

Workplace Ready

BY CALVIN HENNICK / PHOTOGRAPHY BY WILLIAM DeSHAZER

Hands-on tech training in cybersecurity, computer information systems, coding and networking prepares K-12 students for careers and college programs in IT.

By 2025, an estimated 80 percent of living-wage jobs in Tennessee's Hamilton County will require a degree or technical credential, according to the report "Chattanooga 2.0: Helping To Shape The Future Of The Workforce."

Partly in response to this need, several years ago Hamilton County Schools launched what officials call Future Ready Institutes, designed to give students hands-on experience in fast-growing fields.

Six high schools in the county now feature an IT career cluster with classes on topics such as cybersecurity, coding or networking.

"Information technology in Chattanooga is expanding by the minute," says Olivia Bagby, the district's Future Ready Students director, who oversees the county's early postsecondary opportunities and career and technical education programs. "With the workforce needs of IT, we've formed partnerships at a large scale to help create those pipelines. Rather than businesses having to train our students after they graduate from high school, we're training them. We're giving them the skills and knowledge they need to have those options, rather than starting from the ground floor when they leave for college."

**Olivia Bagby,
Future Ready
Students Director
for Hamilton
County (Tenn.)
Schools, prepares
students for tech-
rich careers.**

Alisha Hyslop, senior director of public policy for the Association for Career and Technical Education, says that K-12 CTE programs focused on IT are "getting more attention" as the economy evolves. In particular, she says, IT programs on topics such as cybersecurity grew during the pandemic, in part because they were seen as a good fit for remote learning.

It's easy to see why IT instruction is alluring to schools looking to give their students an edge, but Hyslop notes that it can be

challenging for schools to stay on top of the latest tech trends. "Every single part of the economy is more tech rich than it was five years ago," she says. "What you would teach in those programs today is completely different from what you might have taught even a year ago."

TECH FOR SUCCESS

Hyslop has a simple, straightforward standard for the technology that should be used in IT-focused CTE programs in K-12: "Students need to be using the same technology that is being used in the IT industry."

While Hamilton County Schools has a one-to-one Chromebook program for all of its high school students, those in coding and other IT programs often need more powerful devices, Bagby notes. Students also have access to specialized computer labs and even a networking lab that was set up specifically to mirror the real-world networking equipment of a business partner in the community. "We worked with that business to set up a networking lab very similar to their network,"

Bagby says. "In our discussions of what they want students to be able to do, they helped us decide what sorts of equipment should be in that room."

St. Vrain Valley Schools in Colorado operates Pathways in Technology Early High School programs at three of its high schools. The P-TECH education model, created by IBM and in

place in hundreds of schools around the world, allows students to earn both a high-school diploma and a no-cost, two-year postsecondary degree in a STEM field. Students also participate in a range of workplace experiences with industry partners.

**Up to
\$10,000**

The additional annual earnings of individuals with associate degrees in CTE fields compared with those who have associate degrees in other fields¹

FUTURE CAREERS

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— Olivia Bagby, Director, Future Ready Students, Hamilton County Schools

St. Vrain’s three P-TECH programs are in cybersecurity, computer information systems (CIS) and biochemistry, and each program utilizes technology tailored to students’ needs. Students in the biochemistry program, for instance, explore human anatomy using Samsung HMD Odyssey virtual reality headsets. In the CIS program, students work on Lenovo ThinkPad laptops and compact desktops. The cybersecurity program, which launches this year, is still in the process of buying much of its equipment. However, the program will benefit from the districtwide learning technology program, which distributes tablets to all students as well as Logitech keyboard cases to those in grades three through 12.

“We figure out what our industry partners need, and then we build the curriculum and technology around their specific workforce requirements,” says Brandon Shaffer, the district’s P-TECH director.

Blue Hills Regional Technical School in Canton, Mass., deploys HP technology and devices, and students in the school’s CIS program have access to a dedicated server and storage area network where they run a virtualization environment. “That way, they can do what they need to do without stepping on our toes,” says Matt Eisan, the school’s technology director.

CERTIFIED WORKFORCE

Eisan himself is a Blue Hills alumnus, and he began working for the school in an IT role immediately after he graduated in 2015. He says today’s students, like he was, are motivated by both the strong IT job market and interest in the course material.

“I’ve known I wanted to work with computers since I was a little kid,” Eisan says. He notes that 45 students listed CIS as their No. 1 option when choosing paths of study last year, nearly

quadruple the program’s 12-seat capacity. “In the past few years, we’ve had new instructors in that program, and they’re absolutely phenomenal. COVID also played a factor. Kids saw that tech isn’t going anywhere.”

Students in Hamilton County’s Future Ready Institutes can obtain certifications such as CompTIA IT Fundamentals and CompTIA A+, potentially giving them a leg up when they start their careers. “The need for IT

The IT Advantage: By the Numbers

Here are some current data points about the IT career field:¹

12.4 million — Estimated number of workers in the U.S. tech sector in 2021

580,000 — Average number of tech workers who will need to be replaced each year between 2020 and 2030 due to retirement and workforce separation as well as industry growth

\$87,000 — Estimated median IT wage, which is 89 percent higher than the national median wage for all jobs

49 — The number of states that saw tech job growth in 2020

4% — Projected 2021 job growth in both cybersecurity and data science, the top areas of IT growth

Source: CompTIA, “Cyberstates 2021: The Definitive Guide to the U.S. Tech Industry and Tech Workforce,” March 2021



talent in Chattanooga is so high,” says Bagby. “We’re trying to stay on top of it.”

Michelle Bourgeois, St. Vrain CTO, notes that a recent graduate of that district returned in an IT role. “From my selfish standpoint, this program provides us with the workforce that will help us excel. By offering our students an opportunity to become our future employees, we can continue to support the innovative programs in our district with staff who truly understand our mission.”

Russell Fox, principal of St. Vrain’s Frederick High School, home of the district’s biochemistry P-TECH program, says that P-TECH is a way to encourage underrepresented groups to pursue technology as a career. The district’s P-TECH programs, he says, are more ethnically and socioeconomically diverse than the rest of the district, and also have a larger share of female students.

“Parents are very interested in the opportunities that the program provides for students,” Fox says. “Students like it because they feel supported, encouraged and challenged.” ■

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