

PLANNING AND IMPLEMENTING AN OUTREACH PROGRAM FOR WOMEN IN ENGINEERING

Kauser Jahan¹, P.E.

Extended Abstract-- Rowan University and a number of corporate sponsors and foundations have helped to establish a summer program to introduce middle school girls to engineering careers. The program titled AWE: Attracting Women into Engineering was initiated in the summer of 1999. The target audience is middle school girls from nearby counties. This target audience was selected, as there is evidence of changes in self-esteem of adolescent girls. In their middle school years, girls also show a drop in math and science confidence and achievement.

AWE focuses on cost effective hands-on experiments in the various fields of engineering to boost the participants' interest in engineering. All experiments require collaborative learning through teamwork. Participants interact with departmental faculty, undergraduate engineering students and representatives from local industry. The AWE Program highlights include hands-on engineering laboratory experiments, field trips, and workshops on engineering ethics, professionalism, gender sensitivity and computer training sessions. The workshop is week-long and caters to four neighboring counties. Typically twenty girls participate in the workshop. Transportation is not provided. Snacks and a closing ceremony lunch are provided.

AWE activities are typically cost effective and simple. Some activities that are offered are indicated below:

TABLE I: DISCIPLINE SPECIFIC ACTIVITIES

Civil and Environmental Engineering

Teaching Civil Engineering Measurements through

Bridges/ Computer Software: The Bridge Builder

Learning Water Treatment through Portable Water Purification Systems/ The Jar Test/ Water Quality Sampling

Building Sandcastles

Chemical Engineering

Slime Processing and Cosmetics Manufacturing

Electrical and Computer Engineering

Electrical Circuits/ Reverse Engineering of Common Appliances

Mechanical Engineering

2L Soda Bottle Rockets

It is expected that the workshop will encourage young women to consider engineering as a course of study and/or a career, thereby attracting new and more diverse engineering talent to the workforce.

The AWE workshop has been highly successful at Rowan University as evidenced by participant and parent surveys and also the overwhelming response from the local school districts.



Investigating Strength of Soils



Launching Soda Bottle Rocket

¹ Department of Civil and Environmental Engineering, Rowan University, 201 Mullica Hill Road, Glassboro, New Jersey 08028-1701

Cost for the program includes salaries for engineering mentors (faculty and students), supplies and materials, meals, transportation for field trips and closing ceremony expenses. The program is in its fourth year. The program in the past three years was free of cost to all participants. However plans are in progress to implement a project fee from participants with some scholarships available for needy students. This change will eliminate the need for relying heavily on sponsor funds.

The following list indicates all activities instrumental to planning and implementation of such a workshop:

- Fundraising
- Proposal Writing
- Human Resources: Faculty and Student Mentors, Administrative Staff
- Transportation for Field Trips
- Emergency Facilities
- Meals
- Laboratory Supplies
- Industrial Mentors
- Keynote Speakers
- Gifts
- Surveys
- Long-term Assessment

This presentation will focus on the extensive planning and organization that needs to take place for implementation of a successful outreach program for attracting women into engineering. It will also focus on assessment methods for tracking participants and the success of such programs.

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