



From Potential to Partnership

Recommendations for Leveraging Corporate Engagement to Expand Computer Science Access in North Carolina

October 20, 2025

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Developed thanks to a co-sponsorship award from Expanding Computing Education Pathways (ECEP)



College of Education
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Objective

The strategies outlined in this brief aim to increase access to high-quality K-12 Computer Science learning across all regions and student populations in North Carolina. By prioritizing support for under-resourced schools, investing in teacher development in rural and high-poverty areas and creating meaningful career exposure for students, North Carolina can build a stronger, more inclusive pipeline of future-ready talent. Corporate partnerships play a vital role in ensuring all students have opportunities to thrive in the tech economy.

North Carolina's Moment of Opportunity: A Workforce Snapshot

North Carolina is rapidly solidifying its status as a national tech leader. With over 40,000 unfilled CS-related jobs and 31% growth in tech occupations in the past five years ([NC TECH Association, 2025](#)), the need for a diverse, well-prepared tech workforce has never been greater.

Yet, despite strong demand, access to foundational K-12 CS education is uneven:

- While NC leads nationally in female representation (~38%), racial diversity remains modest - just 14% Black/African American and 4% Hispanic/Latino ([prnewswire.com](#)).
- Code.org reports that only 60% of U.S. public high schools offer foundational CS with deeply uneven enrollment ([Code.org State of Computer Science Education, 2024](#)).
- Teacher capacity remains a significant challenge: programs like the [NC-Computer Science Professional Learning Program](#), funded by NC Department of Public Instruction and Code.org, and programs like the NCSSM Data Science Summer Institute offer strong support, but demand still outpaces the current professional development infrastructure.



Recent policy shifts, including NC SL 2023-132, which mandates CS in high school and requires middle schools to offer an introductory course, have laid the foundation for statewide expansion ([NC General Assembly, 2023](#)). But implementation requires more than policy: it demands *partnerships*.

Where Corporate Engagement Stands Today

Corporate influence in CS education exists but remains underleveraged. Current contributions include:

- NC TECH Association, representing 700+ companies and 250,000 workers, offers the IT Job Trends dashboard, annual research, scholarships and a Talent Portal - all reinforcing the importance of STEM pipelines ([NC TECH, n.d.](#)).
- CS4NC, North Carolina's chapter of the Expanding Computing Education Pathways (ECEP) Alliance, convenes stakeholders from education, government, higher education and industry to coordinate efforts around CS education ([CS4NC, n.d.](#)).
- Schools in the Fayetteville region can partner with [Fayetteville Technical Community College](#) (FTCC) through its [High School Connections](#) and [Computer Programming & Development programs](#). FTCC already works with local high schools via dual-enrollment pathways, offering K–12 students access to college-level CS coursework, hands-on lab experiences and clear career connections in areas like programming, PC support and network defense. This partnership with FTCC offers a scalable model to embed CS career pipelines directly from high school into post-secondary education and industry.
- Companies like Microsoft and Google support workforce development through initiatives like the [NCSSM's Data Science Summer Institute](#) and Google Career Certificates with the NC Community College System ([NCCCS, 2024](#)).
- Nonprofits such as [FIRST NC](#), [Kramden Institute](#), [Digital Durham](#) and [Code the Dream](#) support K–12 STEM and CS access, often funded by corporate philanthropy.

While promising, direct partnerships between corporations and K–12 public schools remain rare and inconsistently documented, representing a missed opportunity for scalable, targeted impact.

Why Genuine Partnership Matters

North Carolina's tech economy depends on a diverse, skilled workforce. Corporate partnerships in K–12 CS:

1. Expand capacity, helping to close access and teacher shortages.
2. Expand opportunity by prioritizing support for schools and communities with limited access to computer science education.
3. Bridge education and careers, making CS relevant and aspirational.
4. Strengthen policy, adding corporate influence to enforcement of policies like the NC CS Graduation Mandate, SL 2023-132.

Key Avenues for Industry Impact

There are several high-leverage opportunities for corporate partners to meaningfully expand computer science (CS) education in North Carolina. First, corporations can invest in teacher capacity by funding professional development stipends, substitute coverage and immersive training experiences offered through the [NC Department of Public Instruction \(DPI\)](#), or partner-led sessions with [Code.org](#), the [NC CTE Summer Conference](#) and [College Board's AP Classroom](#) training sessions.

The North Carolina Business Committee for Education ([NCBCE](#)), housed in the Office of the Governor, provides a powerful model for public-private partnerships. Through initiatives like LiNC-IT, Tech Team and READY (Real-World Experiences Aimed at Developing Youth), NCBCE facilitates collaboration between business leaders and K-12 schools to create work-based learning opportunities, strengthen career pathways and build educator-industry engagement. Their statewide scope and policy alignment make them an ideal collaborator for scaling computer science education access and relevance across North Carolina.

These investments are particularly impactful in rural or high-need districts that face persistent challenges in staffing qualified CS educators.

Donations of equipment, such as laptops, robotics kits, virtual reality headsets and other instructional technology, can help address resource gaps that limit hands-on learning opportunities for many students. Infrastructure upgrades, particularly in schools with outdated or limited connectivity, are also critical for equitable implementation of CS curricula. Corporate support could also bolster training initiatives such as [Coding in Minecraft](#), which provides hands-on, standards-aligned learning tools for both students and teachers, especially in under-resourced areas.

Mentorship and career exposure initiatives offer another powerful avenue. Corporate employees can serve as mentors, guest speakers or host job-shadowing events that introduce students to real-world CS careers. These experiences are especially meaningful for students who may not otherwise see themselves reflected in the tech industry. Programs like the [NCSSM Data Science Summer Institute](#) exemplify how industry and education can collaborate to expose students to emerging fields and build early career interest in CS-related pathways.

Pre-college paid internships for high school students provide both financial support and early exposure to CS career paths. When targeted toward students from communities with fewer opportunities, these internships help overcome barriers to participation in the tech economy. Similarly, corporations can collaborate with educators to co-design curriculum modules that reflect current industry needs (such as cybersecurity, artificial intelligence or data science) and

offer teacher training on emerging tools and technologies through regional convenings or educator academies.

Finally, sponsoring after-school CS programs, such as coding clubs, robotics teams, hackathons or summer camps, can expand access to informal learning opportunities. These programs are especially beneficial when designed to include students who have historically had fewer pathways into computing, such as those in rural schools or from economically disadvantaged backgrounds. Corporate-sponsored events or in-kind support can help ensure these experiences are not only available but sustainable across diverse educational settings.

Powering CS Pathways: Six Actions for Industry

- Invest in Teacher Capacity
- Provide Equipment and Infrastructure
- Mentorship and Inspiration
- Pre-College Paid Internships
- Support Curriculum Relevance
- Sponsor After-School CS Programs



How Districts Can Engage

To initiate or expand partnerships, districts and schools should begin by identifying specific gaps, such as teacher training, equipment needs or student exposure, and develop concise proposals that clearly communicate these needs. Leveraging established networks such as [NC DPI's Computer Science, IT, and Technology Education](#) resources; the [Friday Institute for Educational Innovation](#), part of NC State University; and the [NC TECH Association](#) can help connect schools to aligned industry partners.

Regional organizations offer additional entry points for engagement, though not specifically CS based. In Eastern NC, [STEM East](#) operates a virtual platform that bridges classrooms and local STEM professionals, offering valuable exposure for students in rural communities. In Southeastern NC, [STEM SENC](#), based at UNC Wilmington, unites K–12 educators, higher education partners and employers to build coordinated strategies for STEM and CS education. In Western NC, [STEM West](#) collaborates with schools, businesses and community partners to expand access to STEM learning opportunities and align workforce development efforts with

regional economic needs. In Wake County, the SummerSTEM program connects teachers with STEM-industry professionals through immersive business site visits and project-based learning training, equipping educators with authentic, real-world experiences to take back into the classroom ([Wake Ed](#)).

When crafting outreach materials, schools should align their proposals with corporate social responsibility (CSR) goals, particularly those focused on workforce development and community investment. Starting with small pilot programs can help build trust and demonstrate impact, creating a foundation for long-term collaboration. Schools and districts are also encouraged to participate in events such as [NC TECH's State of Tech EXPONENTIAL](#) conference to network with potential partners and elevate their visibility within the industry.

Schools and districts can also explore grant opportunities such as the NCDPI Education and Workforce Innovation Commission (EWIC) Grants, which require partnerships between educational entities and businesses to promote college and career readiness. These grants offer a funding mechanism to support scalable, local solutions that align CS education with labor market demands ([EWIC Grants](#)).



Corporate Social Responsibility (CSR) Goals

- Environmental Sustainability
- Social Impact and Community Engagement
- Ethical Labor and Human Rights
- Responsible Governance and Transparency
- Economic Responsibility

Additionally, state-level economic development programs, such as NC Commerce's Sector Strategies, emphasize employer-education alignment to address skills gaps. While not solely K-12 focused, these initiatives reinforce the broader state commitment to connecting talent pipelines with industry ([NC Commerce Sector Strategies](#)).

These strategies align with broader statewide priorities. Districts may also consider applying for EWIC grants or participating in NC Commerce's Sector Strategies to amplify their impact through collaborative innovation.

Models for Replication

North Carolina can draw inspiration from scalable corporate-education partnership models already in use nationwide. For example, [Google Code Next](#) empowers students through project-based learning and hands-on maker spaces—models that can be replicated locally to provide engaging, culturally relevant CS experiences. [Microsoft's TechSpark](#) initiative, originally developed for community colleges, can be adapted for high schools to offer dual enrollment opportunities, industry credentials and career-aligned pathways. Likewise, [FIRST Robotics](#) sponsorships offer a proven model in which local tech companies “adopt” school teams by providing mentorship, funding and industry exposure.

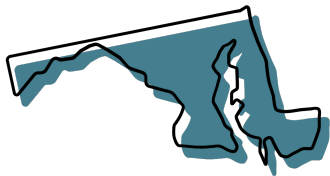
- Google Code Next operates in select cities to empower students through project-based learning and community-based maker spaces. This model offers an ideal local pilot opportunity for community tech hubs or urban districts seeking inclusive engagement.
- Microsoft TechSpark, initially focused on postsecondary institutions, can be adapted to the high school level. In states like Wyoming and North Dakota, TechSpark has supported dual enrollment, digital skilling and economic development programs, showing promise for replication in rural NC.
- FIRST Robotics pairs local tech companies with school teams, offering funding, mentorship and real-world exposure through national competitions. This model is active in several ECEP states and demonstrates the impact of long-term, sustained industry-school collaboration.



What Other States Are Doing

As part of the national ECEP network, North Carolina can also draw on models from other ECEP states - such as Maryland, Rhode Island and Arkansas - that have successfully leveraged corporate partnerships to support teacher training, curriculum co-design and statewide awareness campaigns.

Maryland



Through the Maryland Center for Computing Education (MCCE), created with the Maryland State Department of Education, the state has aligned K–12 CS pathways with regional workforce needs. MCCE initiatives emphasize access for schools and sustained teacher professional learning through partnerships with higher education and industry ([Maryland State Department of Education, 2024](#)).

ECEP funding further supported statewide CS summits and targeted professional development and educator growth in the CS pipeline with industry backing ([Maryland Computing Education Expansion, 2018](#)).

Rhode Island



Rhode Island's CS4RI initiative, launched in 2016, requires CS in all public schools and 86% of high schools. Partnerships with Brown, URI and Microsoft's TEALS program have trained over 1,000 new instructors with \$210,000 in annual PD funding.

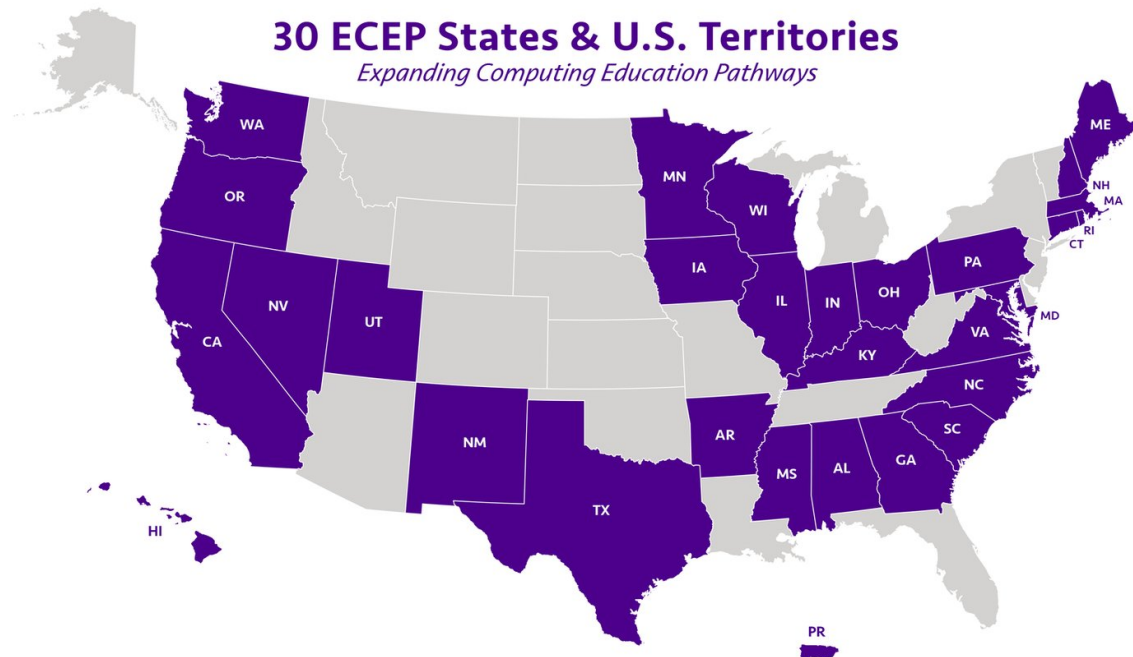
The state has also expanded work-based learning through local companies and high schools, supported by a \$2.5 million U.S. Department of Education grant—showcasing how industry partnerships can scale professional learning and career-aligned student experiences ([Digital Center for Education, 2021](#)).

Arkansas



Arkansas, through ECEP-aligned leadership and governor-backed policies, established its Computer Science Task Force to prioritize CS in K–12 education.

The state leverages public and private funding to build coalitions, integrate CS into ESSA plans and engage corporate partners in strategic planning. It also funds pre-service training for educators who commit to serve high need districts, supported by corporate investment ([State of the States Landscape Report, 2017](#)).



Expanding Computing Education Pathways (ECEP). (2023). *Alliance Members map*. In *ECEP Alliance Members*. <https://ecepalliance.org/alliance-members/>

Key Takeaways from ECEP States

Maryland, Rhode Island and Arkansas offer clear examples of how coordinated corporate and state partnerships can drive meaningful progress in computer science education. North Carolina can immediately consider adopting similar strategies, such as investing in sustained professional development for educators, co-developing curriculum aligned to regional job markets and launching state-supported work-based learning initiatives. These practices not only accelerate implementation but also build lasting connections between schools, higher education and industry, ensuring students are better prepared for CS pathways from classroom to career.

Acting on Promise

North Carolina is well-positioned to lead in developing a robust, inclusive tech talent pipeline. Recent legislation, dedicated professional development efforts and cross-sector collaboration have laid important groundwork. As a participating ECEP state, North Carolina is also part of a broader national effort to expand and diversify computing education. By aligning with proven models from peer states and scaling localized partnerships, North Carolina can serve as a leader in building accessible, workforce-aligned CS ecosystems. However, realizing the full promise of CS education will require a deeper, more coordinated commitment from the state's corporate community. By investing in teachers, equipping classrooms, mentoring students and building curriculum relevance, corporate partners can transform today's mandates into long-term impact, ensuring that every student in North Carolina has the opportunity to explore, engage with and succeed in the world of computing.

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Jaclyn Stevens empowers educators and leaders to design adaptive, student-centered learning experiences, guided by her philosophy to “adapt, not adopt.” At the Friday Institute for Educational Innovation, she leads professional learning and research initiatives in digital literacy, computer science and AI integration. Her work bridges instructional design, technology access and translational research to advance innovative curriculum and strengthen educator capacity.

Suggested Citation

Friday Institute for Educational Innovation (2025). *From Potential to Partnership: Recommendations for Leveraging Corporate Engagement to Expand Computer Science Access in North Carolina*. North Carolina State University. <https://fi.ncsu.edu/from-potential-to-partnership/>