

Dear Readers,

Welcome to the first issue of the year (Volume 14, Issue 1) for the *Journal of STEM Education: Innovations and Research*. Readers will find that our authors' excellent research continues and we have seven interesting articles in this issue that describe several new approaches to improving students' learning through hands-on experiences and exposure to real-world case studies.

To begin the issue, in "STEM Clubs and Science Fair Competitions: Effects on Post-Secondary Matriculation," Alpaslan Sahin surveyed students from a multi-charter school system's after school program. Through his study, Sahin shows that multiple years of science club and fair participation by students positively related with choosing a post-secondary major in a STEM-related field.

Continuing on with promoting STEM education in high schools, "STEM High School Teaching Enhancement Through Collaborative Engineering Research on Extreme Winds" by Danielle Reynolds, Nur Yazdani and Tanvir Manzur examines the Research Experiences for Teachers (RET) program at the University of Texas at Arlington. The authors outline that by training participating teachers in inquiry based research learning and research design, and how to apply this knowledge to their high school classrooms.

Rima Brusi, Arturo Portnoy and Nilsa Toro also discuss high school students in "Precalculus Mega Section: Efficiently Assisting Student Engagement and Completion with Communications and Information Technology." They discuss strategies for improving the overall student performance in a Precalculus class that had high drop/failure rates at their university.

Bjorn Wolter, Mary Lundeberg and Mark Bergland bring us "What Makes Science Relevant?: Student Perception of Multimedia Case Learning in Ecology and Health." They surveyed a number of students at a mid-western university to explore ways in which to make Biology a more interesting and relatable class for non-science majors. They found that through two multimedia case-based approaches developed interest and perceptions of relevance toward the course.

A longitudinal study on score improvements and retention is covered in "Longitudinal Study of Online Statics Homework as a Method to Improve Learning," by Manohar Arora at the Colorado School of Mines. The author discusses the importance of studying the efficacy of any learning intervention in the field of engineering.

V. William DeLuca and Nasim Lari of North Carolina State University also investigated the improvement of learning in engineering curriculums in "Developing Students' Metacognitive Skills in a Data-Rich Environment." They discuss the Metacognitive Inventory, which evaluates students' awareness of their cognitive processes as they approach and solve problems.

Finally, Shawn Simonson and Susan Shadle of Boise State University, explore the use of a special learning system in STEM education in "Implementing Process Oriented Guided Inquiry Learning (POGIL) in Undergraduate Biomechanics: Lessons Learned by a Novice." They provide plenty of insight to help inform instructors about implementing the system in their courses.

As the new year begins, I hope all of our readers can look upon the last semester and see true accomplishments and learning among their students and use suggestions from our authors in future semesters. As always, we welcome comments, questions, and suggestions related to the journal, sent by email to jstemed@gmail.com.

Regards,
P.K. Raju
Editor-in-Chief