

ASME Diversity Action Grant Report

ASME student sections that receive funding through the Diversity Action Grant (DAG) program must complete and submit this report to ASME's Center for Leadership & Diversity by no later than June 1 of the academic year in which the project was undertaken. Any unused funds remaining must be returned to ASME with the report. ASME student sections that fail to submit a timely report may not be eligible to receive DAG funding for future projects. Additional information regarding the project, including photographs, copies of marketing materials and additional text, may be included with this project report.

Date: May 21, 2009

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Summary of DAG Project

ASME DAG Funding: \$ 1,500

Total Project Budget: \$ 2,106.95

Partnering Organizations: Department of Mechanical Engineering, Gannon University
Society of Women Engineers (SWE)

Attendance: Total 50

Women 24

Minorities 1

ASME Section/Region Reps 35

Project Description and Summary:

On April 23, 2009, the ASME Student Chapter with the SWE student Chapter, the Mechanical Engineering faculty and staff of Gannon University hosted the second Mechanical Engineering Day at Gannon University. Forty-seven middle school students participated in the event.

The middle school students arrived at 8:30 a.m. and were greeted by the Dean of the College of Engineering and Business, Dr. Melanie Hatch; the Chair of Mechanical Engineering Department, Dr. Mahesh Aggarwal; the ASME student Chapter President, John Coogan; the SWE Student Chapter President, Hannah Kirby; and the Faculty Coordinator, Dr. Karinna Vernaza.

The participants then rotated through three activities showcasing different aspect of mechanical engineering. These activities were:

1. Egg-Drop Module: The students had to design and build an apparatus, with the least materials, that would allow an egg to be dropped from a height of about 8 feet without breaking when it hits the floor.
2. Watercraft: The students had to design and build a boat out of straws and plastic wrap that could hold 25 or more pennies for at least 10 seconds before sinking.
3. Zip Line: The students had to design and build something to carry a ping-pong ball from the top of a zip line to the bottom in four seconds or less.

In addition to the activities, the middle school students had lunch at the University's cafeteria and interacted with undergraduate students and faculty in a personal level. Then, the participants watched the ASME video titled "Mothers of Invention."

Project Goal/Objective and How Achieved:

The overall goal of this project was to hold again a "Mechanical Engineering Day" at Gannon University this year. The objectives of the "Mechanical Engineering Day" were to establish an effective program to attract a larger population of middle school students and minorities and women students to the mechanical engineering field, and to inspire middle school students to consider mechanical engineering/engineering as a future career.

The goal/objectives were achieved and met. During this year's Mechanical Engineering Day, Gannon University student members of ASME and SWE, supervised and supported by faculty of the Mechanical Engineering Department, hosted middle school students in the various engineering/mechanical engineering related activities, as described in more detail in the above Project Description and Summary section. The middle school students got the opportunities to participate in conducting different mechanical engineering experiments guided by college students showcasing different aspects of Mechanical Engineering. They also got the chance to learn about engineering, to hear about the possible mechanical engineering careers, and how engineers impact daily life.

Discussion and Other Comments/Suggestions:

The activities ran smoothly. From the surveys (refer to Evaluation of Program's Success), it is clear that the participants enjoy the activities and that they learned about engineering.

Conclusion

The Mechanical Engineering Day was a success again this year. Undergraduate students enjoyed teaching middle school students. The middle school students learned about engineering; and they think, according to the survey, that engineering is fun and could be considered as a possible career.

Evaluation of Program's Success:

Mechanical Engineering Day Survey Results (2009)		
Questions		
1	In a scale from 1-5, how much did you know about engineering <u>before</u> participating in the ME Day? (1 being nothing and 5 being the most, please circle one)	
	1. Nothing	4
	2	24
	3	12
	4	7
	5. A lot	
2	In a scale from 1-5, how much did you know about engineering <u>after</u> participating in the ME Day? (1 being nothing and 5 being the most, please circle one)	
	1. Nothing	
	2	
	3	4
	4	29
	5. A lot	14
3	Would you recommend this event to other students interested Engineering?	
	1. Never	
	2	2
	3	1
	4	10
	5. Absolutely	33
4	Were the activities well structured?	
	1. Not really	
	2	
	3	5
	4	19
	5.Excellent	23
5	Please comment on the ME Engineering Video:	
	1. Hated It	2
	2	8
	3	17
	4	18
	5. Loved It	2
6	Please comment on the following activities:	
	Activity 1: Egg Drop Module	
	1. Hated It	
	2	

	3	1
	4	10
	5. Loved It	36
	Activity 2: Zip Line	
	1. Hated It	
	2	8
	3	16
	4	14
	5. Loved It	9
	Activity 3: Watercraft	
	1. Hated It	
	2	1
	3	6
	4	15
	5. Loved It	25
	Do you think engineering is fun?	
	1. Yes	37
	2. No	1
	3. Not sure	9
	Would you consider becoming an engineer?	
	1. Yes	17
	2. No	5
	3. Not sure	25

What was most valuable about mechanical engineering day?	What would you like to improve about this engineering day?	General comments:
I thought the most valuable thing was learning engineering in a fun way	Having less people in your group	The lunch was great and the whole day was fun.
What I learned about engineering	May be one more activity and more points to use.	I liked it.
I learned how to work as a team	Write all the rules	Zip line wasn't that fun.
The fact that I learned a lot of new things about engineering	Nothing really	nothing
We got to think of something (invent) in the activities.	One more activities	It was a lot of fun
It taught you how to engineer in a fun way	For the watercraft chase some of the supplies	It was a lot of fun
Learning that you don't have to only try once, you can try as long as you want	Get some more stations	I liked it and I learned something
Learning about engineers and what they do	nothing	I had fun
Learning what it means to be an engineer	The zip line activity	Good food lots of fun
Learning what engineers do and	The video	I loved the activities

doing fun activities		
The watercraft activity	Nothing	Whole lot of fun, good food
Learning what engineering is	I would like there to be more	It was a fun day
Working with others	How the activities were ruled	None
You could learn how to invent stuff and learn new things	Nothing	Everyone was really nice
The teams that we worked with because it taught us about teamwork	More activities	This was a brilliant idea
You learned about engineer and how to make things	Nothing	Lunch was good
The team working together was good because we were able to share our own ideas	More activities	Very nice structured
The morning events	More pennies for watercraft	I loved the egg drop
Learning what they do	Make the video better	
The morning events		I really liked lunch and the activities
You learned a lot about structuring certain things and making things out of other things	Nothing	I had very good time
Learning how to work together and learning how to make stuff	I am not sure	nothing
Learning how to make stuff	More station	I liked it and it was fun
The morning events and the video	The video needs to be funnier, more events	Nothing
Getting to do hands on activities that were fun	More fun activities	I really had fun
I learned about engineering and I got to make stuff	I wish we had more time	It was fun
Learning what they do	A better video	Nothing
I learned a lot about engineering and the activities, nice	More activities	The lunch was good
Doing different activities and working together	The movie	It was fun
Understanding and learning the basics of engineering	I don't think I would change anything. Very good activities, great food	It was a great way to learn more about inventions & experience college
Learning new techniques for building objects	It was really fun	Gannon has great food and fun activities
The lunch was good and the activities were fun	More activities and no survey	No survey
The using materials wisely	I don't know	We do it again next year
The part of doing and building things	Make more activities	Nice
The valuable thing was learning about engineering	I don't know	I do not have any comments
I learned that you need to work as a team and to use your materials wisely	May be one more activity and more points to use for your materials	The times were fun and it taught you to work as a team.
I really liked the egg drop it was really fun. And everyone was very nice	More activities	I thought it was really fun
The most valuable thing was	I would like there to be	Very fun, the help was good

building your own hems	more stations	
Learned how to work as team	Nothing	Lunch was excellent
What we learned about it.	The zip line	Over all it was fun time
Work as a team	Work more as a team	
The fact I learned something I don't know about it.	nothing	nothing
Being a leader and working as a team. Use the most amount of stuff with least amount of money.	One more activity	Excellent
Learning about engineering	Make the egg dropping thing more fun	I liked it love to all
Doing different activities and working together	Not sure	The lunch was very good
Learning what it takes to be an engineer	Smaller groups	Today was a fun experience & educational

Expense Report

The Mechanical Engineering Day had a total cost of \$2,106.95. The Mechanical Engineering Department of Gannon University contributed with \$126.98 and the Admission of Gannon University contributed with \$479.97. The following table presents the expenses incurred during the Mechanical Engineering Day. The total requested from the ASME Diversity Action Grant is \$1,500.

Expenses	
Walmart - Materials for Watercraft	\$40.52
T-shirt for 50 middle school students and 3 teachers	\$421.88
Prices (Ten Barnes and Nobles \$25.00 Gift Certificates)	\$250.00
Eggs for Egg Drop Module, Name tags and construction paper	\$14.39
Romolo's Chocolate - Taste of Erie Bags	\$28.80
Dollar Store - Materials for Egg Drop	\$61.21
Sam's Club - Water and Candy	\$23.14
Walmart - Materials for Zipline	\$36.66
Lowe's - Materials for Zipline	\$4.79
Little Caesars	\$12.69
Go for Engineering Magazine	\$16.43
Walmart- Color Paper	\$4.21
Top - Cups and Paper clips	\$6.28
Giant Eagle - Giant Jellies	\$5.98
Breakfast - donated by Admissions (\$5.35/ per person) - 70	\$374.50
Lunch at Gannon's Cafeteria (\$5.00 / per person) - 75 participants	\$375.00
Subtotal	\$1,676.48
Total of Other Expenses	\$430.47
Total Cost of Event	\$2,106.95
Total Contributed/Donated by Admissions and ME Department	\$606.95
Total Requested from ASME Diversity Action Grant	\$1,500.00

By no later than June 1, submit this report to:
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