

No 'silver bullet' for science standards

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An article in *Science* by Michigan State University's Suzanne Wilson argues that America's K-12 teachers are not prepared for the Next Generation Science Standards. Credit: Michigan State University

America's K-12 teachers are not fully prepared to meet a new set of science standards, a Michigan State University education scholar argues in *Science*.

Writing in the April 19 issue, Suzanne Wilson said the [professional training](#) landscape for teachers is woefully inadequate to handle the Next Generation [Science Standards](#). The voluntary guidelines, unveiled this month by the [advocacy group](#) Achieve in collaboration with 26 states,

call for more hands-on learning and analysis and cover fewer science topics but in greater depth.

Science in U.S. classrooms already has been de-emphasized in favor of math and reading, Wilson noted, and suddenly the new standards turn up the proverbial Bunsen burner on [science teachers](#).

"Science has been marginalized by the No Child Left Behind Act, so less science has been taught in schools, not more," said Wilson, University Distinguished Professor and chair of the Department of [Teacher Education](#). "And now these standards are coming out that not only call for a renewed focus on science teaching, but the kind of science that many teachers haven't taught and many teachers haven't experienced."

While there is a wealth of teacher training options in the United States, Wilson said, the programs do not accommodate the depth of the new standards.

"When it comes to professional development for science teachers, we simply don't have the knowledge base," Wilson said.

Effective professional development should bolster teachers' [content knowledge](#) and their ability to teach students the subject matter and develop the students' critical thinking skills. It should also help teachers reach all students, including [English language learners](#), Wilson said.

Getting to that point will require a major investment to develop the right instructional materials and the tools to support teachers and students in using those materials, she said. That includes harnessing new technologies and social media to make high-quality training available to all teachers.

"We must realign the considerable resources spent on professional

development with the demands teachers will face with the new standards," Wilson said.

The process could take years.

"Though some might hope for a silver bullet, education reform that leads to fundamental change, such as that envisioned with the new standards, requires time," Wilson said.

The standards are designed to fuel students' interest in STEM (science, technology, engineering and math) and prepare them for college and careers. The states that helped write the new standards range from Michigan to California and Maine to Georgia.

More information: "Professional Development for Science Teachers," by S.M. Wilson, *Science*, 2013.

Related: "Teacherpreneurs: A Bold Brand of Teacher Leadership for 21st-Century Teaching and Learning," by B. Berry , *Science*, 2013.

Provided by Michigan State University

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