

**Michigan Technological University
2009 District CASE V Awards Program
Excellence in Special Events, Individual Event
Abstract**

Title of entry

YES! Expo

Category number and title

47. Excellence in Special Events, Individual Event

Institution

Michigan Technological University

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General description of the entry

The Youth Engineering and Science (YES!) Expo is an annual premier career awareness event that brings together more than 60 companies, 25 colleges and universities, and many other prominent organizations from across the state to inspire youth in grades 8-12 to pursue education and careers in science, technology, engineering and mathematics (STEM) as well as robotics, alternative energy, medical sciences, and other critical industries. YES! Expo which is held at Ford Field, home to the Detroit Lions, allows us to reach a large population of disadvantaged and

underrepresented students and, ultimately, have a more significant impact on the future of Michigan's workforce.

Since its inception in 2004, more than 63,000 students have attended. Annual student attendance at YES! Expo has surged from 4,000 to more than 15,000 and the number of exhibitors has grown from 25 to nearly 100.

YES! Expo is a field trip-based event and consists of two elements:

1. Tradeshow-style format where corporations, universities and other organizations staff exhibits intended to expose students to their exciting and rewarding technology-based careers and educational programs, and
2. A live multimedia professionally produced educational program, highlighting science, technology, education and careers in an entertaining way. Past shows have featured celebrities such as Bill Nye the Science Guy; Dr. Steven Squyres, lead scientist on NASA's Mars Rover project; and this year, Dr. Cindy Bir, star of FOX Sports TV program, *Sports Science* presented to the students.

In an effort to capture the breadth and scope of this event, the corporate sponsorship brochure, the teacher brochure and the YES! Expo magazine, designed for event participants, are included for review. In addition, please visit <http://www.yes.mtu.edu/> to see photo highlights from the event. Please note that the graphics on the site have already been changed to reflect the 2009 event. The 2008 site can be viewed at <http://www.yes.mtu.edu/2008-site/>. Finally, I have included a copy of a news article from the *Detroit Free Press*. The story ran the day after the event.

Goals and objectives of the project

The overarching goals of YES! Expo are to

- Inspire middle and high school students to pursue education and careers in engineering and science.
- Increase minority and female interest in STEM fields. Both groups are vastly underrepresented in these fields.
- Encourage graduation from high school. Graduation rates from Detroit Public Schools are among the lowest in the nation.
- Develop and maintain partnerships with sponsoring corporations and organizations to increase funding support to benefit Michigan Tech programs.
- Develop and maintain partnerships with K-12 schools to assist in undergraduate and pre-college outreach program recruiting.

Description of how project fits into overall institutional and/or advancement goals

The first goal in Michigan Tech's strategic plan is to attract and support a world-class and diverse faculty, staff, and student population. YES! Expo supports this goal by:

- Encouraging students to choose education in STEM fields specifically at Michigan Tech.
- Providing a diverse pool of prospective Michigan Tech students.

Another strategic goal is to promote economic development and innovation in Michigan and the nation. YES! Expo supports this goal by:

- Inspiring and motivating student attendees to be the innovators and entrepreneurs of the future.
- Developing and enhancing partnerships with sponsoring companies, government agencies, and organizations to provide funding for cutting-edge research and programs leading to innovative economic development.
- Supporting technological education and entrepreneurship through partnerships with K-12 districts and individual schools.

Audience

YES! Expo serves middle and high school students primarily from Detroit and southeastern Michigan. Students also attend from other areas of the state as well as Ohio and Indiana. Since its inception in 2004, more than 63,000 students have attended. Annual student attendance at YES! Expo has grown from 4,000 to more than 15,000. Minority groups represent approximately 50 percent of attendees and as expected, females make up approximately half of the students attending YES! Expo.

Total number of professional and support staff who worked on the program; please note the use of freelancers, outside agencies or volunteers

Michigan Tech partners with Innovation Emporium to plan and produce the YES! Expo event. The number of people involved in the event include

- Professional Staff (26)
- Support Staff (2)
- Outside Partners (7)
- Volunteers (14)
- Michigan Tech Students (61)

Program Budget (without salaries or postage)

Management/Promotion	\$32,650
Staff Travel	\$15,000
Professional Event Consultants	\$112,150
School Bus Subsidy Program	\$15,000
Event Expenses (Rent, Security, Custodial, etc.)	\$178,100
YES! Expo Live Show	\$83,000
Total	\$435,900

Any special circumstances or challenges faced

Our nation faces a serious crisis of youth losing interest in Science, Technology, Engineering, and Math (STEM). Michigan and other technology and manufacturing centers have already suffered significantly from this decline. Additionally, women and minorities are vastly under-represented in STEM fields. Until these trends are reversed, the nation will struggle to develop a highly skilled and knowledgeable workforce for the 21st century who will sustain the nation's

position as a global leader in science and engineering. YES! Expo was designed by Michigan Technological University to address this problem. YES! Expo aims to generate interest and enthusiasm in engineering, science and technology among Michigan's youth, and to encourage these youth to attend engineering and science programs at institutions of higher education and ultimately pursue employment with Michigan corporations.

Documented results, measurements of effectiveness

For the past three years, the Dow Corning Foundation funded pre/post-event student surveys to better determine the influence of YES! Expo. A random sample of teachers registered to attend YES! Expo were asked to have their students complete an online survey before and after attending YES! Expo from 2006 through 2008. Pre-event surveys were taken 1-2 days prior to the event, with the post-event surveys occurring approximately 1 week afterward. Data analysis was based on students who completed both the pre- and post-event surveys. The results demonstrate that YES! Expo had a positive impact on how students viewed continuing their education past high school in engineering and science fields and ultimately pursuing technology-based careers. Highlights of the analysis showed:

- 90 % said YES! Expo made them think more about attending college after high school.
- 86% said they have a much better understanding of what engineers and scientists do.
- 87% said they learned more about engineering careers.
- 75% said YES! Expo increased their interest in majoring in engineering.

Statistically significant increases were found before and after attending YES! Expo in:

- Student interest in attending a Michigan university
- Likelihood of majoring in engineering in college
- Engineering self-efficacy (An individual's belief in their ability to be successful and is a predictor of perseverance in majoring in engineering and subsequent career).

For three consecutive years, the survey results provided us with a new understanding that knowing an engineer is a strong contributing factor in students considering engineering as a career. The better a student knows an engineer, the higher their self-efficacy and likelihood of pursuing a career in engineering.

YES! Expo provides a setting where students can meet and talk with real engineers and scientists, and we believe that this interaction has a significant positive influence. Meeting people in technology-based careers enables students to see the connection between what is taught in the classroom and how it is applied in the workplace. Maintaining and enhancing this face-to-face interaction is essential to developing students' interest in considering post-secondary education in STEM fields.