

DAG Report Summary

Grant Recipient	Grant Amount	Projects
University of Toledo	\$1110	Electrical Circuits and Aerodynamics Project for St. Ursula Academy Students
University of Akron	\$1170	2008 Kids' Career Day for Girls
Gannon University	\$1500	Mechanical Engineering Day
UMBC	\$1500	Freshman for a Day
FIU	\$1500	Truss Structure Design Competition
University of Alabama	\$1480	Eastwood Middle School Science Fair
Lamar University	\$2100	Mechanical Engineering Day
Brigham Young University - Idaho	\$1500	Finding the Knack
Universidad de Guanajuato*	\$1848	Promoting U of G's engineering programs to women.
Cal Poly*	\$800	Kinematics and Projectile Velocities for Kids
United States Military Academy*	\$2900	Engineering Exposition
University of Calgary	\$1250	Women in Engineering Day and Open House

***Institution has not yet submitted a report**

**University of Toledo Diversity Action Grant
Electrical Circuits and Aerodynamics Projects for Female High School Students**

The University of Toledo's ASME Student Section's Diversity Action Grant was used to coordinate several engineering oriented projects to promote engineering among younger students in the surrounding community. Four of the projects involved working with a local girl's high school, St. Ursula Academy. The projects included the design and construction of a model arm, a wind-energy project, the design and construction of rubber-band driven airplanes, and helping students prepare for their JETS Math Competition. Along the way, ASME members tried to eliminate engineering stereotypes, teaching the high school students that engineering was not just about sitting at a desk all day creating computer aided drawings. In addition to their work at St. Ursula, University of Toledo ASME members provided assistance with an engineering project at an inner-city junior high, worked with elementary-aged students on model airplanes, and worked with the Student Section of the National Society of Black Engineers organizing a First Lego League project for the upcoming academic year. The University of Toledo ASME student section took full advantage of the assistance provided by the Diversity Action Grant to promote engineering to the youth in the surrounding community.

Summary

Partnering Organizations: National Society of Black Engineers

Overall Attendance: 100

Women: 50

Minorities: 10

Grant: \$1100

University of Akron Diversity Action Grant 2008 Kids' Career Day for Girls

The University of Akron's Diversity Action Grant was used by the ASME-UA student chapter in association with the UA Women in Engineering Program and the Society of Women Engineers student chapter. The grant was used to promote women in engineering at the "2008 Kids' Career Day for Girls." The program targeted girls in grades one through six. The goal was to encourage and support the interests of these children in the academic areas of science, technology, engineering and math. The purpose of Kid's Career Day for Girls is to help girls identify their interests early in life, and consequently begin a more directed academic focus in the fields of engineering. The Diversity Action Grant was used to help offset the cost of upgrading materials for the program. An upgrade in materials greatly helped to enhance the learning experience for participants. Also, some of the funding was used to introduce four new scientific projects at the Career Day for Girls. These projects explored the areas of air bearings, friction in toy cars, industrial engineering, and properties of materials. The grant was also used to improve or replace eleven existing projects and build two hovercrafts for students to ride. The "2008 Kids' Career Day for Girls" successfully supported and promoted engineering and related science studies to the young girls that participated. The ASME Diversity Action Grant supported the efforts to provide an exceptional and lasting learning experience for the participants.

Summary

Partnering Organizations: Lockheed Martin, McDonald's Corp., Ruhlin Corp., Babcock and Wilcox, CT Consultants, NASA, Girl Scouts NEO, Society of Women Engineers UA student chapter, University of Akron, ARCADIS, Go Jo Industries

Overall Attendance:	576
Girls:	356
Minorities:	200+
Grant:	\$1170
Budget for Event:	\$9800

Survey

66.7% rated program to be **excellent**

98.2% said they had **fun**

93.5% said they would **come back next year**

100% of parents believed it had a **positive effect on their child**

Gannon University Diversity Action Grant Mechanical Engineering Day

The Gannon University ASME student chapter's Diversity Action Grant was used to subsidize the cost of Gannon University's first Mechanical Engineering Day. The objective of the program was to introduce and attract a larger population of middle school students, specifically women and minorities, to the mechanical engineering field. The day was supported by faculty of the Gannon University Mechanical Engineering Department. Middle school students participated in several projects including the design and construction of an egg-drop module. The goal was to design a structure, using the least amount of materials, which could prevent an egg from breaking when dropped from a height of eight feet. Other demonstrations performed included boiling and condensations experiments, viscosity measurements, and measurement of flow rate in an open channel. The final project for the middle school students was a beam design. Students had to design and build a beam out of cardboard that could withstand an assigned max load. The Diversity Action Grant was the main source of funding for Gannon's Mechanical Engineering Day. The event was a success and helped to open the eyes of middle school students to the world of mechanical engineering.

Summary

Partnering Organizations:	Department of Mechanical Engineering, Gannon University, Society of Women Engineers
Overall Attendance:	40
Girls:	17
Minorities:	1
Grant:	\$1500
Budget for Event:	\$1867.99

Survey

- Based on survey results, students left the event with an increased knowledge of mechanical engineering.
- Most students would recommend the event to their friends interested in engineering.
- The activities were well structured
- The egg drop module and the beam design were most popular
- 33 out of 40 students said engineering was fun
- 18 students said they would consider becoming an engineer
- 20 students are unsure if they would consider becoming an engineer

UMBC Diversity Action Grant Freshman for a Day

The University of Maryland, Baltimore County ASME student chapter's Diversity Action Grant was used to support UMBC's "Freshman for a Day" field trip. Students from area middle schools arrived at UMBC, split into groups, and participated in three on campus activity rotations. The event was intended to give students a hands-on, science based introduction to UMBC. Overall program goals included encouraging student's interest in the science, mathematics, engineering, and technology fields, getting students thinking about the possibility of college, and allowing the middle school students to observe a college campus while it is in session. The middle school teachers and parents were very pleased with the event. It helped to excite their students and children about someday attending college. The Diversity Action Grant was of great aid in making the "Freshman for a Day" program possible.

Summary

Partnering Organizations:	SBE, Tau Beta Pi
Overall Attendance:	85
Girls:	26
Minorities:	13
Grant:	\$1500
Budget for Event:	\$675.32

Response

UMBC received a very positive response from participants.

Selected Comments from parents/teachers:

"We've had several emails from parents saying how much their child enjoyed the trip (one of the best trips ever!) and how impressed they were with the university."

"Can I write to your supervisor or anyone about what a great service this was for us?"

"My (student's) parents (chaperones) said it was the best trip ever and that they wish they could go to UMBC for college."

FIU Diversity Action Grant Truss Structure Design Competition

Florida International University's ASME student chapter's Diversity Action Grant was used to support FIU's Engineering Gala. Area middle and high school students were invited to FIU to participate in an ASME Design Competition during the gala. The competition consisted of the design and construction of a structure by teams of students. Tape, straws, jelly beans, string, and toothpicks were the only materials permitted in the structure design. Structures were judged by height, strength, and material use efficiency. Throughout the course of the project students were also quizzed on engineering topics and awarded prizes for correct answers. The goal of the program was to promote engineering to middle and high school students in a fun manner. This was possible with the help of the Diversity Action Grant. The funding was used to pay for construction materials, t-shirts, prizes, food, and certificates for participants.

Summary

Partnering Organizations:	Society of Automotive Engineers
Overall Attendance:	235
Girls:	93
Minorities:	202
Grant:	\$1500
Budget for Event:	\$1500

Responses

- Received great feedback from participating teachers and students
- Would improve upon competition next year by creating a fun middle and elementary school division and a more competitive high school division
- More timely arrival of the Diversity Action Grant would allow for more comprehensive program/activity planning

**University of Alabama Diversity Action Grant
Eastwood Middle School Science Fair**

The University of Alabama’s ASME student chapter’s Diversity Action Grant was used to host a science fair at the Eastwood Middle School. The goal of the science fair was to encourage younger students to pursue their interests in the engineering and science fields. Each student applied what they learned from their middle school curriculum to create a real-life experiment. Students had a period of four months, from January to April, to perform experiments and gather data. At the conclusion of the four month period students’ results were featured at the Eastwood Middle School Science Fair. Middle school students were helped through the experimentation process by University of Alabama mentors. Mentors were ASME student chapter members and Society of Women Engineers members. The middle school has approximately 900 students, 79% of whom are minorities. So, it was a great opportunity to promote engineering and science among minority students. The grant was used to provide funding for the experiments performed by the middle school students.

Summary

Partnering Organizations: Society of Women Engineers, Alabama Power, Eastwood Middle School PTA
Overall Attendance: 20 (275 8th Graders benefited from portions of the program)
Girls: 8
Minorities: 5 (approx. 140 8th graders benefited from portions of the program)
Grant: \$1480
Budget for Event: \$1488

Lamar University Diversity Action Grant Mechanical Engineering Day

The Lamar University ASME student chapter's Diversity Action Grant was used to host a Mechanical Engineering Day at Lamar University. High school seniors and college freshman with an interest in science and mathematics were invited to participate. The focus of the event was to attract women and minorities to engineering. Senior mechanical engineering students spoke to those in attendance about their design projects and internship experiences. After the presentations by mechanical engineering students, several professors also spoke to the Mechanical Engineering Day attendees. The presentations were followed by a tour of the mechanical engineering labs. One of the highlights of the day was the mouse trap powered car design competition, which allowed participants an interactive experience of mechanical engineering. Overall, the day provided the attending students with a great deal of information about mechanical engineering joined with hands on experience. This was made possible with the help of the Diversity Action Grant.

Summary

Partnering Organizations:	Lamar University College of Engineering
Overall Attendance:	20
Girls:	7
Minorities:	5
Grant:	\$2100
Budget for Event:	\$2500

Brigham Young University Diversity Action Grant Finding the Knack

The Brigham Young University ASME student chapter's Diversity Action Grant was used for a project called "Finding the Knack." This project was designed to promote engineering among high school students and minorities. The ASME chapter of BYU wanted to encourage students to pursue engineering degrees and higher education. A focal point of the project was a custom t-shirt program. "The Knack" t-shirts were worn on the same day by all who participated in the program. The hope was that observers would ask the participants about the shirts and the students would have the opportunity to explain the shirt along with the benefits of engineering. The intent was to raise awareness of opportunities in engineering particularly among women and minorities. In addition, flyers about mechanical engineering were hung in local high schools and across the BYU campus. As a way of following up the flyers, students of BYU also visited the high schools to make a presentation and answer questions concerning engineering. Finally, BYU students created a web page that would provide students with the resources necessary to begin their journey towards an engineering degree. The "Finding the Knack" program was made possible by the Diversity Action Grant.

Summary

Partnering Organizations:	SAE, IEEE, Local High School Technology Clubs, Mechanical Engineering Department, BYU Idaho Communication Department
Overall Attendance:	Approx. 500
Girls:	Approx. 250
Minorities:	Approx. 100
Grant:	\$1500
Budget for Event:	\$1541.25

University of Calgary Diversity Action Grant Mechanical Engineering Day

The ASME University of Calgary student chapter's Diversity Action Grant was used to subsidize the cost of Women in Engineering Day and Open House. Open House is an event held at the University where seniors in high school, who have already been accepted into the University of Calgary engineering program, come to learn more about the different branches of engineering. At Women in Engineering Day and Open House, the ASME Student Section used the DAG funding to host two design competitions for the visiting students. The design competitions included building a device to launch a marshmallow the greatest horizontal distance and building and programming a Lego robot to travel along a wall. The objective was to promote Mechanical Engineering to incoming students in the hopes that they may one day choose Mechanical Engineering as their major. The program was a great success in attracting women and incoming students to Mechanical Engineering. The design competitions were made possible only with the support of the Diversity Action Grant.

Summary

Partnering Organizations:	Gender and Diversity in Engineering Committee Engineering Open House
Overall Attendance:	500
Girls:	300
Minorities:	100
Grant:	\$1250