

Wisconsin STEM Summit Remarks

June 13, 2011 — Wisconsin Dells

By State Superintendent Tony Evers

Good morning everyone, and thank you, Cheryl, for that kind introduction. I also extend my thanks to the International Center for Leadership in Education and to CESA 6 for putting this conference together and asking me to participate today. They have created an exciting summit designed to build momentum for STEM education, career development, and a brighter economic future for Wisconsin.

So why are you here today? Aside from enjoying the water slides, thanks Cheryl for the weather, my guess is that each of you brings knowledge and skills of your respective subject area. And given the theme of the conference, that knowledge is most likely connected to science, technology, engineering, or mathematics. But, I don't believe that is the reason you are here.

I believe you are at this conference because of your deep commitment to the students you teach. You want to ensure that every child graduates prepared for postsecondary education and career. You understand that preparation for life after high school is built on the ability to apply the knowledge that has been learned. And application means bringing together the knowledge and skills from a variety of disciplines to address problems and to produce creative and innovative solutions.

That is what STEM education is all about — bringing together the science, technology, engineering, and mathematics instruction in schools to reflect the real world demands and prepare students for their future.

So, how does this work in schools? Let's take a look at Westfield.

The Westfield School District began production of biodiesel fuel three years ago, as a means to provide fuel for the district vehicles and equipment, including all school buses, one dump truck, a tractor, and heat for the bus garage. Since the beginning of the program, district vehicles have consumed over 12,000 gallons of biodiesel fuel. Current production capacity is 160 gallons per day.

Students enrolled in STEM classes like science and agriculture education help to produce the fuel, which is made from vegetable oil waste, methanol, and potassium hydroxide. This program, along with the STEM curriculum, teaches students environmental responsibility; chemistry and mathematics concepts; business and marketing ideas; electrical and structural engineering applications; and art and design. The program provides a valuable service to the community by using the vegetable oil waste from area restaurants and businesses. And as the "coup de maître," students use the last smidgen of waste products to produce and sell *soap*.

That is just one example of what is happening in Wisconsin.

Last week at the Board of Regents meeting, I heard one of the most respected CEO's (Badger Meter in Milwaukee) in Wisconsin say this: CEO's chase *synergy* and *talent*, not tax credits. The folks of Westfield have synergy and talent. And, that combination exists in other Wisconsin schools and communities.

As districts such as Westfield move forward with STEM education, we also are moving forward at the state level to support STEM education.

We are working to:

- set rigorous standards;
- emphasize the literacy needed to read and write STEM-related materials;
- participate in the development of new science standards; and
- implement policies that *support* STEM education.

As many of you know, Wisconsin adopted the Common Core State Standards in English Language Arts and Mathematics. The standards are oriented to rigorous content knowledge and broad practices that reflect 21st century skills. The practices include making sense of problems and persevering in solving them, reasoning abstractly, demonstrating independence, and using technology and digital media strategically and capably.

Wisconsin's Common Core State Standards for Literacy in All Subjects, which are a subset of *Wisconsin's Common Core Standards for English Language Arts*, outline the knowledge and skills that each student must possess to demonstrate proficiency in their ability to read and write in the respective content area.

Because the literacy skills to read a novel are different from the skills to read a technical manual; **technology teachers** must teach their students how to successfully read material used in their classes. Because the skills to write a short story are different from the skills to write a chemistry lab report, **science teachers** must teach their students the structure and vocabulary so that students can communicate their findings. That is what disciplinary literacy is all about.

To help teachers enhance disciplinary literacy, department and CESA staff are developing implementation strategies and professional development so that teachers become experts in embedding disciplinary literacy in their classroom activities.

Building on the Common Core State Standards process, a project is under way to develop a national framework for science education. The framework will be the basis for the *Next Generation Science Standards*. This effort has the potential to support and extend STEM understanding, STEM achievement, and STEM career awareness and exploration.

To implement policies that support STEM education, Wisconsin has credit equivalency in STEM subjects. In this process, mathematics, science, and career and technical education educators review the content and rigor of specific career and technical education courses to determine the extent of similarity between those courses and the content in science or mathematics courses. This process may lead to mathematics or science equivalency credit for technical subjects.

In a recent article for Madison Magazine, John Roach wrote about the “coolest” place in Madison — the Apple Store. He called it the epitome of American ingenuity, innovation, and creativity. It is a place where individuals are encouraged to try it out, touch, talk with experts, seek opinions of others, or just simply chat and compare.

Most of all, it is a gathering place of people of all ages, all colors, rural and urban, all economic backgrounds. All are interested in finding new ways to make their lives easier, become more informed, to become more entertained. He wrote that it is the reflection of all this country offers — excitement, solutions, confidence, promise, and hope.

Here is what our goal should be — to make the STEM classrooms the “coolest place” in the school.

- STEM classrooms that bring together all students and act as a place where students, teachers, and community members gather.
- STEM classrooms that serve as labs for student learning, but also as incubators for small start-up businesses in the community.
- STEM classrooms where questions are posed with teachers and students together searching for creative solutions.
- STEM classrooms where finding ways to apply what students have learned in innovative ways is the focus.

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- STEM classrooms where students are encouraged to try it out, see what happens, and use the equipment.
 - STEM classrooms that show the way to careers with bright futures.
 - STEM classrooms that reflect the best of what education offers — knowledge, confidence, promise, and hope.

Synergy and talent. Now that would be cool!!

I wish you a most successful and insightful conference, and I encourage each of you to return home inspired to act on what you learn here, making STEM the coolest part of your school.

Thank you and enjoy the conference.

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Tony Evers is Wisconsin's elected state superintendent of public instruction. A high-resolution photo of the state superintendent is available on the Department of Public Instruction "Media Contacts and Resources" webpage at <http://dpi.wi.gov/eis/vm-media.html>. A copy of these remarks is available on the DPI website at http://dpi.wi.gov/eis/pdf/dpinr2011_79.pdf.