Each year, up to 150 graduates of the Michigan State University teacher preparation program become certified to teach mathematics or science in secondary schools or complete teaching majors in math or science as prospective elementary school teachers.

In addition, MSU offers special programs and incentives to increase the number of high-quality science and math teachers ready for the nation’s classrooms.

**W.K. KELLOGG FOUNDATION WOODROW WILSON MICHIGAN TEACHING FELLOWSHIP**

MSU recruits and prepares some teacher candidates to teach mathematics or science in urban schools through the W.K. Kellogg Foundation’s Woodrow Wilson Michigan Teaching Fellowship. This alternative teacher certification program is for recent college graduates and career-changers that have academic preparation or experience in the math and science fields. Fellows, who receive a $30,000 stipend, complete a yearlong internship and must commit to teach in an urban school district for three years.

[education.msu.edu/te/wkkf-ww/](http://education.msu.edu/te/wkkf-ww/)

**NOYCE TEACHER SCHOLARSHIP**

Teacher candidates majoring in math or science at MSU may apply for the Robert Noyce Teacher Scholarship Program, a National Science Foundation initiative that encourages talented STEM majors to pursue teaching careers. Recipients are required to teach in high-needs urban or rural schools for at least two years.

[education.msu.edu/resources/students/scholarships/noyce](http://education.msu.edu/resources/students/scholarships/noyce)

**DOCTORAL STUDY**

Doctoral students in the Curriculum, Instruction and Teacher Education (CITE) program can choose to concentrate on science or mathematics education and become part of scholarly communities that foster discussion and research efforts within those subject areas. A full Ph.D. program in Mathematics Education is also available through the colleges of Education and Natural Science at MSU.

[dsme.msu.edu/mathed](http://dsme.msu.edu/mathed)

[education.msu.edu/te/science-education](http://education.msu.edu/te/science-education)
THE COLLEGE OF EDUCATION COMMITMENT

Compared to many other countries, U.S. students perform poorly on international assessments of mathematics and science. When it comes to preparing young people for advanced college courses in science, math and technology and, most importantly, for the high-tech jobs in tomorrow’s workforce, few disagree that the nation’s K-12 and postsecondary education systems have fallen behind.

That’s why the College of Education at Michigan State University is especially committed to improving mathematics and science education. More than a quarter of the faculty is involved in major initiatives to increase the number of mathematics and science teachers or in conducting research that addresses issues related to curriculum, standards, teacher quality and pedagogy.

THE INSTITUTE FOR RESEARCH ON MATHEMATICS AND SCIENCE EDUCATION

At Michigan State University, science and math education is a campus-wide priority. The interdisciplinary Institute for Research on Mathematics and Science Education helps bring together top scholars from the science and education fields, both within MSU and across the world. By coordinating national forums, research proposals and outreach efforts, the institute will facilitate projects that can address today’s most pressing challenges related to learning math and science, from kindergarten through the first years of college.

The institute is initially focused on issues involving algebra, biology and physics. Launched in 2010, it is a joint initiative of the College of Education and the College of Natural Science at MSU.

ongoing research strengths

- Mathematical concept development in early childhood.
- Science and math engagement for urban youth.
- Learning progressions in K-12 science.
- Professional learning communities & induction for science teachers.
- STEM teaching and faculty development in higher education.
- Tools for the study of algebra instruction.

How does math teacher preparation in the U.S. compare to other countries? The international Teacher Education and Development Study in Mathematics (TEDS-M), based at MSU, explores how differences in teacher education policies and curricula affect knowledge for teaching math in 16 countries.

They may know how to use a ruler, but most elementary students don’t fully understand the concepts of measurement (length, area and volume). After finding major deficits in widely used curricula, the Strengthening Tomorrow’s Education in Measurement (STEM) project is developing solutions with curriculum authors, teacher educators, teachers and researchers.

How teachers talk about math can affect how students learn math. Among efforts at MSU to study the role of discourse, the Mathematics Discourse in Secondary Classrooms (M-DISC) project will create professional development materials to help secondary math teachers and their students use language in more productive and powerful ways.

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To improve science education, many scholars argue, students should focus on learning fewer core concepts that explain how the world works. And that, according to a team of scholars at MSU, can be accomplished through curricula and teaching based on environmental literacy. They are developing learning progressions in this area, with the goal of integrating the work in K-12 schools.

The College Ambition Program (CAP) is a school-wide intervention for increasing college attendance among students with limited financial and social resources, especially those interested in science and technology fields. The program, being implemented in urban and rural high schools, involves assessing the impact of strategies such as mentoring, one-on-one financial counseling and campus visits.

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