.

The American Meteorological Society annual meeting is this week in Phoenix, Arizona. Many EAS faculty, students and staff will be attending.

EAS will be hosting an alumni and friends reception at the AMS meeting from 6:30-8:30 p.m. on Tuesday, January 13, 2009. The reception will be in the Russell Room of the Hyatt Regency Hotel. During the reception we will formally announce the *Founders Endowment* and recognize Professors Phil Smith, Ernest Agee and Dayton Vincent for their roles in developing the atmospheric science program at Purdue and their many years of service. The *Founders Endowment* is being established to support undergraduate student scholarships in atmospheric science.

Also, NASA has announced that the STS-125 space shuttle mission to repair the Hubble Space Telescope has now been scheduled for launch on May 12, 2009. EAS alum Drew Feustel is a mission specialist on STS-125. We will be following the preparations for the launch and I know that it will be very exciting to watch the launch, the repair operations and the entire mission in May!

## EAS SEMINAR

**Thursday, January 15, at 3:30 p.m. in CIVL 1252:**

"Spatial and Temporal Dynamics of Coupled Groundwater and Nitrogen Fluxes Through a Streambed in an Agricultural Watershed." Casey Kennedy, Postdoctoral Associate, EAS, Purdue University

*Refreshments at 3 p.m. in CIVL 2201*

For more information, see the EAS online [calendar](#).

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## OUR RECENT PUBLICATIONS

Andryscio, N., K. R. Gurney, B. Beneš, and K. Corbin, 2009: Visual Exploration of the Vulcan CO<sub>2</sub> Data. *Computer Graphics and Applications, IEEE*, **29**, 6-11.

Ashfaq, M., Y. Shi, W. Tung, R. J. Trapp, X. Gao, J. S. Pal, and N. S. Diffenbaugh, 2009: Suppression of South Asian Summer Monsoon Precipitation in the 21st Century, *Geophys. Res. Lett.*, **36**, L01704, doi:10.1029/2008GL036500.

Trapp, R. J., N. S. Diffenbaugh, and A. Gluhovsky, 2009: Transient Response of Severe Thunderstorm Forcing to Elevated Greenhouse Gas Concentrations. *Geophys. Res. Lett.*, **36**, L01703, doi:10.1029/2008GL036203.

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## OUTSTANDING PAPER AWARD

It was announced in the December 2008 issue of "The Sedimentary Record" (this is a publication of The Society for Sedimentary Geology within the Sedimentary Geology Division of the Geological Society of America) that a paper Brenda Beittler Bowen and her grad student, Stacy Story, were co-authors on won the Journal of Sedimentary Research 2007 Outstanding Paper Award. The paper reference is:

Benison, K. C., B. B. Bowen, F. E. Obboh-Ikuenobe, E. A. Jagniecki, D. A. LaClair, S. L. Story, M. R. Mormile, and B. Y. Hong, 2007: Sedimentology of Acid Saline Lakes in Southern Western Australia: Newly Described Processes and Products of an Extreme Environment. *Journal of Sedimentary Research*, **77**, 366-388.

## EAS TECHNOLOGY SUPPORT NEWS

### Hypocenter Patching on January 19

Routine security patching will be performed on hypocenter on Monday, January 19 (Martin Luther King Jr. Day), from 11 a.m. – 1 p.m. During this time, all file shares and printing will be unavailable. If you have any questions or concerns, please contact [eas-itap@purdue.edu](mailto:eas-itap@purdue.edu).

### IDC Tips and Techniques

The Instructional Development Center has updated their "Tips and Techniques" webpage with several useful and interesting articles. Topics include a recent upgrade to the Adobe Connect software, Blackboard templates, and the decommissioning of HostedSurvey. For more information, see <http://www.itap.purdue.edu/tit/idc/tips/current.cfm>.

### Matlab R2008b to be deployed on Linux

Matlab R2008b is available for testing on EAS Linux machines in /project/devo/b/matlab-r2008b. Most notably, users are no longer prompted after the notification that the software was built on a newer version of glibc. The new version of Matlab will be placed into service on January 22, provided testing does not reveal any problems. Please note that until the license server, maintained by the Engineering Computing Network, receives the updated Matlab license, users will see a warning about license expiration. The license file will be updated before the license expires at the end of the month.

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### EXTERNAL REVIEW INVITATION

Please plan to join us for a reception to meet the External Review Committee members on Monday, February 2, in CIVL 2201 from 4:30-5:30 p.m.

Appetizers and bar service will be provided.

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### RECENT PRESENTATIONS

Wen-Yih Sun presented a paper entitled, "Effects of the earth's rotation on Boulder downslope windstorm" at the 13<sup>th</sup> Conference on Mountain Meteorology, August 11–15, 2008, Whistler, BC, Canada. (with Dr. W. R. Hsu)

### Faculty and Student Presentations at AGU 2008 December 15-19

#### Monday, December 15

Comparison of Radiocarbon Ages for Multiproxy Paleoclimate Reconstruction of the Great Salt Lake, Utah, \*K E Nielson, G J Bowen, T I Eglinton (POSTER)

Creating a New Model for Mainstreaming Climate Change Adaptation for Critical Infrastructure: The New York City Climate Change Adaptation Task Force and the NYC Panel on Climate Change, \*C Rosenzweig, W D Solecki, A M Freed

#### Tuesday, December 16

Sub-Sea Ice Sands Offshore of Dry Valleys: Potential Links between Onshore and Offshore Cenozoic Records, \*T J Richardson, M F Miller, S S Bowser, (POSTER)

Strain distribution in the East African Rift from GPS measurements, \*S D Stamps, E Saria, E Calais, D Delvaux, C Ebinger, L Combrinck (POSTER)

Using Cs-137, C-14 and biomarker compounds to identify reasons for C and N losses in resampled profiles, \*W T Baisden, R L Parfitt, L A Schipper, T R Filley, C Ross

Carbon and Nitrogen Storage in Glomalin-Related Soil Protein During Grassland-to-Woodland Succession, \*M C Ariza, T W Boutton, M C Gonzalez-Chavez, T R Filley (POSTER)

Microbial Accessibility of Soil Organic Matter Following Woody Plant Encroachment Into Grasslands, \*C A Creamer, T W Boutton, T R Filley (POSTER)

Activities of Extracellular Enzymes in Soils Following Woody Plant Invasion of Grassland, \*T R Filley, D E Stott, V Dooling, L Sorg, T Boutton (POSTER)

Mycorrhizal Productivity Following Woody Plant Invasion of Grassland, \*T W Boutton, H I Rowe, M C Ariza, R M Miller, T R Filley (POSTER)

Distinct Litter Stabilization Dynamics Pathways for Decomposition of Pine Needle and Fine Root Within Soil, \*S Mambelli, T R Filley, J Bird, T Dawson, M S Torn (POSTER)

Lessons Learned in Developing Research Opportunities for Native American Undergraduate Students: The GEMScholars Project, \*S M Zurn-Birkhimer, T R Filley, T J Kroeger (POSTER)

Computational Study of the Scaling relationship between Fluid Flow and Fracture Stiffness, \*C Petrovitch, L J Pyrak-Nolte, D Nolte (POSTER)

Investigating the Role of Extensional Deformation at Convergent Margins Using a Combined Analog and Numerical Approach, \*S S Haq, L M Flesch (POSTER)

Degradation of C60 Fullerol by White-Rot Basidiomycete Fungi: Implications for Environmental Release of Nanomaterials, \*K M Schreiner, T R Filley, R D Bolskar, R A Blanchette (POSTER)

**Wednesday, December 17**

- A Recent Shift in the Carbon Balance of High-latitude Terrestrial Ecosystems in Response to Changes in Climate and Disturbance Regime, \*D J Hayes, A McGuire, D W Kicklighter, K R Gurney, T J Burnside, J M Melillo (POSTER)
- Study of biomass burning plume heights using combined satellite measurements, \*M Petrenko, M Chin, Q Tan, R Kahn (POSTER)
- Dynamical Modeling for Generally Shaped, Layered Lithospheric Geometries Using Continuous Field Variables, L M Flesch, \*L L Dimitrova, A J Haines, W E Holt, M Haines, S S Haq (POSTER)
- Initial Implementation of the "Earthquake Locator Interactive Demonstration (ELID)" in Introductory Earth Science Courses, \*G B Glesener, D S Stamps, R Smalley (POSTER)
- The Magma Plumbing System of Dabbahu and Gabho volcanoes (Afar rift, Ethiopia) from InSAR, GPS and Seismicity data, \*T J Wright, A Ayele, M Belachew, L Bennati, E Calais, C J Ebinger, I J Hamling, D Keir, E Lewi, C Pagli, G Yirgu
- Seismic character of the crust and upper mantle beneath the Sierra Nevada, \*A Frassetto, H Gilbert, G Zandt, T J Owens, C Jones
- Tomographic observations connecting convective downwellings with lithospheric source regions, Sierra Nevada, California, H Reeg, \*C H Jones, H Gilbert, T J Owens, G Zandt
- Tall-tower observations of pollution from near-field sources in central Texas during the Texas Air Quality Study 2006, \*A E Andrews, E Kort, A Hirsch, J Eluszkiewicz, T Nehrkorn, A M Michalak, G Petron, G J Frost, K R Gurney, A Stohl, S C Wofsy, W M Angevine, A B White, S J Oltmans, S A Montzka, P P Tans (POSTER)
- Measuring Regional CO<sub>2</sub> Fluxes Using a Lagrangian Approach, \*D K Martins, C Sweeney, B H Stirm, P B Shepson (POSTER)
- Transient carbon isotope changes in complex systems: Finding the global signal, embracing the local signal, \*G J Bowen, A Schneider-Mor, T R Filley (POSTER)
- Dynamics of Carbon Burial in the Coastal Oceans through the Paleocene-Eocene Thermal Maximum, \*A Schneider-Mor, G J Bowen (POSTER)
- Shear wave anisotropy beneath the Sierra Nevada: Implications for lithospheric foundering and mantle flow, T J Owens, \*I D Bastow, N Badger, G Zandt, C Jones, H Gilbert (POSTER)
- Focal Mechanisms for Deep Crustal Earthquakes in the Central Foothills and Near Yosemite National

Park in the Sierra Nevada, California, \*J C Ryan, A Frassetto, O Hurd, G Zandt, H Gilbert, T Owens, C Jones (POSTER)

**Thursday, December 18**

- New Atmospheric Observations from the Airborne GNSS Instrument System for Multistatic and Occultation Sensing (GISMOS), J S Haase, F Xie, \*P Muradyan, J L Garrison, T Lulich, J Voo, K M Larson (POSTER)
- Measuring Fluid Pressure on the Pore-scale, N Giordano, \*C Petrovitch, L J Pyrak-Nolte (POSTER)
- Capillary Pressure in a Wedge-Shaped Channel from Pore-Scale Imaging, \*Y Liu, L J Pyrak-Nolte, D D Nolte, N J Giordano (POSTER)
- The Influence of El Nino/Southern Oscillation and Volcanic Aerosols on Tropical Terrestrial Carbon Flux, C K Castillo, \*K R Gurney (POSTER)
- Fractures as Time-Dependent Structures: Characterizing Alterations & Changing Length Scales, \*L J Pyrak-Nolte (INVITED)
- Realizing the Potential of Potential Fields I Posters, *(joint with G, PA)*, Presiding: *V Langenheim, U.S. Geological Survey; V Labson, U.S. Geological Survey; W Hinze, Purdue University*
- Bias-correction of high-resolution, daily-scale, climate simulations, M Ashfaq, L C Bowling, K A Cherkauer, J S Pal, \*N S Diffenbaugh (POSTER)
- Estimating Emissions Fluxes of Carbon Dioxide and Methane from Indianapolis Using an Aircraft Trace Gas and Wind Measurement Platform, \*K L Ross, P Shepson, B Stirm, C Sweeney, A Karion, K Gurney (POSTER)
- Bias-correction of high-resolution, daily-scale, climate simulations, M Ashfaq, L C Bowling, K A Cherkauer, J S Pal, \*N S Diffenbaugh (POSTER)
- Seismic Response of In-filled Fractures, \*A A Acosta-Colon, L J Pyrak-Nolte, M Olander (POSTER)
- Monitoring Fluid Flow in Fractured Carbonate Rocks Using Seismic Measurements, \*W Li, L J Pyrak-Nolte (POSTER)
- Transitioning out of the Mid-Holocene Climate: An Evaluation of Land-Ocean Proxy Records and Model Simulations II *(joint with GC, OS)*, Presiding: *M E Kirby, California State University, Fullerton; N S Diffenbaugh, Purdue University*
- Post-rifting relaxation processes in the Afar region (Ethiopia) from GPS measurements and numerical modeling, \*L BENNATI, E CALAIS, T WRIGHT, I HAMLING, E LEWI, S NOONER, R BUCK, C EBINGER (POSTER)

Inference of Shallow, Weak, and Stress-Dependent Asthenosphere at Active Continental Margins from Postseismic Observations: Confirmation of Experimental Power-Laws, \*A M Freed, R Burgmann, T Herring (POSTER)

What is the internal isotope distribution in ozone?, S Bhattacharya, \*G Michalski (POSTER)

Rapid and Time-Transgressive Responses to Early Holocene Drying in the North American Mid-Continent, \*J W Williams, B Shuman, P Bartlein, N S Diffenbaugh (INVITED)

Long-Term Sedimentary Record of Cenozoic Tectonic Processes along the Southern Margin of the St. Elias Mountains, Southeastern Alaska, \*K D Ridgway, J W Witmer, P R Brennan, P Landis, T Pavlis

Regional-Scale Climate III: Regional-Scale Forcing of Climate (*joint with A, H, OS*), Presiding: A L Steiner, University of Michigan; N S Diffenbaugh, Purdue University; A Nenes, Georgia Institute of Technology

Linking Isotope Geochemistry to Environmental and Forensic Science: Analytical Approaches, Novel Applications, Policy Implications I Posters (*joint with A, B, PA*), Presiding: G J Bowen, Purdue University; G Michalski, Purdue University; D Widory, BRGM (MMA/ISO); T Bullen, USGS/ Le STUDIUM

Constraints on lithology of downwelling lithosphere from the Sierra Nevada, California, \*W Levandowski, H Reeg, C H Jones, G Zandt, T J Owens, H Gilbert (POSTER)

#### **Friday, December 19**

Realizing the Potential of Potential Fields II (*joint with G, PA*), Presiding: V Langenheim, U.S. Geological Survey; V Labson, U.S. Geological Survey; W Hinze, Purdue University

New Data Bases and Standards for Gravity Anomalies, \*G R Keller, T G Hildenbrand (deceased), M W Webring, W J Hinze, D Ravat, X Li (INVITED)

Evaluation of high-resolution simulations of temperature and precipitation extremes over the United States, M Walker, \*N S Diffenbaugh (POSTER)

Regional-Scale Climate V: Regional-Scale Forcing of Climate Posters (*joint with A, H, OS*), Presiding: A L Steiner, University of Michigan; N S Diffenbaugh, Purdue University; A Nenes, Georgia Institute of Technology

Response of South Asian summer Monsoon to 21st century changes in greenhouse forcing and SST

feedbacks, N S Diffenbaugh, \*M Ashfaq (POSTER)

Linking Isotope Geochemistry to Environmental and Forensic Science: Analytical Approaches, Novel Applications, Policy Implications II (*joint with A, B, PA*), Presiding: G J Bowen, Purdue University; G Michalski, Purdue University; D Widory, BRGM (MMA/ISO); T Bullen, USGS/ Le STUDIUM

Tectonic Processes Along the Southeastern Margin of Alaska - The Neogene Sedimentary Record: Yakataga Formation, St. Elias Mountains, \*J W Witmer, K D Ridgway, P R Brennan, E Arnaud, T Pavlis (POSTER)

Lithospheric Deformation along the Denali Fault System of South-Central Alaska, \*P R Brennan, H Gilbert, S M Roeske, K D Ridgway (POSTER)

The Vulcan Project: Methods, Results, and Evaluation, \*K R Gurney, D Mendoza, C Miller, D Ojima, S Knox, K Corbin, s denning, M Fischer, S de la Rue du Can

Linking Isotope Geochemistry to Environmental and Forensic Science: Analytical Approaches, Novel Applications, Policy Implications III (*joint with A, B, PA*), Presiding: G J Bowen, Purdue University; G Michalski, Purdue University; D Widory, BRGM (MMA/ISO); T Bullen, USGS/ Le STUDIUM

Multiple Isotope Forensics on Nitrate in the Poisoning of Wild Horses in 2007, \*G Michalski, C Dahman, S Earman, R Hershey

Assessing site-specific spatio-temporal variations in hydrogen and oxygen stable isotopes of human drinking water, \*C D Kennedy, G J Bowen, J R Ehleringer

Bounds of foundering in the southern Sierra Nevada, \*H Gilbert, Y Yang, D W Forsyth, C H Jones, T J Owens, G Zandt

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#### **A NOTE FROM OUR ACADEMIC COUNSELOR**

##### **Dates**

January 18 – Last day to add a class without signatures unless specifically required.

January 19 – Martin Luther King, Jr. Day – No Classes.

January 26 – Last day to drop a class without it appearing on the academic record. You must do this before 5 p.m. in myPurdue.

February 9 – Last day to drop without instructor signature – but does require signature from me and student delivering Form 23 to the Registrar.

March 23 – Last day for any changes to spring schedules (requires signatures and paperwork to the Registrar).

## Summer

### Classes

Purdue list of summer classes is now online. Registration for summer and fall classes will begin in March/April.

### Research

Undergraduate Summer Internships – U. Minnesota  
"Fluids, from Surface to Core"

The Department of Geology and Geophysics at the University of Minnesota - Twin Cities hosts a 10-week NSF-funded summer internship for undergraduates. Now in its eleventh year, the program has a theme of "Fluids, from Surface to Core". Participants will work with individual faculty members and their research groups and will be actively involved in a wide spectrum of projects ranging from paleoceanography to deep earth geophysics.

The program is ideal for students who will be Juniors or Seniors in Fall, 2009 and who are seeking an in-depth research experience. The program carries a stipend of \$4400, and housing and travel funds are provided. The deadline for applications is **February 6**. For more information and application instructions go to <http://www.geo.umn.edu/dept/programs/intern.html>.

### Summer Undergraduate Research in Atmospheric and Space Sciences

Engage in research at Hampton University's Center for Atmospheric Sciences sponsored by NSF and Air Force of Scientific Research. One project is a NASA spacecraft mission to study mesospheric clouds at the edge of space and their relationship to climate change. This is an 8-week program with a stipend of \$3600, up to \$500 for travel, and on-campus housing and meal plan are provided. For application and information: <http://reu.hamptonu.edu>, Dr. William R. Patterson, Hampton University, Hampton, Virginia.

## Convocations

Joshua Bell & Jeremy Denk	Sun, Jan 11	Loeb Playhouse
Mingus Big Band	Fri, Jan 16	Loeb Playhouse
Baroque Band	Sat, Jan 24	PMU Ballroom
CSI: Live!	Fri, Jan 30	Loeb Playhouse
King Henry V	Thu, Feb 5	Loeb Playhouse
The Spy	Sat, Feb 7	Loeb Playhouse
Seussical	Fri, Feb 13	Loeb Playhouse
Jeffrey Siegel, piano	Fri, Feb 20	Loeb Playhouse
The Drowsy Chaperone	Thu, Feb 26	Elliott Hall
The Irish Tenors	Fri, Mar 6	Elliott Hall
Nrityagram Dance Ensemble	Fri, Mar 27	Loeb Playhouse
STOMP	Tue, Mar 31	Elliott Hall
STOMP	Wed, Apr 1	Elliott Hall
Mariza	Tue, Apr 14	Loeb Playhouse
Ain't Misbehavin'	Thu, Apr 23	Elliott Hall

Students may pick up the vouchers in MATH 231. Take the voucher to the Stewart Center box office where you sign the voucher, present your Purdue ID, and purchase ticket(s) for \$10.

Have a good first week of the semester.

Nancy

## ABOUT THIS NEWSLETTER:

This weekly newsletter is the place to look to keep up with departmental happenings, announcements (seminars, student group events, scholarship and award deadlines, departmental committees), job and grant opportunities, and anything else you need to know about the department. It should cut down on the glut of email and other forms of separate announcements – **if it is in the newsletter, we assume you know about it** and no other reminders are needed. Past issues will be available on our departmental web site ([www.purdue.edu/eas/](http://www.purdue.edu/eas/)). Material for inclusion in the newsletter should be submitted to Gina Richey ([grichey@purdue.edu](mailto:grichey@purdue.edu)) by **Friday noon** of each week for inclusion in the Monday newsletter.

For answers to common technology questions and the latest updates from the EAS Technology Support staff, please visit <http://www.purdue.edu/eas/resources/it>.

Also, as an additional resource for information about departmental events, seminars, deadlines, etc., see our departmental calendar at <http://calendar.science.purdue.edu/eas/seminars>.



