

**Computer Science in Rural California: Training, Implementation, Teaching, and Learning** *Early-Phase Grant Request*

**Abstract**

Improving K-12 computer science education is critical to fulfilling the quickly growing need for skilled technology workers. However, implementing computer science education in rural districts presents particular challenges, which risks disadvantaging such areas. To overcome these challenges, the California Small School Districts Association (SSDA) proposes developing and implementing a promising new evidence-based *Computer Science Rural Implementation Model*.

This model will demonstrate how rural school districts throughout the country can train teachers and empower students to learn computer science through a combination of teacher professional development, multi-year pathways of rigorous computer science courses, integration of math and science into computer science, professional competency certifications, and work-based learning. These *will* be delivered through a public and private partnership serving 9 rural counties in Northern California. The partners include the University of California Davis, TechSmart Inc., Nepris Inc., and the California State University of San Marcos. Rigorous evidence-based efficacy research will examine its effectiveness and inform improvements.

We propose to implement this model at 69 sites in 54 rural school districts across nine counties, where it will serve 265 teachers and approximately 8,168 students in grades 3 through 12. In doing so, we will create a generalizable model for how rural school districts can incorporate computer science education, disseminating information and guidance to ensure it can be replicated throughout the country. This proposal responds to Absolute Priorities 1 and 3 and the Competitive Preference Priority, aiming to expand access to rigorous computer science education and improve computer science achievement among the underrepresented population of low socioeconomic students served by rural educational agencies.