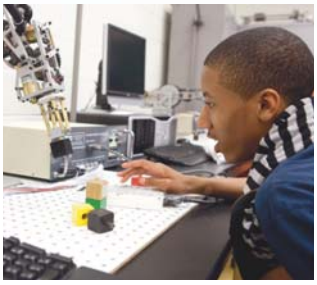
I-STEM EDUCATION INITIATIVE

Science, Technology, Engineering, and Mathematics Education | University of Illinois at Urbana-Champaign



Why a Campus Focus on STEM Education?

Our world increasingly relies on science and technology to solve some of today's most intractable problems. As noted in the 2007 National Academy of Sciences report, ***Rising Above the Gathering Storm,*** U.S. student interest and performance in science, technology, engineering, and mathematics (STEM) fields is in decline. Perhaps at no time in our nation's history has a strong, comprehensive system of education been so essential. As challenges mount in such areas as national defense, climate change, health, energy, economic growth, food safety and accessibility, and environmental protection, so does the demand for highly able scientists, engineers, and health professionals. As the flagship campus of one of the nation's premier land-grant research universities, the University of Illinois at Urbana-Champaign is committed to playing an active role in the improvement of STEM education at all levels.

What is I-STEM?

The I-STEM Education Initiative (I-STEM)—a campus coalition grounded in education and led by the Office of the Chancellor—involves Liberal Arts & Sciences, Education, Engineering, Agriculture, Veterinary Medicine, Applied Health Sciences, Medicine, Library and Information Sciences, Social Work, the National Center for Supercomputing Applications, Beckman Institute for Advanced Science and Technology, the Institute for Genomic Biology, and other units.

I-STEM Goals

1. Facilitate P-16 STEM Education Outreach.

Cultivate sustained, coordinated preschool through undergraduate partnerships to engage students in STEM experiences early and consistently, involving university faculty and students to meet STEM education challenges.

2. Improve STEM Teacher Training and Professional Development Quality.

Revitalize STEM teacher pre-service education, induction, and professional development programs that attract and prepare a diverse group of P-16 STEM teachers and promote their effectiveness, retention, lifelong learning, and continued involvement in research.

3. Foster Undergraduate and Graduate STEM Education Reform.

Champion accessible, engaging undergraduate STEM programs and research experiences to promote interest and success in STEM fields, including teaching, for diverse students.

4. Shape Policy and Advocate for STEM Education.

Stimulate partnerships with Illinois business and industry, government agencies, educational institutions, and professional associations to understand the STEM pipeline, mainline and workforce development needs, opportunities, and challenges and to serve as advocates within the state.

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I-STEM Activities

- Act as a liaison across campus units to improve STEM education quality and access at pre-college, undergraduate, graduate, and post-doctoral levels.
- Bolster new and existing STEM education partnerships with P-16 schools; local, state, and federal agencies; other colleges and universities; and the private sector.
- Document current and future trends in STEM teaching and learning, teacher preparation, STEM workforce needs, and the status of the P-20 (preschool through graduate school) STEM pipeline in Illinois.
- Focus effort on increasing the number of highly qualified STEM teachers graduating annually from our campus, particularly those who will teach in high-needs schools.
- Support sustained, innovative, exemplary STEM teacher induction and professional development opportunities for local and regional teacher effectiveness and retention.
- Provide strategic grant-writing assistance for research, instructional, and outreach STEM education proposals.
- Furnish evaluation support for STEM education projects on the Illinois campus.