STEM Connections

We have increased capacity to serve future teachers and practicing education professionals with programs to improve their content knowledge and teaching skills in science, technology, engineering and mathematics (STEM) education. Our new Math & Science Education Central (MSEC) facility. As an expansion of the college’s award-winning Technology and Learning Center, MSEC is devoted solely to advancing K-12 teaching and learning. A unique collaborator in this venture is the Saint Louis Science Center, whose partnership is cemented through a shared endowed professorship in the College. The Science Center offers multiple opportunities for joint programming and learning sites.

Programs for future teachers are developing for the modern era to close the gap between the teacher and the community by creating clinical experiences that cross community boundaries to bridge cultural gaps, deliver relevant curriculum and instruction, and provide access to the resources that students and families need to be viable and engaged citizens. MSEC is vital in providing connectivity and partnerships with science museums and science learning institutions as sites for K-12 teacher internships. These experiences will prepare them beyond basic STEM teaching skills to take transformative roles in their classrooms, schools and communities.

Practicing teachers from throughout the region are involved in MSEC with UMSL teacher candidates, other teachers and college faculty, engaging in collaborative research and action research projects in K-12 classrooms. Videos of these projects and teaching units help populate MSEC’s bank of best practices research in STEM education.

Examples of Teacher Resources

- Science Equipment Checkout for use by teacher candidates and graduate students
- MasterCard Math Manipulative Lending Library
- Archeological Travel Fellowships in partnership with the Science Center
- UMSL Community Garden Project

MSEC’s Long Term Benefits

- Increasing the numbers of at-risk and low-achieving students who participate in quality STEM learning activities both in and out of the classroom;
- More elementary and secondary teachers graduating as specialists in STEM education;
- Improved student achievement in STEM subjects
- Greater numbers of teachers who improve their STEM content knowledge and use technology-enhanced curricula along with innovative, tested methods to teach
- More doctoral graduates with a Ph.D. or Ed.D in STEM education