



Power Systems Engineering Research Center

Industry Advisory Board Meeting Highlights December 5-7, 2018



Sather Gate, main entrance to the University of California- Berkeley

The Industry Advisory Board (IAB) meeting this December took place on the campus of the University of California - Berkeley. The meeting venue was the Sutardja Dai Hall located within the building that houses the Center for Information Technology Research in the Interest of Society (CITRIS).

The meeting was attended by 113 people:

- 38 industry members representing 20 industries
- 32 university faculty and staff from 12 universities
- 43 students

Our appreciation goes to GEIRI-North America for their generous financial support of the meeting.

Our host during the 3-day long meeting was Dr. Shmuel Oren, PSERC site director at Berkeley. We thank him and his students for taking care of the many logistical and catering arrangements needed for such a complex undertaking. Several graduate students 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 meeting coordination and administrative support from Paula Baker and Avanna Peeples from the PSERC office in Arizona.



Left: Sather Tower (Campanile), Right: campus street view

Wednesday, December 5

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

Systems:

- Zhiwei Wang (GEIRI- North America): *Ongoing Research Activities at GEIRI-North America*

Markets:

- Jim Price (CAISO): *Ongoing Developments at California ISO*
- Yonghong Chen (MISO): *Electricity Market Design and Market System Development*
- Nikita Singhal (EPRI): *Generator Contingency Modeling in Electric Energy Markets*

T&D:

- Patrick Panciatici (RTE): *Digital Transformation for the Energy Transition in Europe*

Afterward, a mini job fair for students was held in parallel to 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. Ten industry members participated in the fair and we appreciate their time and willingness to meet and interact with the students.

Thursday, December 6

After a satisfying breakfast, the day began with a warm welcome from Dr. Tsu-Jae King Liu, Dean of Engineering at the University of California-Berkeley followed by an organizational update by Dr. Vijay Vittal, PSERC's director.



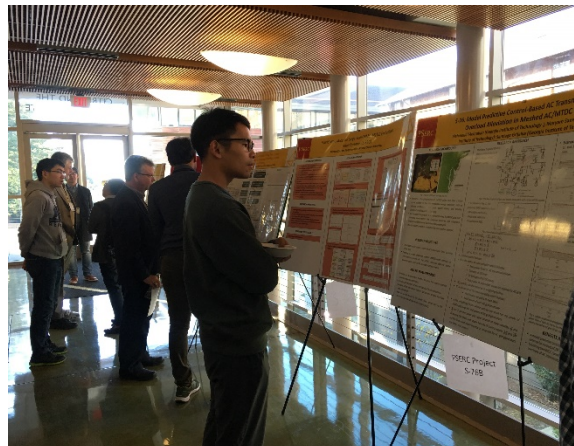
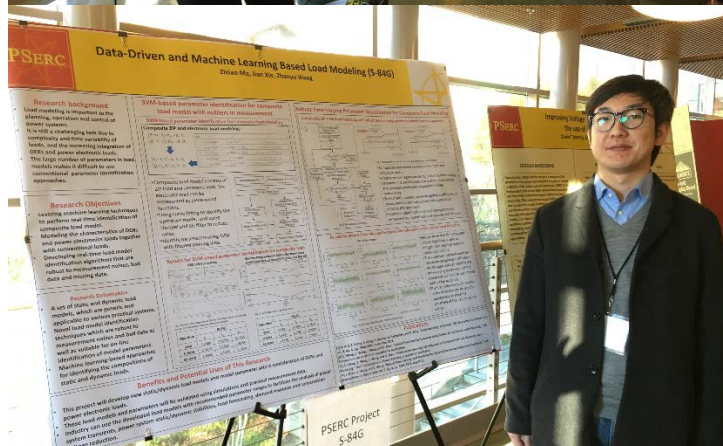
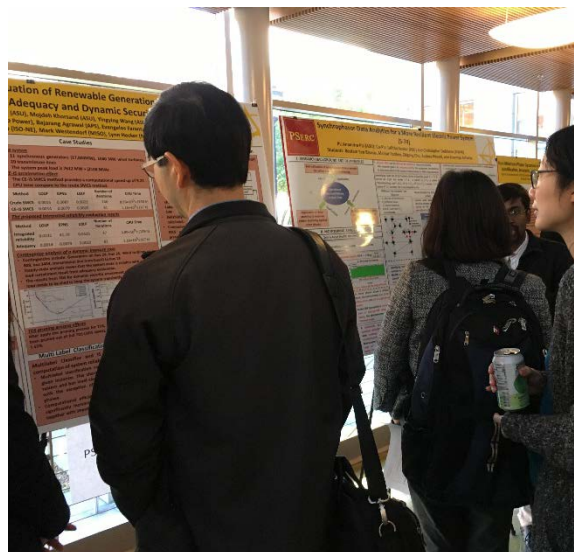
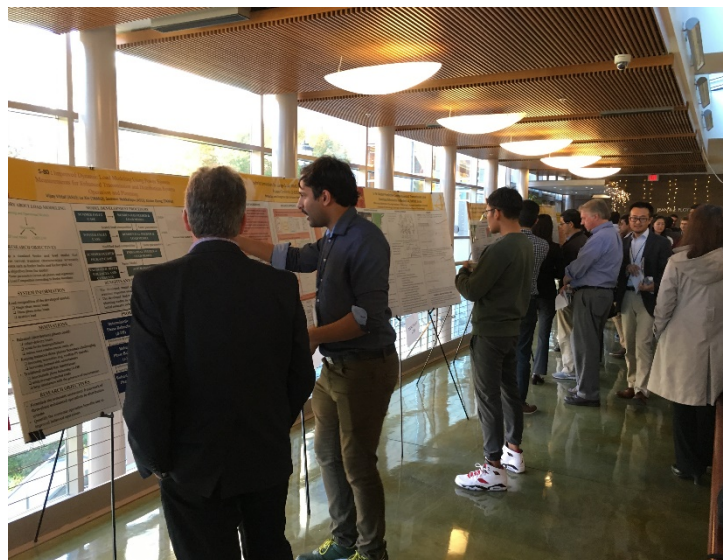
Attendees listen to Thursday's presentations

Throughout the morning and the early afternoon, attendees had the opportunity to listen to presentations regarding the four project proposals that emerged from the annual solicitation process held during the fall. The four proposals were:

- *Proposal 3: Market and Control Mechanisms Enabling Flexible Service Provision by Grid-Edge Resources within End-to-End Power Systems (Markets)*
Presented by: Leigh Tesfatsion (Iowa State)
- *Proposal 4: Machine Learning Approaches for Real-time Integration of Synchrophasor Data (Systems)*
Presented by: Lalitha Sankar (Arizona State)
- *Proposal 12: Harnessing the Power of Artificial Intelligence (AI) for Transmission & Distribution Operations (T&D)*
Presented by: Yang Weng (Arizona State)
- *Proposal 15: The Stacked Value of Battery Energy Storage Systems (Markets)*
Presented by: Meng Wu (Arizona State)

Dr. Vijay Vittal then gave a technical presentation titled: *Interdependent Electric and Water Infrastructure Modeling, Optimization and Control* based on a CRISP (Critical Resilient Interdependent Infrastructure Systems and Processes) NSF funded project.

Later in the afternoon students, faculty, and industry members participated in a poster session that featured 16 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

The day ended with a dinner at the Graduate Berkeley Hotel that provided an opportunity to relax and network.

Friday, December 7

At the beginning of the session the IAB chair Patrick Panciatici (RTE-France) presented a summary of the main outcomes of the closed IAB meeting.

- New officers for 2018:
 - Mark Westendorf (MISO) will be the new IAB chair
 - Evangelos Farantatos (EPRI) will be the new IAB vice-chair
- The Industry members discussed and unanimously approved the four project proposals presented. The new projects will begin in July 2019.

The Friday morning session continued with a presentation by Samuel Pasquier (CISCO) titled: *LF Energy*, followed by one by Michael Jordan (University of California at Berkeley) titled: *Machine Learning: Dynamics, Economics, and Stochastics*. Attendees appreciated both presentations, which provided many interesting questions and idea exchanges.



Left: Samuel Pasquier (CISCO) presented the first tutorial
 Right: Michael Jordan (University of California at Berkeley) presented the second tutorial

After the presentation, Dr. Anna Rosa Lampis, PSERC's Deputy Director announced the winners of the best student poster competition.

The winning students were:

- Sameer Nekkhalapu (Arizona State) with the poster: *Improved Dynamic Load Modeling Using Power System Measurements for Enhanced Transmission and Distribution System Operations and Planning*
- Venkatesh Venkataramanan (Washington State) with the poster: *Cyber-physical Modeling and Visualization for Microgrid Resiliency*.

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



Winners of the Poster Competition:
 Left: Patrick Panciatici, Sameer Nekkhalapu (Arizona State), Dr. Vijay Vittal;
 Right: Patrick Panciatici, Venkatesh Venkataramanan (Washington State), Dr. Vijay Vittal

The meeting adjourned at 11:00 a.m.