

Editorial

Welcome to the *Journal of STEM Education: Innovations and Research*, Volume 10 Issues 3 & 4. The articles in this issue discuss many areas of STEM Education, from innovative teaching tools to new integrative courses. Some of the articles are educator-centric, while others focus on student experiences; some detail findings of studies and surveys while others present classroom-based experiences. Each of the articles included in this issue have something unique to say about STEM Education and how it *has, can, or perhaps should* change.

First, in “Development of a Leadership, Policy, and Change Course for Science, Technology, and Mathematics Graduate Students,” Monica Cox, Carlotta Berry, and Karl A. Smith discuss a new course designed to integrate leadership and policy in a graduate engineering program. They give an overview of the course, including units and deliverables, and they discuss the difficulties inherent in introducing social sciences content to a traditionally technical discipline. Along with providing reasons for introducing such a course into the curricula, they provide suggestions for creating the course at other universities.

Next, Patricia S. Moyer-Packenham, Anastasia Kitsantas, Johnna J. Bolyard, Faye Huie, and Nancy Irby detail the findings of a study involving faculty in several different areas: STEM disciplinary departments in Institutes of Higher Education, K-12 schools, and educational departments of IHEs. “Participation by STEM Faculty in Mathematics and Science Partnership Activities for Teachers” discusses the expectations for participation of the three different groups in pre-service and in-service teacher activities, how the findings of that study contradicted the original hypothesis, and the implications of such a contradiction.

Rohitha Goonatilake, Qingwen Ni, and Juan M. Moran-Lopez also discuss the results of a study involving faculty. In “Faculty Perception of Undergraduate Research in NSF-Funded CSEMS Scholarship Programs,” they detail the findings of a survey conducted to explore faculty perceptions of mentoring in the Computer Science, Engineering, and Mathematical Sciences (CSEMS) scholarship program funded by the National Science Foundation. Their findings indicated that faculty believe research should be a part of undergraduate education regardless of whether the students are in scholarship programs, but the faculty should fully understand their students’ needs before introducing them to research.

In “The Transition to a Configurator-Based Design Process,” Fred Ahrens describes the experience of university students in “reverse engineering” a configurator to include updated design information and expanded product coverage. The project was unique in that it was completed mostly by university students who worked without relevant design guidelines. Ahrens gives the methods used by the students to apply their theoretical knowledge to a real-world problem.

Finally, Chou and Moaveni introduce an innovative solution to the problems facing students in introductory steel design courses in their article “Web-Based Interactive Steel Sculpture for the Google Generation.” They argue that today’s students are more comfortable using web-based learning tools, and so they created a web-based interactive steel sculpture that students can access at anytime from any location with Internet access. Their article describes the development of the interactive structure, student responses to the web-based learning, and methods to enhance student learning using the interactive structure in a steel design class.

In addition to these fine articles, this issue brings with it the announcement that starting next issue, the *Journal* will begin publishing a new section titled “Profiles in Ongoing Research Activities.” This section will house one- to two-page research briefs detailing the work that is going on *now* in our ever-evolving, rapidly advancing field. These briefs will focus on current research in STEM Education fields. Because they will be reviewed by our editorial staff instead of going through the peer-review process like our regular articles, the turnaround time for publishing these research briefs will be expedited. Our goal in publishing these briefs is to give researchers a chance to spread the word about their work and possibly network with other researchers who are doing similar or complementary work. For more information about how to submit or the nominal publication fee, please contact either myself or my editorial assistant, Ashley Clayson.

Finally, I would like to thank Norman L. Fortenberry and Elizabeth Cady of the Center for the Advancement of Scholarship on Engineering Education at the National Academy of Engineering for their contribution to this issue. They have provided us with a guest editorial detailing the Engineering Equity Extension Service’s efforts to recruit and retain women engineering students across departments.

As the fall semester unfolds, may the articles included herein remind us to reflect on our own approaches to teaching and mentoring, evaluate our methods, and improve and adapt as we see fit. I look forward to receiving your comments and input regarding the journal and issues addressed herein. Have a good semester!

P.K. Raju
Editor-in-Chief