

All Hands On Deck:

San Antonio Highlands High School's Pathways Program

A Bright Spot in the Lone Star State: San Antonio Highlands High School's Pathways in Technology Early College High School (P-TECH) program,



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All4Ed



Introduction

In 2023, the U.S. Department of Education awarded Career-Connected High School (CCHS) grants using \$25 million appropriated by Congress through the Perkins Innovation and Modernization (PIM) fund. After a rigorous selection process, 19 grantees were selected from among nearly 200 applicants. Each grantee is required to implement a partnership among K-12, higher education, and employers. In addition, each grantee is required to implement four core components of college and career pathways: dual enrollment, work-based learning, college and career advising, and industry recognized credentials.

Located in San Antonio, Texas, Highland High School is one of 16 high schools in the San Antonio Independent School District, and a Career Connected High School grant recipient. As a grantee, Highlands High School's Pathways in Technology Early College High School (P-TECH) program is redefining its college and career pathways programming by offering students early exposure to high-demand industries including engineering, manufacturing and aviation, hands-on learning experiences, early college credit, and robust support structures. District leaders at San Antonio ISD designed Highlands High School's P-TECH program to increase college and career readiness for students from marginalized backgrounds and other students who typically do not have access to innovative and leading-edge programs and services. Established with an open-enrollment, lottery-based system that requires no GPA or essay submission, their P-TECH program aims to eliminate barriers to access and accelerate student success for all students through integrated high school and college coursework, intentional career-connected learning, and strategic partnerships.

How has Highlands reimaged pathway programs? What strategies have yielded to their success?

All4Ed is seeking to understand and identify strategies for success in reimaging high schools to center career pathways. Our team conducted a site visit to Highlands P-TECH in March 2025 to tour their PIM CCHS work. All4ED team members met with students, educators, district leaders, and community partners to learn about the district's Career and Technical Education (CTE) programs, workforce development initiatives, and industry partnerships. The visit aimed to identify best practices, challenges, and opportunities for strengthening career-connected learning and expanding equitable access to high-quality college and career pathways for all students.

Here's what we uncovered: Highlands P-TECH isn't just preparing students for their next step—it's reimaging what career readiness looks like. By seamlessly blending high school, college, and industry experiences, their approach shows us how early college and career programs can open doors to high-wage, high-skill, and high-demand good jobs and bright futures.

Structured Pathways and Rewarding Skill Development

Highlands P-TECH programs thrive because of their structured and sustained collaboration with colleges and industry leaders. These partnerships ensure that students graduate with rigorous academic requirements and industry-relevant skills and credentials.

Through its growing collaboration with St. Philip's College, the local community college that is part of the Alamo College District, Highland P-TECH students have begun to gain access to rigorous dual credit opportunities that seamlessly transfer to postsecondary institutions via [Texas Direct](#), a statewide articulation initiative that provides smooth transfer degree pathways between two- and four-year institutions in the state. The first pathway program to lead to seamless transfer includes the engineering pathway program. Through this partnership, students follow a structured sequence of courses to earn dual credit—through which they

What is P-Tech?

P-TECH (Pathways in Technology Early College High School) is an innovative school model that blends high school, college, and career training into a seamless, six-year program. Students graduate with both a high school diploma and an industry-recognized associate degree at no cost to them and are prepared to enter high-demand STEM fields. The model is grounded in strong partnerships between high schools, community colleges, and industry leaders.

In Texas, P-TECH is one of several state-supported college and career pathways models. Through the Texas Education Agency (TEA), P-TECH campuses receive support as part of the College and Career Readiness School Models (CCRSM) network, alongside Early College High Schools (ECHS) and T-STEM (Texas Science, Technology, Engineering, and Mathematics) Academies.

are taking college courses in high school and earning both high school and college credit. Each program curriculum has been thoughtfully designed and structured with the goal of ensuring students gain dual credit and an in-demand industry credential or accreditation; this ensures students are both college and career ready. For example, to successfully complete the Manufacturing Pathway students take courses in basic-fluid power, robotic fundamentals, electromechanical devices and must complete and earn (FESTO) certifications. FESTO—short for Festo Didactic, a global leader in industrial automation and technical education, offers industry-recognized credentials that validate a student's knowledge and hands-on skills in areas such as pneumatics, hydraulics, and mechatronics. These certifications are valued by employers in advanced manufacturing and serve as a signal of workforce readiness in high-demand technical fields. Other examples of how their pathways integrate dual credit coursework with industry-recognized certifications include:

- **Welding:** Includes Level 1 Welding Certificate and American Welding Society (AWS) certification prep, reinforced by lab-based

instruction. These certifications validate students' proficiency in welding processes and safety protocols, opening doors to careers in skilled trades and manufacturing.

- **Manufacturing:** Students complete Automated Industrial Process (AIP) and (FESTO) certifications in Electricity, Fluid Power, and Robotics, while learning lean manufacturing principles.
- **Engineering:** Coursework integrates Automatic Computer-Aided Design (AutoCAD) and Autodesk software certifications, applied through project-based learning and design challenges. AutoCAD is widely used in engineering, architecture, construction, and manufacturing for drafting, design, and documentation.
- **Aerospace:** Combines aviation technician fundamentals with site visits and shadowing opportunities at Southwest Research Institute (SWRI) and other regional partners.

By embedding industry certifications within the curriculum and ensuring students graduate with both academic credentials and work-based learning experiences, they are creating a pipeline of skilled workers, ensuring that students leave high school with the confidence and knowledge to excel in their chosen fields. This matters because it prepares students to succeed in postsecondary education and the workforce, while also strengthening local economies, addressing persistent labor shortages, and ensuring that historically underserved students gain access to upwardly mobile careers. When students graduate with certifications and college credit in hand supported by real-world training and strong employer connections, they are equipped with the confidence, skills, and direction to excel in their chosen fields from day one.

Work-based Learning Through Strong Industry Partnerships and Workforce Alignment

On the industry side, Highlands P-TECH programs have built robust, ongoing partnerships with major employers in the San Antonio region—including Toyota, Southwest Research Institute (SWRI), and

TOYOTETSU—to give students meaningful, hands-on work experiences. These partnerships allow students to engage in real-world manufacturing and engineering projects, such as shadowing engineers at SWRI and participating in site visits, internships, and job-shadowing experiences that mirror professional expectations. Industry partners also regularly send guest speakers to classrooms and host students at their facilities, exposing students to workplace culture, career pathways, and cutting-edge technologies.

Beyond experiential learning, employers play an active role in shaping the curriculum. Through participation in advisory boards and regular program reviews, they help design programs and certification processes to ensure: (1) certifications reflect current industry standards; (2) instructional content prepares students for in-demand occupations; and (3) students graduate with verified, marketable skills. For example, students can earn industry-recognized credentials such as AWS welding certifications or FESTO certifications in pneumatics, hydraulics, and AC/DC circuits, often while completing dual credit coursework through St. Philip's College.

Early exposure to professional environments builds students' confidence and professional skills, reduces the financial burden of postsecondary training, and helps them make informed career choices. By embedding employer input from program design to delivery, Highlands' P-TECH strengthens the local talent pipeline, supports economic mobility for underserved youth, and addresses critical labor shortages across the region's most essential industries.

Advising That Expand Possibilities

District leaders at Highlands emphasize early exposure to careers and student-centered support as core design principles of the P-TECH model. Recognizing that many students face poverty, instability, and limited access to visible high-wage career opportunities, school leaders invest in robust outreach beginning in middle school. Mini career fairs and outreach events at feeder middle schools introduce students to high-quality career pathways, connect them with industry professionals, and

increase awareness of postsecondary and workforce options. Through hands-on demonstrations and interactions with employers, students can envision themselves in future careers and make more informed choices about their educational paths.

Once enrolled, freshmen engage in structured career exploration, gaining exposure to multiple pathways, including welding, manufacturing, aerospace, and engineering, before selecting a specialized track in their sophomore year. This approach emerged from program leaders' commitment to continuous improvement: early cohorts were required to select a pathway before their freshman year, but this limited student agency and alignment with interests. In response, Highlands revised its model to give students time to explore, ensuring pathway choices are student-driven and well-informed.

Comprehensive college and career advising is embedded throughout this process. Advising is proactive and student-centered, with regular check-ins that help students set goals, manage rigorous coursework, and bridge the expectations between high school and college. These supports equip students with the technical skills needed for high-demand industries and build confidence, professionalism, and a sense of belonging in postsecondary and workforce settings.

Leveraging Federal Funding and other Multiple Streams of Funding

As the United States seeks to strengthen domestic manufacturing and reduce reliance on foreign supply chains, investing in talent development has never been more critical. This starts with building strong, locally rooted, career-connected education systems like the one thriving in San Antonio.

At Highlands High School in San Antonio, Texas, the P-TECH program is powered by a smart strategy: braiding federal, state, local, and private funding streams to create real opportunities for students. This multi-source approach ensures access to rigorous academics, hands-on industry experiences, and the wraparound supports students need to thrive.

In 2024, San Antonio Independent School District



(SAISD) secured a three-year federal grant of **\$4.5 million** to support college and career readiness programs at seven San Antonio Independent School District (SAISD) high schools and nearly **\$2.8 million through the Career-Connected High School (CCHS) initiative**. These federal investments fuel dual credit courses, industry credentials, and work-based learning across seven high schools, including Highlands all aligned with high-wage, high-demand careers critical to America's economic future.

State support through the **Jobs and Education for Texans (JET) Grant** provides Highlands with industry-aligned equipment and technology, ensuring students train with the same tools used by today's professionals. Meanwhile, private investments like a grant from Caterpillar cover uniforms, tools, and safety equipment, reducing barriers to entry for students and ensuring equitable access to career pathways.

This is more than a local success story. San Antonio is beginning to fill the manufacturing workforce gap that the U.S. urgently needs to close if we want to rebuild our infrastructure, reshore production, and compete globally. Without continued and expanded federal investment, innovative models like P-TECH risk being outpaced by international competitors who are already investing heavily in education and workforce development. Sustained federal funding is needed to ensure that every community can prepare students for the industries of tomorrow and secure America's long-term economic strength. Unfortunately, the U.S. Department of Education abruptly cancelled funding for the CCHS program in July 2025, undercutting the innovative work taking place in San Antonio.



Conclusion

Highlands High School's CCHS initiative stands as a model of what's possible when federal investment, local leadership, and strong partnerships align to create meaningful, career-connected opportunities for students. By integrating academic rigor, industry engagement, and equitable access, Highlands is expanding pathways to high-wage, high-demand careers for students who have historically been left behind. Its success demonstrates that with sustained and strategic support, schools can prepare young people not only for college and careers but also to drive the economic vitality of their communities. As the nation seeks to strengthen its workforce and invest in the next generation of innovators, programs like Highlands' CCHS initiative show that the return on such investment is measured not only in skills and credentials, but in opportunity, confidence, and futures transformed.

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