



Focus: Strengthening STEM Education Workforce Pathways

From Robotics to Virtual Anatomy, Students Explore Future STEM Careers 3

Conference Connects Teachers with STEM Classroom Innovations. 5

Bring IDRA VisionCoders to Your School..... 7

Changing the State of Girls in STEM Through Access, Culture and Confidence

by Stephanie Garcia, Ph.D.

In 2019, I wrote in the *IDRA Newsletter* about how girls are less likely to take higher-level math courses in high school or choose STEM fields in college (Garcia & Razynska, 2019). The unfortunate news is that this has not changed much over the last seven years. Girls and young women are still underrepresented in STEM.

According to the 2026 National Girls Collaborative Project’s latest report, *State of Girls and Women in STEM*, although the STEM workforce is becoming more diverse, “women represent 35% of the STEM workforce, despite being 48% of the total workforce” and “Latina, Black and Native American women represent less than 10% of the STEM workforce overall” (NGCP, 2026).

A report by the United Nations Educational, Scientific and Cultural Organization (UNESCO) also found (2024):

- Women occupy just over one in five technology positions in companies;
- Only 17% of patent applications were filed by women globally; and
- Women constitute only 26% of employees in data and artificial intelligence, 15% in engineering and 12% in cloud computing across the world’s leading economies.

In summation: “The digital transformation is led by men... A lack of women in the technol-

ogy workforce is an economic loss to society” (UNESCO, 2024).

This is a pervasive, systemic issue.

Here is another truth: “Closing this gap is a powerful opportunity to unlock talent, drive innovation and build a more equitable future” (Pemberton Labuda, 2025).

This begs the question: How can we tackle this issue? Here’s a great start, as shared by Makers’ Muse: “The problem isn’t ability. It’s access, culture and confidence.” Let’s lead with that.

Supporting Deliberate Access

With all the anti-diversity, equity and inclusion laws dismantling and defunding high-quality programs, support systems that are critical to STEM persistence for women and girls are under attack.

When there are fewer opportunities to engage, interest declines. Participation and persistence of girls and young women in STEM will decline even more, which then “signals a massive loss of potential talent, ideas and perspectives” (Maker’s Muse, 2026).

As a first-generation Latina STEM educator myself, I have seen how access changes trajectories. When educators and industry, higher edu-
(cont. on Page 2)


*Talent is evenly distributed.
Opportunity is not.*

The increase in women’s participation in the STEM workforce includes all racial and ethnic groups, but Latina, Black, and Native American women **represent less than 10% of the STEM workforce overall**



(Changing the State of Girls in STEM Through Access, Culture and Confidence, continued from Page 1)

Girls often have limited exposure to relatable women STEM role models



Interaction with diverse women role models can shift girls' perceptions about who participates in STEM and increase girls' identification with STEM

NGCP The State of Girls and Women in STEM

When our research partners align, we have the people-power and collective expertise to architect new STEM pathways with multiple entry points that expand possibilities for entire communities. That is why we at IDRA focus on building strong STEM ecosystems rather than programs alone.

Reframing STEM Culture

Cultural stereotypes often frame STEM careers as unsuitable or incompatible with femininity and girls' interests. Workplace barriers continue to push women out, especially mothers and women of color (Pemberton Labuda, 2025; Makers' Muse, 2026).

Research shows that "exposure to relatable women STEM role models can shift perceptions of who participates in STEM and increase girls' sense of belonging and identification with STEM careers" (NGCP, 2026).

Early bias shapes confidence. Career guidance programs and increasing knowledge among parents and caregivers are vital to support roles free of biased notions and what is an "appropri-

ate" career for women to pursue (Pemberton Labuda, 2025; UNESCO, 2024).

The many years I spent as a middle school science teacher and later as a university instructor in a teacher preparation program frame my experience and inclusive-based approaches to teaching and learning.

I have seen firsthand that we expand access and belonging for girls and young women in STEM when we invest in improving instruction to ensure the curriculum is relevant and inclusive, when we increase guidance counseling and when we implement mentorship experiences.

Leading Confidence

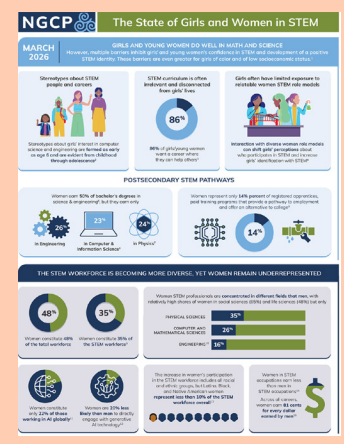
There is another gap to consider in this discussion: the confidence gap. This "influences subject selection, career aspirations and willingness to take risks in competitive academic environments" (Makers' Muse, 2026).

A large part of confidence is perception. Unfortunately, girls' perceptions of their abilities in math and science decline from fifth to 12th grade (NGCP, 2026). This often means girls self-select out of STEM pathways at increasingly young ages.

This issue is not about ability or competence, but rather about students' perception of themselves (Garcia & Razynska, 2019; Makers' Muse, 2026).

According to NGCP, 57% of girls don't believe they are smart enough for their dream career, and one in two girls says they are afraid to be leaders because they don't want others to think they are bossy (2026).

(cont. on Page 8)



86% of girls and young women say they want a career where they can help others.

STEM careers offer exactly that.

The research in NGCP's 2026 *State of Girls and Women in STEM* report shows that when STEM programs connect to what girls actually value, interest and engagement grow.

When girls see women in STEM who reflect their own backgrounds and experiences, their sense of belonging increases.

The barriers are real. So is the evidence for what helps.

Read the full report: <https://ngcproject.org/resources/state-girls-and-women-stem>

The Intercultural Development Research Association (IDRA) is a non-profit organization with a 501(c)(3) tax exempt status. Our mission is to achieve equal educational opportunity for every child through strong public schools that prepare all students to access and succeed in college.

The IDRA Newsletter (ISSN 1069-5672, ©2026) serves as a vehicle for communication with educators, school board members, decision-makers, parents, and the general public concerning the educational needs of all children across the United States.

Permission to reproduce material contained herein is granted provided the article or item is reprinted in its entirety and proper credit is given to IDRA and the author. Please send a copy of the material in its reprinted form to the *IDRA Newsletter* production offices. Editorial submissions, news releases, subscription requests, and change-of-address data should be submitted in writing to the *IDRA Newsletter* production editor. The *IDRA Newsletter* staff welcomes your comments on editorial material.

Publication offices:
5815 Callaghan Road, Suite 101
San Antonio, Texas 78228
210-444-1710; Fax 210-444-1714
www.idra.org | www.idraseen.org
contact@idra.org

Celina Moreno, J.D.
IDRA President and CEO
Newsletter Executive Editor

Christie L. Goodman, APR, Fellow PRSA
IDRA Director of Communications
Newsletter Production Editor

From Robotics to Virtual Anatomy, Students Explore Future STEM Careers

by Stephanie García, Ph.D., & Asaiah K. Puente, EdD, CNP



IDRA knits together education, workforce and equity pathways so young people in San Antonio can see and access real opportunities. Our Alamo STEM Youth Summit is one moment in a broader strategy to strengthen the regional talent pipeline.

We recently held our third annual full-day Alamo STEM Youth Summit for students from San Antonio middle and high schools. This free event was co-hosted by St. Phillips College – MLK Campus and served close to 300 students representing nine school districts.

The summit broadens STEM career awareness, connects middle and high school students directly with college and industry mentors, and provides hands-on workshops to develop leadership and critical business skills.

Celina Moreno, IDRA President and CEO, shared during her keynote to the students: “We want you to see yourself as we see you: someone who can design solutions, solve problems and shape the future.”

At the summit, students attended action-oriented sessions and a STEM expo featuring exhibitors such as SAMSAT, IBC Bank, Wex Foundation, SETA Robotics, U.S. Air Force, Youth Code Jam, TX BioMed, and many more.

Kenneth Pichot, MMS, a faculty member in the St. Philip’s College Department of Natural Sciences and who led an interactive workshop for students, shared: “Events like this are critical because they give students the opportunity to ask any questions they want. With this academic curiosity, students are empowered to become designers of their own education.”

We selected engaging sessions based on the students’ interests shared before the event, with prospective topics ranging from robotics and cybersecurity to aviation and medical engineering. The event featured 24 sessions, including virtual reality demonstrations, mastering a robot maze, a hospital simulation lab tour, and presentations on internship opportunities and the Prefreshman Engineering Program (PREP) at the University of Texas at San Antonio.

Our goal is to open students up to the opportunities they have now and in the future.

A middle school student from Las Palmas Leadership School for Girls in Edgewood ISD reflected, This summit “helps people our age open our minds that there are more options for us.”

Many of our students who attended have already shown interest in STEM and in joining robotics clubs or coding teams at school. And
(cont. on Page 4)

“One of the most powerful outcomes of the Alamo STEM Youth Summit was seeing nearly 300 students actively engaging with STEM professionals and college pathways they may not have previously imagined for themselves.

– Candace Barnett, St. Philip’s College, Academic Program Coordinator

(From Robotics to Virtual Anatomy, continued from Page 3)

others not drawn to such clubs may not have seen themselves in STEM. We keep this in mind as we structure and plan the event with sessions to showcase the breadth and depth of STEM fields. Our goal is to help students see what is possible and recognize that they belong in these spaces.

A 10th-grader from Wagner High School in Judson ISD reflected on her established interest in robotics and how the summit expanded on her knowledge for the career paths open to her: “I think this event is amazing... I like that they showed the biomedical part... because, mostly in engineering, we talk about robots and we talk about actual manufacturing. But we never get to see the medical field of engineering. But today we actually got to see that. And I saw a lot of my peers interested.”

In addition to the students getting exposed to amazing college tours, impactful demonstrations and new opportunities, their teachers also benefit greatly.

“Getting to speak with the presenters and exhibitors had a huge impact for me,” said one participating teacher.

“One of the most powerful outcomes of the Alamo STEM Youth Summit was seeing nearly 300 students actively engaging with STEM professionals and college pathways they may not have previously imagined for themselves,” shared Candace Barnett, M.Ed., AET, academic program coordinator for the St. Philip’s College cybersecurity and information technology department. “Hosting this event at St. Philip’s College reinforced our commitment to creating inclusive, hands-on experiences that help students see themselves in STEM fields and



higher education.”

This event would not be possible without funding from the Defense STEM Education Consortium, our co-host, St. Philip’s College, and other generous partners and sponsors, such as IBC Bank, Spurs Sports and Entertainment, and Moak Casey. Contact IDRA to help ensure this event continues to grow and excel, preparing future STEM leaders in our community.

We encourage San Antonio teachers to look out for next year’s interest form so your students can experience this powerful, free event that helps prepare them for future STEM college and career pathways.

Stephanie Garcia, Ph.D., is IDRA’s STEM education specialist and directs IDRA VisionCoders and co-directs the Alamo STEM Ecosystem on IDRA’s behalf (stephanie.garcia@idra.org). Asaiah K. Puente, Ed.D, CNP, is an IDRA consultant (asaiah.puente@idra.org).

Subscribe for IDRA news alerts



<https://idra.news/GetUpdates>

Conference Connects Teachers with STEM Classroom Innovations

by Stephanie Garcia, Ph.D., & Jeff Wheatcraft

On a special day in February, the lights at Northeast Lakeview College's Paluxy Hall rose to illuminate tables in hallways and empty classrooms, ready to be filled with the excitement and conversation of exchanging ideas and information. IDRA and the Alamo STEM Ecosystem, which IDRA co-leads, brought together hundreds of teachers and pre-service teachers for a free, one-day conference dedicated to STEM excellence in the classroom.

With the theme "Moonbeam: Illuminating Pathways to STEM," sessions engaged participants in hands-on, practical experiences that fostered collaboration, with educators able to take what they learned back to their classrooms or programs.

Teachers received continuing education credits as they collected classroom strategies and lesson ideas and connected with local industry resources.

The morning opened with a keynote by Ryan Saavedra, B.S., CEO & founder of Alt-Bionics, which is transforming the fields of prosthetics and humanoid robotics with cutting-edge, yet affordable bionic hands. He spoke about his journey from not being a "good student" to earning a degree in electrical engineering with a dual focus in control systems and electromyographic interfaces. He has melded his technical expertise with a passion for harnessing technology to improve the lives of others.

He shared that, as a college student, when an injury while rock climbing led him to worry if he would lose the injured finger, he asked himself, "What if I built my own finger?" That question propelled him forward.

"The biggest advice that I always give students is just: Ask questions," said Saavedra. "And for teachers, I would say just reward more questions. A lot of us feel stupid when asking ques-

tions. But if I didn't have that [encouragement], it would have been a different journey for me."

The sessions that followed were engaging and, most importantly, hands-on. As part of creating a place of learning where teachers can take what they have gained and immediately implement it into their classrooms, we wanted to ensure that presenters modeled this most important part of the learning experience.

The sessions were selected based on a variety of criteria but, most importantly, they needed to engage the teachers the same way we want the teachers to engage the students, with hands-on, minds-on learning. Sessions covered a wide variety of topics, including robotics and coding, science and engineering, AI, and pathways to careers in STEM.

One session had a panel of industry leaders and a second panel led by students. When asked the one thing teachers can do differently regarding STEM education, one student said: "Through my experience, I realized that hands-on activities really motivate students to pursue a STEM path. Also, it helps them retain the information more than doing tests over and over."

First-generation college students understand what it means to navigate systems that are not always built for you. This conference is what systems-level impact looks like.

And as former middle school teachers, we know how powerful representation and access can be, especially in equipping educators to open doors for students who may not see themselves in STEM. IDRA is proud to serve as the institutional anchor for this conference each year.

Participants described their key takeaways from the conference:

(cont. on Page 6)



"A lot of us feel stupid when asking questions. But if I didn't have that [encouragement], it would have been a different journey for me."

– Ryan Saavedra, CEO & Founder of Alt-Bionic

(Conference Connects Teachers with STEM Classroom Innovations, continued from Page 5)

- “STEM is the future!”
- “Different ways to reach your students to enrich their learning.”
- “Real-world connections to strengthen student understanding.”
- “Making STEAM more accessible.”
- “Great engaging STEM activities for my students!”
- “Why AI is important and how it can support us educators.”
- “My biggest takeaways were how powerful early exposure and real-world connections are.”

Rather than focusing only on middle and high school grades, a unique component of the conference was our attention to STEM for our youngest students.

One teacher said, “I saw new ideas of approaching STEM subjects in the Pre-K setting.” Another commented, “There are a variety of resources available to students in all grade levels.”

This tells us how invaluable teachers see our collective efforts to build bridges, harness unique collaborations, support inquiry-based and inclusive learning approaches, and strengthen school-community partnerships.

With nearly 300 registrants, this educator-serving event impacts 26,000 students served by the conference attendees.

We value our teachers, who lead this work in schools across our city every day. There is an urgent need for us to continue showing our support and investing in our community through this annual event.

Each year, this event draws incredible support from sponsors who believe in us. We are thankful to our co-chair, Northeast Lakeview College, for serving as our host and premier sponsor.

Organizations participating in the exhibition came from a variety of fields and industries, including ASE partners like Girls Inc., Southwest Research Institute, and Students of Service (SOS) San Antonio. Other exhibitors included SeaWorld San Antonio, Bat Con, Natural Bridge Caverns and iFly.



“Through my experience, I realized that hands-on activities really motivate students to pursue a STEM path. Also, it helps them retain the information more than doing tests over and over.”

– Student panelist



We are also grateful for our signature sponsors: the Alamo AFCEA Education Foundation, TX FAME (Lone Star Chapter), JCB, and the Wheatcraft Project, for sponsoring food, donating swag bags and conference materials. They also led panels and workshops for our educators.

In a time when budget cuts, teacher shortages and other systemic barriers are increasing, we need to collectively focus on equitable access to STEM pathways. This work cannot be accomplished in silos, which is why we need this conference more now than ever. This work is mission-driven and community-rooted. IDRA supports the backbone of this conference because building strong, equitable ecosystems is part of IDRA’s mission.

If you are interested in joining forces with us for the 2027 Alamo STEM Ecosystem Educator Conference (date to be determined), please contact us and join our steering committee.

Stephanie Garcia, Ph.D., is IDRA’s STEM education specialist and directs IDRA VisionCoders and co-directs the Alamo STEM Ecosystem on IDRA’s behalf (stephanie.garcia@idra.org). Jeff Wheatcraft is an IDRA consultant (jeff.wheatcraft@idra.org).

Bring IDRA VisionCoders to your school!

IDRA VisionCoders is an elective 6th to 8th-grade computer science course designed for students who are in at-risk situations. Students learn valuable computer science skills, and they improve their computational thinking, computing identity and math skills.

“I learned that you must face your fears, and you must persevere to achieve success. This program has also helped me realize that coding is something I want to do in the future.”

– 8th Grade VisionCoders student



Why VisionCoders?

- Fewer than 1% of adults in South San Antonio work in computer-related fields.
- But these are the fastest-growing, highest-paying, most in-demand jobs.
- Tech workers are happier with their jobs and earn higher salaries.
- Computing jobs are the #1 source of new wages.

“The influence of this program got [my daughter] thinking about going to college.”

– mother of 8th Grade VisionCoders student

Be a sponsor to help us keep the program alive!

IDRA VisionCoders has served nearly 800 students across 11 local middle schools. But federal funding has ended. We need you to keep this highly popular program reaching more students.

• We Prepare Your Teachers

IDRA trains VisionCoders teachers to teach block programming and video game design. And we assist throughout the school year.

• Students Learn to Code & Mentor

Participating students become software designers who create educational games for elementary school students (their “buddies”), whom they also mentor. Throughout the year, students design games based on their buddy’s learning needs.

• Students Make College & Career Connections

Students build digital project portfolios and journal their experiences. They have guest speakers and host an end-of-year showcase to present their games to families, staff, STEM professionals and the broader community.

Contact Us stephanie.garcia@idra.org



www.idra.org



idraseen.org



[@IDRAed](https://www.facebook.com/IDRAed)



[@IDRAedu](https://twitter.com/IDRAedu)



[@IDRAedu](https://www.instagram.com/IDRAedu)



[idra.news/LinkedInIDRA](https://www.linkedin.com/company/idra-news/LinkedInIDRA)

Children First
IDRA
Transforming Education

Focus: Strengthening STEM Education Workforce Pathways

(Changing the State of Girls in STEM Through Access, Culture and Confidence, continued from Page 2)

Through IDRA's asset-based student programs (like IDRA VisionCoders), I have personally seen that, when students feel supported and heard and when they are given multiple opportunities to engage in leadership positions and activities, they gain confidence. Their perception of what they can accomplish now and in the future changes.

What We Can Do Now

There are several actions we, as a community, can take to reshape our future.

First, **mentorship** plays a pivotal role because role models and mentors have been shown to increase girls' confidence in STEM and influence their career aspirations (NGCP, 2026; UNESCO, 2024).

Hands-on experiences and internships enable female students to see that their skills are valuable in technical occupations (UNESCO, 2024).

We need to increase **investments in outreach, mentorship, academic support and bridge programs** that increase retention and degree attainment in STEM for women, students of color and first-generation students (Pemberton Labuda, 2025).

And we need to **reframe how STEM careers are presented** to "emphasize social impact, collaborative nature and real-world relevance to attract a broader range of students" who may not traditionally identify with traditional STEM stereotypes (Maker's Muse, 2026). This aligns with "girls' strong desire to help others" (NGCP, 2026).

Maker's Muse summarizes: "Addressing the STEM gender gap requires change at multiple levels, including education policy, organizational culture, leadership accountability and societal expectations" (Maker's Muse, 2026).

A great start is to increase the use of authentic, community-rooted approaches that foster change across our school communities and STEM ecosystems. The long-term, life-changing impact is what keeps me committed.

Talent is evenly distributed. Opportunity is not.

Resources

García, S., & Razynska, K. (May 2019). Five Best Practices that Add Women to the Equation- Preparing K-12 Girls in Mathematics. *IDRA Newsletter*.

Makers' Muse. (January 8, 2026). The STEM Gender Gap: Why We're Still Losing Half Our Talent. Medium.

NGCP. (March 20, 2026). *State of Girls and Women in STEM*. National Girls Collaborative Project.

Pemberton Labuda, C. (2025). The STEM Gap. AAUW.

UNESCO. (November 2024). Support Girls and Women to Pursue STEM Subjects and Careers. Gkibak Education Monitoring Report.

Stephanie Garcia, Ph.D., is IDRA's STEM education specialist and directs IDRA VisionCoders and co-directs the Alamo STEM Ecosystem on IDRA's behalf (stephanie.garcia@idra.org).