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TEXAS ADVANCED COMPUTING CENTER

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The University of Texas at Austin

Texas Advanced Computing Center

Expanding Pathways in Computing (EPIC)

2024-25 Annual Report

March 2026

Prepared by

TACC Evaluation Services

EPIC
EXPANDING PATHWAYS IN COMPUTING

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Introduction

EPIC Mission and Goals

The Expanding Pathways in Computing (EPIC) unit within The University of Texas at Austin (UT) Texas Advanced Computing Center (TACC) is dedicated to advancing computer science (CS) and STEM (Science, Technology, Engineering, and Mathematics) education. EPIC's mission is to broaden participation in CS and STEM K-20 pathways through research, outreach, and policy advocacy. To achieve this mission, EPIC partners with school districts; institutions of higher education; industry leaders; and federal, state, and local government entities who are dedicated to expanding access and opportunity for all students.

EPIC aims to grow and improve CS and STEM K-20 pathways to provide high-quality education for all students. Specifically, EPIC's goals are to:

- Increase the participation and success of students in CS and STEM education;
- Build a sustainable CS and STEM education community of practice; and
- Improve the quality of research and evaluation on broadening participation in CS and STEM.

Overview of EPIC Programs and Services

In 2024-25, EPIC had two main areas of programs and services: 1) WeTeach_CS (WTCS) Teacher Professional Development (PD) and Outreach and 2) Research and Policy. These two areas worked together to achieve EPIC's mission and goals. This report highlights EPIC's activities and accomplishments in the 2024-2025 academic year (i.e., September 1, 2024 - August 31, 2025) in both of these areas.

WeTeach_CS Teacher Professional Development and Outreach

WTCS is a professional development network that builds the capacity of K-12 educators and institutions to improve access to, participation in, and experiences of high-quality computing-related education for all students. While WTCS focuses on K-12 CS teachers, its work also aims to increase the capacity of administrators, schools and school districts to build K-20 CS education pathways for students.

Research and Policy

EPIC's research and policy activities are designed to expand the availability and use of research-based knowledge about STEM and CS education. EPIC is engaged in both developing and disseminating research and in helping policymakers, teachers, administrators, and other advocates for CS education apply this knowledge to address education challenges.

EPIC Accomplishments

EPIC Professional Development Reach

Participants Served

WTCS offered a total of 332 events and other PD resources from September 2024 to August 2025, serving a total of 4,806 educators (see **Table 1**). The events focused on introductory and advanced CS, artificial intelligence (AI), computational thinking, and cybersecurity topics, using both in-person and online formats. In total, educators earned 148,545 hours of continuing professional education (CPE). EPIC served an additional 193 educators and educational leaders through Expanding Computing Education Pathways (ECEP), an NSF-funded Broadening Participation in Computing (BPC) Alliance.

Table 1. WTCS Professional Development and Participants

Type	Example Events/Resources	# Events/ Resources	# Registrants*
Workshop	• Certification Preparation and Professional Credentials • Cybersecurity and Networking Education • Computer Programming and Computational Thinking • K-12 CS Curriculum and Course Support • Launch_K5 CS**	214	3,345
Course	• Foundations of CS for Educators • Foundations of Cybersecurity and Credentialing • Scaling Innovative Pedagogy (ScIP) • Launch_K5 CS**	139	3,554
Resource	• CS 8-12 Practice Packet • Tech Apps EC-12 Practice Packet	42	530
Webinar	• WeTeach_Cyber Networking Series	6	63
Partner Event	• Texas Computer Science Leadership Network (TXCSLN) • WeTeach_CS Secondary Hubs Project Director Meeting	4	158
Summit	• The Impacts of AI Symposium: Essentials for Educators • WTCS Summit 2025	2	615
Total		**332****	**4,806**

**The registrant number in each row represents the number of unique registrants for each type of WTCS event/resource. The total number of registrants is the number of unique registrants across all types of WTCS events/resources; thus, it is less than the sum of registrants as some registrants participated in multiple events.*
***The total number of events is less than the sum of each event category, since Launch_K5 CS teacher PD events were classified as both workshops and courses as they contained both types of activities.*

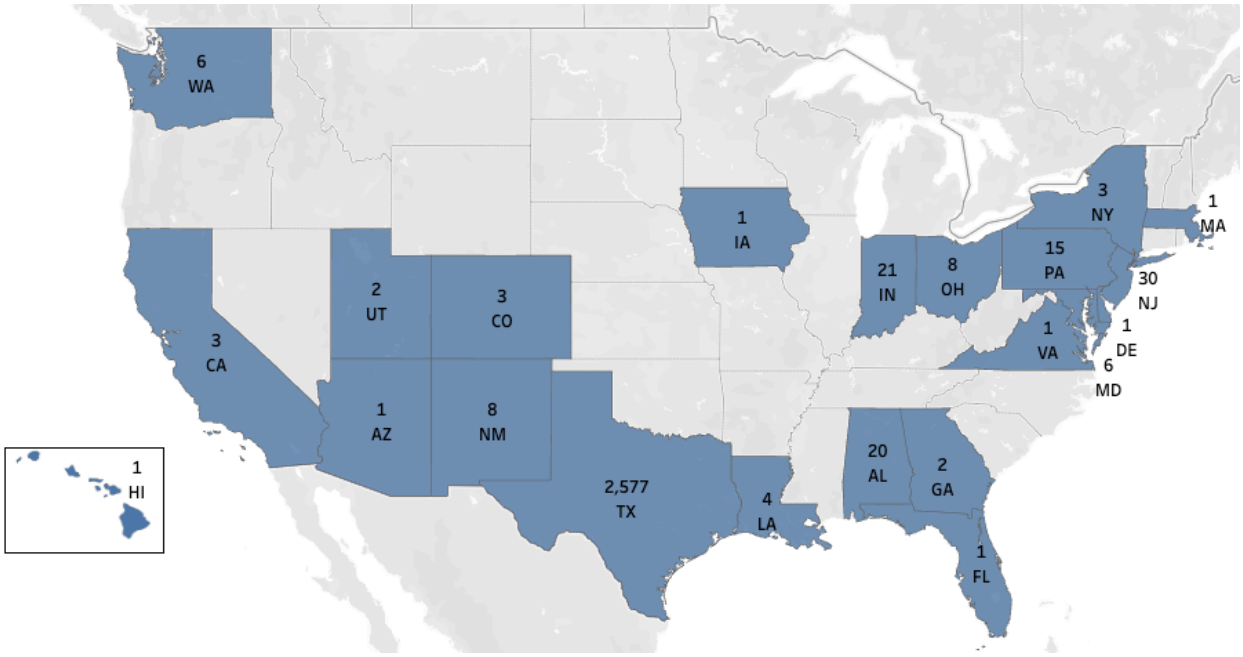
Characteristics of WTCS Registrants

Individuals who registered for PD were asked to provide profile information, including their professional characteristics. This section summarizes data on the 2,952 individuals who registered for WTCS PD in the 2024-2025 academic year and provided complete or partial profile information.

States Served

The 2,717 WTCS registrants who reported their states were based in 22 states across the United States (see **Figure 1**). Within Texas, the 2,577 WTCS registrants represented **427 school districts** and **1,161 schools**. Among the 1,822 educators who worked in Texas public schools, almost three quarters (73%) were in Title 1 schools and almost one quarter (23%) were in rural areas. In addition, for educators in Texas public schools, their schools had an average of 63% of students eligible for free or reduced lunch.

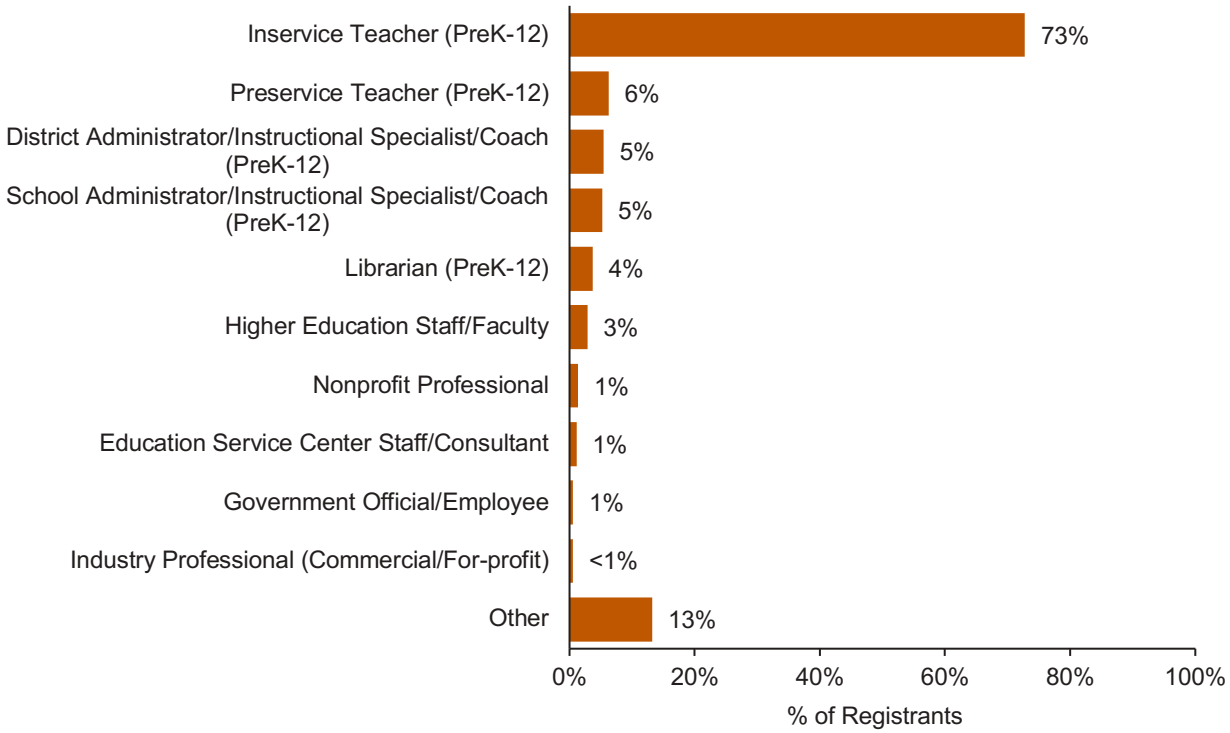
Figure 1. States of WTCS Registrants (N=2,717)



Professional Characteristics

Almost three-quarters (73%) of WTCS registrants were in-service teachers (see **Figure 2**). A smaller proportion of registrants were pre-service teachers (6%), district administrators/instructional specialists/coaches (5%), school administrators/instructional specialists/coaches (5%), librarians (4%), higher education staff and faculty (3%), and 1-2% were in the remaining roles, including non-profit professionals, education service center staff/consultants, industry professionals, and government officials/employees. Some respondents who selected the "Other" option specified their roles including graduate students, retired teachers, and interventionists.

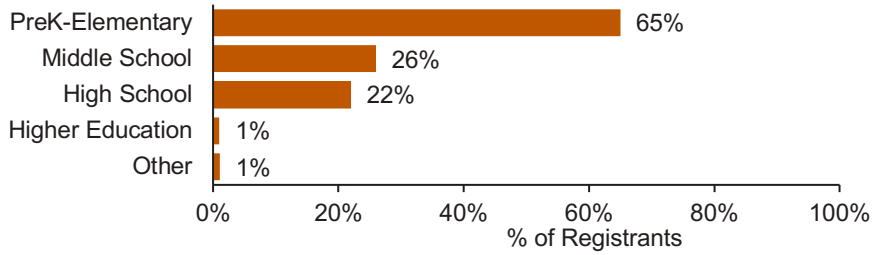
Figure 2. Professional Role (N=2,701)*



**Percentages total more than 100%, since registrants could select all options that applied.*

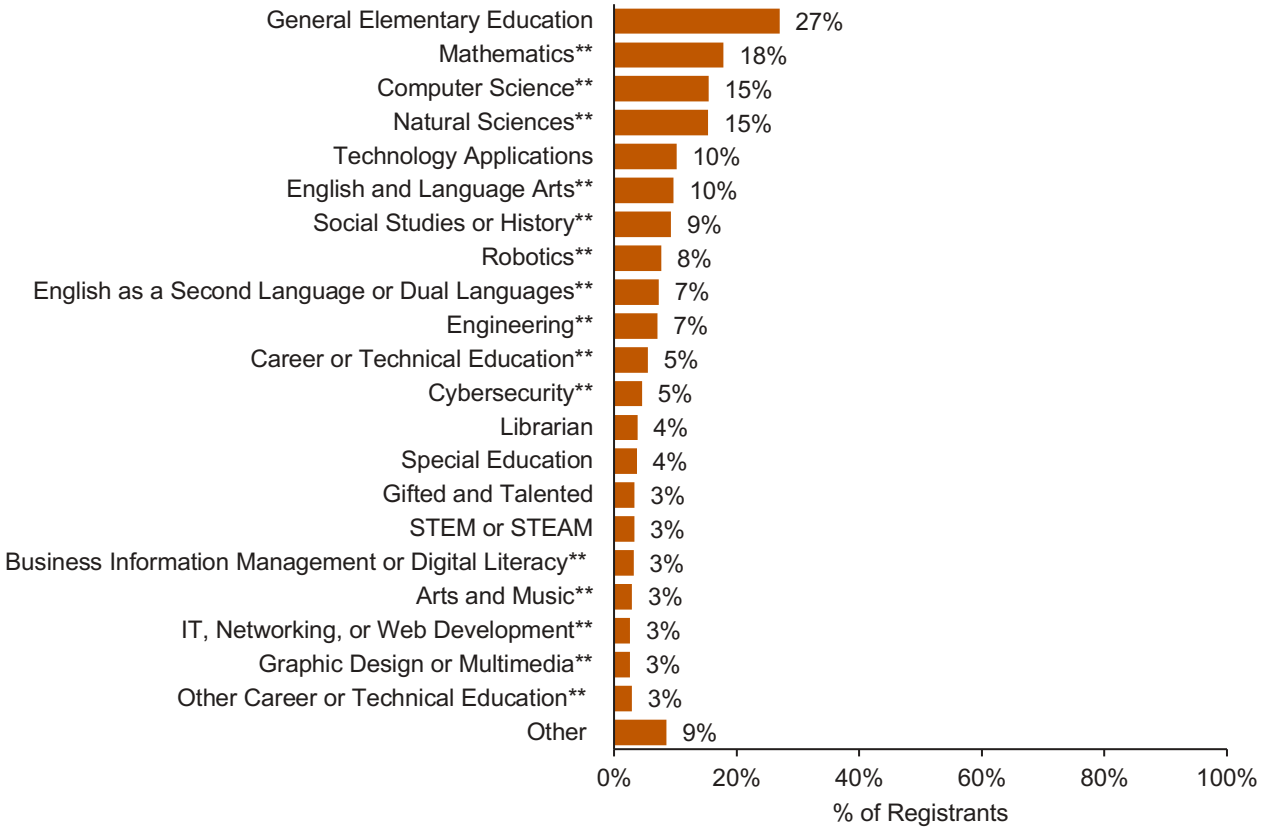
As shown in **Figure 3**, about two-thirds (65%) of WTCS registrants taught or worked at the PreK-elementary level. Less than half of registrants taught or worked in middle school (26%), high school (22%), and/or higher education (1%). A few (1%) selected "Other," including educators who taught adult learning or summer school programs. The most common subject or area the educators taught or worked in was general elementary education (27%), followed by mathematics (18%), CS (15%) and natural sciences (15%) (see **Figure 4**). Registrants who were categorized as "Other" taught or worked in areas such as data science, statistics, foreign languages, health education, or instructional technology. Such a wide range of subject areas reflects two of the primary objectives of WTCS: 1) promoting integration of CS and computational thinking into core subjects (the focus of K-5 PD), and 2) supporting secondary teachers of non-CS subjects to become certified to teach high school CS courses.

Figure 3. Grade Levels (N=2,493)*



**Percentages total more than 100%, since registrants could select all options that applied.*

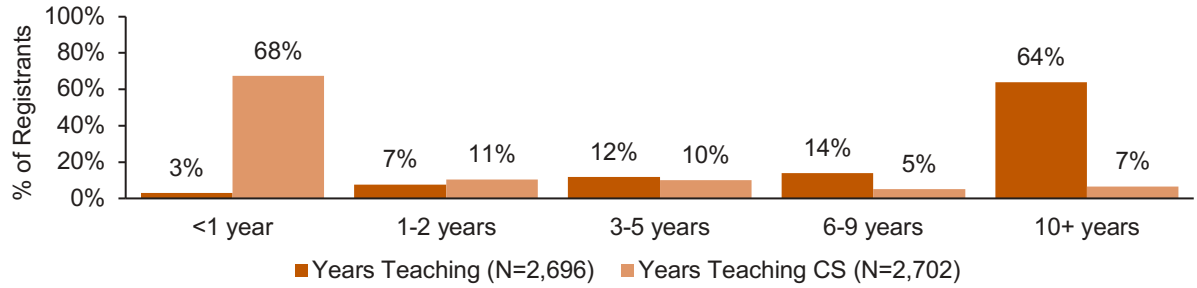
Figure 4. Subjects Taught (N=2,439)*



**Percentages total more than 100% as registrants could select all options that applied. The figure excludes respondents who selected "Not applicable" and did not select any option. Response categories that have less than 3% of respondents selecting them were combined into the "Other" category.*
***Specific subject options were not presented to K-5 teachers completing a Profile when registering for Launch_K5 CS unless they indicated they were a subject specific teacher.*

Figure 5 shows WTCS registrants' years of general teaching experience and their experience teaching CS, specifically. Almost all (90%) WTCS registrants taught for at least three years and almost two-thirds (64%) taught for 10 years or more. In contrast, more than three-quarters (79%) had two years or less of experience teaching CS, with 10% teaching CS for three to five years and 12% teaching CS six or more years. Nearly all (97%) registrants had a bachelor's degree and almost half (43%) had a graduate degree.

Figure 5. Years of Experience



Outreach and Research Projects

EPIC provides outreach and research aimed at improving CS education in Texas and across the United States. This section highlights EPIC projects in these areas in 2024-2025.

Professional Development and Outreach

The PD and outreach activities consisted of a variety of projects that involved educator PD, networking and community building, and evaluation.

- **Professional Development** included in-person and virtual workshops, webinars, and online courses for educators. The PD primarily focused on CS education, such as AI, CS 8-12 certification preparation, effective pedagogy, cybersecurity, elementary CS integration, and advanced CS course pathways.
- **Network and Community Building** consisted of community events and outreach within the CS education community, including the WeTeach_CS Summit and presentations at regional and national venues.
- **Evaluation** involved collecting comprehensive data on WTCS (such as student and school characteristics, levels of participation, satisfaction, outcomes, and impacts) to provide real-time feedback to the WTCS PD team to improve their work.

Texas CS Pipeline (TXCSP)

The Texas CS Pipeline (TXCSP) was a new program launched in April of 2024 that significantly expanded the services provided by WeTeach_CS. The purpose of TXCSP was to build a statewide network of computing related professional development, with a priority for supporting Texas educators to obtain CS teacher certification and scalable training of elementary teachers to implement the newly updated Technology Applications standards (TEKS). In addition, TXCSP supported PD for cybersecurity and AI, while building infrastructure through projects such as the TX CS Data Dashboard, the TX CS Leadership Network, and the Educator Preparation Programs Community of Practice. The TXCSP was funded at $10 million over the 24-26 biennium by the Texas State Legislature through the Texas Higher Education Coordinating Board (THECB) with an additional $4 million in state funding distributed after EPIC documented corporate and philanthropic matching funds of at least $4 million. TXCSP funded expansion of WTCS PD within the following program areas:

- **WeTeach_CS Certification Hubs** prepared middle and high school teachers who were certified in a field other than computer science to become certified to teach CS with the Tech Apps or CS 8-12 certification. Participating teachers participated over 100 hours of in person and virtual PD and courses within a community of practice called a "hub" that was led by a project director and instructional team member. PD focused on upskilling these teachers with the CS and technical content knowledge assessed on the certification exams. One statewide hub was managed by UT Austin at TACC and 12 external partners each led regional WTCS Certification Hubs, including Rice University, UT Dallas, UT El Paso, Region 1 Education Service Center (ESC), Region 5 ESC, Region 12 ESC, Region 20 ESC, Texas State University, Texas Southern University, Southern Methodist University, Stephan F. Austin State University, and Prairie View A&M University.

- **The WeTeach_Cyber Hub** built the capacity of high school teachers to teach cybersecurity and prepared them to earn the CompTIA Security+ industry-based certification through PD events and courses. Teachers participated within a hub and met regularly during the school year as they engaged in PD and prepared for the certification exam. Cyber hub teachers complete 112 hours of PD.
- **Middle School and High School AI Hubs** instructed teachers to integrate AI into their middle and high school classrooms by providing PD events and curriculum materials. Teachers participated within a hub and met during the school year as they implemented AI lessons with their students. These hubs leveraged partnerships with Georgia Tech and Carnegie Mellon Universities in their PD. The Middle School hub consists of 60 hours of PD while the HS hub consists of 40 hours of PD.
- **Launch_K5 CS** trained K-5 teachers to apply new standards for integrating computational thinking, CS, and cybersecurity into their classroom. These new state standards called the Texas Essential Knowledge and Skills for Technology Applications (Tech Apps TEKS), were required to be implemented by the 2024-25 school year. PD was implemented through a train-the-trainer model in which educators across Texas participated in a three-day workshop and then trained teachers through a two-day workshop and an asynchronous online course adapted from Code.org. Trainers and teachers were given lesson plans and materials for integrating the Tech Apps TEKS into different subject areas.
- **Code.org's** Professional Learning Program supported Code.org curriculum training that WTCS provided to elementary, middle, and high school teachers in Texas. WTCS served as the Code.org Professional Learning Program's regional partner for the state of Texas.
- **Cyber.org** partnered with WTCS to promote and provide demonstrations on its cybersecurity resources to K-12 teachers, who could receive free access to the Cyber.org curriculum modules, cyber range, lesson plans, and supplementary resources.
- **Deep Dive Workshops** were offered over two days to provide a variety of immersive, hands-on professional learning experiences designed to support CS and STEM educators across Texas.
- **Networking Training** involved two specialized workshops to support educators teaching College Board's Career Kickstart: Cyber Networking course. The Tech Apps Certification Prep workshop was designed to help prepare teachers to get certified, while the Networking Fundamentals workshop provided hands-on training in core networking concepts.
- **Preferred Curriculum and Professional Development Providers** was a series of virtual, hybrid, and/or in-person workshops provided by external curriculum and professional development providers to advance teachers' knowledge, pedagogy, and skills in computational thinking, CS, cybersecurity, and related topics. All trainings were a minimum of four days, aligned to TEKS for the appropriate subject area, and provided materials and resources as needed for classroom use. In total, 23 providers led 30 trainings across 14 of the 20 ESCs.
- **Project Rural Opportunities in CS (ROCS)** trained rural secondary teachers to use the Microsoft FarmBeats curriculum that aligns to the TEKS for Agriculture, 6th grade Technology Applications, 7th grade Science, and 8th grade Science. The curriculum teaches CS, AI, and data science within the context of agriculture, for example, through having students use a micro:bit physical computing device to create a sensor for measuring soil samples. A train-the-trainer model was employed to scale PD to 87 educators. Trainers and educators were given resources and materials for using the curriculum.
- **Educator Preparation Program (EPP) Community of Practice** was a statewide effort in collaboration with UTeach Computer Science to explore shared curriculum, resources, and

professional learning opportunities to benefit educators and EPPs across Texas. This collaborative effort brought together higher education partners from 21 institutions of higher education (IHEs) and school district leaders to build capacity, combine resources, and strengthen the overall preservice CS teacher pipeline. Initial meetings resulted in publication of a report with policy recommendations for reforms needed at a state level to increase the number of CS certified teachers produced by EPPs in Texas.

- **State Strategic Planning** is a regular convening of TX CS education leaders to draft goals, strategies, intended outcomes, and a timeline of recommendations to support expanding CS education statewide.
- **CS Jumpstart** was a workshop that trained teachers in an introductory Python programming course, which incorporates block and text-based coding, as well as physical computing with Texas Instruments (TI) handhelds, robots, and drones.

Other Professional Development and Outreach Projects

- **Certification Incentive Program (CIP)** provided current and pre-service teachers in Texas with a $1,000 stipend for getting certified in CS 8-12 and a $200 stipend for getting certified in Tech Apps.
- **Texas CS Leadership Network**, funded with support from Google.org and through the TXCSP, created a community of practice for CS administrators and teacher leaders to collaborate and share resources through in-person and virtual meetings.
- **UT Austin's Institute for Foundations of Machine Learning (IFML)** partnered with WTCS to implement AI modules in high school classrooms as part of the National Science Foundation (NSF)-funded IFML Broader Impacts programs that are designed to broaden participation for those in AI education and careers (NSF #2019844).
- **Advancing AI Literacy through Teacher Crafted CS Lessons** is a Google.org sponsored project which trained teachers to develop lessons for integrating AI literacy into a wide range of secondary subject areas.

Research and Policy Projects

- **Accelerating Women's Success and Mastery in Computer Science (AWSM in CS)**, funded by NSF (#1837602), supported research on best practices for increasing access and participation of young women in computing courses.
- **Algebra 1 Pathways Research**, funded with support from Google.org, examined students longitudinally from 5th grade to high school graduation to determine how policies that open advanced math pathways for middle school students affect their subsequent high school course taking in CS and other advanced STEM courses.
- **Computing Educator Opportunities (CEO) Initiative**, involved three different projects, with the common goals of supporting and engaging participants in a comprehensive PD program to deepen their CS knowledge, strengthen their pedagogical skills, become certified to teach CS, and empower them with teaching strategies that meet the needs of their students and classrooms.
  - **CEO Research Practice Partnership (RPP)** was funded through an NSF grant (#2318887) to support CEO in Texas.
  - **CEO Leadership-Class Computing Facility (LCCF)** was funded through the NSF LCCF grant (#2139536) to expand CEO into Pennsylvania.

    - **CEO Southwest** was funded by Reboot Representation to expand CEO into Colorado, New Mexico, and Utah.
- **Developing Computing Pathways Research (DCPR),** funded through the NSF LCCF grant (#2139536) to develop an online data visualization tool that can be used to guide computing education and career planning; study the connection between computing secondary education, higher education, and career outcomes; and disseminate best practices for improving and measuring computing education outcomes.
- **Expanding Computing Education Pathways (ECEP)**, an NSF (#2137834), Google, and Siegel Family Endowment funded Broadening Participation in Computing (BPC) Alliance involving 29 states and Puerto Rico, supported broadening participation in CS and CS-related fields through systemic change, policy research, and data-driven advocacy. ECEP leveraged a collective impact model with states as the unit of change to increase and measure capacity for, access to, participation in, and experiences of computing education. ECEP state leadership teams focused on building and sustaining state K-12 computing education ecosystems that systematically identify and address gaps in opportunities, outcomes and representation in computing education.
- **The Scaling Innovative Pedagogy (ScIP)** project is a teacher focused PD component of ECEP that provided K-12 teachers a hybrid professional learning course, equipping them to promote access to, participation in, and experiences of CS in their schools and classrooms.
- **Texas CS Data Dashboard** provided an in-depth look at the state of K-12 CS education in Texas through an interactive data platform. Users could examine trends in CS education over time at the state, regional, district, or school level. The CS Data Dashboard is supported by the THECB through the TXCSP and the Siegel Family Endowment.

Statewide Broader Impacts

EPIC aims to broaden participation in computing by expanding the capacity of states to offer CS, as well as to increase K-12 student access to and participation in CS coursework. In Texas, broader impacts are tracked along the five goals outlined by the WTCS program: 1) Increase the number of certified CS teachers; 2) Increase the percentage of high schools offering CS courses; 3) Increase the number of high school students completing CS courses; 4) Broaden student enrollment in CS courses; and 5) Expand CS opportunities for students in grades K-8 to build a pipeline for CS-related programs of study.

Annual progress toward these goals has been made over the past decade. Between 2015 and 2018, funding from the federal Math and Science Partnership (MSP) allowed WTCS to support a large statewide CS teacher PD network. This period saw extensive growth in CS education in terms of capacity, access, and participation. While WTCS was able to continue to support CS teacher certification efforts after 2018 by leveraging corporate, philanthropic, and other grant funding, the number of teachers obtaining a CS certification decreased notably when federal MSP funding was eliminated. In March 2024, the State of Texas invested millions toward expanding CS education and EPIC was selected to manage the Texas CS Pipeline (TXCSP) Initiative, which included support for scaling CS teacher certification PD across Texas. This funding has allowed more extensive CS-related PD to take place. However, at the time this report was developed, metrics on statewide impacts from this funding were not yet available. EPIC

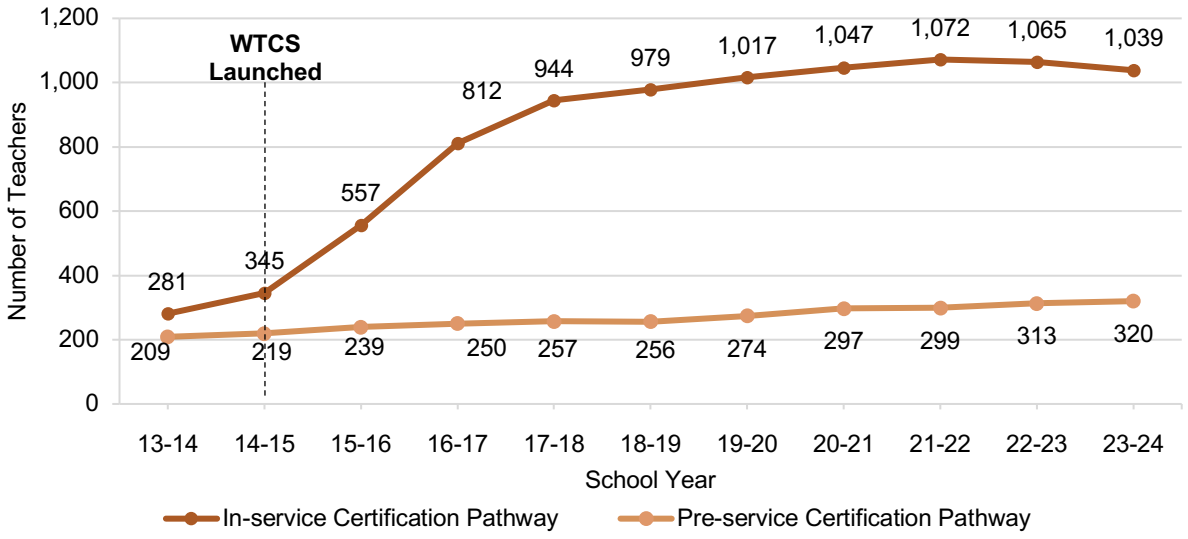
combined statewide data from the Texas Education Research Center[1] (ERC) with its own internal data to assess progress in achieving the WTCS program's goals within Texas. This section reports data across time up to the 2023-24 academic year, since it is the most recent year for which data were available.

> **"Teachers are getting informed, prepared, and able now to deliver impactful lessons to the next generation"**
>
> **- WeTeach_CS Summit Participant**

Goal 1: Increase the Number of Certified CS Teachers in Texas

The number of in-service teachers certified in CS 8-12 employed in Texas public schools noticeably accelerated after WTCS's launch in 2014-2015 through 2017-2018, followed by a slower increase through 2021-22 and a slight decrease in 2022-23 and 2023-24 (see **Figure 6**). The dip in CS certified teachers employed in Texas public schools from 2021 to 2024 is indicative of the need for a statewide strategy like TXCSP to address this trend. This data also demonstrates that the vast majority of CS certified teachers in Texas are the product of in-service teacher training rather than preservice teacher preparation programs, demonstrating the need for strategic improvements in preservice pathways.

Figure 6. Number of CS 8-12 Certified Teachers Employed in Texas Public Schools

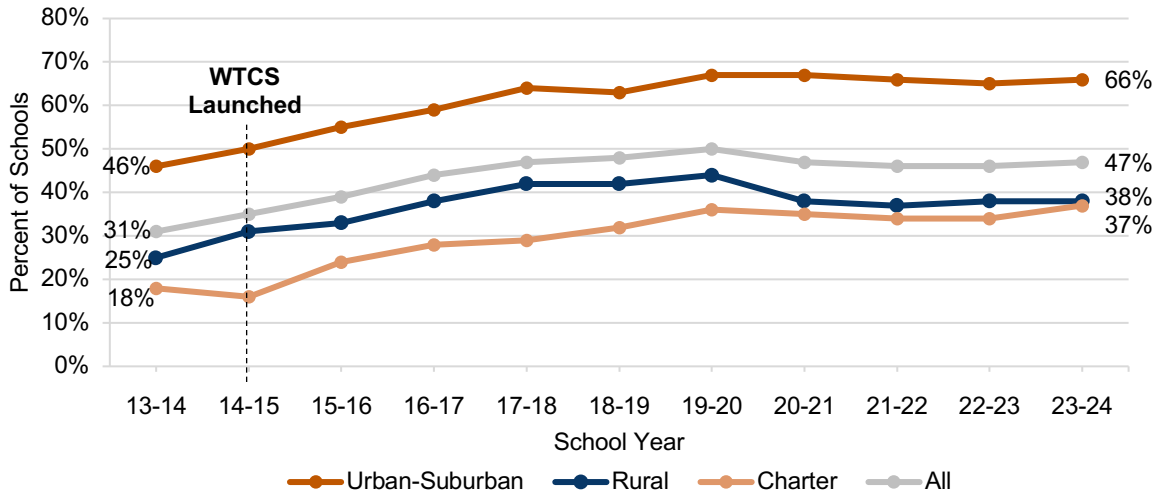


[1] The conclusions of this research do not necessarily reflect the opinion or official position of the Texas Education Research Center, the Texas Education Agency, the Texas Higher Education Coordinating Board, the Texas Workforce Commission, or the State of Texas.

Goal 2: Increase the Number of High Schools that Offer CS

From the 2013-14 school year to the 2023-24 school year, the number of high schools offering CS increased over 15 percentage points, from 31% to 47% (see **Figure 7**). While 49% of Texas high schools offered CS in 2023-24, larger schools offered CS at higher rates, resulting in 79% of Texas high school students having access to CS at their school. Since 2018, the percent of all high schools offering CS has hovered between 46% and 48%. In this time period, charter schools and urban/suburban schools showed increasing percentages of high schools offering CS coursework, while rural schools showed a decrease. WTCS has identified rural schools as a priority area for capacity-building efforts and runs specific programs, like Project ROCS, aimed at increasing CS course offerings in those areas. It's also notable that while the Texas Education Code requires all high schools to offer at least one CS course[2], the majority of schools are not in compliance with this requirement. The CS4TX coalition, which advocates for expanded CS education in Texas, has recommended that the access to CS coursework requirement be included in the state's accountability system to incentivize schools to address this expectation.

Figure 7. Percentage of Texas High Schools Offering Computer Science Courses

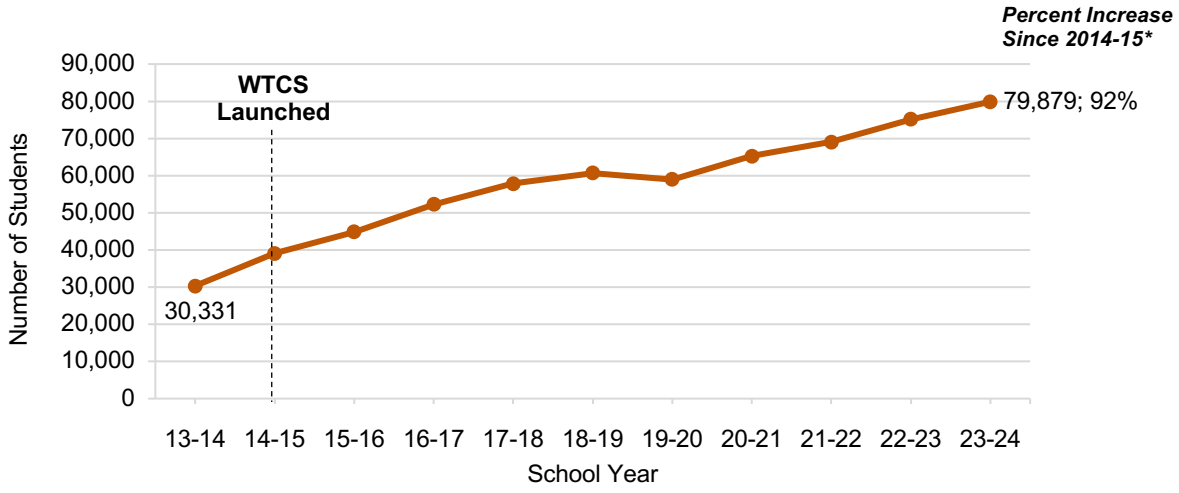


Goal 3: Increase the Number of Students that Enroll in High School CS Courses

While the percentage of Texas public schools offering CS has remained relatively stable for the past few years, the percentage of high school students enrolling in CS courses has grown (see **Figure 8**). In the 2023-24 school year, 5% (N=79,879) of Texas high school students were enrolled in at least one CS course. Within the period from the 2017-18 school year to 2023-24 when the percentage of schools offering CS remained relatively stable (as shown in **Figure 7**), annual participation in CS coursework rose from 4% to 5% as more students were enrolling in CS courses. Adjusted for population growth, the overall percent change in student enrollment from the 2014-15 school year represents a 92% increase.

[2] Texas Education Agency (TEA). (2025). Texas Education Code (Chapter 74. Curriculum Requirements) https://tea.texas.gov/about-tea/laws-and-rules/sboe-rules-tac/sboe-tac-currently-in-effect/ch074a.pdf

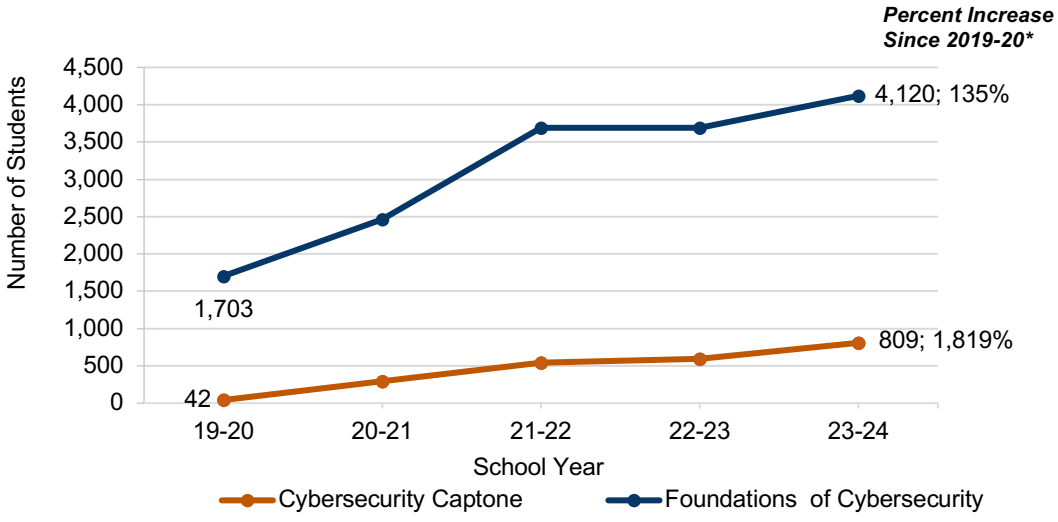
Figure 8. Number of Texas High School Students Enrolled in Computer Science Courses



**Adjusted for population growth.*

In addition to student enrollment in CS courses, WTCS is also interested in increasing the number of students enrolled in cybersecurity courses. Texas created a specific CTE pathway for cybersecurity that included two new cybersecurity courses, which were first offered in the 2019-20 school year. By the 2023-24 school year, 192 high schools offered the beginner-level Foundations of Cybersecurity course and 92 offered the advanced-level Cybersecurity Capstone. Enrollment in the Foundations of Cybersecurity course rose from 1,703 students in 2019-20 to 4,120 students in 2023-24 (see **Figure 9**). Similarly, enrollment for the Cybersecurity Capstone course rose from 42 students in 2019-20 to 809 students in 2023-24.

Figure 9. Number of Texas High School Students Enrolled in Cybersecurity Courses

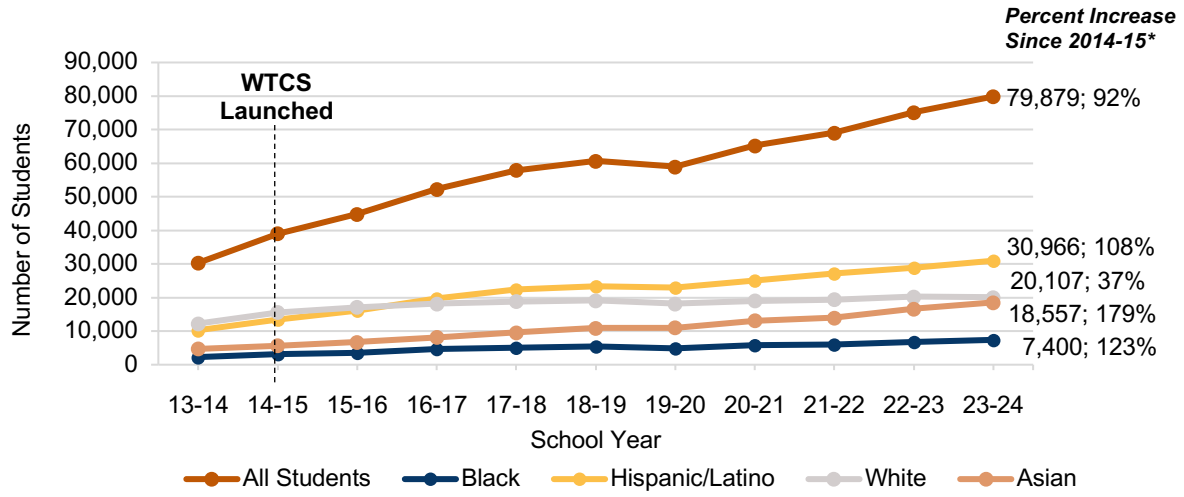


**Adjusted for population growth.*

Goal 4: Broaden Student Enrollment in CS Courses

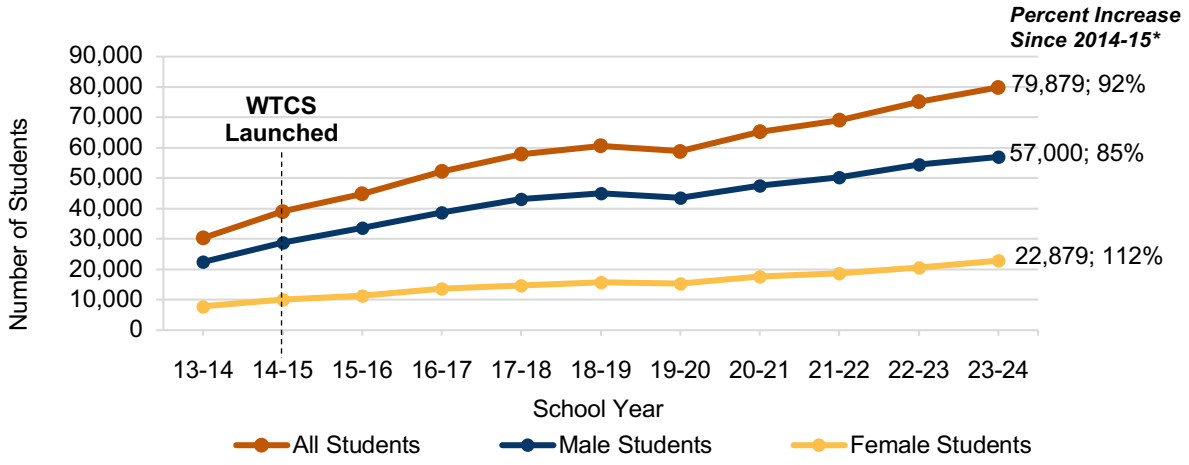
EPIC and WTCS have tracked student enrollment by race/ethnicity, sex, and a variety of other demographic categories throughout the past decade. All categories of race and ethnicity have seen increases in high school CS participation across the past 10 years (see **Figure 10**). Controlling for population changes, Asian students have increased their enrollment in CS coursework by 179% in the past decade, compared with a 123% increase for Black students, a 108% increase for Hispanic/Latinx students, and a 37% increase for White students. Different racial and demographic groups increased CS enrollment at different paces, and the same was true for male and female student groups. Male students, comprising a larger overall percentage of the population of enrolled students, increased their participation in CS coursework by 85% over the last decade when adjusted for population growth (see **Figure 11**). This result is compared with female students, who increased their participation in CS coursework by 112% over the same time.

Figure 10. Number of Texas High School Students Enrolled in CS by Race and Ethnicity



**Adjusted for population growth.*

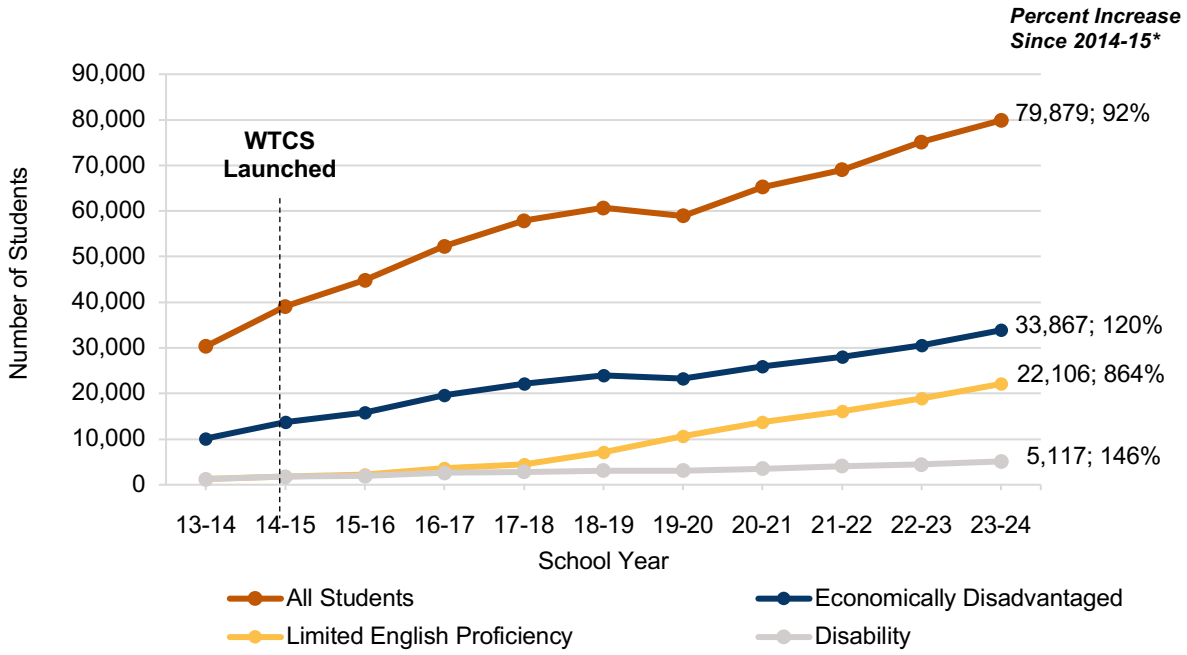
Figure 11. Number of Texas High School Students Enrolled in CS by Sex



**Adjusted for population growth.*

Examining student participation in CS coursework through the lens of other demographic categories also shows growth in CS participation. Over the past decade, students categorized as economically disadvantaged increased CS enrollment by 120%; students who had limited English proficiency saw an increase of 864%; and students with disabilities increased CS enrollment by 146% (see **Figure 12**).

Figure 12. Number of Texas High School Students Enrolled in CS by Other Characteristics

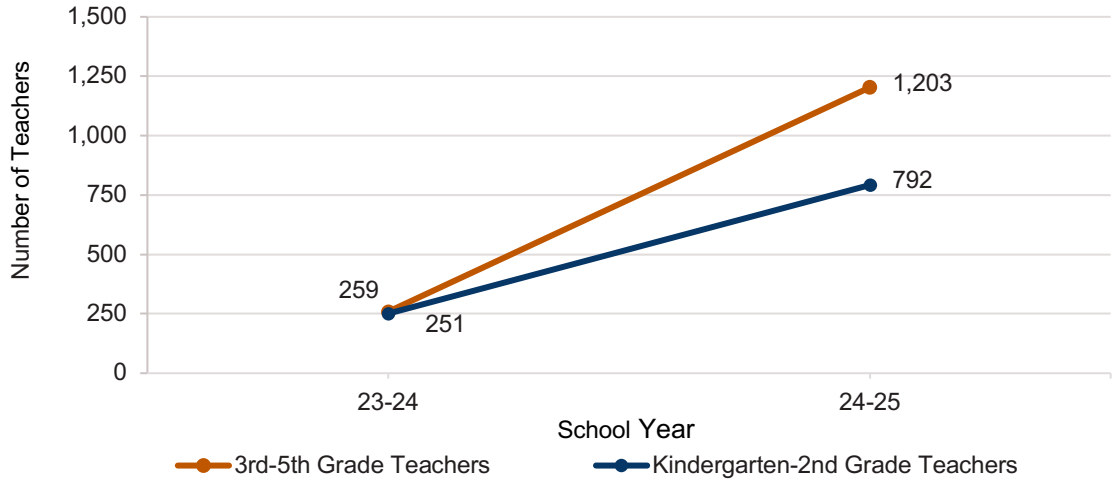


**Adjusted for population growth.*

Goal 5: Expand CS Opportunities for K-8 students to build a pipeline for CS-related programs of study

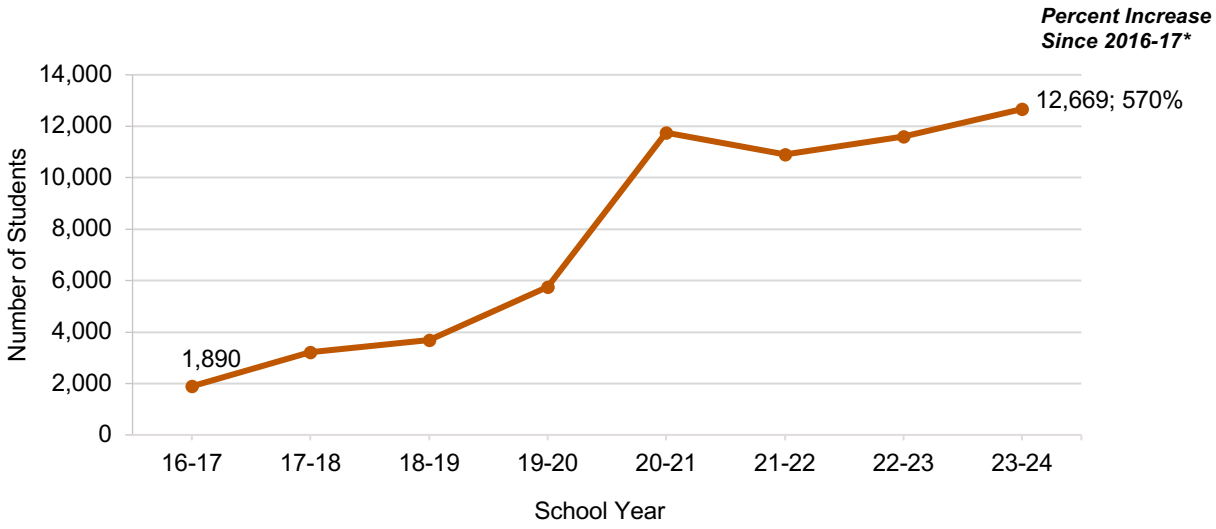
Early exposure to CS in elementary and middle school grades helps students build foundational skills and interest in computing before high school. In the 24-25 school year, Texas enacted new K-8 Technology Applications TEKS which emphasize computational thinking and CS. In response to these changes, WTCS has implemented Launch_K5 CS, a teacher PD program to help K-5 teachers implement the new standards through integration with core academic subjects. As displayed in **Figure 13**, in its first year of operation the Launch_K5 CS program served 251 K-2nd grade teachers and 259 3rd-5th grade teachers. In the 2024-25 school year, those numbers grew to 792 K-2nd grade teachers and 1,203 3rd-5th grade teachers.

Figure 13. K-5 Teachers Trained in Tech Apps TEKS with WeTeach_CS



Additionally, WTCS has encouraged the offering of CS courses in middle school for high school credit. WTCS has provided Code.org PD for teachers who teach the introductory Fundamentals of CS course since the 2017-18 school year. In 2023-24, EPIC expanded PD for K-5 and middle school teachers through the TXCSP Initiative and other projects. As of 2023-24, 14% of middle schools in Texas offered at least one CS course and 19% of Texas middle school students attended a school that offered CS. Approximately 1.2% (N=12,669) of Texas middle school students enrolled in a CS course in the 2023-24 school year (see **Figure 14**). This growth in high school credit CS course enrollment in middle school represented a 570% increase since 2016-17, indicating that the WTCS focus on advising districts about how to offer HS CS in middle schools and providing curriculum training is having an impact on student outcomes. Through building the capacity of K-5 and middle school teachers to provide high-quality computing instruction, students will both build foundational literacy skills in computing and be more prepared to take CS in high school and in post-secondary education.

Figure 14. Number of Texas Middle School Students Enrolled in CS Courses



**Adjusted for population growth.*

Collaborations

EPIC's mission to broaden participation in K-20 STEM and CS education leverages expertise and relationships with a range of collaborators. These collaborators include organizations that EPIC works with on specific projects, that receive services from EPIC, or that provide funding to EPIC. **Figure 15** shows the states represented by these collaborations and **Tables 3, 4,** and **5** list the collaborating entities. The majority of the partnering institutions outside of Texas are part of the ECEP Alliance.

Figure 15. States of Collaborating Organizations

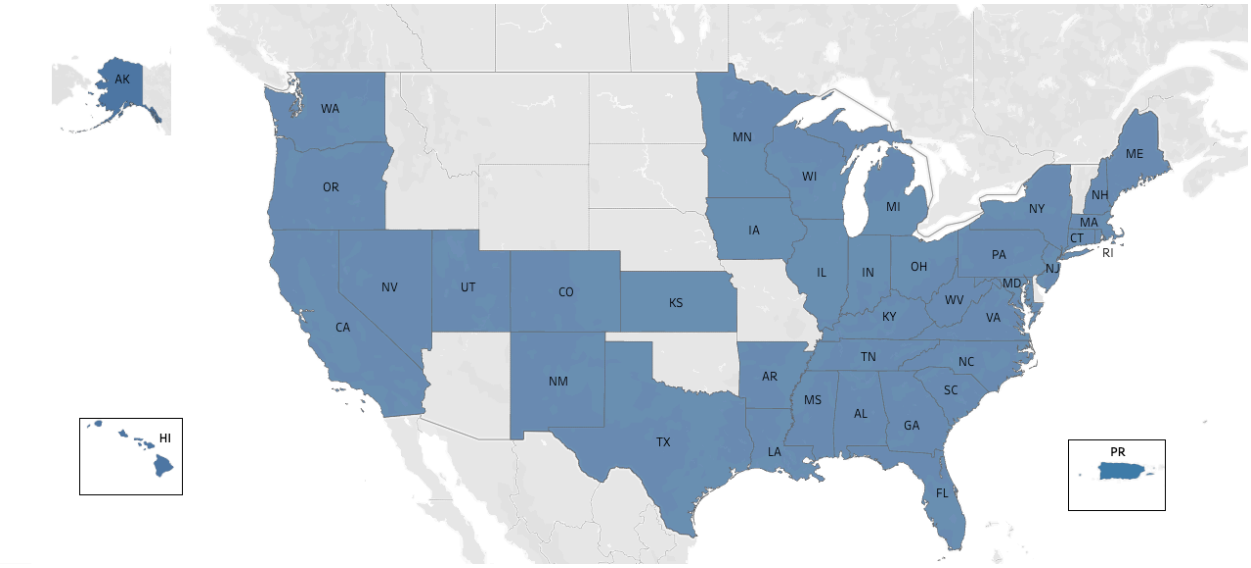


Table 3. Collaborating Organizations: Higher Education*

Higher Education			

• Angelo State University
• Austin Community College
• Baylor University
• Brigham Young University
• Capital Community College
• Carnegie Melon University
• Center for Cyber Education at Mississippi State University
• Central Oregon Community College
• Cleveland State University
• Connecticut State Community Colleges
• Desert Research Institute
• El Paso Community College
• Georgia Institute of Technology (Georgia Tech)
  ○ Constellations Center for Equity in Computing
• Indiana University
• Lamar University
• Marquette University
• Maryland Center for Computing Education: Maryland University System
• Massachusetts Green High Performance Computing Center
• Massachusetts Institute of Technology (MIT)
	• Teaching Systems Lab
	• Mississippi State University
	• Montclair State University
	• National Center for CS Education - St. Scholastica
	• North Carolina (NC) State
	  ○ Friday Institute
	• NC State University
	• Portland State University
	• Prairie View A&M University
	• Rhode Island College
	• Rice University
	• Ripon College
	• Sam Houston State University
	• Southern Connecticut State University
	• Southern Methodist University
	• Stephen F Austin University
	• Stockton University
	• Temple University
	• Texas A&M International University
	• Texas A & M Kingsville
	• Texas A&M University Corpus Christi
	• Texas A&M University Texarkana
	• Texas Southern University
	• Texas State University
	• Texas Tech University
	• The Citadel
	• The University of Alabama in Huntsville
	• The University of Texas at Arlington
		• The University of Texas at Austin
		  ○ Applied Research Laboratories
		  ○ Dept of Computer Science
		  ○ Extended Education Ventures
		  ○ OnRamps
		  ○ UTeach Institute
		• The University of Texas at Dallas
		• The University of Texas at El Paso
		• The University of Texas at Rio Grande Valley
		• The University of Texas San Antonio
		  ○ Center for Infrastructure Assurance and Security
		• The University of Texas Tyler
		• The William and Ida Friday Institute for Educational Innovation
		• University of California, Los Angeles (UCLA)
		  ○ Center X
		  ○ Graduate School of Education & Information Studies
		• University of California San Diego
		• University of Houston
		• University of Massachusetts (Umass) Amherst
		• University of North Carolina (UNC) Charlotte
		  ○ Dept of Software and Information Systems
		• University of Puerto Rico Rio Piedras
			• University of Alabama
			• University of California, Irvine
			• University of Florida
			• University of Hawaii (HI) at Manoa
			• University of HI Maui College
			• University of Illinois Urbana-Champaign
			• University of Maryland Baltimore County
			• University of Maryland System
			• University of Maryland-College Park
			• University of Minnesota - Twin Cities
			• University of North Hampshire (NH)
			• University of NH, Manchester
			• University of North Georgia
			• University of Oregon
			• University of Rhode Island
			• University of Washington, Seattle
			• University of Wisconsin Madison
			• Ursinus College
			• Virginia Community College System
			• West Texas A&M University
			• West Virginia University
			• Western Washington University
			• Westminster College

**This list does not include internal collaborators within TACC.*

Table 4. Collaborating Organizations: Government Organizations

Government*			
• Alabama Dept of Early Childhood Education • Alabama Dept of Education • Arkansas Dept of Education • California Dept of Education • Chesapeake County • Connecticut State Dept of Education • Education Service Center (ESC) 1 • ESC 5 • ESC 12 • ESC 20 • Georgia Dept of Education • Green Hills Area Education Agency (AEA) • Hawaii Dept of Education • Illinois Dept of Innovation and Technology	• Illinois State Board of Education • Indiana Dept of Education • Iowa Dept of Education Iowa Governor's STEM Advisory Council • Kentucky Dept of Education • Loundon County • Maine Dept of Education • Maryland State Dept of Education • Massachusetts Dept. of Elementary and Secondary Education • Minnesota Dept of Education • Mississippi Dept of Education • National Science Foundation • New Hampshire Dept of Education	• New Mexico Public Education Dept • North Carolina Dept of Public Instruction • Nevada (NV) Dept of Education • NV Governor's Office of Science, Innovation, and Technology • Washington Office of the Superintendent of Public Instruction • Ohio Dept of Education • Oregon Dept of Education • Pennsylvania (PA) Dept of Education • PA Training & Technical Assistance Network (PaTTAN) • Pacific Northwest National Laboratory • Rhode Island Dept of Education	• South Carolina Dept of Education • Southeast Arkansas Education Service Cooperative • Stanislaus County Office of Education • Texas Dept of Information Resources • Texas Education Agency (TEA) • Texas Higher Education Coordinating Board • Tuscarora Intermediate Unit 11 • US Dept of Education • Utah State Board of Education • Virginia Dept of Education • Wisconsin Dept of Public Instruction

**Dept=Department.*

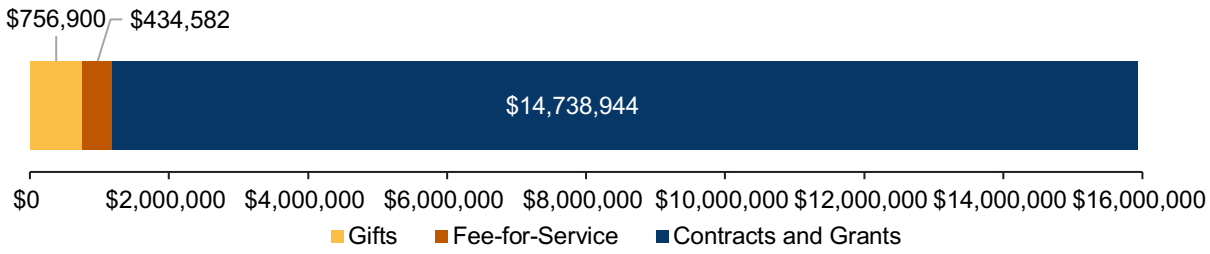
Table 5. Collaborating Organizations: Nonprofit, Industry, Professional Organization

Non-Profit			
• ACCESSComputing • Armed Forces Communications and Electronics Association (AFCEA) Alamo Chapter • Alliance for Interdisciplinary Innovation in Computing Education (AIICE) • AimHire • App Inventor Foundation • Battelle Education • Beyond100K • BootUp PD • C Spire • Computing Alliance of Hispanic-Serving Institutions (CAHSI) • Code Crew • Code in the Schools • Code.org • CodeSavvy • CodeVA • College Board	• Committee on Widening Participation in Computing Research (CRA-W) • Community Foundation of Utah • CompTIA • CS4IL • CS4TX • CSEdResearch.org • CSforAll • CSforCLE • CSforMA • Cyber.org • CyberTexas Foundation • Educate Maine • Kapor Center • Kentucky Science and Technology Center • LatinX Digital Leaders Now • LEAP Alliance • Learning Technology Center	• Maine Mathematics and Science Alliance • Micro:bit Educational Foundation • National Security Innovation Council • National Security Innovation Council (NSIC) • National Center for Women & Information Technology (NCWIT) • NCWIT - WI • NewBoCo • Nextech • Northeast LASER Alliance • OpenEDG • Oregon CSTA • Processing Foundation • Qubits Learning • Reboot Representation • Robin Hood Foundation • SageFox Consulting	• San Antonio Museum of Science and Technology • Siegel Family Endowment (SFE) • Smithsonian Science Education Center • STARS Computing Corps • STEM Advisory Council • STEMcoding • STEMM Opportunity Alliance • TechCorps • Technovation • The Wheatcraft Project • Utah STEM Action Center • Virginia Chamber of Commerce • Virginia College Access Network • Virginia Economic Development Partnership
Industry			
• Akkodis • Brown Dog Gadgets • Ellipsis Education • Firia Labs • Google.org	• Iconic Drone Education • Imagi Education, Inc. • Kai's Education • LEGO Education • Newark • Pitsco Education	• Play Piper • Raspberry Pi Foundation • Robolink • SECURA insurance • Texas Instruments • VEX Robotics	
Professional Organization			
• Computer Science Teachers Association (CSTA) • Greater Austin STEM Ecosystem • Institute of Electrical and Electronics Engineers (IEEE)	• TechNet • Texas Association of Latino Administrators and Superintendents	• Texas Computer Education Association (TCEA) • Texas Information Technology (IT) Caucus	

Funding

EPIC is funded through multiple sources, including grants, fee-for-service income, and gifts. In 2024-25, EPIC received a total of $15,930,425.50. As shown in **Figure 16**, almost all of the funding was received from contracts and grants income. The biggest funding source in 2024-25 was the TXCSP. A smaller proportion of funding was from fee-for-service and gifts.

Figure 16. Funding Received by Funding Type (2024-2025)



Communication and Dissemination

Publications and Conference Presentations

EPIC expanded its influence and reach in the CS and STEM education fields through multiple dissemination efforts. In 2024-25, EPIC presented its research at conferences both within Texas and nationally. The EPIC team published journal articles, white papers, and conference papers aimed at improving the discourse and furthering knowledge surrounding K-12 CS and STEM education. EPIC also facilitated numerous outreach presentations to statewide and national audiences. The **Appendix** has a list of EPIC's publications and conference presentations.

Selected Conferences Where EPIC Presented (2024-2025)

- American Educational Research Association (AERA) Annual Meeting
- American Evaluation Association (AEA) Evaluation 2025
- Association of Career and Technical Education (ACTE) Career Vision
- American Astronomical Society Winter Meeting
- Beyond100K Annual Summit
- Computer Science Teachers Association (CSTA) Annual Conference
- Cyber.org EdCon 25
- Humble Independent School District AI Summit
- Innovation and Technology in Computer Science Education (ITISCE)
- National Rural STEM Conference
- Region 5 Superintendents Technology Conference
- Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)
- Special Interest Group Computer Science Education (SIGCSE) Technical Symposium
- Texas Association of School Administrators (TASA) Midwinter Conference
- Texas Computer Education Association (TCEA) Convention & Exposition
- Quantum Science and Engineering Education Conference

Texas Computer Science Education Data Dashboard

The EPIC team developed and maintained data dashboards for its research and evaluation projects using Excel and Tableau software. For example, in 2024-25, EPIC maintained its data dashboard that exhibits data visuals of CS education in Texas and created new regional profiles to highlight CS education in each region of Texas.[3] The visuals on the dashboards are based on the CAPE framework,[4] highlighting the capacity for, access to, participation in, and experience of CS education in Texas K-12 schools. EPIC also conducted user experience studies on these visuals to understand educators' usage of these data dashboards. Findings from the studies indicated that educators most frequently use the dashboard to advocate for CS education in their schools and districts, compare with other schools and districts, and make decisions about CS education.

> **"The dashboard includes very granular information, such as the number of schools and school districts, which is extremely useful. It allows me to examine heat maps showing CS course offerings and accessibility, particularly for specific electives in rural schools. I think this data will be even more useful for my future research."**
>
> **- CS Dashboard Focus Group Participant**

Social Media

EPIC used social media to reach the public, as well as CS teachers, researchers, and organizations. Example metrics on EPIC's social media reach are as follows. As of August 14, 2025:

- EPIC published a weekly newsletter through WTCS, with **9,618 subscribers**.
- EPIC published a cybersecurity newsletter through WTCS, with **785 subscribers**.
- The WTCS Twitter account had **4,056 followers**.
- The WTCS LinkedIn had **1,578 followers**; Instagram had **272 followers**.
- EPIC Threads account had **90 followers**.
- EPIC Bluesky account had **222 followers**.
- EPIC's two Facebook accounts had **1,162 followers**.

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[3] *Texas Advanced Computing Center. (2025). Texas CS Education Data Dashboard. https://tacc.utexas.edu/epic/research/dashboard*

[4] *Fletcher, C. L. & Warner, J. R. (2021). CAPE: A framework for assessing equity throughout the computer science education ecosystem. Communications of the ACM, 64(2), 23-25. https://doi.org/10.1145/3442373*

Summary and Future Directions

In 2024-25, EPIC greatly expanded its programs and services. Through the TXCSP, EPIC scaled existing teacher training programs related to CS teacher certification, cybersecurity, and AI. In 2024-25, TXCSP added the Educator Preparation Program (EPP) Community of Practice in collaboration with UTeach Computer Science to explore barriers to pre-service teacher preparation programs and recommend policy solutions. In addition, TXCSP launched Project ROCS to train rural teachers in integrating CS in agricultural lessons along with a Preferred Curriculum and Professional Development Provider program to engage additional high quality PD providers in serving more K-12 CS teachers across the state. Additional research programs began as well, such as the Algebra 1 Pathways Research project supported by Google.org and the NSF LCCF-funded Developing Computing Pathways Research project.

Moving forward, EPIC will build on past success and work to further increase its impact. Each of the TXCSP programs are continuing to grow in 2025-26, with additional WeTeach_CS Certification Hubs across the state and new cohorts of teachers participating in Middle School and High School AI Hubs, WeTeach_Cyber Hubs, Project ROCS, and Launch_K5 CS. The TXCSP is introducing new programs as well, such as the Family Engagement program for engaging students and their families in community events to learn about CS, Quantum Hubs for training teachers to teach quantum technologies in secondary classrooms, and Launch_MS CS that integrates computational thinking and CS into middle school. Other new programs include the Texas Supporting and Guiding Educators in CS (Texas SAGE CS) Teacher-Mentor Program, Cert Prep Open Plan (which offers CS certification prep resources outside of a formal hub), and Texas Computer Science Professional Development Week (TX CSPDWeek) workshops. In addition, EPIC is adding more externally funded projects, such as the Google.org supported AI Literacy for Innovation, Growth, and Networking (ALIGN) project to build AI literacy capacity among educators, school district leaders, and community stakeholders in Texas. EPIC will also continue to pursue opportunities to scale up its programs and partnerships with new states.

Appendix: EPIC Publications and Presentations

Publications (September 2024-August 2025)

Haynes, M., Garbrecht, L., Fletcher, C., Madrigal, A., & Baniahmadi, M. (2025). Strategies for increasing young women's participation in CS. In *Proceedings of the ACM RESPECT* Conference, 317-322. https://doi.org/10.1145/3704637.3734777

Jacobson, M. R., Wang, Z., Fletcher, C. L., & Carrell, A. L. (2025). Building teacher capacity to integrate computational thinking into primary school instruction: Strategies for designing high-quality and scalable interventions. In *Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education* V. 1, 541-547. https://doi.org/10.1145/3724363.3729038

Jacobson M. R., Wang Z., Yang Y., & Kaur K. Facilitators and barriers for integrating technology education into K-5 classrooms. (2025). In *Proceedings of the 56th ACM Technical Symposium on Computer Science Education* V. 2, 1491-1492. https://doi.org/10.1145/3641555.3705185

Jacobson M. R., Baker S. N., Yang Y., Childs J., & Wang Z, Garbrecht L. S. (2024). Data sharing and evaluation: Evaluation's role in improving the quality of open science data sharing platforms. *New Directions for Evaluation*, 184, 65-71. https://doi.org/10.1001/ev.20621

Kaur, K., Martin, N. D., Jacobson, M. R., Fletcher, C. L., Carrell, A. L, & Childs, J. (2025). No Administrator Left Behind: Insights from the Texas Computer Science Leadership Network. In *Proceedings of the 2025 Conference for Research on Equitable and Sustained Participation in Engineering, Computing, and Technology*, 367-371. https://doi.org/10.1145/3704637.3734795

Newland, J. (2025). Using Data Science in High School Astronomy. *ASP 2024: Astronomy Across the Spectrum*, *539*, 147. http://arxiv.org/abs/2501.04856

Zarch, R., & McCune, J. (2025) Minding the gap: Methods for understanding teacher capacity when developing high school computer science graduation requirements. In *2025 ASEE Annual Conference & Exposition*. https://doi.org/10.18260/1-2--56969

Presentations (September 2024-August 2025)

Andreas, A., & Newland, J. (2025). Bringing advanced astronomy to high school students with Colab. WeTeach_CS Summit. Austin, TX.

Belvin, C., Soares, E., Dunlap, T., & Newland. J. (2025). Strengthening teacher efficacy in computer science education through hands-on coding. TACCster 2025. Austin, TX.

Carrell, A. (2025). Defining barriers and advancing CS education in rural Texas schools. WeTeach_CS Summit. Austin, TX.

Carrell, A., & Fletcher, C. (2025). WeTeach_CS for STEM coordinators. STEM Coordinators Network. Virtual.

Carrell, A. (2024). WTCS grants and opportunities. ESC 19 CCR Meeting. El Paso, TX.

Childs, J., Antoine, A., Kaur, K., Green, E., Baker, S., & Fletcher, C. (2025). Preparing the next generation of computer science educators. AERA. Denver, CO.

Ciambra R., Rutherford, T., Kuper, O., Orr, L., Schwarz, A., Blackwell, J., French, Kaiser, D., Kelly, S., Newland, J., Perry, J., Ramseyer, E., Rebull, L., Strasburger, D., Urbabnowski, V., & Van Winkle, E. (2025). Curricula for educators to access authentic data. AAS Winter Meeting. Washington, D.C.

Fielder, R. (2025). Opportunities in AI and computer science. April 2025. Region 5 Superintendents Conference. Sea Drift, TX.

Fletcher C., DeLyser L., Garg K., & Wilson J. (2025). Navigating CS education research in unprecedented times. Infosys Crossroads 2025. Indianapolis, IN.

Fletcher, C. (2025). Ten years of WeTeach_CS. WeTeach_CS Summit. Austin, TX.

Fletcher, C., Schwartz, J., Kyle, T., & Walker, J. (2025). Navigating AI in education policy and practice. TASA Midwinter Conference. Austin, TX.

Garbrecht, L., Haynes, M., & Jacobson, M. (2024). Sharing strategies and lessons learned for effectively mentoring and empowering new evaluators. AEA Annual Meeting. Portland, OR.

Garbrecht, L. (2025). Evaluation services and K-20 teacher professional development. NSF CAREER Panel. Austin, TX.

Gomez, R., Akli, L., Hunter, D., Brown, T., Massie-Perez, S., & Antoine, A. (2024). Broadening participation and opportunity through innovative programs. TACC Symposium 2024. Austin, TX.

Haynes, M., Fletcher, C., Beavers, K., Llamas, M., Duplechin, L., & Warren, J. (2025). Professional pathways into computing. WeTeach_CS Summit. Austin, TX.

Haynes, M., Garbrecht, L., & Jacobson, M. (2024). Centering voices of students with blindness or low vision to improve inclusive chemistry lab experiences. AEA Annual Conference. Portland, OR.

Haynes, M., Garbrecht, L., Fletcher, C., & Madrigal, T. (2025). Promoting gender parity in secondary CS courses. AERA. Denver, CO.

Haynes, M., & Madrigal, T. (2024). Creating inclusive CS classrooms & increasing young women's participation. Texas Women & Girls in STEM Summit. Virtual.

Hendricks, N. (2025). Forging the future: Industry partnerships for cybersecurity education. Austin ISSA Quarterly Meeting. Austin, TX.

Hendricks, N., & Hunter, D. (2025). Leadership-class computing facility: Opportunities. Texas Association of Black School Educators. Galveston, TX.

Hendricks, N. (2024). Protecting MotionMend: A risk assessment case study. NICE K-12. San Antonio, TX.

Hendricks, N. (2025). Chalkboards to chatbots — the AI revolution. West TX Legislative Summit. San Angelo, TX.

Hendricks, N. (2025). Introduction: Cyber.org's Cyber Society. TCEA. Austin, TX.

Hendricks, N. (2024). Introduction to Cyber.org's Cyber Society. ACTE Vision. San Antonio, TX.

Hendricks, N (2025). Networking. July 2025. TIVA 2025. Corpus Christi, TX.

Johnson, G., & Newland, J. (2025). Incorporating Python through Google Colab into physics/kinematics. WeTeach_CS Summit. Austin, TX.

Lau, J., & Speed, H. (2025). Introducing physical computing inputs and outputs to young learners. June 2025. WTCS Summit. Austin, TX.

Martin, N., & Fletcher, C. (2024). Scaling inclusive pedagogy in computer science. Beyond100K Annual Summit. Austin, TX.

Newland, J., & Friberg, E. (2024). Data, data, data! Use phenomena to drive science learning. CAST 2024. San Antonio, TX.

Newland, J. (2025). Enhancing CT attitudes in physics students by code-based model-building. CSTA Annual Conference. Cleveland, OH.

Newland, J. (2025). Impacting student attitudes about CS through integration into science. WeTeach_CS Summit. Austin, TX.

Newland, J. (2025). Improving student computational thinking outcome expectancy. Texas Section AAPT/APS. Houston, TX.

Newland, J., Andreas, A., Hickey, J., Ramseyer, E., Strasburger, E., & Crosby, B. (2025). Bridging Research and the Classroom: Leveraging Multi-Wavelength Data for SED Plots of Young Stellar Objects Using Google Colab. American Astronomical Society Winter Meeting. Washington, D.C.

Newland, J. (2025). Integrating data science pedagogy into astronomy courses. Data Science Education K-12 Conference. San Antonio, TX.

Orban, C., & Newland J. (2025). Resources to integrate CS skills into high school math and science. CSTA Annual Conference. Cleveland, OH.

Robison, S., Jacobson, M., & Henderson, S. (2024). Challenges and opportunities in evaluating university-based centers and institutes. AEA. Portland, OR.

Roehl, S. (2024). AI 101 for educators: Code.org. Humble ISD AI Summit. Humble, TX.

Roehl, S. (2024). Artificial intelligence is not magic — it is just code. Humble ISD AI Summit. Humble, TX.

Roehl, S. (2025). Data insights and AI. National Rural STEM Learning Summit. Fort McDowell, AZ.

Roehl, S. (2025). Coding fundamentals and physical computing with Micro:bits. Cyber EdCon. Rosemont, IL.

Roehl, S., & Lau, J. (2025). SCRATCHing the surface of elementary coding. TCEA 2025. Austin, TX.

Roehl, S. (2025). Reimagining futures: Empowering students through AI pathways. School-University Partnerships in Education. Corpus Christi, TX.

Roehl, S., Wang, Z., & Carrell, A. (2025). Unlocking data insights with AI for rural educators. National Rural STEM Conference. Fort McDowell, AZ.

Vega, J. (2025). ROCS. Agriculture Teacher Conference. Corpus Christi, TX.

Wang, J. Yeh, M., & Newland, J. (2025). Advancing mentorship through quantum research experiences in high school. Quantum Science and Engineering Education Conference. Albuquerque, NM.

Whyte, C. E., Jacobson, M., & Tsai, A. (2024). Implementing statewide education evaluations with stakeholder engagement in Texas and California. AEA Conference. Portland, OR.