

7<sup>TH</sup>  
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**ELECTRIC POWER**  
INDUSTRY CONFERENCE

Presented by the Swanson School of Engineering & the Center for Energy

THE 7<sup>th</sup> ANNUAL | UNIVERSITY OF PITTSBURGH

Electric Power Industry Conference | November 12 & 13, 2012

**WELCOME !!**

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**ELECTRIC POWER**  
INDUSTRY CONFERENCE

Presented by the Swanson School of Engineering & the Center for Energy

**Pittsburgh Athletic Association – Pittsburgh, PA**  
**November 12 and 13, 2012**

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## Sponsors – Thank You!





## Monday Morning (1), Nov. 12

10:00 AM Welcome and Opening Remarks:  
**Conference Chair**

10:05 AM Introduction of Keynote Speaker  
**Gerald Holder, PhD**  
– **Dean, Swanson School of Engineering, University of Pittsburgh**

10:10 AM Keynote Address:  
**John A. Swanson, PhD**  
– **Founder, ANSYS Inc.**  
**Topic: "Solar Energy Today"**

11:15 AM Panel Session  
**Power System Modeling and Analysis Developments for Clean Energy Integration**  
Moderator:  
**Tom McDermott, PhD – Asst. Professor, Swanson School of Engineering**  
Panelists:  
**Brian Gemmell, PhD – General Manager, Power Technologies International, Siemens Energy**  
**Marius Rosu, PhD – Manager, Electromechanical Product Line, ANSYS**  
**Donald Shoup, PE – Manager, Power System Engineering Services, Mitsubishi Electric**  
**Stephen Zitney, PhD – Director, AVESTAR, DOE National Energy Technology Lab (NETL)**

12:30 PM Luncheon – Schenley Lounge / Pennsylvania Room

## Conference Committee

### Paul Kovach

– Marketing, Communications, and Public Relations

### Matt Manzo

– Web Site Development

### Kenny Doty

– IT and Technical Support

### Monica Bell

– Conference Coordination and Support (welcome back!)

### Stephanie Aaronson

– Conference Planning, Materials, and Communications

### Brandon Grainger

– Technical Program, Workshops, and Graduate Student Sessions

### Danielle Ilchuk

– Registration, Corporate Sponsors and Exhibits, and  
Overall Conference Planning and Coordination Activities

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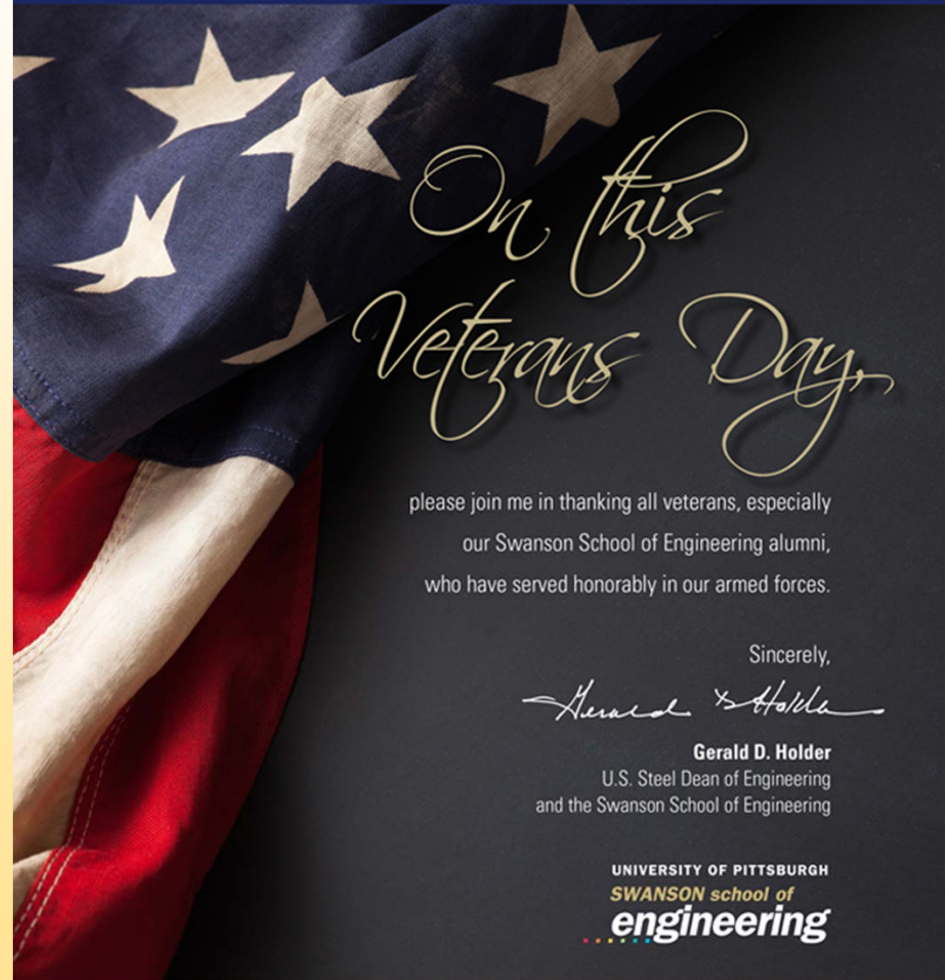
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**Celebrating  
Veterans  
Thank You !**

UNIVERSITY OF PITTSBURGH | SWANSON SCHOOL OF ENGINEERING



please join me in thanking all veterans, especially  
our Swanson School of Engineering alumni,  
who have served honorably in our armed forces.

Sincerely,

**Gerald D. Holder**

U.S. Steel Dean of Engineering  
and the Swanson School of Engineering

UNIVERSITY OF PITTSBURGH  
SWANSON school of  
**engineering**

Swanson School of Engineering | 109 Benedum Hall | 3700 O'Hara Street | Pittsburgh, PA 15261

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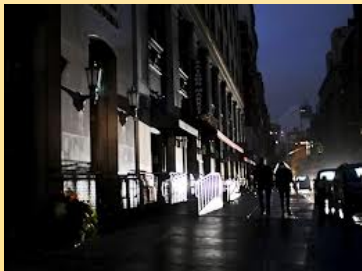
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## Super Storm Sandy Recovery



## **2012 Electric Power Program Highlights**

### **New Research Activities and Educational Developments:**

- **Center for Energy: Richard King Mellon Foundation Grant**
- **DOE NETL RUA: Grid Technologies Collaborative (Power Electronics)**
- **DOE EERE: National Offshore Wind Energy Grid Integration Study**
- **ARPA-e Solar ADEPT: Power Conversion Technology Development**
- **Eaton-sponsored Power System Lab, under construction**
- **Solar PV installation on Benedum Hall rooftop**
- **32% of all graduating EE's completing the EPE Concentration**
- **IEEE PES Scholarship Plus national awards, 4 undergraduate students**
- **IEEE PES T&D Show award-winning student poster**
- **New faculty in electric power; and new corporate partnerships**
- **New graduate courses in smart grids and advanced power electronics**
- **Planning for distance-based post-bacc electric power certificate program**

### **Notable Outreach Activities**

- **National Academies of Science & Engineering Energy Ambassadors Program**
- **Middle school course development on "Introduction to Energy & Electricity"**
- **IEEE Power & Energy Society Magazine, Nov/Dec 2012 'DC Theme'**

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## Electric Power Engineering Partners

**SIEMENS**

**EATON**  
*Powering Business Worldwide*

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Foundation

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THE HEINZ ENDOWMENTS  
Howard Heinz Endowment • Vira L. Heinz Endowment



## Keynote Address

**John A. Swanson, PhD**  
Founder, ANSYS, Inc.

**“Solar Energy Today”**



## Monday Morning (2), Nov. 12

11:15 AM Panel Session

### **Power System Modeling and Analysis Developments for Clean Energy Integration**

Moderator:

**Tom McDermott, PhD**

– Asst. Professor, ECE Dept., Swanson School of Engineering

Panelists:

**Brian Gemmell, PhD**

– General Manager, Power Technologies International, Siemens Energy

**Marius Rosu, PhD**

– Manager, Electromechanical Product Line, ANSYS

**Donald Shoup, PE**

– Manager, Power System Engineering Services, Mitsubishi Electric

**Stephen Zitney, PhD**

– Director, AVESTAR, DOE National Energy Technology Lab (NETL)

12:30 PM Luncheon – Schenley Lounge / Pennsylvania Room

## Monday Afternoon (1), Nov. 12

1:30 PM Technical Program – Invited Presentations

**Electric Power Industry Strategies for Addressing the Challenges of Grid Planning and Operations for Clean Energy Integration**

### Session A – Pennsylvania Room

Chair: **Zhi-Hong Mao, PhD – Assoc. Professor, ECE Dept., SSOE**

Speakers:

- |                         |  |
|-------------------------|--|
| <b>Dan Carnovale</b>    | – Manager, Power Systems Experience Center, Eaton Corp.  |
| <b>Jason Black, PhD</b> | – Research Director, Energy Systems, Battelle Memorial Institute                               |
| <b>Ken Loparo, PhD</b>  | – Nord Professor of Engineering, Great Lakes Energy Institute, Case Western Reserve University |
| <b>Steve Mankevich</b>  | – Chief R&D Engineering, GE Energy Power Conversion  |
| <b>Open Discussion</b>  | – Impacts of Super Storm Sandy on Power Grid Infrastructure                                    |

### Session B – Library

Chair: **Ervin Sejdic, PhD – Asst. Professor, ECE Dept., SSOE**

Speakers:

- |                         |   |
|-------------------------|---|
| <b>David Roop</b>       | – Director, Electric Transmission Operations, Dominion Virginia Power |
| <b>Wayne Galli, PhD</b> | – Vice President, Transmission Services, Clean Line Energy Partners   |
| <b>John Daniel</b>      | – Senior Principal Consultant, ABB Inc.                               |
| <b>Bruce Campbell</b>   | – Engineering Manager, Advanced Power System Technologies, Eaton      |

## Monday Afternoon (2), Nov. 12

4:00 PM Graduate Student Research Symposium and Poster Session  
**University of Pittsburgh Electric Power Initiative Research Group Students  
and NETL-RUA Partner Universities**

GSR Posters and Paper Presentations:

**Graduate student highlights of recent research work, including various poster topics and  
brief presentations on the following specific titles:**

*“Ship to Grid: Medium Voltage DC Concepts in Theory and Practice”*

- **Brandon Grainger, Adam Sparacino, Matthew Korytowski, Shimeng Huang**

*“Energy Conversion Trends: High Frequency System Operation and Economic Impacts”*

- **Emmanuel Taylor, Raghav Khanna, Ansel Barchowsky, Rusty Scioscia**

*“Electric Grid Design, Take Two: Next Generation Grid Network Controls, Power Converters,  
and Renewable Energy Supply”*

- **Hashim Al Hassan, Patrick Lewis, Alvaro Cardoza, Benoit DeCourreges**

5:30 PM Adjourn Afternoon Session



# Monday Evening, Nov. 12

## Monday Evening, Nov. 12

### Student-Industry Networking Event

6:00 PM Welcome and Opening Remarks  
**Conference Chair**

6:05 PM Evening Session Guest Speaker – Pennsylvania Room

**C. D. (Dan) Mote, Jr., PhD**  
**Former President and Regents Professor, University of Maryland;**  
**Nominee for President of the National Academy of Engineering**

~ 7:00 PM Networking Reception and Industry Exhibits – Main Ballroom

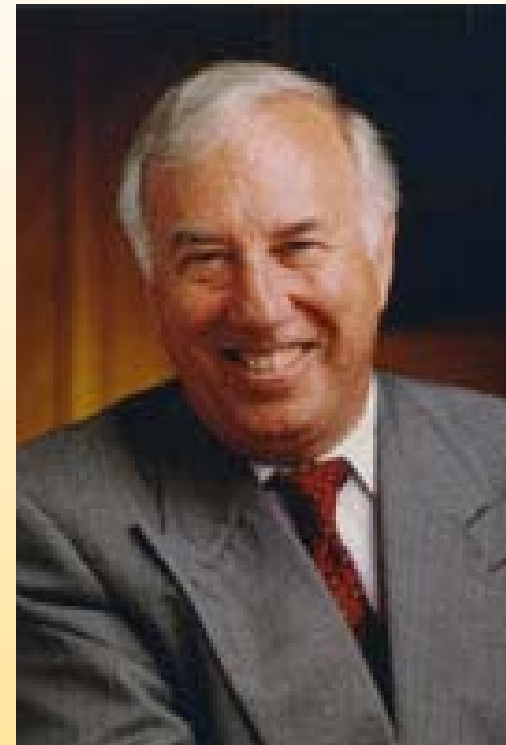
**An evening social event bringing together Pitt students studying in the electric power and energy fields with participating industry organizations, as well as business-to-business contacts among the industry participants. The evening session provides networking and information exchange opportunities focused in the electric power and energy sector.**

## **Evening Session Keynote:**

### **C. D. (Dan) Mote, Jr., PhD**

**Former President and Regents Professor  
University of Maryland**

**Nominee for President of the  
National Academy of Engineering**



## Tuesday Morning (1), Nov. 13

### 9:00 AM Workshop Sessions A

#### A-1) **National Academy of Sciences and Engineering Energy Ambassador Program**

Location: **Library**

Session Moderators:

**Emmanuel Taylor – Energy Ambassador Program Representative  
and Pitt Graduate Student Researcher**

**Barbara Kline Pope – Executive Director for the Office of Communications and the  
National Academies Press  
The National Academies of Science, Engineering, and Medicine**

#### A-2) **Technology Regional Innovation Cluster (T-RIC) Program**

Location: **Patriarch**

Session Moderator:

**Petra Mitchell – President and CEO, Catalyst Connection**

## Tuesday Morning (2), Nov. 13

### 10:00 AM Workshop Sessions B

B-1) **APRA-E Solar ADEPT Program Project**

Location: **Library**

Session Moderators:

**Brandon Grainger – Pitt Graduate Student Researcher**

**Alex Leary – CMU Graduate Student Researcher**

B-2) **DOE-414 National Offshore Wind Energy Grid Interconnection Project**

Location: **Patriarch**

Session Moderators:

**John Daniel – Senior Principal Consultant, ABB Inc.**

**Hashim Al Hassan – Pitt Graduate Student Researcher**



## Tuesday Morning (3), Nov. 13

### 11:00 AM Workshop Sessions C

#### C-1) **DOE NETL Regional University Alliance (RUA) Grid Technologies Collaborative**

Location: **Library**

Session Moderators:

**Wayne Honath – Director of GTC Program Development and Industry Relations,  
University Energy Partnership**

**Steven Bossart – Lead Energy Analyst, Project Management Center,  
DOE National Energy Technology Lab (NETL)**

#### C-2) **DOE-152 Workforce Training – Keystone Smart Grid Fellows Program**

Location: **Patriarch**

Session Moderators:

**Matthew Korytowski and Rusty Scioscia – Pitt Graduate Student Researchers**

### 12:15 PM **Lunch and Closing Remarks – Pennsylvania Room / Schenley Lounge**