Abstract

Computer science (CS) powers most of today's fastest-growing industries. The number of jobs requiring computer science skills is rising at a rate that will far outstrip America's ability to fill them. The severe deficit of skilled computer science workers, exacerbated by a lack of diversity in the workplace, can be traced back to a lack of qualified teachers and inadequate access to rigorous, comprehensive CS education pathways at the K-8 level. To address this issue, San Diego Unified School District, the 17th largest school district in the country and the 2nd largest district in California, requests funds for an Early-Phase grant award to meet absolute priorities 1 and 3, developing and implementing a promising new evidence-based ***Computer Science-Urban Implementation Model*** (*CS- Urban Implementation Model)* for grades 3-8.

This model will demonstrate how Urban school districts throughout the country can train their teachers and empower their students to learn CS through a combination of in-depth teacher professional development, multi-year pathways of rigorous and differentiated CS courses, professional competency certifications, and work-based learning. This *CS- Urban Implementation Model* will be delivered through an innovative public and private partnership with the University of San Diego, California State University of San Marcos, TechSmart Inc., LEGO Education, and the non-profit Classroom of the Future Foundation.

SDUSD will implement this model at 34 schools, serving 332 teachers and 10,400 students. In doing so, SDUSD will create a replicable model using efficacy research as its guide. The desired outcomes are to train teachers how to code and teach coding, to offer students and teachers the chance to earn competency certificates within a CS pathway for grades 3-8, and to ultimately improve access and learning for students in computer science with an emphasis on serving underserved (African American and Hispanic) populations.