

## NJCATE CONVENTION REPORT May 2-3, 2003

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The fourth annual conference on student recruitment and retention strategies for engineering technology, hosted by the New Jersey Center for Advanced Technological Education (NJATE), was held in Miami, Florida, on May 2-3, 2003. The purpose of this report is to provide an overview of the conference and highlight critical issues in recruitment and retention of students in engineering technology programs.

### FRIDAY, MAY 2

After general introductions, Dr. Eugene DeLoatch, President of the American Society of Engineering Education (ASEE), opened the convention with a keynote speech. Highlights of the speech included:

- If we have low numbers of women and minorities in engineering careers, we do not have our “best team on the field.”
- Good questions to ask ourselves are: Who are we recruiting and why are we recruiting them? Who are we retaining and why are we not retaining others?
- It’s a disgrace to be graduating less than 50% from our programs.
- In 1862, the Morrill Act created Land Grant Institutions. Currently, if we spread 100 pennies on the floor, we have less than 1/2 of one penny representing the minority students in engineering programs.
- Many people who are not enrolled in our institutions are capable of becoming engineers.
- Recruitment and retention is hard work. If we could recruit and retain students easily, it would have already been done.
- Engineering programs are going to help save our nation and bring it into the global marketplace.
- Companies are now going where the worker is – Outsourcing.
- In the question and answer session following his speech, Dr. DeLoatch stated that the National Science Foundation (NSF) does not fund “business as usual” programs.

A panel discussion followed the keynote speech. Panelists included: Terrance Freeman (St. Louis Community College), Stanley Love (Softech LC), Lucy Morse (University of Central Florida), Frank Rubino (Middlesex Community College), and Margaret Weeks (ABET). Panel participants commented on the topic: “Why choose an Engineering Technology Career?” Comments included:

- Engineering technology is one of the least limiting professions.
- Our culture does not understand what engineering is all about.
- Industry does not let colleges know what jobs are available.
- We need to know what attracts students and what our target population is for recruitment.

The next session included four presentations on student recruitment, one of which was the CME Focus Group Executive Summary (which was very well received). The “Mentoring Triangle” Recruitment Strategy for Females in Engineering Technology programs was presented by two faculty persons and one student from the Finger Lakes Community College in New York State. Females in local engineering technology careers mentor college and high school students in their career choice and development. Since its inception, enrollment of females has increased by 31%. Dr. Raju, Dean of Engineering Technologies at SUNY-Farmingdale in New York presented a program that connects high school students with local industries. Students attend workshops, collaborate on projects, and are invited to tour the companies. One lesson Dr. Raju felt he learned during the development of the program: “program logistics are enormous.” The final presenter in this session was Thea Sahr from Boston’s public television station. The station recently received a NSF grant to create videos and a website to showcase innovative Advanced Technological Education (ATE) programs from across the country.

After lunch, convention attendees participated in a series of discussions concerning student recruitment. During this time, three issues were considered: 1) What are the most effective ways to increase enrollment? 2) How can institutions reach non-traditional students? and 3) How can we involve industry as a spokesperson for the profession? Results of the group discussions will be posted on the NJATE website ([www.njate.org](http://www.njate.org)).

### **SATURDAY, MAY 3**

The Saturday session began with a presentation from Terrence Freeman concerning persistence of students in engineering and technology programs. Unfortunately, Mr. Freeman did not present information concerning the national databases he used in his study, nor did he define “student persistence.”

The next session included four presentations on student retention. Milton Randle, Director of the Mathematics, Engineering, Science Achievement Program (MESA) at Fullerton College in California presented information on their Academic Excellence Workshops, which group students in common course sections for study and assistance. Mr. Randle suggested that Asian students are very good at socializing and studying in groups. In contrast, American students seem to be good at socializing in groups but not at studying in groups. To African American males, studying in groups is perceived as cheating. Nasser Abdellatif presented a program that linked community colleges, high schools, and middle schools. Mr. Abdellatif felt that a successful strategy for his program was to use retired high school principals as coordinators since they were familiar with the local school system. Mr. Klaus Wuersig, from the University of Pittsburgh at Bradford, gave an overview of an entry-level engineering course designed to acquaint students with the engineering profession and to begin to work in teams solving engineering problems.

Dr. Saeed Foroudastan, from Middle Tennessee State University, presented the most interesting session of the day. Factors contributing to successful stimulation of student interest in engineering technology included: 1) make sure the college’s best faculty teach first-year students, 2) recruit “undecided major” students at the college (these students are on campus, why not recruit them?), 3) improve teaching strategies (how instructors interact with students, viewing students as “customers”), and 4) complete hands-on, innovative projects early in the program. Students’ most recently created a Moon Buggy and a

Solar Bike, which they then drove through campus as a recruitment strategy. Since these strategies have been in place at Middle Tennessee State University, student retention rate has increased 80%.

As in the previous day, the final session included a series of activities and discussion questions: 1) List ten essential components that contribute to retention of students, and then rate the top three, 2) What are the barriers to student retention? 3) What resources are necessary to ensure student success? and 4) What are successful retention strategies for non-traditional students? Results of these discussions will be posted on the NJATE website.