



# Student Impressions of the 2008 M-STEM Academy

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## What is M-STEM?

The Michigan Science, Technology, Engineering and Mathematics Academy (M-STEM) is a new two-year program designed to maximize the academic, personal, and professional success of Michigan engineering students to prepare them for the global workforce. The Academy is an expansion of the nationally recognized College of Engineering Professionals-in-Training Program (PTP) formerly administered by the Multicultural Engineering Programs Office (MEPO).

## M-STEM Benefits

- A summer transition program for first-year students
- Specialized coursework that integrates science and mathematics concepts
- Customized advising
- Career guidance
- Academic learning activities
- Paid professional summer internship or research opportunity
- \$3000 stipend for completion of the summer and fall semesters

## Research Question

To evaluate the effectiveness of the M-STEM Academy and to inform program improvement, Professor Edward St. John's research team conducted focus groups with M-STEM students at the end of the summer transition program. Specific areas of inquiry include students':

- Prior academic experiences and future plans;
- Decision-making processes to attend M-STEM;
- Perceptions of the M-STEM Academy; and
- Transition into the college academic and social environment.

## Sample

Twenty M-STEM students have participated in focus groups thus far. Students who were at least 18 years old at the time of the interview were asked to be focus group participants.

## Method

Initial focus groups were conducted in August 2008. Data collection is ongoing, and additional focus groups with both M-STEM and non-M-STEM engineering students will continue throughout the Fall 2008 semester.



## Preliminary Findings

**Below we highlight students' quotes that inform our research questions. Quotes were recorded verbatim from the focus group transcripts.**

**M-STEM participants are already considering graduate or professional school.**

I was really leaning towards biomedical at first but I also want mechanical because it's just such a wide field. If I ever decide to change majors I could transfer my credits and I wouldn't be losing any time. And then when I found out they have a five year master's in biomedical or I could do an undergrad in mechanical and a master's in biomed, that was just the most appealing option to me so that's what I'm planning on doing.

I'm actually gearing pretty hard towards the research because the way I see it I'm going to need to know my professors to get good recommendations for grad school or for future internships. So I figure I could spend my first couple summers in college just doing research here. Build up my network more and more. And then when I jump to the real world it will be a little bit easier.

[From a Industrial and Operations student who plans on earning an MBA] An MBA will further expand your knowledge of business and then you can have the engineering background so you're killing two birds with one stone basically.

**Students were most surprised and pleased by the strong professional and social networks they forged during the summer program.**

There are a lot of connections. We had numerous seminars on networking. Now we have the MEPO network under our belts too. It should be relatively easy to get research in the school next summer or an internship almost any company of our choosing.

One thing for me that was actually above my expectation was the network that we get by doing this. I've just been meeting so many new people and I we have such a strong network now, like we have academic advisors and now we have corporate advisors and I wasn't expecting that at all.

I wasn't expecting the network and all. Getting assigned to a mentor. I didn't sign up for the College of Engineering mentoring program because I didn't really want one and now I'm getting two whether I like it or not...I see the point of it now. Before I was kind of like I don't need them.

We got to know each other. I think that during the fall when we start school we'll already have a support group.

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## Preliminary Findings

**The students saw M-STEM as an opportunity to improve their study skills and habits prior to the beginning of the semester.**

I know a lot of people here took a lot of hard classes senior year. I had four hours out of the day where I left school early because I was dual enrolled. I just knew that my study habits weren't anywhere near where they needed to be coming into the school of engineering. I figured, hey, I'll get myself in shape before school starts and that way when school starts I won't be trying to keep up, trying to keep a C average. I'll start off solid. I'll try maybe setting the curve for once.

Basically just by the fact that we were able to come down to the campus early, get used to it, use the bus system, everything like that, we're all a step above everybody else.

**Students had mixed reflections on how their experiences in M-STEM have influenced how they are going to approach the transition to Michigan.**

Sometimes they're like, you're [not] the best anymore. U of M is tough. You're not the best. You're not the best. You got in, you're not the best anymore. For me it's kind of been like a self-esteem kind of struggle. I've had problems with it this summer.

Yeah, for some people it seems like it's too daunting of task. I think to a degree they made us, hey we're going to prepare you for it. There are a thousand incoming freshman to the school of engineering. There are 47 of us here who know what to expect now. There are going to be lot of kids coming in, I graduated at the top of my class. When they get here, they're going to spend the first semester partying, the first midterm partying. And then when they see the 20s and 30s on their tests they're probably going to start reevaluating.

## Conclusions

- The summer M-STEM Academy was an extremely rigorous introduction to college-level coursework that students described as "boot camp for engineers."
- Students recognized that the activities and skills they gained through M-STEM would put them ahead of their peers, both academically and socially.
- Since most M-STEM participants had strong math and science academic preparation, they expressed trepidation about joining a competitive environment where they would not necessarily be "the best."
- The students used the summer program to build their academic and professional networks, thus laying the foundation for graduate school and future employment opportunities.