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ARCHITECTING AN ADAPTIVE WORKFORCE

2025 PARTNER REPORT

The future of work is no longer built on static expertise, but on structured adaptability. The workforce needs to be purposely designed with foundational skills that both anchor growth and evolve with technology. It is not enough to train for today, we need to architect for what's next.

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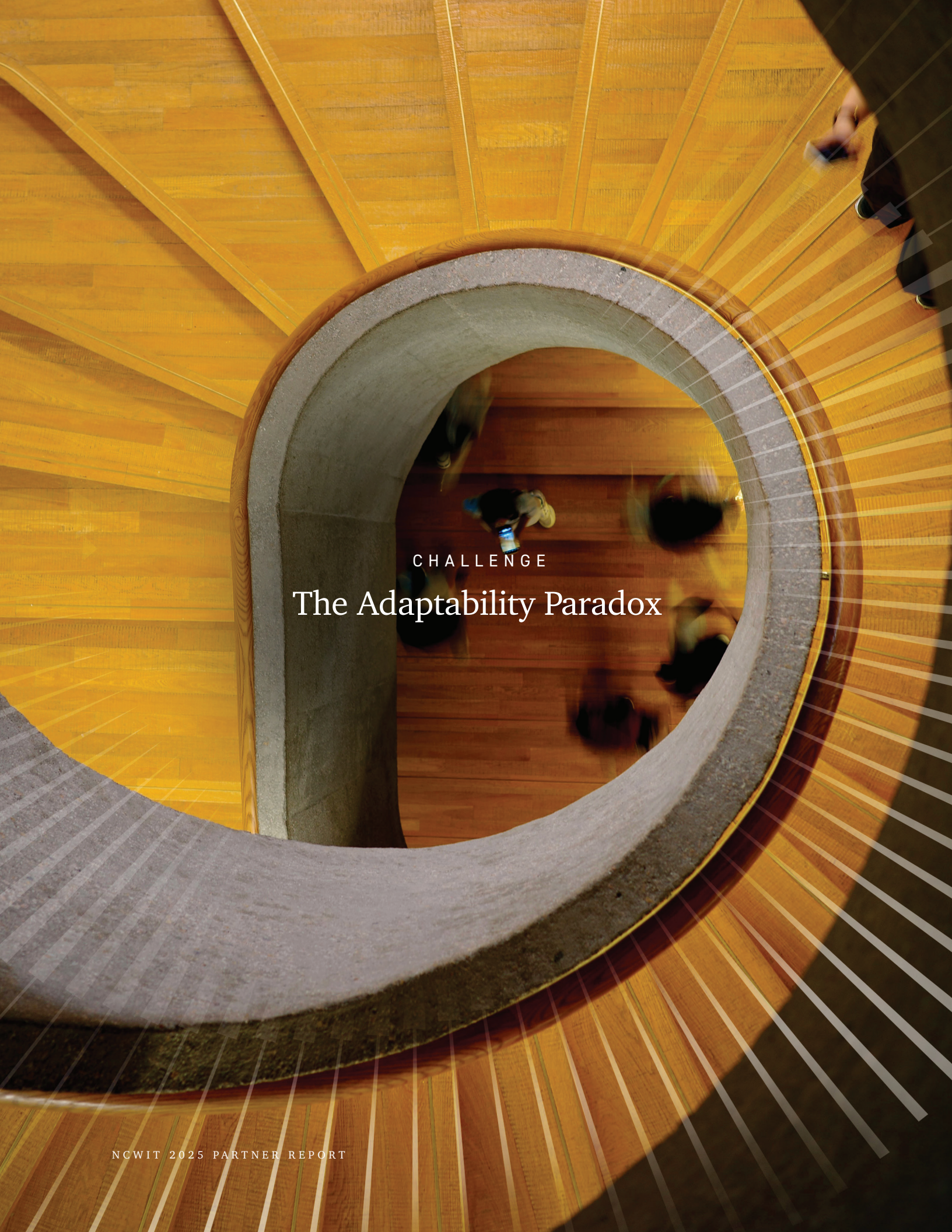


INTRODUCTION

Designing the workforce of what's next

2025 was a year of profound transformation, driven largely by the exponential explosion of artificial intelligence (AI) across every sector of industry, education, and people's personal lives. This avalanche of AI integration has fundamentally shifted the conversation around the future of technology and engineering careers. Though the demand for integration, cybersecurity, and validation skills is higher than ever, there is also a shift occurring in the hiring landscape: employers are increasingly prioritizing adaptability and capability. "New-collar" roles, which combine hybrid skills of technical fluency, manual capability, and continual adaptability, are becoming the backbone of the new economy. However, we are simultaneously witnessing a counter-trend born of uncertainty. As white-collar hiring slows and recruiters are flooded with thousands of AI-generated resumes, many organizations are retreating to the perceived safety of pedigree and thus overlooking untapped, high-potential talent. Recent reports highlight that some major firms are narrowing their campus recruiting efforts back to a shortlist of up to only 30 elite universities out of 4000 nationwide, as a proxy for rigor and grit.

At NCWIT, we believe this retreat to exclusivity is a risk our country cannot afford. We are on the cusp of harnessing the power of quantum technologies, an advancement that will eclipse our current computing power in dramatic and unprecedented ways. It is a shift that has been compared to moving from paper maps to GPS for navigation: It is a complete paradigm change. For example, it renders even our most advanced encryption algorithms, which rely on the mathematical difficulty of factoring prime numbers, fragile. Quantum computers can crack such unsolvable algorithms in a matter of minutes. That said, quantum computers also have the potential to solve previously intractable problems that would benefit millions of people. For example, entire genomes can be mapped, allowing for personalized therapeutic strategies in oncology, neurology, and rare genetic disorders. A transformation of this scale cannot be achieved by a few; to navigate a shift of this magnitude, we must engage the full power of a vast, diverse workforce.



CHALLENGE

The Adaptability Paradox

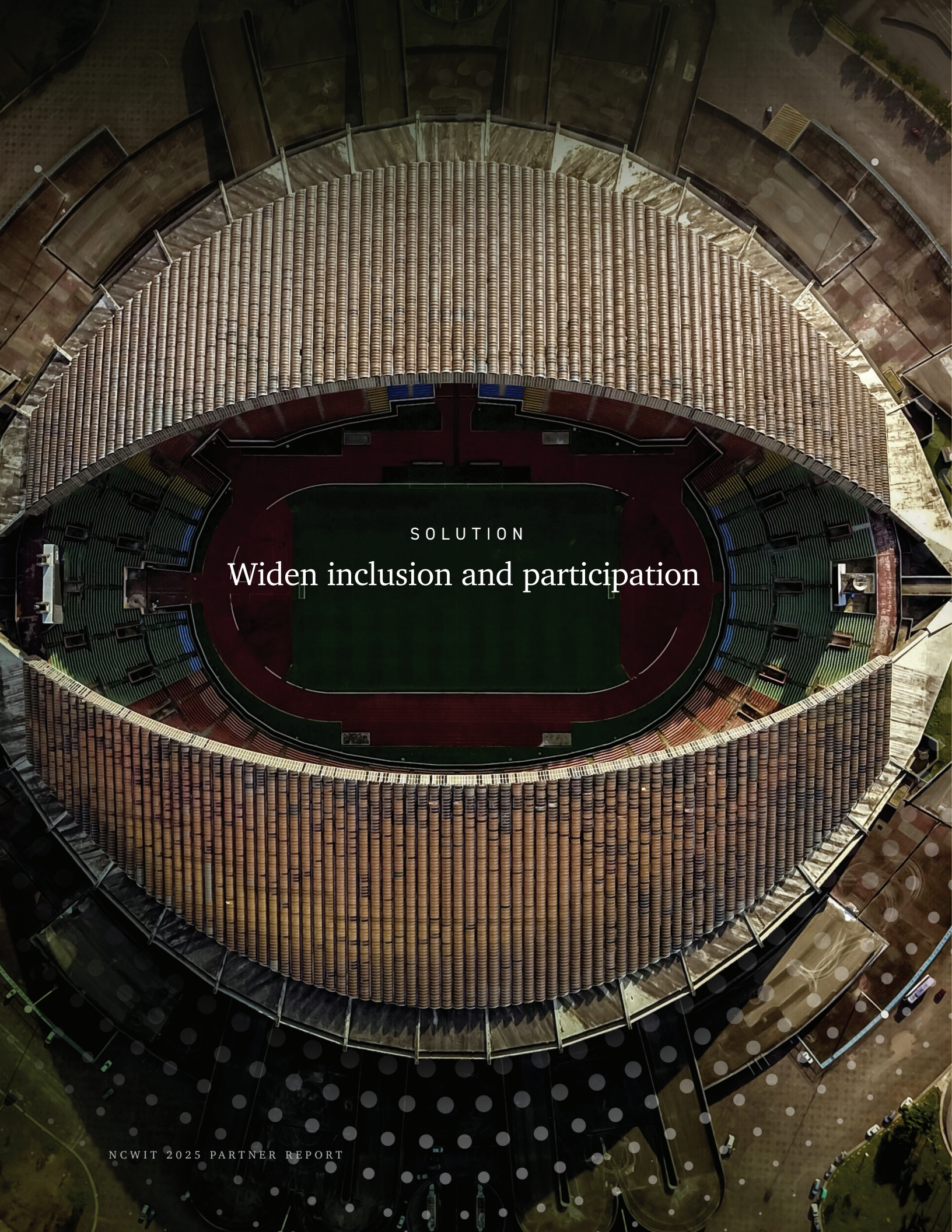
Though the demand for technical talent may never have been higher, the nature of the talent gap has shifted. Today, we face a paradox: As AI and quantum technologies accelerate, traditional technical proficiencies are becoming obsolete faster than our educational systems can adapt to shifting needs. We are no longer just facing a shortage of workers—we are facing a critical misalignment of skills and mindsets.

The “Half-Life” of Technical Skills and the Loss of International Students

Technical proficiency in a specific language or tool can change or become secondary every 2.5 to 5 years. Yet, traditional educational pathways, from K-12 through higher education, are slow to respond to emergent needs. The phenomenon of curricular lag describes the struggles institutions face in integrating rapidly advancing fields like AI and quantum information technology (QIT) in real time. This internal struggle to keep pace is made more urgent by a shift in global talent trends that has created a domestic capacity crisis. While the U.S. has historically relied heavily on international talent to sustain high-tech sectors, with 60% of computer science master’s degrees previously awarded to international students, new international student enrollments fell by 17% in the 2025-2026 academic year. Quite simply, we can no longer rely on outside talent to fill workforce shortfalls.

The Participation Divide

The rapid avalanche of AI integration risks pushing the most marginalized communities even further to the periphery. If foundational computing access remains a luxury, the leap to quantum and AI will become an insurmountable barrier. We are currently facing a shrinking foundation: in 2025, the percentage of high school students who participated in a foundational computer science class fell from 6.4% to 6.1%. Within that narrow pool, the gap for women and other marginalized students remains a persistent crisis with only 33% women and 38% from Black, Latine, or Native American (BLNA) backgrounds. At a time when we need a vast, diverse range of perspectives to navigate the quantum and AI era, we are instead narrowing the pipeline of who gets to build it.



SOLUTION

Widen inclusion and participation

Our vision is a technology ecosystem, K-12 through career, where everyone thrives and influences innovation. We seek to cultivate a robust and dynamic tech workforce, recognizing that broader participation drives innovation, boosts economic output, and secures the nation's competitive position in an increasingly globalized market. Ensuring that the U.S. remains at the forefront of technological innovation and economic growth in the 21st century requires focused attention on engineering and computational thinking, professional school counselors, students themselves, and the environments in which individuals learn and work.

KEY STRATEGIC GOALS:

INDIVIDUAL CAPACITY:

Increasing the ability of individuals to participate fully in the technology ecosystem.

ORGANIZATIONAL CHANGE:

Equipping corporations and academic institutions to create inclusive cultures where all talent can thrive.

PUBLIC AWARENESS:

Shaping cultural narratives to expand access to and participation in technology.

In this rapidly evolving world, where technical proficiency cycles every few years, we are pushed to ask, what skills do students and workers truly need, and how can we mitigate the tendency of organizations facing uncertainty to retreat from the practices most likely to widen inclusion and participation? NCWIT's answer lies in four pillars:

1.

FOUNDATIONAL PROBLEM-SOLVING

TEACHING STUDENTS ENGINEERING-THINKING SKILLS AND HABITS OF MIND THAT ALLOW FOR ADAPTATION TO ANY ENVIRONMENT.

2.

GUIDANCE & COMMUNITY

HELPING STUDENTS UNDERSTAND AND CHOOSE FROM RAPIDLY EVOLVING CAREER PATHS, AND OFFERING THEM SUPPORTIVE COMMUNITY ALONG THE WAY.

3.

HUMAN-CENTRIC SKILL DEVELOPMENT

HELPING ORGANIZATIONS REALIZE THE POTENTIAL OF NEW TECHNOLOGIES BY TEACHING INDIVIDUALS COLLABORATION, RESILIENCE, AND LEADERSHIP SKILLS

4.

BUILDING CAPACITY FOR INCLUSION

WORKING WITH TEAMS AND ORGANIZATIONS TO DEVELOP THE POLICIES AND PROCEDURES NEEDED TO ENSURE ALL WORKERS CAN THRIVE.



1. FOUNDATIONAL PROBLEM-SOLVING

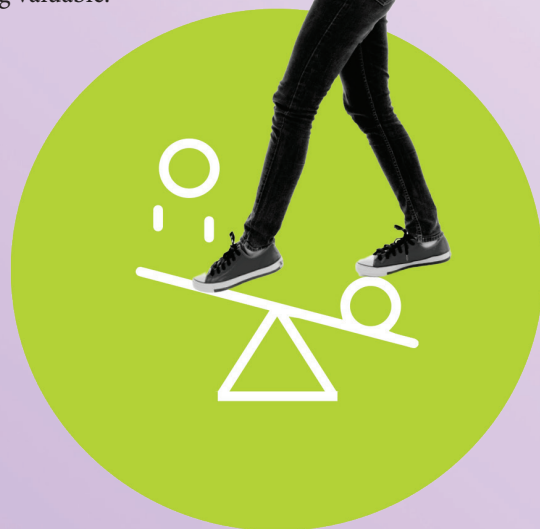
The Teach Engineering program empowers K-12 educators

Teach Engineering (TE) empowers educators who are intimidated by the prospect of bringing engineering design into their classroom by offering access to a free digital library that provides standards-aligned, hands-on activities, as well as the educational support systems and videos needed to help educators succeed.

Teach Engineering (TE) demystifies engineering design for K-12 educators. By providing a curated library of standards-aligned, hands-on activities, supported by instructional videos and peer systems, TE replaces classroom hesitation with the confidence to lead high-impact STEM learning. Teach Engineering professional development equips formal and informal K-12 educators with the knowledge, skills, and confidence needed to effectively integrate engineering design and design thinking into their existing STEM curriculum.

In addition, the program includes the 2025 launch of a teach-the-teacher model wherein Teacher Champions offer professional development sessions and presentations to school districts, curriculum coordinators, teachers, and students in their local area.

90%
of participants reported that they learned something valuable.



80%
are motivated to share what they learned about Teach Engineering with other teachers.

2,000+
engineering and engineering-related STEM materials were contributed by 100+ university partners.

“Participating in the Teach Engineering Champions Institute has been both empowering and energizing. The program gave me the tools, confidence, and community to champion engineering education in a way that feels accessible and relevant to the students I serve.”

- TECI Participant



Visit our updated website with over 2,000 lessons at teachengineering.com



2. GUIDANCE & COMMUNITY

NCWIT supports both school counselors
and the students themselves
in their technical journeys

Navigating the fast-moving world of technology requires an adaptive workforce created through a multi-layered strategy that addresses both the institutional gatekeepers and the students themselves. School counselors must be equipped with up-to-date career information; as the primary architects of a student's academic path, they cannot effectively guide students toward high-growth fields if they are operating on outdated perceptions of the tech landscape. Simultaneously, information alone is insufficient for students who do not see themselves reflected in the industry. To move from interest to persistence, students need a robust, supportive community where they can cultivate a technologist identity. Such a community provides the essential social capital—growth opportunities, awards, and peer resources—that transforms a fleeting interest into a professional trajectory, ensuring that once a counselor provides a roadmap, the student has the internal resilience and external support to navigate it.

Counselors for Careers in STEM

School counselors are oft-overlooked yet critical influencers in a student's journey. They advise and encourage student career aspirations, provide course recommendations, and introduce students to occupations. However, in the past year, we have uncovered a profound and immediate crisis in middle and high school education: the systemic unpreparedness for AI's impact on students' academic, career, and social-emotional development. NCWIT research shows that counselors are underprepared to advise about computing and technology; and AI, which is rapidly reshaping future careers, is even more foreign to them. Those in advising roles must be AI-literate to prepare their students for a world where AI proficiency will be a baseline skill.

School counselors' influence extends significantly beyond students. As systemic change agents, counselors are uniquely positioned to advance AI literacy, ensuring that benefits are maximized and risks are mitigated. For example, a counselor with social science-informed AI literacy can consult administrators to shape policy, collaborate with educators on curriculum integration, and use school data to ensure equitable access to AI-related opportunities.

Counselors must prepare students for a world where AI is both a tool and part of their academic, career, and personal lives, including their social/emotional development. In 2025, NCWIT's C4C program launched a comprehensive, full-day professional development workshop, "Guiding Students in the AI Era" which equips counselors to prepare students for future careers while promoting safe, responsible AI use. It is backed by social science expertise and provides a holistic framework to guide students in understanding AI, while also addressing ethical and social dimensions of AI and students' responsible use.

"I was aware of how little I understood AI, but I am shocked at how much we are failing our students by not addressing AI literacy now."

- C4C PD Participant

The majority of AI workshop respondents are very likely to talk with students about their AI use and share resources provided in the workshop, creating a cascade effect that will benefit thousands of students.

25,000+
counselors have been trained in a professional development workshop, with a potential reach of nearly 11 million students.

100%
of AI workshop attendees reported being more knowledgeable about AI and better equipped to guide students on its safe and responsible use as a result of workshop attendance.



Aspirations in Computing (AiC)

AiC builds the next generation of technologists by offering recognition, access to resources (scholarships, internships, jobs, etc.), and mentorship to a community of more than 30,000 technologists. With thousands entering each year from across the U.S., the program has shown positive outcomes: 89% of AiC community members report a college major or minor in a science, technology, engineering, or mathematics (STEM) field (77% in computing or engineering specifically). By offering longitudinal support (K-12 through career), NCWIT provides encouragement and a community that conquers isolation, builds in long-term motivation, opens doors, and changes lives.



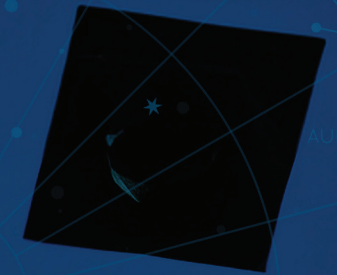
NCWIT'S 2026 AiC Ambassadors
(left to right): Raechel Walker,
Paola Mendiola Efigenio,
Sajida Shabanali and Rebekah Butler.

“I truly believe that even just being nominated for the award had a significant impact on my decision to pursue a degree in computing [...], and winning the award further showed me that there is a place for me in computing.”

- AiC High School Award Winner

92%

of AiC award winners agreed that winning the award increased their confidence.



97%

of AiC Community members say they are likely to stay in a technology field.

89%

of AiC Community members report a STEM-related college major or minor.



3. HUMAN-CENTRIC SKILL DEVELOPMENT

NCWIT's Online Learning Lab empowers individuals to develop the human-centric skills they need to thrive

This past year saw a decrease in organization-supported initiatives focused on internal cultures, and in response NCWIT has expanded our individual learning opportunities. In this climate, individuals' everyday micro-behaviors play an outsized role in transforming workplace cultures into ones where all employees can thrive. Drawing on two decades of research and experience, NCWIT's Workforce and Higher Ed Alliances partner with employers and postsecondary institutions to implement the practices needed for inclusion. In 2025, NCWIT continued its work with postsecondary institutions and launched an online learning lab (OLL) that provides the human-centric skills like collaboration, resilience, and growth mindset, that employers now prioritize.

Focus: The NCWIT OLL shifts the center of gravity away from top-down training mandates and toward an evidence-based model that equips individuals with inclusive micro-behaviors that create ripple effects and critical mass, ultimately transforming organizational culture norms.

Impact: Thirteen of 15 ratings from individuals taking courses as part of a Learning Circles Pathway rated the courses as 5/5 for meeting their expectations, stating that the courses "had good information," "were informative," and "provided valuable tips and ideas [for planning change efforts]." Multiple course takers also noted their appreciation for the type and breadth of topics included in the courses.

4. BUILDING CAPACITY FOR INCLUSION

NCWIT helps organizations build internal capacity to create and sustain cultures where all employees can thrive

Although individual skill-building is critical, meaningful change cannot occur without parallel efforts to dismantle biased systems and foster inclusive cultures. For years, NCWIT has served as a “central nervous system” for this kind of systemic change. Its network of more than 1,600 organizations provides a unique infrastructure for collaboration, shared learning, and the exchange of evidence-based practices, accelerating progress across the K-12 to career ecosystem.

NCWIT’s approach emphasizes internal ownership and sustainability. Rather than employing a consultant-driven model, NCWIT builds internal capacity so organizations and individuals can sustain change from within—ensuring impact that endures beyond any single program or leader. For example, 34 postsecondary institutions engaged in-depth work under NCWIT’s guidance to transform the culture of their computing departments with efforts to broaden participation in 2025. Additionally, recognizing that organizations contain many distinct subcultures, NCWIT uniquely focuses on designing customized interventions at the workteam level, where culture is most actively formed and reinforced.

“HPE deeply values our multi-year partnership with NCWIT and the measurable impact it creates for our teams and the broader tech ecosystem. They equip leaders and teams with research-backed practices that improve inclusion, retention, and collaboration—outcomes we monitor through pulse surveys, ERG metrics, and post-event application.”

- Rasheda Carter, PMP, Culture and Engagement Manager, HPE

88%
of corporate employees reported an improved ability to create inclusive environments.

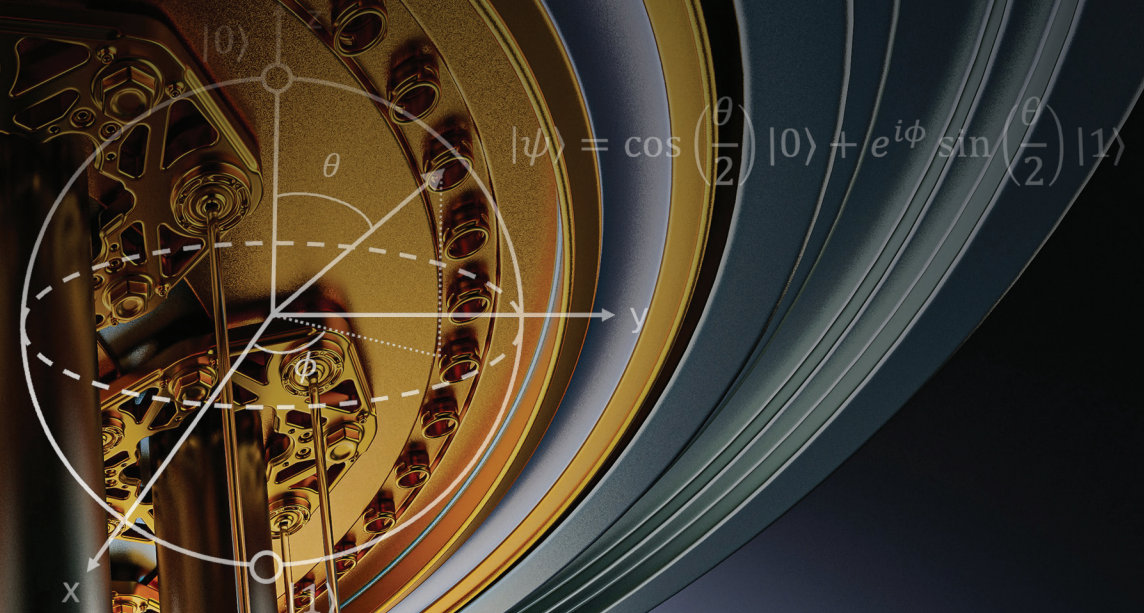
83%
of corporate employees reported increased attention to whose voices are heard in meetings.

FUTURE OUTLOOK

Adaptation Is the Advantage.

It is unclear what the future holds, so NCWIT seeks to examine the foundations needed to thrive regardless of the technology specifics that rest on them. We cannot simply react to the next wave of innovation, we need to focus on the systemic levers that ensure the U.S. tech workforce remains resilient, no matter how fast the technology cycles. Our strategy moves beyond teaching specific, perishable technical skills; we are investing in the long-term drivers of success.

In this era of rapid change, the U.S. can build and maintain an innovative advantage when organizations architect classrooms and workplaces with the foundational ingenuity needed to pivot and the inclusive cultures that allow all people to thrive. Join us in our mission to ensure that the future of technology belongs to everyone.



REFERENCES AND CREDITS
https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf
<https://learning.linkedin.com/content/dam/me/business/en-us/amp/learning-solutions/images/lis-linked-in-talent-report-2026/pdfs/2026-linked-in-talent-velocity-advantage-report.pdf>
<https://www.wsj.com/lifestyle/careers/elite-colleges-are-back-at-the-top-of-the-list-for-company-recruiters-ad9526ac>
<https://www.ssh.com/academy/how-quantum-computing-threats-impact-cryptography-and-cybersecurity>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC12096140>
<https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/>
<https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/building-leaders-in-the-age-of-ai>
<https://www.forbes.com/sites/annaesaksmith/2025/11/17/new-international-student-enrollments-in-us-slid-17-this-fall-survey-shows/>
<https://www.edweek.org/teaching-learning/how-to-get-more-students-into-computer-science-classes-in-the-age-of-ai/2025/12>

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The idea you don't have is the voice you haven't heard.

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