



museum of  
**science+industry**  
chicago

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**MUSEUM OF SCIENCE AND INDUSTRY, CHICAGO COMMITS TO TRAINING 1,000  
TEACHERS OVER THE NEXT FIVE YEARS**

*Michigan State Study Shows Positive Results of Museum-Designed Professional Development*

**CHICAGO (March 27, 2014)** — A new study from the Education Policy Center at Michigan State University shows that a teacher professional development program developed and run by the Museum of Science and Industry, Chicago significantly improves student performance in science.

Chicago Mayor Rahm Emanuel and Chicago Public Schools officials joined Museum President David Mosena to unveil the study, which was funded by the Boeing Corporation and conducted by William Schmidt, Ph.D., a nationally recognized science curriculum expert from Michigan State University. More than 800 teachers, two-thirds of whom work in the Chicago Public Schools, have already benefited from the program. At the press conference, Mosena announced the Museum's intention to work with 1,000 middle-grades teachers over the next five years.

"Science can be complex, challenging and oftentimes intimidating for both students and teachers," Mosena said. "It is critical during the middle years of schooling to make science more engaging through hands-on, inquiry-based teaching to foster a strong interest in science. As champions of science and learning, we are using our content expertise, proven teaching strategies and world-class exhibits to improve science education in schools."

Mayor Emanuel outlined Chicago's broad efforts to improve STEM (science, technology, engineering and math) education, which has a goal of tripling the number of students with STEM credentials by 2018. "I would like to thank the Museum of Science and Industry for partnering with the City as we work to expand access to STEM education for Chicago's teachers and students," Mayor Emanuel said. "Our partnership with MSI also reflects the opportunities available to help support our teachers while creating a roadmap for students of a cradle to career STEM education by leveraging our City's world-class, civically-engaged cultural institutions, businesses and non-profits. Our goal as a City is for every child to be 100% college ready and 100% college bound, so that we prepare our children with the academic foundation and skills to be the next leaders in the 21st century highly-specialized, technical economy."

U.S. Secretary of Education Arne Duncan, who grew up in Hyde Park and has been a frequent visitor to the Museum, said "Improving STEM education is a national priority. It's great to have strong outside partners like MSI to supplement STEM teaching in our schools. Museums all across America can play a key role in enriching education for children."

At the press conference, Professor Schmidt said that science student performance in the United States is lagging on both U.S. and international tests, in part because so many teachers lack the skills and the support they need to make it more engaging. "Many professional development programs are not very effective," Schmidt said. "The Museum's program is, and we now have the proof."

(more)

The Museum's program targets 4<sup>th</sup>-8<sup>th</sup> grade teachers with limited or no background in science or science teaching, but who are nevertheless expected to teach science. Because so many of them lack adequate training and resources, science class too often is taught from textbooks rather than through the hands-on explorations of methods of scientific inquiry that are proven to be most effective.

In fact, recent reports from the National Science Foundation found:

- Science is more likely to be taught by novices, especially in low-income schools.
- Science receives only 40 percent of the learning time given to math and less than 30 percent of the time spent on reading.
- More than a third of U.S. elementary students learn no science in a typical week.

Understanding the importance of quality science education, the Museum created its Center for the Advancement of Science Education (CASE) to help achieve MSI's vision. CASE programs are designed to engage students and the adults who guide and influence them, including their teachers, families, communities and schools.

MSI teacher courses are designed to meet evidence-based practices in teaching and learning. Teachers at schools with predominately low-income, high-need student populations are top priority. The Museum reduces barriers to participation by offering courses at no cost and paying for substitute teachers for sessions held on school days. Teachers are recruited in pairs to ensure support back at school, and after each session they receive lesson plans, student worksheets, discussion forums, and kits of materials to conduct classroom science activities for all students.

MSI teacher courses cover four different areas of science: energy, environmental science, anatomy and life science, and Earth science. The energy course, called Get Re-Energized (GRE), was the subject of the Michigan State study during the 2012-13 school year.

Schmidt, who is co-director of the Education Policy Center at Michigan State University, designed the study with a randomly assigned treatment group of 57 teachers who took the MSI course and a control group of 28 who did not. Both groups were comparable in the teachers' baseline science knowledge and the demographics of their students.

The teachers were all tested at the beginning and end of the course and the differences were significant. Their students were also given two tests, one traditional paper and pencil test and the other an innovative "applied knowledge" test at the Museum where they used their classroom learning with hands-on Museum exhibits.

The study's conclusion is unambiguous: "Not only does the GRE program have a direct effect on teacher knowledge, but the program also positively impacted student performance on both the formal and applied tests. The GRE capacity-building course benefited not only the participating teachers but their students as well."

**The Museum of Science and Industry, Chicago (MSI)** offers thousands of fun and interactive exhibits and one-of-a-kind, world-class experiences to inspire the inventive genius in everyone. Through its Center for the Advancement of Science Education, MSI also aspires to a larger vision: to inspire and motivate children to achieve their full potential in science, technology, medicine and engineering. Come visit and find your inspiration! MSI is open every day except Thanksgiving and Christmas Day, and hours are 9:30 a.m. to 4 p.m. daily. The Museum is supported in part through the generosity of the people of Chicago through the Chicago Park District. For more information, find MSI online at [msichicago.org](http://msichicago.org) or call (773) 684-1414 or (800) GO-TO-MSI.