

Program Development Grant Final Report Cover Sheet

DR# 144

Project Title: SWE EXPO 2002

Date: 4-25-02

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Section: _____

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Deliverables: Indicate type (i.e. document, web page, brochure, etc.), title, and media (hard copy, email file, disk, etc.)

Documentation of the survey and its results, participant material, and summary of labs and demonstrations will be provided in hard copy.

Select the one primary Strategic Priority this project addressed:

Leadership Education Diversity Visibility Vitality

SWE Committees to which this report and deliverables would be of interest:

Career Guidance Public Relations MultiCultural Committee
 Continuing Devel. Publications Other: _____
 Membership

Project Audience (age, sex, diversity) Female: X **Male:** _____

| <i>Age Group</i> | <i>No. Actual/Proposed</i> | <i>Diversity</i> | <i>No. Actual/Proposed</i> |
|--|----------------------------|---|----------------------------|
| <input type="checkbox"/> Elementary | / | <input type="checkbox"/> Caucasian | / |
| <input type="checkbox"/> Middle School | / | <input type="checkbox"/> African American | / |
| <input type="checkbox"/> High School | <u>40 / 30</u> | <input type="checkbox"/> Hispanic | / |
| <input type="checkbox"/> College | / | <input type="checkbox"/> American Indian | / |
| <input type="checkbox"/> Professional | / | <input type="checkbox"/> Pacific Islander | / |
| <input type="checkbox"/> Other _____ | / | <input type="checkbox"/> Asian | / |
| Contact Hrs: <u>13</u> | per attendee | <input type="checkbox"/> Other _____ | / |

SWE Volunteers (No.) 21

Estimated Total Hours: 150

Non-SWE Volunteers (No.) 5

Estimated Total Hours: 20

Amount of Grant: 1,000 **Total Final Expenses:** 2,580 **Amount SWE Owes You:** 100

-or-

Amount You Owe SWE: _____

Executive Summary:

The Kettering University SWE EXPO 2002 is an overnight experience for female high school students in their junior and senior years. The event started on a Friday night with dinner and a keynote speaker, the evening is for the girls to get to know each other and the following day is filled with labs, projects and demonstrations of engineering. The object of this event is to expose the girls to the opportunities that are available for women end engineering and science.

SWE Expo Demonstrations

The girls were split into three different groups and rotated between the following stations:

STATION 1

The EE Demonstrations consisted of two main demonstrations. The two demonstrations showed the progression of students in the ECE program.

It showed the progress from projects that freshman are involve in, building a 6-legged robot. They are responsible for the some of the building and programming of this robot. The first portion was given by Dr. Laura Rust of Kettering's Electrical Engineering Department.

The second demonstration was an explanation of the hand-held games. The hand-held games are a Computer engineering Senior Design Project. Participants also were given an overview of hand-held games and got to view the drawing of the original game boy. Theses games varied from Pac-Man and Tetris to a Math-tutor. Expo participants were given the opportunity to play with these games. Dr. Jim McDonald of the Kettering's Computer Engineering program gave the second portion.

STATION 2

Powder Metallurgy

This lab shows the use of metallic powder (Aluminum) to form solid parts like gears, carburetors and in our case bulldogs and beagle dogs. The powder is compacted into a rubber mold, by first filling the mold, then compacted by vibration then compressed at 25,000 lb under isostatic condition (all-around pressure in a water tank. The result is a solid piece of aluminum that can be polished into a shiny surface.

STATION 3

Thermoforming

This process heats up a sheet of plastic till it is soft and forms it into a mickey mouse shape using a mickey mouse mold.

SWE Expo Projects

The girls were split into three different groups with in the large groups they were split down into smaller groups of 3-4 people and then the larger groups were rotated between the following stations:

STATION 1

Boats

Each group received a bag full of the same objects and was allotted 15 minutes to design and build a boat. We then tested the boats by floating them in a wash tub of water and putting weights into the boats to see which one could stay afloat with the most amount of weight. The team with the most stable boat won.

STATION 2

Paper Towers

Each group was given 5 pieces of paper to build a tower out of, the tower had to sustain the weight of a floppy disk. The tallest one won.

STATION 3

Broom Stick

Each group had to rest a broom stick on all of their finger tips and starting from a standing position they had to lower it to the floor without anyone letting go. The fastest group won.

EXPO 2002 Budget

| | | Income | Expense | Total |
|--------------------------------------|-------------|--------|---------|-------|
| Program Development Grant | | 1000 | | 1000 |
| Admissions | | 400 | | 1400 |
| Manufactureing Department | | 400 | | 1800 |
| Participants Fee | | 780 | | 2580 |
| Marketing the Event | Mailings | | 180 | 2400 |
| | Telephone | | 80 | 2320 |
| Participant's gift bags | | | 120 | 2200 |
| Name Tags | | | 25 | 2175 |
| Follow-up Mailing | | | 25 | 2150 |
| T-Shirts | | | 600 | 1550 |
| Prizes for the projects and games | | | 80 | 1470 |
| Gifts for speakers and demonstrators | | | 200 | 1270 |
| Overnight games and activities | | | 120 | 1150 |
| Projects | | | 50 | 1100 |
| Labs | | | 400 | 700 |
| Food | Plasticware | | 80 | 620 |
| | Drinks | | 50 | 570 |
| | Snacks | | 170 | 400 |
| | Dinner | | 250 | 150 |
| | Breakfast | | 50 | 100 |
| | Lunch | | 100 | 0 |
| TOTAL | | | | 0 |

SWE EXPO 2002

Name: (optional) _____

How did you Learn about the Kettering University SWE EXPO?

Were you familiar with Kettering University before attending?

What part of this program did you enjoy most?

What part of this program did you least like?

Has this program made you more aware of the opportunities for women in science, math, and engineering fields?

Has this program helped to interested you in a field of science, math, and engineering?

Would you recommend this program to others?

What would you like to of seen that this program did not cover?

What high school do you attend?

Graduation year?

Current degree interest?

Do you have any other comments or suggestions

SWE EXPO 2002 SURVEY RESULTS

How did you Learn about the Kettering University SWE EXPO?

Mail 66%
Phone 17%
Friend 17%

Were you familiar with Kettering University before attending?

Yes 83%
No 17%

What part of this program did you enjoy most?

Games / Projects 34%
Meeting new people 17%
Talking to girls in engineering 16%
Labs 34%

What part of this program did you least like?

Tour and the end parent questions 34%
Sleeping 34%
Long panel 17%
Unanswered 16%

Has this program made you more aware of the opportunities for women in science, math, and engineering fields?

Yes 83%
No 17%

Has this program helped to interested you in a field of science, math, and engineering?

Yes 83%
No 17%

Would you recommend this program to others?

Yes 100%
No 0%

What would you like to of seen that this program did not cover?

- Chemistry
- More types of engineering