IEEE Systems Council

Workforce Development Technical Committee

The Workforce Development Technical Committee is a small group of four individuals (two from USA, one from Spain, and one from South Africa) who are devoted to improving the education of different segments of our society: K-6; Gr 6-12; undergraduate, postgraduate; early career, mid-career, and late career professionals.

As we are a small group, we are only able to focus on certain aspects of this education at present but we do hope to expand in the future.

The main focus of the workshop this year was to plan and to host educational conference workshops, for the postgraduate and various stages of career professional, which examines future technical domains with the purpose of further refining technical education to be better able to adapt and develop solutions to future needs.

Our choice of a workshop rather than a tutorial at a conference was based on the feeling that a tutorial is instructional and non-interactive with the assumption that the attendee has no knowledge of the tutorial material. A workshop involves peer interaction with the assumption that the attendee has partial knowledge of the topic. Given that most conference attendees possess some knowledge of the topic and being involved via peer interaction would entail both gaining knowledge from others, making useful contacts, and being more engaged than attending a tutorial, a workshop was viewed as being more feasible for a conference.

A rough template, which is flexible depending on the area of the workshop, was developed for each workshop. Within the template, area experts are first engaged to determine the workshop's goals and objectives and identify metrics for success. The workshop template is to first develop its goals and objectives. The workshop participants, given these goals and objectives, prioritise and weigh objectives; develop credible solution(s) that meet the selected objectives; perform risk analysis on solutions; further analyse solutions in terms of given metrics; develop set of recommendations from set of solutions and metrics/risk evaluation; and then select a small set from the list of recommendations.

In order to test the viability of this workshop pan, a pilot workshop was held at the first IEEE International Symposium on Systems Engineering on Sept 28, 2015 in Rome, Italy. Workshops received full support of Systems Council. However due to workforce constraints, only one of ten possible workshops could be held. This single workshop had high attendance and the interactive workshops produced many successful recommendations in light of the topic given.

In light of the success of this workshop, the immediate goals of this committee is to further develop these workshops for different domains; identify the gaps in knowledge produced by these workshops (in order to provide areas for further research and to refine undergraduate curriculums either to fill these gaps or to keep these gaps in mind when working within this domain); and to devolve the knowledge gained within these workshops to different levels (K-6, 6-12, et al) using educational experts. Later goals would be to broaden the approaches of the committee beyond workshops to new and different methods and produce a journal that publicises the discoveries of the committee