

Collaborative Research Receives NSF Grant

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Dr. Mimi Recker and her team collaborating over Zoom

[Dr. Mimi Recker](#) and [Dr. Jody Clarke-Midura](#) of the Instructional Technology and Learning Sciences department and [Dr. Jessica Shumway](#) of the School of Teacher Education and Leadership have received a \$1,000,000 grant from the National Science Foundation funding a project to enhance elementary teachers and paraprofessional educators' ability to teach computer science.

Because computer science is an increasingly important subject in education, many school districts, including those found in rural areas and small towns, are interested in better offering computer science education in ways that reach all students. "We are deeply concerned by the fact that, nationally, the computing workforce continues to suffer from large and inexcusable gender and diversity gaps," Recker said, "Our work is especially motivated to address this shocking problem."

Often, the responsibility to teach such topics falls upon locally-hired paraprofessional educators who haven't received formal training in computer science and related concepts. Many districts are seeking ways to help these paraprofessional educators teach introductory computing concepts more effectively, as well as provide them with curriculum and teaching resources.

Along with Stanford associate professor [Dr. Victor Lee](#), Recker, Clarke-Midura, and Shumway's project is designed to work collaboratively with local educators and district specialists to develop a model to support paraprofessional educators' learning in order to enhance their ability to teach computer science. "Math and computer science have natural affinities," said Recker. "Our approach is to partner with elementary teachers,

working with them to adapt existing mathematic instruction to highlight key computing concepts."

Recker and her team have already seen several complications due to COVID-19 and classroom research restrictions. "It would normally be very difficult to have built trust with Cache County School Districts without being able to have these in-person interactions," Shumway stated, "but we are fortunate that Mimi, Jody, and Victor have previously partnered with these school districts and have already built that trust."

Despite the challenges of conducting research during this time, the team is hopeful that their work will make a difference in computer science education. "We hope that paraprofessionals and teachers will be able to use our outcomes to implement and improve computer science instruction in elementary schools, as well as have support to integrate mathematics and computer science instruction," said Recker.

The department of Instructional Technology and Learning Sciences and the School of Teacher Education and Leadership are both part of the Emma Eccles Jones College of Education and Human Services at Utah State University.