

A TWO-YEAR COLLEGE / FOUR-YEAR UNIVERSITY BRIDGE INTO THE FUTURE

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BACKGROUND

The future for women in engineering in Northeast Ohio is much brighter due to the strong collaborations which have formed between The University of Akron and Stark State College of Technology. The Women in Engineering Programs at both institutions have common missions of increasing the number of engineering degrees awarded to women, with The University of Akron's focus on bachelors, masters and doctoral degree programs in engineering, and Stark State College of Technology's focus on associate degree programs in engineering technology. Over the past two years these Women in Engineering Programs have combined efforts on several innovative projects, and new plans continue to be developed. The collaborations at these institutions can serve as a model for other institutions across the country.

FORMING A SUCCESSFUL COLLABORATION

Making the Initial Links

The first step in forming a strong collaboration was learning about the opportunities for collaboration. Stark State College of Technology and The University of Akron are separated by a distance of only 20 miles and the crossing of a county line. Because of the close vicinity, the collaborative opportunity was very apparent. The link occurred when a newspaper article appeared on the Women in Engineering Program at The University of Akron. Stark State College of Technology recognized the common mission of its Women in Engineering Program and the Program at The University of Akron. Subsequently, contact between the Program Directors at these institutions was made.

Establishing a Collaborative Purpose

The first meeting between the Program Directors involved a discussion of the services within each Program. When many similarities were discovered, collaboration on some of the overlap areas was proposed. The advantage of collaboration was seen as pooling resources to create a greater impact. Each institution viewed the collaboration as an opportunity to increase the awareness of the opportunities for women in engineering fields, thereby creating the potential for women to enter the "engineering pipeline" at either institution. The collaboration also served to encourage women to go further down the "engineering pipeline," from the associate's on to the bachelor's degree level.

IMPACTING CHANGE THROUGH COLLABORATION

1997 WEPAN/NAMEPA CONFERENCE

Formulating a “Non-Compete Agreement”

Because each institution has a common mission of increasing the enrollment of and the degrees awarded to women in engineering, the potential for competition for students exists. Stark State College of Technology offers associate's degrees in engineering technology, while The University of Akron offers associate's degrees in engineering technology and bachelor's degrees in engineering and engineering technology. Rather than compete, the Women in Engineering Programs at these institutions have formed an alliance to reach a greater number of students and to make a stronger impact on those students regarding the excellent career opportunities available in all fields of engineering. In their collaborative programs, the differences between engineering and engineering technology are explained, and also the differences between an associate's degree and a bachelor's degree. The Programs have formed an agreement to keep the best interest of each student in mind, helping each student find their appropriate career path.

COLLABORATIVE ACTIVITIES

Middle School Bridge

At the middle school level, The University of Akron and Stark State College of Technology have combined efforts through the Stark County EQUALS conference in 1995 and 1996. Presentations were given to 6th and 7th grade girls to help inspire them to take math and science classes during their entire middle school and high school years. There were also special sessions offered for parents, to offer information on how to help open the doors of opportunity for their daughters by encouraging them to follow through on their math and science studies. Other collaborations between The University of Akron and Stark State College have involved hands-on programs for middle-school girls, to teach the girls how to apply math and science concepts to engineering.

High School Bridge

At the high school level, a joint Women in Engineering Conference entitled “Reach for the Stars” was provided in April, 1996. The day-long conference featured highlights of careers in engineering and engineering technology. To provide exposure for both institutions, the conference was “co-hosted,” where the morning sessions were held at Stark State College of Technology and the afternoon sessions were held at The University of Akron. For 1997, a similar co-hosted program is planned. Other collaborations have included hands-on programs for high school girls. At these programs, the girls solved engineering problems using equipment in the various engineering laboratories.

Associate's Degree / Bachelor's Degree Bridge

At the college level, programs were designed to heighten the awareness of opportunities further down the “engineering pipeline.” One-on-one student advising was offered for students at Stark State College of Technology by the Women in Engineering Program Directors at both institutions to encourage the pursuit of bachelor's degrees. Informational seminars were also provided. In addition, activities were designed to allow the interaction of the women engineering students at each institution, for the purpose of “peer mentoring.” Activities have included tours of the Inventor's Hall of Fame at Inventure Place and attendance at a special luncheon entitled “Women Pioneers in Science and Technology.” Interaction was also encouraged between the Society of Women Engineers (SWE) Student Chapters at each institution. The SWE groups visited the Cleveland Science Museum, and also hosted tours of their respective campuses.

FUTURE COLLABORATIVE ACTIVITIES

Resource Bridge

A future project involves the development of resource materials to describe the similarities and differences between careers in engineering and engineering technology. The materials are intended to provide a stronger link between engineering and engineering technology disciplines. These resource materials will be used to help appropriately guide women into engineering or engineering technology and to provide encouragement for women to continue on the "engineering pipeline," from associate's degrees to bachelor's degrees and beyond. The different career opportunities at the different levels of the "engineering pipeline" will be highlighted.

Industry Bridge

Another future collaboration will involve the formulation of stronger links with industry. Women engineers at various industries will be encouraged to serve as mentors for students at the associate's and bachelor's degree levels. These women will also be encouraged to be speakers at the various collaborative programs. In addition, informational sessions will be offered to the women engineers in industry to encourage the pursuit of additional training or advanced degrees in engineering.

CONCLUSIONS

The collaborations that have occurred between the Women in Engineering Programs at The University of Akron and Stark State College of Technology have helped increase the number of women at different points in the "engineering pipeline." Through collaboration, the effectiveness of outreach and retention activities was increased while cost was reduced by the pooling of resources. Through continued collaborations, the Women in Engineering Programs at The University of Akron and Stark State College of Technology are building a bridge into the future for all women in engineering. The experiences of these Programs may be used as a model by other institutions for the development of their own collaborative efforts.

