



Math Science Technology at Michigan State University July 11—24, 2010

Audience

The Math Science Technology at Michigan State University (MST@MSU) Program is a two-week summer residential program for academically talented students who have completed grades 7, 8, or 9 with a minimum age of 12 years old in the 2009-2010 school year. An ACT Math score of 21 or Composite of 23, or SAT score of Math or Critical Reading 530 or Combined Total of 1010 is the eligibility criteria. Thirty-one (31) males, twenty-nine (29) females were in the program; twenty-three (23) 7th graders, thirty-five (35) 8th graders and two (2) 9th graders.

Funding

MST@MSU programming and scholarships are funded by the MSU Provost, (\$20,000 for 5 staff members) the W. B. and Candace Thoman Foundation (\$15,000 for low-income scholarships), and the Dorothy Lawshe Endowment (\$6,000 for scholarships). Student tuition covers the remaining program costs.

Objectives

The academic focus of the MST@MSU program is on mathematics, science, technology and the applications in these areas. The goal is to match the intellectual abilities of talented adolescents with rigorous and challenging course work which provides enrichment, but does not duplicate or accelerate course work that is part of the regular K-12 school curriculum.

MST@MSU offers opportunities for students

- * to experience active learning as they investigate problems that can be solved through a better understanding of mathematics, science, engineering, and technology
- * to focus on intensive areas of study that allow for interdisciplinary research using tools of mathematics, science, and technology
- * to link the tools of many career fields while focusing on real world problems.

Total contact time: 53 hours

Description

MST@MSU students select two academic courses and one special session clinic to attend each day for the two weeks of this residential program. Academic courses include Astronomy, Digital Photography/Hands-On Video, Genetics & Biotechnology, Mathematical Explorations, Mechanical Engineering, Nuclear Astrophysics, Physics, Physiology, and Public Health. Special session clinics include basketball, creative writing, Flash I, Flash II, Soccer, and visual arts. Classes are held on the MSU campus, using campus classrooms, labs and special facilities. Taught by MSU professors who were assisted by area high school teachers, students participate in lectures and labs in two –hour classes, followed by a 90 minute special session. Sixty (60) students participated in the 2010 program. Twelve (12) MSU faculty provided instruction.

Each evening time is scheduled for homework, presentations or use of campus facilities. Students will be attending a presentation by the Honors College on college preparation for high school, an evening at the MSU Observatory, the Abrams Planetarium, use of the IM pool and gymnasiums plus nightly activities planned by the program on-site coor-

dinators and residential assistants. Students are placed in groups of ten, with 24/7 supervision in the dorm, to and from class, and evenings.

Impacts

Students completed a post program evaluation the last day of classes. Student responses

- * averaged 96.85% when asked if their classes were a positive learning experience,
- * 92.8% felt that their classes were challenging to very challenging,
- * 100% of the students responded that they learned some to a lot of new information,
- * when asked prior to the class if they would consider a career in their classes, 47.46% responded yes, and
- * after completing their classes 71.14% responded that they would likely pursue a career in their classes.

Sixty students completed an optional gender/ethnicity form.

- * 30 were Caucasian, 18 Asian American/Pacific Islander, 7 African American, 2 Multiracial, 3 no response.

Scholarships equaling \$6,000 were awarded to 8 students. Five students returned to the program from the 2009 MST@MSU program.

Parents were asked to give input post-program. Here are some of the statements submitted by parents:

“From what my child has told me, MST@MSU was an invaluable experience. My son had an opportunity for personal growth and a learning experience that was both fun and informative. MST@MSU is a very good program.”

“Diversity and teamwork of students [were my child’s favorite aspects of MST@MSU].”

“My son loved the classes. The teachers’ knowledge and their way of teaching made me wish I had attended MST. He learned things he could have never learned in school and had fun while doing it.”

Additional Significant Information

2010 was the 20th year for the MST@MSU program on the MSU campus.

MST@MSU students in 2010 came from Michigan, California, Florida, Mississippi, Illinois, Indiana, Ohio, and Georgia. The on-site coordinators are veteran middle school educators. The ratio of resident assistants to students in 1:10, with five additional staff members on-site to assist program participants.

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