Abstract. The UTeach Institute, in partnership with the American Institutes for Research (AIR) and four established UTeach programs—The University of Texas at Austin, Louisiana State University, University of Houston, and the University of North Texas—proposes to work in four regions of the country to strengthen STEM and Computer Science education. This Supporting Effective Educator Development Grant proposal, **Expanding and Strengthening the STEM Teacher Workforce Through UTeach,** addresses Absolute Priority 1, *Supporting Effective Teachers, (1) Providing teachers from nontraditional preparation and certification routes or pathways to serve in traditionally underserved Local Education Agencies (LEAs), (3) Providing teachers with Evidence-Based professional enhancement activities, which may include activities that lead to an advanced credential,* the Competitive Preference Priority, *Promoting Science Technology, Engineering, or Math (STEM) Education, With a Particular Focus on Computer Science,* and the invitational priority*, Support of the use of micro-credentials*. Project goals include: **(1) To increase the number of highly qualified STEM teachers in high needs schools through the expansion of UTeach alternative preparation pathways, and (2) To increase the number of computer science teachers who can broaden participation of underrepresented students in computer science in high needs schools through evidence-based professional development of in-service teachers.** We will prepare 160 new STEM teachers, including 40 CS teachers through a new, UTeach post-baccalaureate, alternate route to teaching. We will prepare another 160 in-service teachers to offer rigorous computer science coursework using the College Board-endorsed, *UTeach CS Principles* curriculum and a new *UTeach CS A* curriculum. We will also develop a series of UTeach CS Teaching micro-credentials based on this work. AIR will conduct an impact study to assess ongoing teacher support as part of the PD and implementation of UTeach CS curricula.