

CAMPUS + LIFE + SCIENCE & TECHNOLOGY

Published: March 21, 2013

ROBOTICS-THEMED PROGRAM TAKES AIM AT SCIENCE TEACHING

Contact(s): [Tom Oswald](#), [Xiaobo Tan](#), [Drew Kim](#)

Can a robot help make a better science teacher? That question may soon be answered at Michigan State University.

This summer, middle- and high-school science teachers from around Michigan will gather at MSU to take part in a robotics-themed program designed to refine their teaching skills and come up with more exciting ways of teaching what is known as the STEM disciplines – science, technology, engineering and mathematics.

The educators will be participating in a program titled Research Experiences for Teachers, which is funded by a recently received \$500,000 grant from the National Science Foundation. The program will train 10 to 12 teachers every year for the next three years.

“These days, robots are something everyone can relate to,” said Xiaobo Tan, an associate professor of electrical and computer engineering and project co-director. “And it works well for us because as a discipline, in terms of research and education, robotics is very multidisciplinary, covering physics, biology, chemistry, mathematics and others.”

The teachers will be working side-by-side with MSU faculty and graduate students in labs, learning research methods and developing innovative curricula for their own classes. The ultimate goal: The new teaching materials will instill excitement in students, who will then be more motivated to pursue careers in science and engineering.

“Many of the teachers in our schools are teaching the same way they’ve done it in the past,” said Drew Kim, assistant to the dean of the MSU College of Engineering and co-director of the project. “The STEM field is constantly evolving and students need to be better prepared for their careers.”

“It’s a matter of making the teachers feel empowered; feel as if this is something they can do,” Tan said. “They become more knowledgeable about the latest discoveries and technological advances and, consequently, their class materials become more interesting, more engaging and more relevant to the students.”

Eleven MSU faculty members from four College of Engineering departments will take part.

The MSU team will now begin recruiting teachers from all over the state, focusing much of their attention on districts that are socioeconomically challenged, particularly larger cities like Detroit and Grand Rapids, as well as smaller, rural districts.

MSU received a similar NSF grant three years ago. However, this was not an automatic renewal, as the university had to undergo an even more stringent application process this time.

“We had to demonstrate what we learned the last three years and how we were going to improve upon it,” Kim said. “In its publicly released project abstract, the NSF said we had an exemplary program. Building on our past success, we look forward to working with schools and teachers and helping improve STEM education.”