

The Value of ASEE Membership Especially Related to Faculty at Two-Year Institutions

Walter W. Buchanan, Muhammad H. Kehnemouyi
Buchanan@entc.tamu.edu and muhammad.kehnemouyi@montgomerycollege.edu
Texas A&M University/ Montgomery College

Abstract: The main mission of the American Society for Engineering Education is to provide benefits to its members. This is done in a variety of ways including its publications, website, and hosting sectional, zone, and its annual meetings. This paper will focus what ASEE is doing and can do to provide value to faculty at two-year institutions.

The American Society for Engineering Education has a long past to be proud of, a significant current presence in engineering and engineering technology education, and a future with a lot of promise. The main mission of ASEE is to provide benefits to its members, and it has been our experience that the annual conference is one of the most important benefits. The opportunity to network with engineering and engineering technology faculty around the country, and to learn from peers at technical and other sessions is invaluable. As a junior faculty member, getting introduced to the Educational Research and Methods Division (ERM) is invaluable. Its sessions introduce one to many good pedagogical techniques to be a good instructor. It is also invaluable to attend the business meetings and social events, as there you get to network and meet colleagues from around the country, who can help you later. Many joint papers can come out of these future collaborations. We encourage all of you to bring a junior colleague to the next ASEE meeting, whether the national one, or your sectional meeting, and introduce him or her to the benefits of attending and participating in these events, both overall ones and sessions in your discipline specific field. You will make a friend for life in so doing, as well as benefiting our profession. That is because these conferences really are the best place to network with fellow engineering educator colleagues, our industry supporters, and get new ideas to improve our teaching of engineering and engineering technology. From an attendance of 70, at the first ASEE national conference in 1893, last year's attendance of almost four thousand, almost a third of our membership, attests to the value our members place in the annual conference.

Of course, ASEE does much more to benefit its members, the purpose for its existence. Its publications and website are also very important. ASEE's award-winning *Prism* magazine goes to over 12,000 individuals and is read by many more. This general audience magazine reports on state-of-the-art technology and other important issues in engineering education, including innovative curricula, updated instructional methods, research opportunities, and K-12 outreach

activities that encourage young people to pursue careers in engineering. ASEE also uses its website and newsletters to publicize top *Prism* articles about engineering. Other top ASEE publications include the *Journal of Engineering Education (JEE)*, our peer-reviewed international journal that is published quarterly by ASEE in partnership with a global community of engineering education societies and associations. Jack Lohmann of Georgia Tech did a fine job as Editor of JEE during the past ten years, and we are sure the new editor, Michael Loui, at the University of Illinois at Urbana-Champaign, will carry on in his fine footsteps. Other publications include *Advances in Engineering Education*, a new journal to disseminate significant, proven innovations in engineering education practice, our valuable *Engineering College Profiles & Statistics Book*, *Engineering - Go For It*, to attract middle-school and high-school students to engineering and engineering technology, and its many fine division publications including the *Journal of Engineering Technology (JET)*, *Computers in Education Journal*, the *Engineering Design Graphics Journal*, the *Chemical Engineering Education Journal*, *The Engineering Economist*, plus other guides, blogs, newsletters and websites. The ASEE Website is particularly valuable telling all about ASEE, its conferences, publications, fellowship programs, awards and resources, and activities in its sections and zones, councils and chapters, divisions and groups, the membership directory, job postings, reports relating to engineering education, and much more.

One of the co-author's goals as president of ASEE during this coming year is to expand on the society's already firm foundation. The current past president, Don Giddens, has worked hard this past year in being proactive in publicizing what ASEE is all about and getting faculty at research-intensive universities and our discipline specific engineering societies to ask, "What does ASEE think?" Although research is very important at Research-1 universities, the public is more and more demanding an emphasis on good teaching. This is especially true at public universities, where state legislators and parents are demanding this, as the cost of higher education rises. We know that decreasing financial state support is a factor in this, but we can still work to provide good return on investment. ASEE can play a major role in this.

This next year it would be good to concentrate on expanding our value to faculty at two-year institutions and thereby increasing their membership, which is currently only 4% of our total. The cost of education at two-year institutions is much less than at four-year ones, in many cases one-third as much, due to the almost total emphasis on teaching. As the debt of graduating seniors rises due to the increasing cost of higher education, it is imperative that, as a country, we deal with this. Student debt is now higher than credit card debt in the United States and this is unsustainable. One way to deal with this is to encourage students to start their academic careers at two-year institutions and then transfer to a four-year institution, since tuition at a two-year school can be one-third the tuition of a four-year school in many places. This could be accomplished by:

1. Enhancing the reputation of community colleges among high school students. College counselors in high schools could emphasize community colleges as a recognized and a respectable college option and provide students with information about transfer compatible schools and courses. For instance, when students are being informed about particular majors at certain colleges and universities, counselors should present them with the option of beginning that major at any of the community colleges that offer that major and have transfer agreements with the institution. They could also highlight the advantages of selecting the community college route, which include less tuition cost, more emphasis on teaching, more personalized education (smaller student faculty ratio), reduced need to work, and thus more focus on academics, which is imperative for the initial college years when students are trying to settle down.
2. Working on creating a network of standardized transfer agreements between community colleges and four-year institutions for transferable courses that are acceptable across the nation. For instance, a chemical engineering curriculum could be created which would be offered at several community colleges across the nation and transferable to different four-year institutions in several states. The agreements could be regulated by ASEE, ABET, or a related organization.

Texas A&M University has an agreement with its local community college where students can attend there for two years, while taking a course at Texas A&M each semester and participating in any of the student activities that they care to. They are then advised so all credits transfer over, as long as they maintain a satisfactory grade point average. The savings cost to the student is usually around \$10,000. Montgomery College, which enrolls the largest number of engineering students in any community college in the nation, has a great model that could be emulated. In addition to transfer articulation with the Maryland Higher Education System, their engineering department has articulated transfer agreements with several other high ranking four-year institutions in other states such as Georgia Tech, RPI, and George Washington University.

Overall, however, the all too common difficulty of two-year to four-year transfer is getting proper student counseling. It is not unusual for a transfer student to lose at least a semester of student credit hours due to this problem. Better counseling and good articulation agreements can go a long way in alleviating this problem. In addition to teaching, transfer counseling should become one of the major responsibilities of faculty. Prior experience has shown that when faculty members themselves (as opposed to external counselors) are involved in student transfer advising and articulation, the transfer process becomes smoother, more efficient and seamless. Thus, funds and resources should be made available to train faculty and encourage them to participate enthusiastically in student transfer advising and articulation.

We would like to see ASEE be a player in this and work with our two-year ASEE faculty members to work towards a solution.

- 1- A proactive step toward this would be to appoint a community college faculty on the advisory board of ASEE, so that they have a voice in ASEE and feel some ownership of the organization. If only 4% of the membership of ASEE are community college faculty and they account for over 46% of the students, then clearly ASEE needs to increase the recruiting process (According to a report published by NSF, 46% of STEM graduate start their education at two-year schools.)
- 2- A one- or two-day workshop entitled: best practices in transfer articulation between two- and four-year schools could also be organized where participants from both types of institutions could share successful models during the conference. Montgomery College could organize, host, and share its model during one of these conferences. An even more effective approach would be to offer summer fellowships to faculty members at community colleges and four-year institutions to enable them to collaborate on the development of standardized articulation agreements.
- 3- ASEE could encourage “Ancillary” accreditation (since ABET doesn’t accredit two-year engineering programs).

One problem we have with their membership is less funds for professional membership activity and travel at two-year institutions. Our Executive Director, Dr. Norman Fortenberry, recognizes this problem and is working to make ASEE more affordable, value-wise, for two-year faculty. For starters, two things can be done. We can encourage attendance at sectional meetings and work to make these of increasing value to two-year faculty. New and/or outstanding community college faculty could be sponsored to attend meetings and also recognized during conferences. Publications highlighting community college outreach, teaching and transfer achievements should be encouraged during the ASEE annual conference. Currently, the two-year division of ASEE is focused on engineering technology and does not incorporate two-year transfer programs in its operations. A separate division which emphasizes on transfer articulations and practices could be formed. ASEE is also working to make its website more useful and of value to two-year faculty. This can result in a sort of virtual meeting in a way.

WALTER W. BUCHANAN

Dr. Buchanan is the J. R. Thompson Endowed Chair Professor and Head of Engineering Technology and Industrial Distribution at Texas A&M. He received his Ph.D. and J.D. from Indiana University, and his BSE and MSE from Purdue. Walt is a P.E. in six states and a Fellow of ASEE and NSPE. He has written over 100 papers on engineering technology education, is a past member of the Board of Directors of NSPE, and is currently ASEE President.

MUHAMMAD H. KEHNEMOUYI

Dr. Kehnemouyi has a M.S. and Ph.D. in mechanical engineering from The George Washington University. He is a P.E. and a full professor and chair of the Department of Physics and Engineering at Montgomery College, and is a recipient of the National Institute for Staff and Organizational Development Excellence Award, the Montgomery College Outstanding Faculty Award, and is an advisory board member of the Journal of Engineering Education.