

# Michigan Engineering in K-12

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April 12, 2011



Michigan**Engineering**

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College of Engineering

# Overview of Involvement

- **Michigan Engineering Zone (MEZ), Detroit**
- **CoE students in K-12 classrooms**
- **CoE students in after-school programs**
- **Summer camps**
- **Teacher training**
- **Approximately 50 programs overall**

# Examples of Involvement

- **MEZ: Mentoring of 15 FIRST Robotics teams from Detroit public high schools, summer programs**
- **Ypsilanti: Grad student teaching aides, after-school programs**
- **DAPCEP: Weekends on campus, 7th-9th grades**
- **WISE summer camps, 7th & 8th grades, hands-on**
- **MITE summer camps, 10th,11th grades, math engineering, communications**
- **SCEEP: Rising 12th graders, engineering, teamwork, applying for financial aid**

# Challenges

- **Lots of \$\$ and time per student reached**
- **Doesn't scale: We're missing most students**
- **More emphasis on training teachers is needed**
- **Little faculty reward, so staff lead most programs**
- **Need to partner with Education Schools -- they have expertise!**
- **Funding -- thank you corporate America!**

# **K-12 Engineering Standards in MI**

- **Initiative in Michigan involving all 18 engineering deans**
- **Modeled after Massachusetts effort**
- **Flexible intent: not proposing a required course in engineering**
- **We began with a white paper, signed by all deans**
- **Now soliciting support of deans of education**
- **Plan to approach State Board of Education**

# Challenges

- **With cutbacks in K-12 spending, now is not the best time to try adding a new mandate**
- **Massive teacher training required; some teachers will not be suitable**
- **Meshing with ongoing study of National Academies Board on Science Education; expected to propose standards for K-12 engineering education**
- **Success will require a full-time leader/devotee for the long haul; which dean will step down to lead?**