Advances in Engineering Education

SPRING 2016

From the Editor

This issue, envisioned and nurtured by Aditya Johri (George Mason University) and Mihaela Vorvoreanu and Krishna Madhavan (Purdue University) focuses on the need to share data among the greater research community. The issue consists of eight invited papers plus a study by the guest editors. While sharing data intuitively makes sense, as the papers point out, it has not always happened, and among engineering education researchers, there is much catching up to do compared to other scientific fields. However, we are at a point in time, where the potential for sharing has never been better, with calls for "open source" data from both the funding agencies and a growing number of researchers.

In developing this issue, Johri, Vorvoreanu and Madhavan have reached out to colleagues across a wide spectrum of fields, including engineering, to present case studies on data sharing as guides for the engineering education research community. The content of these articles is summarized in their guest editorial. Briefly, papers address:

- sharing qualitative data (Walther and colleagues);
- the contrasting views of the policy and research communities on data sharing (Cheville);
- data sharing related to design thinking (Adams and colleagues);
- challenges when sharing data within the confinement of a research group (Trevelyan);
- an overview of MIDFIELD (the Multiple-Institution Database for Investigating Engineering Longitudinal Development), which is one of the largest, if not the largest engineering education dataset with a 16 year history (Ohland and Long)
- a system that generates and analyzes environmental (watershed) data that is used for both education and research (Brogan and colleagues);
- a digital library for videos (Databrary) that was specifically created to share data (Gilmore and colleagues); and
- a reflection on the Academic Pathway Study that was part of NSF's Center for Advancement of Engineering education (CAEE) that ran over a seven year period (Toye) and collected a number of data sets of various formats. The paper addresses the complexity of working with shared datasets.

In presenting these papers, we hope they further stimulate ideas and interests in the increased sharing of datasets among the broader engineering education community.