
EDITORIAL

We join the nation in mourning the dead and unaccounted for in the New York City, Washington, D.C., and Pennsylvania terrorist attacks. The massive loss of life was caused by the wrong use of technologies, and shows how technologies in the wrong hands could lead to incidents that threaten the safety and security of our country. A lesson that evolves out of this catastrophe is the necessity of bringing an awareness of ethical considerations into SMET education. The terror shows that it is important for scientists and engineers throughout the world to dwell on policy and ethical issues and aid in the development of technologies that can prevent such incidents in the future.

In this issue, we are publishing five articles and one case study. Due to the time it took for reviews to be completed and articles accepted, we had to combine issues 1 and 2 of volume 2.

In the first article, Norman Fortenberry, James Powlik and Maricel Quintana-Baker describe how SMET education has become more broad-based than in the past. They argue for more emphasis on SMET education at K-12 and undergraduate level. They propose six areas that would benefit from the National Science Foundation's attention in the next decade and beyond.

Kevin Dahm and James Newell describe how a sophomore class developed an economic design for a baseball stadium. The course improved the public speaking skills of the students, gave them experience with open-ended design problems, and developed their teamwork skills. They report that this project was a highly successful vehicle for students of all engineering disciplines.

William Call presents a transmission-line fault location case study that is targeted at two-year technical college students. This case study received excellent reviews for its ability to develop successful technical problem-solving skills in students. The instructor's guide shows clearly how electrical engineering principles can be applied to solve a real-world problem.

In the next article, Elizabeth Mathias describes how creating and implementing CD-based simulations of real-world problems can develop a workforce's capabilities. The project describes methods through which new workers can develop the skills and knowledge they need to become creative and responsible problem solvers. This project brought together faculty teams at five community colleges to collaborate with the Johns Hopkins research team.

Teresa Larkin-Hein describes the approach followed at American University, where writing was incorporated into the curriculum for non-physics majors. The students had to write a paper that was presented at a conference specifically held for this course and had to follow rigorous steps for acceptance and presentation of the materials. At the conclusion of the conference, the students were able to link the active process of writing to sound, scientific content. In addition, these activities allowed students to demonstrate a deeper understanding of a topic or set of topics using their individual learning styles.

Scott Danielson and Sudhir Mehta show how to use pedagogy-based resource materials for statics instruction. The authors report that the benefits of these materials include encouraging students to take ownership of their learning, helping instructors focus on critical content, and turning classroom lectures into engaging discussions.

With a view to improving the scope and impact of this journal with SMET educators, we have initiated an ongoing discussion with members of our Advisory Board and other educators. Our recent discussions with Dr. Norman Fortenberry and Dr. James Lightbourne of the National Science Foundation have led us to modify the mission and value statement as follows. The journal will now publish recent developments that impact SMET education in such areas as policy and industry needs. In addition, we are also expanding its scope to include articles that report innovative methodologies in education that are well founded in SMET content, informed by educational research, and tested through assessment of impact on student learning.

The innovative experiments reported by the authors of this issue provide us with an information base that we can learn from and improve upon to excel in our profession. Please send in your innovative articles and instructional materials. We look forward to hearing what you have to say.

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