



# Power Systems Engineering Research Center

## Industry Advisory Board Meeting Highlights May 15-17, 2019



*Engineering Hall at the University of Wisconsin- Madison*

The Industry Advisory Board (IAB) meeting this May took place on the campus of the University of Wisconsin - Madison. The meeting venues were the Engineering Hall and the Mechanical Engineering Building.

The meeting was attended by 96 people:

- 25 industry members representing 17 industries
- 36 university faculty and staff from 12 universities
- 35 students

Our host during the 3-day long meeting was Prof. Bernie Lesieutre, PSERC site director at Madison. We thank him and Courtney Summars for taking care of the many logistical and catering arrangements needed for such a complex undertaking. Several graduate students, and especially Sogol Babaeinejadsarookolae, Jonathan Snodgrass, and Kshitij Girigoudar also helped at registration and throughout the meeting with the presenter time



clock, the career fair, and the posters set-up. Additionally, we would like to acknowledge the administrative support provided by Taylor Mills from the PSERC office in Arizona.



*Camp Randall gate*



*Mechanical Engineering Building*

### **Wednesday, May 15**

The meeting started in the early afternoon with stem meeting sessions that included the following presentations:

#### **Markets:**

- Kory Hedman (Arizona State), *Chair*
- Tongxin Zheng (ISO-NE), *Vice Chair*

#### **Systems:**

- Venkataramana Ajjarapu, Iowa State, *Chair*
- Di Shi, GEIRI-NA, *Vice Chair*

#### **T&D:**

- Ward Jewell, Wichita State, *Chair*
- Jeff Fleeman, AEP, *Vice Chair*

It was then followed by a mini job fair for students held in parallel with a welcoming reception. At the fair, the PSERC Power Systems graduate students had the opportunity to meet with many of the industry representatives to learn about current and future job openings. Industry members participated in the fair and we appreciate their time and willingness to meet and interact with the students.





*Job fair for graduate students*

### **Thursday, May 16**

After a substantial breakfast, the day began with a warm welcome from Dr. Ian Robertson, Dean of Engineering at the University of Wisconsin-Madison followed by an organizational update by Dr. Vijay Vittal, PSERC's director.



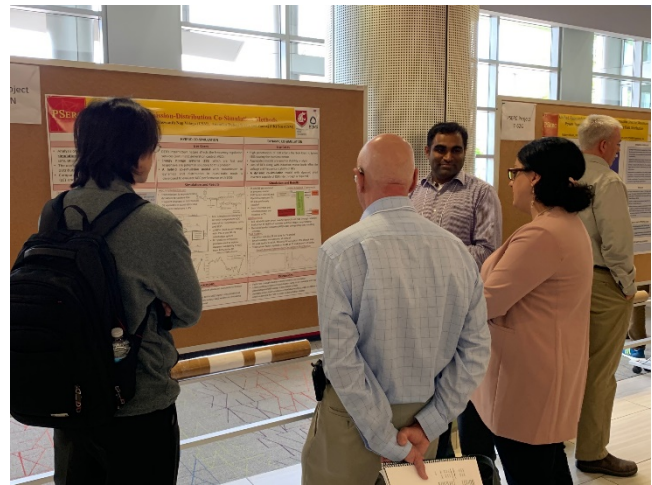
*Attendees listen to Thursday's presentations*

Throughout the morning and the early afternoon, attendees had the opportunity to listen to presentations ending in 2019. The presentations were:

- **M-37: Development of Expansion Planning Methods and Tools for Handling Uncertainty**  
Project Leader: Lizhi Wang (Iowa State)  
Team Member: James McCalley (Iowa State), Christopher DeMarco (UW-Madison)

- **M-38:** *Coordination Mechanisms for Seamless Operation of Interconnected Power Systems*  
Project Leader: Subhonmesh Bose (UIUC)  
Team Members: Lang Tong (Cornell University)
- **S-74:** *Synchrophasor-Data Analytics for a More Resilient Electric Power System*  
Project Leader: Anamitra Pal (Arizona State)  
Team Members: Lalitha Sankar (Arizona State), Christopher DeMarco (UW-Madison)
- **S-75:** *Reliability Evaluation of Renewable Generation Integrated Power Grid including Adequacy and Dynamic Security Assessment*  
Project Leader: Chanan Singh (Texas A&M)  
Team Members: Vijay Vittal (Arizona State)
- **S-76:** *Modeling, Control, and Protection of Multi-Terminal Direct-Current Transmission for Improving Power Grid's Performance*  
Project Leader: Maryam Saeedifard (Georgia Tech)  
Team Members: Ali Mehrizi-Sani (Washington State), Jiangchao Quin (Arizona State)
- **S-81G:** *Oscillation Monitoring and Control of the RTE Power System Using Synchrophasors*  
Project Leader: Vaithianathan (Mani) Venkatasubramanian (Washington State)  
Presenter: Maddipour Farrokhifard (Graduate Student)
- **S-82G:** *Cyber-Physical Modeling, Visualization and Metric for Microgrid Resiliency*  
Project Leader: Anurag Srivastava (Washington State)  
Team Members: Adam Hahn (Washington State)  
Presenter: Venkatesh Venkataramanan (Graduate Student)
- **T-60:** *Framework to Analyze Interactions between Transmission and Distribution Systems with High Distributed Energy Resource (DER) Penetrations*  
Project Leader: Anamika Dubey (Washington State)  
Team Members: P.K. Sen (Colorado School of Mines)

Later in the afternoon students, faculty, and industry members participated in a poster session that featured 21 posters based on ongoing PSERC research projects. The posters presented by the students were entered in the annual *Best Poster* competition evaluated by PSERC industry members.



*Poster session*





*Poster session*

Following the poster session, the IAB members participated in a closed industry meeting. The day ended with a dinner at the Doubletree Hotel that provided an opportunity to relax and network.

### **Friday, May 17**

At the beginning of the session the IAB chair, Evangelos Farantatos presented a summary of the main outcomes of the closed IAB meeting.



*Left: Anna Rosa Lampis, PSERC Deputy Director  
Center: Mohammadreza Hatami, student, WSU  
Right: Evangelos Farantatos, IAB Chair, EPRI*

After the summary, Dr. Anna Rosa Lampis, PSERC's Deputy Director, announced the winner of the best student poster competition. The winning poster was the one for the project *S-86G: Input-output Metrics for the Power Grid's Swing Dynamics*. Presented by Mohammadreza Hatami from WSU.

We very much appreciate all the industry members that participated in the evaluation of the posters.

The Friday morning session continued with two presentations:

- *Practical Electrostatic Motors and Potential Grid Applications*, by Dan Ludois, Professor of Electrical Engineering (UW-Madison)
- *Nuclear Energy in a Shifting Landscape*, by Paul Wilson, Professor of Nuclear Engineering and Chair (UW-Madison).

Both presentations were very well received and provided many stimulating idea exchanges.

The meeting adjourned at 11:00 a.m.