CONGRATULATIONS AND WELCOME TO EAPS!

DR. INDIRAJEET CHAUBEY, EAPS NEW DEPARTMENT HEAD

DR. BARBARA GIBSON, EAPS NEW ASSISTANT DEPARTMENT HEAD

CONGRATULATIONS TO PROF. ROBERT NOWACK

From 2009-present, Robert Nowack from Purdue, Andre Revil from the Colorado School of Mines, Tom Parsons from the USGS, and Mike Walter from the Univ. of Bristol, UK have been co-Chief Editors for the Journal of Geophysical Research - Solid Earth (JGR-B).

In the Spring of 2013, Robert Nowack was named to a new position of Editor-in-Chief (EIC) for JGR-B.

JGR is one of the primary journals of the American Geophysical Union (AGU) and is divided into a number of sections.

As a group, JGR is one of the largest and most prominent journals in the geosciences. JGR-B alone last year processed over 1,400 manuscripts.

EAPS FALL 2013 WELCOME BACK PICNIC

MARK YOUR CALENDARS!

The EAPS Welcome Back Picnic for Fall 2013 is scheduled for Wednesday, August 14th from 3:30-7:00pm at Happy Hollow Park Shelter #4.

Everyone is welcome, along with your families! (See attached flyer)

William (Bill) J. Hinze
EAPS Emeritus Professor, Purdue University
Ralph R. B. von Frese, Ohio State University
Afif H. Saad, Saad GeoConsulting

PUBLISHES NEW BOOK

Gravity and Magnetic Exploration, Principles, Practices, and Applications
Published: April 2013
ISBN: 9780521871013
http://www.cambridge.org/us/knowledge/isbn/item6796388/?site_locale=en_US

EAPS PRESENTATIONS

Professor Laura Pyrak-Nolte was the chair of the 47th US Symposium on Rock Mechanics/Geomechanics in San Francisco, California held on June 23 - 26th, 2013. The conference was attended by 630 participants from 51 countries. In addition, she was inducted as a Fellow of the American Rock Mechanics Association (ARMA) and made a member of the board of ARMA. Presentations on her group's research were given by Bradley Abell (Dispersive Waves Propagating along a Surface Fracture), Eric Boomsma (Particle Swarms in Variable Aperture Fractures) and Prof. Pyrak-Nolte (Laboratory to Field: Critical Scaling of Single Fractures).

EAPS PUBLICATIONS


PUGS?

Do you have a passion for Earth? Do you find our solid planet and all of its cycles fascinating? Want to meet other cool people like yourself? Come check out **P.U.G.S.** We are **Purdue University's Geologic Society.** Never heard of us before?-That's alright, our club has been rather small, but we have quite a bit planned for this upcoming semester. In PUGS, Students will be able meet professionals in the field as well as other interested students. We will participate in numerous activities, go on trips, and share our love for geology. Not a geology major?-No problem! Our club is open to everyone and anyone who wants to join.

**Come check us out!**
Callout: Sept. 9th, 2013, HAMP 1144, 6-7pm

### THE NEW POSTER PRINTER IS HERE!

A new poster printer is in HAMP 2296 and it is now available.

The new, HP Designjet T1300 is a large upgrade from our previous poster printer with new options, dual roll availability and much faster, high quality printing.

As always – it is available from the computer (also upgraded) attached to it, or by simply plugging a usb stick directly into the machine. The HP trainer recommends using the HP software from the computer since it allows the most option changes on the fly. Any picture file or PDF will be read and printed without issue.

Science IT will be happy to show you how to use it if you prefer, but it is extremely user friendly and a lot like the old HP printer.

**PLEASE DO NOT** attempt to change any ink, paper or other consumables in the machine. Please call IT Help Desk at 44488 or go to HAMP 2249 for assistance with any issues you may have with the new machine.

### CAMPUS NEWS

**Director of the Global Sustainability Institute**

We seek to recruit a dynamic leader who is passionate about research, education and engagement to further develop the Global Sustainability Institute (GSI) at Purdue. As the overall leader for the GSI, the individual has the opportunity to capitalize on the unique interdisciplinary strengths of Purdue in energy, climate, the environment, water and food. This is a key leadership position for Purdue and Discovery Park, and the Director will be expected to raise the national and international profile of sustainability. (See attached for more information)

### ALFRED P. SLOAN FOUNDATION RESEARCH FELLOWSHIPS

These fellowships seek to stimulate fundamental research by early-career scientists and scholars of outstanding promise. Candidates must hold a Ph.D. (or equivalent) in chemistry, computational or evolutionary molecular biology, computer science, economics, mathematics, neuroscience, ocean sciences (including marine biology), physics, or a related field. Candidates must hold a tenure track (or equivalent) position and be no more than six years from completion of their most recent Ph.D. No more than three candidates from a department may be nominated. Please contact your department head ASAP to coordinate submission. Deadline: September 16.
The National Research Council of the National Academies sponsors a number of awards for graduate, postdoctoral and senior researchers at participating federal laboratories and affiliated institutions. These awards include generous stipends ranging from $42,000 - $80,000 per year for recent Ph.D. recipients, and higher for additional experience. Graduate entry level stipends begin at $30,000. These awards provide the opportunity for recipients to do independent research in some of the best-equipped and staffed laboratories in the U.S. Research opportunities are open to U.S. citizens, permanent residents, and for some of the laboratories, foreign nationals.

Detailed program information, including online applications, instructions on how to apply and a list of participating laboratories, is available on the NRC Research Associateship Programs Website (see link above).

Questions should be directed to the NRC at 202-334-2760 (phone) or rap@nas.edu.

There are four annual review cycles.
Review Cycle: May; Opens March 1; Closes May 1
Review Cycle: August; Opens June 1; Closes August 1
Review Cycle: November; Opens September 1; Closes November 1
Review Cycle: February; Opens December 1; Closes February 1

Applicants should contact prospective Adviser(s) at the lab(s) prior to the application deadline to discuss their research interests and funding opportunities.

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BUILDING RESEARCH COLLABORATIONS: ELECTRICITY SYSTEMS WORKSHOP
August 28-29, 2013

Burton D. Morgan, Room 121, Discovery Park
Registration (no cost) is now open for the workshop on ‘Building Research Collaborations: Electricity Systems’ August 28-29, 2013 at Purdue. Attached is the tentative agenda. Please share it with your colleagues/students and encourage them to register/attend. Please contact Andrew Liu (andrewliu@purdue.edu) for technical questions or Pankaj Sharma (Sharma@purdue.edu) for general questions. (See attached for tentative agenda)

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POSTDOCS AND PhD GRAD STUDENTS
2013 President Harry S. Truman Fellowship

Sandia Laboratories has announced the 2013 President Harry S. Truman Fellowship in National Security for Science and Engineering for young PhD professional: current qualified PhD students or recent graduates, as well as postdoctoral researchers. A flyer containing information about the 2013 Truman Fellowship may be found by visiting our website (https://engineering.purdue.edu/Intranet/Groups/Administration/RE/). The application deadline for fellows is November 1, 2013. More information is available at http://www.sandia.gov/careers/students_postdocs/fellowships/truman_fellowship.html

A Note from Our Academic Counselor

Congratulations to EAPS Candidate for Graduation
Jordan A. McGrew

Summer Commencement is 9:30 a.m. in the Elliott Hall of Music on Saturday, August 3, 2013. It will be broadcast live on Comcast Channel 5 and Boiler TV Channel 13, and a Windows Media live stream also will be available at mms://video1.itap.purdue.edu/graduation

August Birthdays
Lucy Flesch – 12th
Terry West – 15th
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 Wanitta Thompson (thompsow@purdue.edu) by Friday noon 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, deadlines, etc., see our departmental calendar at http://calendar.science.purdue.edu/eas/seminars.
EAPS Faculty, Staff & Grad Students
WELCOME BACK PICNIC

August 14, 2013
Wednesday
3:30–7:30 pm
Happy Hollow Park
Shelter #4

Picnic dinner will be provided...

PLEASE BRING A DESSERT TO SHARE!

Games...

Families are Welcome
Director of the Global Sustainability Institute

We seek to recruit a dynamic leader who is passionate about research, education and engagement to further develop the Global Sustainability Institute (GSI) at Purdue. As the overall leader for the GSI, the individual has the opportunity to capitalize on the unique interdisciplinary strengths of Purdue in energy, climate, the environment, water and food. This is a key leadership position for Purdue and Discovery Park, and the Director will be expected to raise the national and international profile of sustainability.

The Director provides leadership and vision for the GSI which includes the following: Energy Center, Center for the Environment, Purdue Climate Change Research Center, Purdue Water Community, Purdue Center for Global Food Security, and the U.S.-China Ecopartnership for Environmental Sustainability. The Director will foster a team oriented approach focused on sustainability and is expected to effectively communicate the Institute’s achievements and vision to a variety of stakeholders, including the public, NGOs, policy makers, government leaders, industry and scientists in other disciplines. The Director is responsible for all aspects of the GSI operations, including budget, staff, and coordination of the Centers and Institute initiatives. The Director is expected to utilize the unique infrastructure and investment of Discovery Park to integrate research and engagement among the centers to sustain and grow a world class Institute. The Director of the GSI reports to the Executive Director of Discovery Park and works closely with academic Deans, Department Heads, Discovery Park researchers, and the GSI Center Directors in the administration of the program.

Qualifications

Individuals must hold the rank of Professor at Purdue West Lafayette and have a PhD in a sustainability-related field, a broad knowledge of global sustainability research opportunities, and a successful track record of research leadership, engagement, and scholarly achievement in an area directly related to global sustainability. She or he must have demonstrated capability to bring together and facilitate interdisciplinary groups. The individual must be self-motivated, enjoy new challenges and opportunities, and engage effectively with faculty and a variety of stakeholders across many disciplines.

Applications are welcome until September 16th or until a suitable candidate is identified. This position is a 5 year appointment with the potential for renewal after review. Potential applicants are encouraged to discuss their interest with their department head, as the Directorship is a 75% appointment in the Global Sustainability Institute with a 25% academic appointment in the individual’s home department. Applicants should submit a letter articulating their experience and vision for GSI, as well as a current CV, electronically to Wendy Field (wfield@purdue.edu).

If you have questions about the details of the position, please contact Al Rebar (rebar@purdue.edu). If you have questions about the search, please contact Karen Plaut (kplaut@purdue.edu).

Purdue University is an Equal Opportunity/Equal Access/Affirmative Action Employer fully committed to achieving a diverse workforce.
Building Research Collaborations: Electricity Systems

August 28-29, 2013
Burton D. Morgan, Room 121
Discovery Park
Purdue University

The goal of this workshop is to identify Purdue capabilities and build research collaborations in the area of electricity systems. Knowledge gaps and challenges addressing the Eastern region will be discussed.

Five working sessions on electricity systems include:

- Security of Energy Infrastructures,
- Data Management and Analytics,
- Regional Issues,
- Workforce Training,

Three breakout sessions, and a poster session also are planned.

The workshop is co-sponsored by the colleges of Engineering, Science, Technology, and Health and Human Sciences, and Discovery Park’s Cyber and Energy Centers.

Two continental breakfasts and two lunches are provided and a heavy hors d’oeuvres/reception on the first evening of the workshop.

There is no registration fee, however registration is required. Please use the following link to register.

Register for Event

For more information contact Pankaj Sharma (sharma@purdue.edu)
A Workshop on
Building Research Collaborations: Electricity Systems
Purdue University, West Lafayette, IN 47907
28-29 August 2013

Day 1
7:00-8:00 am  Registration/breakfast
8:00-9:00 am  Inauguration and keynote presentations
9:00-9:15 am  Break
9:15-10:45 am  Panel Session #1: Security for Energy Infrastructures (Lead: E. Bertino)
Synopsis: Novel energy infrastructures are characterized by large and complex software systems able to support a more intelligent management of the infrastructures. This however makes the infrastructures vulnerable to cyber-attacks, including injection of malicious data, disclosure of privacy-sensitive data, and denial of service attacks. Conventional security solutions are inadequate as they are unable to deal with very large complex systems with real-time requirements as it is the case of energy infrastructures. The deployment of smart meter infrastructures is also introducing privacy issues related to the unauthorized or improper use of energy consumption data. This session will identify challenges and develop a research roadmap towards addressing these challenges.
Suggested Keynote Speaker: Dan DeLaurentis (AAS, Purdue)
Suggested Panelists:
• Ninghui Li (CS, Purdue)
• Rick Sheldon (Oakridge)
• Scott Peters (Sypris)

10:45-11:00 am  Break
11:00-12:30 pm  Panel Session #2: Data Management and Data Analytics for Energy Infrastructures (Lead: E. Bertino)
Synopsis: Modern energy infrastructures will require the management and integration of different data types, including spatial and temporal data. Also data will likely have uncertainty. The management of these data must be done in real time in order to provide actionable information to the infrastructure control systems. Also effective and efficient data analytics techniques are crucial in such context. Quality of data is also an important challenge that requires solutions that take into account specific aspects of energy infrastructures. This session will identify challenges concerning data management and analytics and develop a research roadmap towards addressing these challenges.
Suggested Keynote Speaker: Leon Reznik (CS, RIT)
Suggested Panelists:
• Peter Baker (Cyber Center, Purdue)
• Sunil Prabhakar (CS, Purdue University)
• Walid Aref (CS, Purdue University)
• Athula Kulatunga (CoT, Purdue University)
• Michael Zhu (Stat, Purdue University)
12:30-2:00 pm  Lunch and Luncheon speaker
2:00-2:15 pm  Break
2:15-3:45 pm  Panel Session #3: Regional Issues with National and Global Impacts
              (Lead: R. Kramer)
Synopsis: The Midwest region, and especially Indiana, is at the crossroads of major energy flows in the Eastern United States. Traditionally issues that have arisen in this area have been representative of many of the issues associated with energy, reliability and transport that have arisen across the nation and the world. As we transition to new scenarios in the production, use and transportation of energy, it is critical that region wide issues be considered for both the energy system and the customers that rely upon it as a key eminent necessary for their operations and productivity. In the future, if these issues are not considered in a timely and effective manner, the transition to a new national energy profile many be impeded. Long-term issues include transmission infrastructure investments to connect the large amount of wind resources located mainly in rural areas in this region, the transition from a coal-dominated power generation portfolio to a more diversified, sustainable portfolio and the interrelation between natural gas sources and transportation for electric generation. Other issues include maintaining system reliability given a diverse resource mix and regional coordination such as that between MISO and PJM. This session will provide solutions to the main issues faced by the Midwest electricity system, and to discuss the broader application of the solutions to address similar issues at the national and global scale.
Suggested Keynote Speaker: Doug Gotham (State Utility Forecast Group)
Suggested Panelists:
•  Bob Pauley (Eastern Interconnection States' Planning Council)
•  Jameson Smith (Midwest ISO)
•  Robert Kramer (Purdue Calumet)
•  Arcelor Mittal

3:45-4:00 pm  Break
4:00-5:30 pm  Panel Session #4: Smart Grid Workforce Training and Education
              (Lead: E. Dietz)
Synopsis: The development of the future electricity grid requires a highly-trained and flexible workforce to fully realize the advanced grid technologies’ promise and benefits. The future workforce will be vital to reaching our goal to build a sustainable, reliable and efficient energy system. Growing and training the smart grid workforce will require close collaboration between industry and academia. This session will discuss and propose education and training programs to minimize the education-workforce gap in the electric energy sector, and to discuss the challenges of recruitment, retention, graduation and employment.
Suggested Keynote Speaker: Eric Dietz (CIT, Purdue)
6:00-8:00 pm  Suggested Panelists: TBD  
Day 2  
7:00-8:00 am  Breakfast  
8:00-9:30 am  Advanced Grid Modeling, Simulation and Computing (Lead Alex Pothen)  
9:30-10:00 am  Overview and break for group discussion  
The US Power Grid is highly complex—and its complexity is growing at a rate faster than ever before due to the continuous integration of renewable energy sources, emerging storage technologies and intelligent loads into the Grid. The reliable and efficient operation of the next generation power grid will require developing new advanced modeling, simulation and analysis capabilities. These include real-time and near real-time network wide dynamic simulation and state estimation; reliable, validated, static and dynamic models of complex network components; and analysis of a large number of contingencies fast enough to provide timely options to system operators. This session seeks to identify the most critical, high-priority computational challenges that need to be addressed to attain the majority of progress towards building these new capabilities. Main focus will be laid on scientific computing algorithms and the use of high-performance computing platforms.  
Suggested Keynote Speaker:  
Victor Zavala (Argonne)  
Suggested Panelists:  
Sven Leyffer (Argonne)  
Ahmed Sameh (CS, Purdue)  
Oleg Wasynczuk (ECE, Purdue)  
Andrew Liu (IE, Purdue)  
10:00-10:15 am  Break  
10:15-12:00 pm  Breakout groups (Lead: A. Liu)  
- Breakout Group #1 – Demand Response, Smart Buildings, and Microgrids  
  Suggested Lead: Oleg Wasynczuk (ECE, Purdue)  
  Suggested Discussion Points:  
  - Current technology for smart homes and smart buildings  
  - Microgrid plug-and-play and system stability  
  - Market mechanism for demand participation to wholesale markets  
- Breakout Group #2 – Renewable Integration  
  Suggested Lead: Doug Gotham (find replacement) (State Utility Forecast Group)  
  Suggested Discussion Points:  
  - Business model for transmission investment
- Long-term planning and capacity value of renewable resources
- Flexible ramp product markets to increase system reliability with large amount of intermittent resources
- Forecasting techniques for renewable generation

➢ Breakout Group #3 – Advanced Grid Modeling, Simulation and Computing
Suggested Lead: Victor Zavala (Argonne)
Suggested Discussion Points:
- Multiscale modeling
- Large-scale stochastic optimization
- Faster than real-time simulation
- Applications of high performance computing

12:00-2:00 pm Report back and working lunch