UT AUSTIN IS THE HEART OF INCLUSIVE CS EDUCATION IN TEXAS

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THEY SAY EVERYTHING IS BIGGER IN TEXAS.

This is certainly true when it comes to the state's efforts to create equitable computer science education. At the forefront of this movement is the University of Texas at Austin, who is leading several, statewide efforts to prepare teachers, engage policy makers, and make the Texas computing landscape accessible and inclusive for all students.

The We Teach CS Summit (June 2018) brought together state-wide stakeholders and featured a section for CS teachers in the WTCS program to showcase student achievements.

Enabling rigorous and engaging computer science courses in schools across the second largest state in the U.S. is no small feat. One of the primary barriers to implementing CS in Texas high schools is the scarcity of trained and certified teachers. Addressing this is the number one goal of the WeTeach_CS (WTCS) program. Since establishing its CS certification program to prepare teachers already in the classroom in 2014, WTCS has helped almost 500 teachers across the state of Texas become CS certified.

Building on this success, WTCS expanded its reach by partnering with the research-based and student-centered program, UTeach who developed a curriculum aligned with the new Advanced Placement Computer Science Principles (AP-CSP) framework. UTeach has since trained nearly 700 educators to teach its CSP course, and over 6,500 students have passed the AP-CSP exam in the last two years that it has been offered. Importantly, the diversity of students sitting for the AP exam is growing; in just the past school year, the percentage of girls in the UTeach CSP courses who took the AP test increased by three percent, and underrepresented students increased four percent.

Teachers engage in hands-on CS activities at the WTCS summit.

To continue scaling these successes across the entire state, the university joined the Expanding Computing Education Pathways (ECEP) Alliance. With Carol Fletcher, Deputy Director of UT Austin's STEM Center, at the helm, they built a network of computer science educators, school districts, university faculty, and industry partners, known collectively as CS4TX.

The network has had two statewide meet-ups and broadened their work to 22 states and Puerto Rico. Recently, the National Science Foundation awarded them a large grant to continue this progress to all fifty states.

While the ECEP alliance established Texas as a leader in formal CS education policy, and the WTCS and UTeach prepared thousands of CS teachers, The Texas Advanced Computing Center (TAAC) took the lead in direct outreach to Texas students through informal learning. One of the Center's programs, Code@TACC, implements a suite of engaging and project-based after school camps, from robotics to cybersecurity. Code@TACC serves nearly 300 high school students, of which 23% are African-American, 47% Latinx, and 46% Female. Additionally, TACC is training a cadre of students who will lead data science, visualization, and analytics efforts that support health, sustainability, and social justice in Hawai'i and elsewhere in the Pacific through a partnership with Georgia Tech and Chaminade University of Honolulu.

A teacher interacts with Virtual Reality at the WTCS Summit.

Connecting all the dots between K-12 schools, out-of-school organizations, and policymakers is the Texas Girls Collaborative (TxGCP), a state-wide network committed to informing and motivating girls to pursue careers in science, technology, engineering and mathematics (STEM). Led by UT Austin's Women in Engineering Program (WEP), TxGCP provides forums, curriculum, best practices, and resources to foster collaborations and build the capacity of this massive network of STEM educators and advocates across the state of Texas.

These programs are just a snapshot of the sprawling landscape of Texas computing. The state has more initiatives than you can shake a stick at, including professional development courses, AP and dual enrollment CSP development, and the Accelerating Women's Success and Mastery in Computer Science (AWSM in CS) program. Many of these programs are giving students opportunities to learn and share their CS skills, in some case with their Texas Representatives on Capitol Hill. With UT Austin at the center of all of these efforts, the university has established itself as an enduring agent for CS education improvement in Texas and the nation.

Left panel: *A student shares her CS project at the "Student Playground" of the WTCS Summit.*
Right panel: *Students show their CS skills to Texas House Representatives at a 2016 Hour of Code at the Capitol.*

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