

MSU: Helping Ensure Kids Are Succeeding in School

- MSU will prepare a new generation of K-12 teachers **who are able to creatively and effectively use technology to enhance student learning.**
- Via such projects as PROM/SE, **MSU will use data-driven, carefully researched, collaborative initiatives to assist K-12 teachers to provide enhanced instruction in local school districts.** The PROM/SE model program is a long-term mathematics and science partnership funded by the National Science Foundation. Twenty-nine school districts in Michigan (plus others in Ohio) joined with MSU in this effort to improve mathematics and science achievement for all students. PROM/SE is using careful analysis of student assessment data, curricular materials and state standards to target reform efforts more effectively and to develop powerful new professional development opportunities.
- **MSU will seek “an active engagement with the problems of society, particularly K through 12,”** affirmed MSU President Lou Anna Kimsey Simon in her February 2005 inaugural address.

Spotlight on Success: MSU Connected Mathematics Project (CMP)

“Project 2061 developed a procedure for analyzing mathematics textbooks that attends to both content and instructional design by asking these questions:

- Does the textbook focus on a coherent set of significant, age-appropriate student learning goals?
- Does the textbook’s instructional design effectively support the attainment of those specified learning goals?

The Project 2061 curriculum-materials analysis yields critical information in both areas that can be useful in guiding teachers and schools as they make important decisions about adopting textbooks and selecting materials for their students. CMP received the highest ranking by quality instruction in student and teacher editions, and most or partial content ranking on selected content benchmarks.”

— *Project 2061 of the American Association for the Advancement of Science* (1999). “Middle Grades Mathematics Textbooks: A Benchmarks-Based Evaluation.” Evaluation report prepared by the American Association for the Advancement of Science, Washington, D.C.

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For more information contact:

Ann Beaujean, director, State Relations, beaujean@msu.edu, 355-5060, www.msu.edu/unit/vpga
Information compiled by Dr. Carole Ames, dean, College of Education.

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Outcomes for Michigan’s Future

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In Brief:

- The Elementary Education graduate program at MSU has been **ranked #1 in the nation** by *U.S. News & World Report* for a decade.
- The Secondary Education graduate program at MSU has been **ranked #1 in the nation** by *U.S. News & World Report* for a decade.
- Other highly ranked graduate education programs at MSU include:
 - **curriculum and instruction** (#2),
 - **educational psychology** (#3),
 - **educational policy** (#9), and
 - **administration/supervision** (#9).
- With support from the National Science Foundation (NSF), MSU mathematics faculty have developed the **Connected Mathematics Project**, a standards-based, middle-grades curriculum that is helping students succeed in mathematics across Michigan and the nation.
- In keeping with growing trends toward public K-12 accountability, MSU is administering the **Third International Mathematics and Science Study (TIMSS)**, a widely recognized assessment of comparative student achievement that provides decision makers with outcomes data for policy planning.
- With NSF support via the **Promoting Rigorous Outcomes in Mathematics and Science Education (PROM/SE)** project, MSU collaborates with 29 Michigan school districts in using data-driven methods to improve learning outcomes in mathematics and science.

Situation:

Recently, the Governor's Commission on Higher Education and Economic Growth (the "Cherry Commission") noted a major impediment to the creation of a highly educated and skilled Michigan workforce: "*The troubling reality in Michigan is that nearly all (90 percent) of the state's 9th graders say they want to go to college, but only 41 percent enroll directly out of high school and, ultimately, only 18 percent graduate with a bachelor's degree.*" Moreover, "*Only 30 percent of students who graduate from high school take a course of study rigorous enough to prepare them for postsecondary education.*"

MSU Capacity:

- In the MSU College of Education, Michigan possesses a nationally preeminent asset for **teacher preparation** at both elementary and secondary levels, as well as offering conspicuous leadership in **rehabilitation counseling, educational psychology, and educational technology**.
- To earn and keep its outstanding national rankings, the MSU College of Education produces **research publications recognized for their high impact** by objective measures. For example, Thomson/ISI citation indexing data ranks the **MSU College of Education #2 in the nation for citations** per paper among major, federally funded education colleges.
- To assist Michigan teachers to develop their professional careers across the state, the MSU College of Education offers a full **Online Master of Arts in Education** program.
- The MSU College of Education provides professional development to community K-12 officials — e.g., through the **Summer Institute for**

Michigan colleges and universities must assist Michigan K-12 education if the state is to thrive in the knowledge-based economy of the twenty-first century. As the Cherry Commission has observed, progress is being made, but it must continue: "*In recent years, Michigan has focused attention on early childhood education and has put in place rigorous K-8 curriculum standards... Michigan must extend rigorous standards to the high school level and better connect high school learning to postsecondary aspiration and success.*"

Superintendents — and policy information to school boards from the **Education Policy Center**.

- An innovative **Division of Science and Mathematics Education (DSME)** brings together faculty from the MSU Colleges of Natural Science and Education in a cooperative effort to enhance the economically vital areas of science and technology education. DSME serves both K-12 teachers (e.g., with a **masters-level science certification program**) and students (by hosting the **Michigan Science Olympiad**).
- The **Michigan Institute for Safe Schools and Communities (MISSC)**, located in the MSU College of Education, assists Michigan's Office of Drug Control Policy, the Institute's funding agency, in performing its multifaceted mission of helping schools and communities establish and maintain safe school and community environments. In partnerships with private and public community social service coalitions, the MISSC provides best practices training for **safe and drug-free schools**, policy and program research and analysis.

Successes:

- MSU was one of four universities asked by the **Carnegie Corporation** to participate in the "**Teachers for a New Era**" reform initiative. Other major foundations, including Annenberg, Rockefeller, and Ford, are providing support for the effort.
- Through the Office for K-12 Outreach Programs, MSU education faculty led in the revision and rollout of Michigan's new **Grade Level Content Expectations** in mathematics and literacy, the standards that will guide K-12 schools in preparing all students for the yearly assessments in grades 3–8 required by the federal **No Child Left Behind (NCLB) Act**. NCLB measures adequate yearly progress (AYP) for all student populations, including those traditionally considered at risk.
- The **Michigan After-School Initiative** was a response to **Michigan House Resolution #26**, which mandated the Michigan Department of Education and Family Independence Agency to assess the status of after-school care. MSU research determined what proportion of the population had after-school care, why other students did not, and what benefits and outcomes resulted from safe, high-quality programming. Based on results from this study, legislation was passed to permanently fund some after-school programs and prioritize such programs.
- The Education Policy Center supported the development of Michigan's school accountability system (**Education YES!**), including eventual incorporation of a measure of student learning gains in the assessment formula.
- With funding from **Pfizer and the Siemens Foundation**, MSU offers the **High School Honors Science/Mathematics/Engineering Program (HSHSP)**, through which Michigan's students can obtain the sort of **rigorous and enriching secondary education** recommended by the Cherry Commission.
- With support from the Michigan Department of Community Health, the MSU Division of Science and Mathematics Education is offering **Frontiers in Genetics**. This innovative program **pairs outstanding researchers with master teachers** to provide teachers professional-development workshops on such topics as "Cancer as a Genetic Disorder."
- Headquartered at MSU in the United States, the **Third International Mathematics and Science Study (TIMSS) National Research Center** is participating in the **most extensive investigation of mathematics and science education ever conducted**. The study is sponsored by the International Association for the Evaluation of Educational Achievement (IEA) and funded in the United States by the National Science Foundation and the National Center for Education Statistics (NCES). Approximately **50 countries have participated in this comparative survey** of education focusing upon nine-year old students, thirteen-year old students, and students in their last year of secondary schools.

Outcomes for Michigan's Future:

Responding to state needs, Michigan State University is pursuing a number of initiatives that hold potential for helping Michigan children and youth to learn.

- **In partnership with the Detroit Public Schools, MSU will train urban educators** through a program supported by a \$6 million grant from the Broad Foundation.
- **MSU will build and maintain effective public/private partnerships to enhance K-12 education** in Michigan, such as the recent alliance with the Young Women's Christian Association (YWCA) to establish an after-school enrichment program grounded in systematic instruction in physical activity.