Oklahoma has a strong economic base in science and technology where energy and aerospace are leading industries in the state. However, a variety of STEM (science, technology, engineering and mathematics) education indicators show that Oklahoma has suffered a steady decline in strength in STEM, including the number of college graduates with STEM degrees and an smaller workforce with STEM knowledge. With strategic investment and planning, Oklahoma is well-positioned to realize growth in multiple STEM areas. Creating the workforce of the future and maintaining a strong economy will require a highly educated workforce.

The Need

Unfortunately, Oklahoma produces less than two-thirds of the required STEM graduates needed to fill projected job openings in the next decade. There is a need to recruit, support and retain high-quality STEM teachers; improve the quality of STEM education programs; increase the number of graduates in STEM disciplines; and encourage a more diverse population to pursue STEM fields.

The land grant mission of Oklahoma State University positions the Center for Research in STEM Teaching and Learning (CRSTL) to serve as a “hub” for faculty members and graduate students to create and define innovative ideas and exciting, collaborative research proposals aimed at improving science, technology, engineering and mathematics teaching and learning. Although housed in the College of Education, CRSTL supports collaborative efforts between the College of Arts and Sciences, the College of Agricultural Sciences and Natural Resources, and the College of Engineering, Architecture, and Technology.

CRSTL has a mission to nurture and encourage collaborative endeavors in transformative research on STEM teaching and learning that promises extraordinary outcomes in STEM education at all levels (K-20) in Oklahoma and the nation. CRSTL aims to identify, advocate,
support, reward, invest in and sustain STEM education and training programs and initiatives to improve the quality of life for all Oklahomans and the economy of the state. The OSU College of Education is ranked as the top college for an education degree in Oklahoma and CRSTL provides expertise in the teaching and learning of STEM. Our STEM education experts prepare tomorrow’s teachers and provide training for current teachers to acquire and master new skills in the teaching and learning of STEM.

OSUTeach Program

Oklahoma State University is committed to growing the number of highly qualified mathematics and science educators of secondary schools in Oklahoma and beyond. In February 2014, the National Math and Science Initiative and the Howard Hughes Medical Institute announced that OSU had been selected as an implementation partner for UTeach, a successful program created to attract a wide range of bright science and mathematics majors into secondary teaching careers, to prepare them through an advanced field-intensive curriculum and to promote professional retention through induction support and ongoing professional development.

OSU offers the first and only UTeach program in Oklahoma with coursework that began in the fall of 2014. State and national leaders for STEM education attended the launch of the new OSUTeach Program.

This effort is a collaboration between the College of Education and the College of Arts and Sciences. Students will graduate from OSU with a bachelor’s degree in mathematics or a science content field and having completed teacher certification coursework. The program is modeled after the successful and innovative UTeach program at the University of Texas-Austin. OSUTeach program personnel would like to see a strong research effort to determine the efficacy of this change in the preparation of future mathematics and science teachers in the state.


3. http://osuteach.okstate.edu

For More Information

- The Center for Research on STEM Teaching and Learning (CRSTL): crstl.okstate.edu
- CRSTL is part of OSU’s College of Education: education.okstate.edu/