CONGRATULATIONS TO DR. TERRY WEST!

The Association of Environmental and Engineering Geologists (AEG) has selected Dr. Terry West to receive the 2013 Honorary Member Award, the Association's highest award. This award is presented to a Member whose career has exemplified the ideals of AEG and has contributed long, distinguished, and outstanding service to the advancement of environmental and engineering geology. Dr. West will be honored at the 56th AEG Annual meeting in Seattle, WA this September. This is a great honor and a very well deserved recognition of Dr. West's accomplishments in engineering geology and service to AEG.

MANY CONGRATULATIONS!

CONGRATULATIONS TO Dr. KEN RIDGWAY

Congratulations on being selected as an EarthScope speaker for 2013-14! (http://www.earthscope.org/resources/speakers/2013/) It's a great honor and opportunity to share your research accomplishments and contributions to outreach, particularly for Native American students and the program at Purdue.

MANY CONGRATULATIONS!

SPRING SEMESTER 2013 TEACHING HONOR ROLLS

EAPS Faculty
(See attached list)

EAPS Grad Students and Undergraduate TAs
(See attached list)

CONGRATULATIONS TO ALL!

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.

EAPS PRESENTATIONS


Sun, W. Y., 2013: “Numerical Simulation of Dust Storms in Asia” (with K. Yang, and N. Lin) on May 31 at Kyungpook National University, Korea on May 30.

Sun, W. Y., 2013: “Numerical Simulation of Dust Storms in Asia,” (with K. Yang, and N. Lin) at The 12th International Conference on Atmospheric Sciences and Applications to Air Quality (ASAAQ) in Seoul, Korea, 3~5 June 2013.

Alex Gluhovsky gave the talk “Gyrostatic extensions of the Lorenz 1963 system as novel time series models for atmospheric data” at the SIAM Conference on Applications of Dynamical Systems (Snowbird, Utah) on May 21.
EAPS DEFENSES

Monday, July 8, 10:00-1:00, HAMP 2201

Monday, July 8, 1:00-3:00, HAMP 2201
Linyuan Shang, MS Defense, "Improving Leaf Phenology Simulations Using Satellite Data and Model-Data Assimilation Approach: Implication to Simulating Evapotranspiration of Terrestrial Ecosystems in the U.S."

Wednesday, July 10, 2:00-4:30, HAMP 2201
Michael King, MS Defense, "Evaluating Sources Chemical Pathways of Aerosol Production on the Southern Ute Indian Reservation and Navajo Nation using Geochemical Isotope Analysis."

THOUGHTS ON GRADUATE MENTORING:

Jon Harbor recently gave a short speech at an event to recognize recipients of the Provost’s Award for Outstanding Graduate Mentoring. Included in his remarks were the following five thoughts for current and future graduate faculty members:

1. It’s all about the students and their success. Spend time finding out about their goals, aspirations, strengths and weaknesses, and help them build a set of experiences that leverage their strengths, fill in the gaps in their knowledge, skills and experience, and that are focused on their goals.

2. It’s all about the students and their success. Spend time building a supportive community of learners – they help each other far more than you will ever have time to do, and in some ways better, and they learn a lot about mentoring from this.

3. It’s all about the students and their success. Show your students that it is possible to be productive, happy and have a balanced life – it helps them think about how they can balance the things they want to do in their lives. Spend time on other things – hobbies, family, sports, culture – whatever you enjoy, and make sure your students see how you value this and how it enriches your life.

4. It’s all about the students and their success. Spend time on former students as they move through their professional and personal paths – they still appreciate an outside opinion and some suggestions, and they are a fantastic support network for our current and future students.

5. It’s all about the students and their success. When you facilitate the success of a talented, diverse, and collaborative group of graduate students, the rewards are astounding. You suddenly realize that you are associated with some amazing research that gets funded and published in top journals, and that you have graduate students who are friends and colleagues that will always be a part of your life.

EAPS PUBLICATIONS


EAPS GRAD STUDENTS IN THE LOCAL NEWSPAPER

A news article by EAPS grad student, Derrick Snyder, in the Lafayette Journal & Courier entitled, “For Storm Forecasters, Goal is Hours, Not Minutes.” Click link to read article: http://www.jconline.com/apps/pbcs.dll/article?AID=2013306290034

CAMPUS NEWS

Amy’s Lab Safety Newsletter
June 2013
(see attached)

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RESEARCH COMPUTING “COFFEE BREAK CONSULTATIONS” FOR WOULD-BE, NEW AND EXPERIENCED USERS.

Weekly “Coffee Break Consultations” with ITaP Research Computing (RCAC) staff are informal meetings with benefits for new and experienced high-performance computing users or faculty, staff and students just thinking about adding the tool to their research toolbox. More information is available at www.itap.purdue.edu/newsroom/detail.cfm?newsId=2788 or by emailing rcac-help@purdue.edu.

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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)
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)

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

OPEN POSITION AT UNIVERSITY OF ILLINOIS-CHICAGO

The Department of Earth and Environmental Sciences at the University of Illinois at Chicago (UIC) seeks applicants for the position of Coordinator of Undergraduate Laboratories to start on 16 August 2013. The successful candidate will manage and help develop instructional laboratories, including the training of Teaching Assistants in laboratory activities and maintenance of laboratory equipment. Minimum Qualifications---Undergraduate and Advanced Degree in Geoscience, Earth and Environmental Science or Geoscience Education required. A minimum of one year of previous teaching experience (as teacher or teaching assistant) in middle school, high school, and/or college/university setting required. Please direct questions about the position to pdoran@uic.edu. To apply, please complete the online application providing contact information of three professional references at https://jobs.uic.edu (click on the Job Board and then on the position link) and upload a cover letter, curriculum vitae, and a statement of laboratory management and teaching experience. For fullest consideration, please apply by July 5, 2013. Women and minority candidates are strongly encouraged to apply. Final authorization of the position is subject to availability of state funding. UIC is one of the nation’s leading urban research universities and an Affirmative Action/Equal Opportunity Employer.
A Note from Our Academic Counselor

Veterans Success Center

Starting Monday, July 1st, 2013, Purdue University will open its first Veterans Success Center (VSC) in ENAD 402. The primary purpose is to provide one-stop access to benefits and programming for military veterans, military personnel, and benefit-using family members. In order to provide a strong foundation, the following professional staff will be located within the VSC:

- Teresa Harris, Veterans Certifying Official
- Sarah Underwood, Veterans Certifying Official
- Jamie Richards, Coordinator for Military Veteran and Nontraditional Student Programs and VSC Director

The VSC will provide the following for military veterans, military, and benefit using family member students:

- Consult and process GIBILL benefits
- Assist with military Tuition Assistance and National Guard Supplemental Grants
- Serve as an advocate for the student
- Help the student connect with needed services on and off campus
- An open study space available during normal working hours
- Access to and meeting space for the Purdue Student Veterans Organization
- Coordinated access to local, regional, and federal agencies related to veterans services and benefits
- Access to the Veterans Mentoring Program
- VA Work Study opportunities

Faculty and Staff should know:

- We offer Green Zone faculty and staff awareness training
- We are always interested in creating partnerships that enable veteran student success as the VSC gets established and develops additional programs and services

As you may be aware, ENAD is slated to be demolished which means that this will not be the permanent home; more information will follow on the permanent location. The VSC will operate during normal working hours and can be reached by calling 49-47638, faxing 49-41545, or by emailing dogtags@purdue.edu.

**CCO – New Location**

Also, starting July 1, 2013, the CCO will be housed in YOUNG HALL Rm. 132. The new location brings a new name for your student account—it’s changed from CCO Express to myCCO. See what’s stayed the same and what’s new at [www.cco.purdue.edu](http://www.cco.purdue.edu)

**July Birthdays**

Steve Smith – 7\textsuperscript{th}
Andy Freed – 8\textsuperscript{th}
Alex Gluhovsky – 13\textsuperscript{th}
Bill Hinze - 26\textsuperscript{th}
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 (thompsov@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.
TO: EAPS Faculty  
FROM: Jon Harbor, Dept. Head  
SUBJECT: Honor Roll – Spring Semester 2013

I am pleased to report once again that many of our faculty colleagues have made the department’s Teaching Honor Roll for the 2013 Spring semester (based on student evaluation average instructor rating) as noted below. Congratulations!

Service Courses (=> 4.0)
Dean Ballotti EAS 102 Earth Science for Elem Teachers 4.1
Andrew Freed EAS 106 Geosciences in the Cinema 4.7

Undergraduate/Graduate Courses (=>4.5)
Ernie Agee EAS 117 Intro to Atmospheric Science 4.6
Ernie Agee EAS 137 Freshman Seminar in EAS 4.7
Tom Carney EAS 325 Aviation Meteorology 4.6
Darryl Granger EAS 390 Geol Field Methods 5.0
Jeff Trapp EAS 391* SB Field Course 4.8
Mike Baldwin EAS 391 Scientific Computing 4.8
Sonia Lasher-Trapp EAS 532 Atmospheric Physics I 4.9
Bob Nowack EAS 559 3D Seismic Interpretation & Visualization 4.5
Darryl Granger EAS 591* Tectonic Geomorphology 4.5
Nat Lifton EAS 591* Tectonic Geomorphology 4.7
Ken Ridgway EAS 591 Crustal Tectonics 5.0
Jeff Trapp EAS 591 Mesoscale Convective Processes 4.9
Mike Baldwin EAS 591 Mesoscale Forecasting 5.0
Terry West EAS 591 Advanced Engineering Geology 5.0
Alex Gluhovsky EAS 591 Stat Analysis of Low Order Models 5.0
Andrew Freed EAS 591 Graduate Teaching Practicum 5.0
Chris Andronicos EAS 691 Seminar in Earth Science 4.6

*Course was co-taught
I am pleased to announce that the following TAs have made the Teaching Honor Roll for the 2013 Spring semester by achieving a score of 4.5 or higher as rated by their students. **Congratulations!**

<table>
<thead>
<tr>
<th>Name</th>
<th>Course</th>
<th>Lab/Module</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laci Brock</td>
<td>EAS 111</td>
<td>Physical Geology Lab</td>
<td>4.6</td>
</tr>
<tr>
<td>Darryl Reano</td>
<td>EAS 111</td>
<td>Physical Geology Lab</td>
<td>4.5</td>
</tr>
<tr>
<td>Andrew Najafiarab</td>
<td>EAS 111</td>
<td>Physical Geology Lab</td>
<td>4.7</td>
</tr>
<tr>
<td>Zach Umperovitch</td>
<td>EAS 112</td>
<td>Earth Through Time Lab</td>
<td>4.9</td>
</tr>
<tr>
<td>Darryl Reano</td>
<td>EAS 474</td>
<td>Sediment and Strat</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Summer Edition

What Not to Wear: Laboratory in Summer Edition
Warm weather brings along with it shorts, sandals, and tank tops but you might want to think twice before wearing those clothes to lab. If you’re wearing the latest summer style and you spill a chemical, most likely it would end up on your arms, legs, or feet. Ouch! If you want to be safe, a great idea for summertime is to keep a pair of long pants and tennis shoes at lab. You can change into them while at work and change into your cool clothes before you go home.

Would you be interested in attending a Safety Fair where you could ask REM questions and see vendors with the latest safety gear? Let us know! Click this link for a very brief survey: https://purdue.qualtrics.com/SE/?SID=SV_6l0WoqyTeOH8L0F

Where Does My Waste Go?
After all chemical waste is picked up, it is transported back to Purdue’s very own Treatment, Storage and Disposal Facility (TSDF). Every constituent in each container is considered when the safest and most cost-effective method of disposal is determined. Each hazard class is handled differently, for example, flammable solvents are sent to be used as fuel in a cement kiln and aqueous wastes are sent for waste-water treatment. It can become complicated when we receive very complex waste, i.e. single containers with constituents in multiple hazard classes. Here are a few rules of thumb to keep in mind as you are collecting your waste streams.

Don’t Mix:
- Organic solvents with Oxidizers or Organic Peroxides
- Organic solvents with Mercury (elemental or salts)
- Acids with Metals
  Green solvent cans are great for waste flammable liquids, but should not be used with any acids or bases.
- Halogenated and Non-Halogenated solvents
  Halogenated solvents such as Chloroform and Dichloromethane cost twice as much for disposal.

We understand that sometimes your process requires mixing incompatible chemicals and we can dispose of those too. However, the process will take longer and the container won’t be returned as quickly. And if you aren’t sure of the hazards of the chemicals you are working with, check out the Safety Data Sheet (SDS). They have tons of info including a quick overview of the hazards (Section 2) and reactivity information, including any materials to avoid (Section 10).

Quick Chemical Storage Tips
As you store chemicals in your lab, keep in mind that all chemicals do not play nice together.

* Don’t store chemicals alphabetically. Separate them by hazard class first and then you can sort them alphabetically.

* Organic acids, such as Acetic acid, need to be kept away from Oxidizing acids, such as Nitric acid. Secondary containment can be used.

* Keep pyrophoric and reactive chemicals away from water and aqueous mixtures.

Your Waste Goes Here! Inside a room at the Laboratory Materials Storage Building.
Shipping Hazardous Materials

Lots of items, such as those listed below, are regulated by the Department of Transportation and require special packaging and employee training. Contact Lanie Hazlewood at lshazlewood@purdue.edu or 49-67367 before shipping.

- Dry ice
- Liquid nitrogen
- Micro-organisms (virus, fungi, prions, bacteria)
- Body fluids (blood, urine, secreta)
- Compressed gas cylinders & aerosol containers
- DNA, RNA, cell lines
- New synthesized chemicals
- Pharmaceuticals
- Research samples

Summertime means EPA Inspection Time

Usually, the EPA comes to inspect Purdue during the summer months. So make sure all your containers are labeled and closed! And don’t forget about proper HPLC waste collection procedures. Due to previous violations, the EPA has already informed us that they’ll be looking for better compliance this year with HPLC waste. We definitely don’t want to get a fine.

You can help keep Purdue compliant!

“Piled Higher and Deeper” by Jorge Cham

www.phdcomics.com

Seminar BINGO!

To play, simply print out this bingo sheet and attend a departmental seminar.

Mark over each square that occurs throughout the course of the lecture.

The first one to form a straight line (or all four corners) must yell out to win!

“FREE” Speaker runs out of time

Entire slide filled with equations

“The data clearly shows…”

There’s a Grad Student wearing same clothes as yesterday

Bitter Post-doc asks question

Speaker forgets to thank collaborators

Cell phone goes off

You’ve no idea what’s going on

“Future work will…”

References Advisor (past or present)

Use of PowerPoint template with blue background

“If beyond the scope of this work”

Master’s student bobs head fighting sleep

Speaker asks for host professor to show up

“You’re the only one in your lab that bothered to show up

Blatant typo

“... et al.”

Work ties in to Cancer/HIV or War on Terror

Speaker sucks up to host professor

Host Professor falls asleep

Speaker wastes 5 minutes explaining outline

Speaker bashes previous work

Repeated use of “um…”

Dry ice

Liquid nitrogen

Micro-organisms (virus, fungi, prions, bacteria)

Body fluids (blood, urine, secreta)

Compressed gas cylinders & aerosol containers

DNA, RNA, cell lines

New synthesized chemicals

Pharmaceuticals

Research samples

www.phdcomics.com

Do you have a lab safety question or issue you’d like Amy to address in this newsletter? Let her know!

E-mail atheivag@purdue.edu; Phone 49-69359
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.
Approximately 50 grants are available in the 2014-2015 competition for U.S. academics, professionals, and mid-career researchers to teach and/or conduct research in Brazil. The governments of the United States and Brazil, through the U.S.-Brazil Fulbright Commission, have expanded teaching and research exchange opportunities in science and technology through the Fulbright-Brazil Scientific Mobility Program.

**2014-2015 Awards Include:**

- Fulbright-ALCOA Distinguished Chair in the Environmental Sciences and Engineering (#4456)
- Fulbright-FACEPE Distinguished Chair in the Oil and Gas Sciences and Engineering (#4460)
- Fulbright-Brazil Scientific Mobility Program Distinguished Chair (#4458)
- Fulbright-Brazil Scientific Mobility Program (#4457)

U.S. applicants must be affiliated with an accredited PhD graduate program or accredited research network in Brazil and should seek affiliation by contacting the appropriate program coordinator at the institution of their interest.

Grant lengths vary by award and range from 3 to 9 months, beginning August 2014 or March 2015. Proficiency in Portuguese or Spanish is not required for awards in science and technology.

Visit [http://www.iie.org/cies](http://www.iie.org/cies) to access the Catalog of Awards, online application and guidelines. The application deadline for the 2014 – 2015 competition is August 1, 2013.

For information contact Alisha Scott at ascott@iie.org or (202) 686-6014 or Katrin DeWindt at kdewindt@iie.org or 202.686.6254.
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,
• Modeling/Simulation/Computing.

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 DeLaurentiis (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 may 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)
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