UPCOMING EAPS MEETINGS

GRAD EXPO
February 27th & 28th, 2015

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OTHER IMPORTANT DATES TO REMEMBER

FORM 40s DUE
March 14, 2015

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SPRING FACULTY MEETING SCHEDULE

Mar. 24th & Apr. 14th, 2015
3:00-4:30 p.m.
HAMP 3201

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EAPS DISTINGUISHED SCIENCE ALUMNI AWARD
RECEPTION
April 17, 2015

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EAPS ANNUAL AWARDS BANQUET
April 20, 2015
Ross-Ade Pavilion
5:30-9:00 p.m.

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EAPS ALUMNI ADVISORY BOARD MEETING
April 21, 2015

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EAPS COLLOQUIA

Yue Zheng
PhD Candidate
"Impacts of Land-Atmosphere Interactions on Regional Convection and Rainfall"
Tuesday, Feb. 17, 2015
4:00 p.m.
HAMP 2201

COLLOQUIA cont.

David Minton
Professor
“Impacts in the Early Solar System”
Thursday, Feb. 19, 2015
4:00 p.m.
Physics Bldg./Room 203

UNDERGRADUATE AND GRADUATE STUDENT INFORMATION

EERE POSTDOCTORAL RESEARCH AWARDS

In order to spur innovation in solar energy, the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (EERE) is now accepting applications for postdoctoral researchers in solar energy to participate in the EERE Postdoctoral Research Awards.

The EERE Postdoctoral Research Awards support research on energy efficiency and renewable energy to help solve our nation’s energy challenges. This year, this exciting program will offer up to five recent Ph.D. recipients the opportunity to conduct applied research projects to advance breakthrough solar energy technologies at universities, national laboratories and other research facilities. Former recipients of the EERE Postdoctoral Research Awards are now faculty and staff scientists at major research institutions and national laboratories. This research will contribute to the SunShot Initiative goal to make solar energy technologies cost-competitive with traditional energy sources by 2020.

Reducing the total installed cost for utility-scale solar electricity by approximately 75%, from the 2010 baseline, to roughly $0.06 per kWh without subsidies will enable rapid, large-scale adoption of solar electricity across the United States.

Potential research topics for these awards include behavioral and data science to lower solar electricity cost, systems integration, concentrating solar power, and photovoltaic cells, modules, and materials. The awards will provide a highly competitive two-year stipend with health insurance as well as allowance for travel, relocation, and research expenses. Applicants must be U.S. citizens or permanent residents, complete all requirements for their Ph.D. by May 31, 2015, and have a Ph.D. for no more than five years. The application period for the EERE Postdoctoral Research Awards closes on May 7, 2015. The awards will be announced in July 2015 for the projects to start in...
Applications are being accepted for the Purdue Class of 1937 Scholarship

Each year 15-20 scholarships are given to undergraduate students from funds raised by the Class of 1937, ranging from $500-$4000 per student. Selection is made on the basis of leadership activities while at Purdue. Applications for the Fall 2015 and Spring 2016 terms can be found at http://goo.gl/UPKfkk or through the Office of the Dean of Students Student Assistance Center Webpage, under the “Scholarships” link.

To be Eligible for a Purdue Class of 1937 Scholarship, an applicant must meet the following qualifications:

- Be enrolled at the Purdue University West Lafayette campus;
- Maintain registration of 12 or more credit hours for Fall 2014 and Spring 2015 terms;
- Classified as a sophomore, junior, or senior during the 2015-2016 academic school year;
- Have a cumulative grade index of 2.0 or higher on a 4.0 scale.
- Be in good academic and social standing with the University;
- Show evidence of leadership ability and leadership potential;
- Be a domestic student as defined by the University;
- Describe financial need for the scholarship*

*This does not mean an applicant must qualify for financial assistance through Purdue’s Division of Financial Aid to be considered for the award.

Applications and recommendation letters must be submitted by Friday, March 6, 2015, no later than 5:00pm (EST). Late applications will not be accepted. If you have questions about the application process, please contact Jenny Bowes in the Student Assistance Center in the Office of the Dean of Students at 765-494-1747 or jbowes@purdue.edu.

CSESC 2015
COMPUTATIONAL SCIENCE AND ENGINEERING STUDENT CONFERENCE

Abstract Submission Opens
January 5th, 2015

On March 27 the Society of Industrial and Applied Mathematics will host the annual Computational Science and Engineering Student Conference at Purdue University. This conference will highlight the computational science and engineering research that is being done across all of the different departments on campus.

The conference is completely student organized and run. It is a great way to meet other students doing research on campus and see all of the different ways that computational science is used at Purdue.

They will begin accepting abstracts for talks and posters from both undergraduate and graduate students working in any discipline that uses computational research to advance in their field. Each of the applicants for talks and poster presentations need to submit a title and an abstract. They aim to include as many talks as possible. The invited participants will be contacted by email. Also, all participants who submit an abstract are cordially invited to a free continental breakfast and lunch during the conference. https://csesc2015.wordpress.com
OTHER NEWS

PURDUE'S COMMUNITY CLUSTER PROGRAM RESEARCH SUPERCOMPUTER

Purdue's community cluster program is tailored for research needing big memory and high throughput, in addition to the usual high-performance parallel computation. Purdue's latest research supercomputer offers faculty and campus units more than a one-size-fits-all resource, but it still has all the advantages of the successful Community Cluster Program.

Purdue researchers can find out more about the new supercomputer, to be built by ITaP Research Computing this spring, at a faculty luncheon set for noon to 1:30 p.m. Friday, Feb. 27, in the Lawson Computer Science Building, Room 1142. The lunch also is an opportunity to provide input on the new cluster.

Registration and other information: https://www.rcac.purdue.edu/news/740
Questions: rcac-help@purdue.edu.

The new cluster will run on the same shared, community model that has given Purdue the best supercomputing infrastructure in the nation for use by researchers on a single campus. But subdividing it to address specific computational demands of different types of research will better serve more users, says Preston Smith, director of research services and support for ITaP Research Computing. For more information, contact Smith, psmith@purdue.edu or 49-49729.

THE BIOMEDICAL & LIFE SCIENCES COLLECTION

Purdue University has subscription access for you to view The Biomedical & Life Sciences Collection. The collection provides immediate access to over 1,500 online seminar style talks containing the latest research and developments as well as the fundamentals presented by the world's leading experts including a number of Lasker and Nobel Laureates.

Talks related to your research, instruction and interests can be viewed at: www.hstalks.com/access.

You may be asked for a username and password which are:

Username   PURDUE
Password    MEMBER

They have recently added a number of new series to the collection including:

- Molecular Genetics of Human Disease edited by Prof. Eamonn R. Maher
- Gene Transfer and Gene Therapy edited by Prof. Luigi Naldini
- Epigenetics, Chromatin, Transcription and Cancer edited by Dr. Ali Shilatifard
- Systems Biology edited by Prof. Hiroaki Kitano

For faculty involved in teaching, all the lectures can easily be assigned for viewing by students and uploaded to Virtual Learning Environments (VLE/MLS) such as Moodle or Blackboard.

Additionally, if you are interested in the services of our Course Director, Dr. Eyal Kalie, to help identify talks from the collection that can match your courses, please do let me know.

If you would like to be kept updated as new talks and series are added to the collection, please register here: http://hstalks.com/r/blsc/updates

IMPORTANT NOTICE ABOUT THIS NEWSLETTER

This newsletter is used as the primary information source for current and upcoming events, announcements, awards, grant opportunities, and other happenings in our department and around campus. Active links to additional information will be provided as needed. Individual email announcements will no longer be sent unless the content is time-sensitive. We will continue to include our publications, presentations and other recent news items as well. Those using paper copies of the newsletter should go to our newsletter archive on the EAPS website at www.purdue.edu/eas/ and Click on News to access active links as needed. Material for inclusion in the newsletter should be submitted to Fallon McQuern (fmcquern@purdue.edu) by 5:00pm on Thursday of each week for inclusion in the Monday issue.

If it is in the newsletter, we assume you know about it and no other reminders are needed. For answers to common technology questions and the latest updates from the EAPS Technology Support staff, please visit http://www.purdue.edu/eas/info_tech/index.php.

Also, as an additional resource for information about departmental events, seminars, etc., see our departmental calendar at http://calendar.science.purdue.edu/eas/seminars.
Impacts of Land-Atmosphere Interactions on Regional Convection and Rainfall

Yue Zheng
PhD Candidate

Accurate prediction of high resolution (1-10 km) regional convection and rainfall is vital for a wide variety of meteorological applications. To improve the understanding and the model simulation of the regional convection and precipitation, we studied the impacts of (i) heterogeneous land surface, (ii) land-atmosphere surface coupling strength, and (iii) an improvement to the Kain-Fritsch (KF) convection parameterization scheme, using the Weather Research and Forecasting (WRF) model.

A number of numerical experiments were conducted over a variety of land-atmosphere coupling hotspot regions across the globe. Results indicate that replacing a simple slab land model with the more detailed land surface models (LSMs) (e.g., Noah and High-Resolution Land Data Assimilation System) can help improve the performance of surface layer and PBL processes over heterogeneous landscapes. Details in LSMS also aid the simulation of turbulent characteristics to land-surface heterogeneity as represented by LSMS coupled to WRF model. The adoption of a dynamic land – atmosphere coupling formulation helps improve the simulation of surface fluxes and resulting atmospheric state, leading to better precipitation intensity forecast. Additionally, the excessive precipitation noted in high-resolution model forecasts was greatly alleviated by introducing scale-aware parameterization of cloud dynamics in the KF scheme in the WRF model. Our results indicate that the improvements in land – surface representation, land atmosphere coupling, and convection parameterization triggers can together yield positive impacts on the model performance for short term rainfall predictions.

Tuesday, February 17, 2015
4:00 p.m.
Room 2201 HAMP

Refreshments at 3:30 pm
Room 2201/ HAMP
Planet formation is a process by which small objects in orbit around the newly born Sun collided and merged with each other until only a few big objects remained. This collisional process left its marks in a number of important ways. I will discuss the role of collisions during two different epochs of early solar system history. First I will discuss the first few million years of solar system history when the planets were beginning to form out of a disk containing solid mountain-sized bodies, called planetesimals, and gas. I will discuss how the first large bodies, the planetary embryos, began to form and how the interactions between embryos and planetesimals shaped the structure of the early solar system. I present research that shows that "chondrules," which are small spherical features that are quite common in meteorites, are a by-product of the collisions within the planetesimal disk. Next, I will discuss a later event called the Late Heavy Bombardment, which occurred a few hundreds of millions of years after the planets formed. The concept of the Late Heavy Bombardment refers to a time approximately 4 billion years ago when the impact rate onto the Moon increased dramatically, and was proposed based on samples of lunar rocks obtained during the Apollo and Luna missions. It has been hypothesized that the solar system underwent a dynamical instability that resulted in an increase in the impact rate of the early Earth and Moon. I will show that the currently most-popular hypothesis for this instability event, called the Nice Model, has a number of problems. I will present an alternative hypothesis for the apparent increase in the impact cratering rate seen in the lunar cratering record.
“A Midwest Gathering Promoting Interdisciplinary Research in Quaternary Geoscience for Graduate Students”

University of Cincinnati, Ohio, USA
April 25-26th, 2015

Saturday April 25th

Poster Sessions
Isotope Geochemistry
Tectonics / Geomorphology

Workshop Sessions
Stable Isotope Applications
GIS & Remote Sensing

Sunday April 26th

Poster Sessions
Paleoecology / Ecology
Humans & the Anthropocene

Workshop Sessions
Quantitative Methods
Communicating Science

For More Information Visit:
http://quatcon2015.weebly.com/

Participants: Graduate Students
Registration: Free! RSVP by March 25th, 2015
Abstract Deadline: March 25th, 2015
Abstract Submission Opens January 5th, 2015
https://csesc2015.wordpress.com

On March 27, the Society of Industrial and Applied Mathematics will host the annual Computational Science and Engineering Student Conference at Purdue University. This conference will highlight the computational science and engineering research that is being done across all of the different departments on campus.

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