IEEE PES PEEC Subcommittee on University Education Activities

Meeting Notes from the 2015 PES GM, Denver, Colorado

Venue & Time: Monday July 27, 2015, Plaza Court 2, Sheraton Downtown, Denver.

In attendance: Hao Zhu (UIUC), Christine Chen (UBC), Na Li (Harvard), Syed Islam (Chair, Curtin), Sairaj Dhople (Vice Chair, UMN), George Karady (ASU), Leonard Bohmann (MTU), Vijay Vadlamudi (NTNU), Massod Parvania (University of Utah), Doug Logan (Walla Walla University), Chika Nwankpa (Drexel), Miguel Velez-Reyes (University of Texas at El Paso), Sara Eftekharnejad (Syracuse), Dennis Ray (UW-Madison), Sukumar Brahma (NMSU), Tapan Saha (University of Queensland), Henry Louie (Seattle University), Simon Bartlett (University of Queensland), Mesut Baran (NCSU).

1. Introduction and Welcome:

Syed Islam, the subcommittee chair welcomed the attendants.

2. Minutes of the previous meeting:

With no amendments, or corrections floored during the meeting, the minutes of the previous meeting held on Monday July 27, 2014 are approved.

3. Planned activities for 2016 GM:

Panel- I ---- Syed: E-Learning modules and a possible workshop on E-learning education. Watch, review, and summarize modules. Syed to approach Alejandro Dominguez-Garcia to chair the panel. Number of opportunities in e-learning and modules created by institutions, and mentioned a few venues (CUSP, Power Learn, etc.) Opportunity to document and catalog these modules, and create a library to benefit all.

Panel - II ---- George: Proposes a panel session on experimental virtual laboratories for undergraduate curriculum. (Similar methods adopted in Japan and India.) Could perhaps be an international effort covering India, Japan, and China. Willing to chair and organize the panel.

Panel -III ---- Tapan Saha: Involving industry in undergraduate education.

4. Comments from Attendees:

Syed: Introductions. Organizes activities for university education. Indicated that panels for GM and T&D are main focus. If there are areas that do not work particularly for a panel but can be taken up by PEEC, then that is taken up. Special functions: PEEC Survey in relation to university resources. Sukumar Brahma to provide a report on survey. Maintain email list from sign-up sheet. Indicated that chair, Elias, is unwell, and is therefore unable to maintain his chair position. Dhople to take up position as Vice Chair. Secretary position is open for the upcoming year.

Vijay: North American education system dominates the PEEC activities? Bohman: Commitment on the order of 6 years since the positions rotate. Travel to GM's is the biggest difficulty. Vijay: Is there a mentorship program for educating new generation of professors? Syed: This committee definitely looks into power-engineering education. Bohman: Teaching at power and energy systems at university level is the main goal of the committee. Traditional role is to sponsor panel sessions aimed at education innovation. People interested in secretary position: Vijay, Christine, Hao (probably).

Syed: Action items from last meeting. Two panels were proposed and will be organized this GM: i) University-Industry interaction for resource creation in power and energy education [Wed 1-5 PM in Plaza Ct. 2]; ii) Panel on undergraduate teaching laboratories (By Badrul Choudhary) [Wed 8-12 in Plaza Ct. 6].

George: (In regards to E-learning opportunities) ASU offers undergraduate degree through internet-based delivery and distance learning. Laboratory testing is difficult in this delivery mode. Syed: Open universities Australia --- Australian distance-based curriculum delivery. George: Perhaps, a good way to reach community colleges. Syed: Lessons learnt, and experiences from laboratory sessions in distance-mode education. Doug: at the low-power levels (analog, digital, and power electronics) this perhaps exists. How does one do this for machines and transformers?

Vijay: Perhaps a forum where faculty members discuss how fundamental concepts are taught. Chika: Probably a good idea, gien changing student backgrounds. George: Perhaps tightly tied to the book that is being utilized. Sukumar: Expression of ideas is perhaps more relevant.

Tapan: How to provide industry input into undergraduate curriculum. Inviting industry perspectives into classrooms. Site visits are on one side, but how do you incorporate that into the classroom? Syed: Value provided by industry / practicing engineers to make things better. Topics that pertain to industry space (e.g., standards, occupational health and safety). George: Trying to follow the model from medical school. George: Perhaps at graduate level, things are different. Syllabus has to be followed. Syed: This could be a logistical issue. Perhaps pursue different mechanisms?

5. PEEC - Survey Update (Sukumar)

Working group within the committee. Surveys health of power education. Completed survey last year focused on N. America. Results are out and documented. 132 universities responded. Published results in the form of a presentation where the data is presented in a comparative format with regard to a previous survey. Data includes: courses taught, professors, their background. What is the way ahead? When should the next survey be conducted? Interest in extending the survey to all countries (what are the involved logistics?). Automate software to scrub data.

International participation: Growth of PES outside USA and Canada is great. How to coordinate with chapters outside? Distributed effort perhaps makes sense. Could the same survey be used? If majority of the questions are the same, then comparisons are easy. However, different places teach different. Profit-making private universities could use this as an advertising tool and provide numbers that are self-serving. Volume of data from some parts of the world could be tremendous. Perhaps take an intermediate step: test format of survey in areas where currencies of surveys are similar. Graduated approach would be better. How does one translate details that are unique to

different parts of the world? Design text from members and tailor to country of interest. What does one hope to achieve with this survey? Dennis: i) Provide information for universities to benchmark themselves, ii) provide information about which universities to attend, iii) create a story about nature and status of power-engineering programs to share with industry and government. Ask people for proposals. Provide details on US story. Evaluate proposals. Chika: How does one ensure statistical significance?

Dennis: Perhaps consider forming a working group that will address the challenge of extending this to a global scale. Volunteers for the working group: Sukumar (USA), Syed (Australia), Vijay (Nordic countries). Working group could seek out different members.

6. Adjourn:

There being no items for general business, Chair thanked all attendees and the meeting was adjourned on time.

Prepared by: Sairaj Dhople