The promise of Career Technical Education (CTE) is one of economic success, opportunity and personal fulfillment. CTE gives learners the chance to identify and unlock their career passions, develop the academic and technical skills they need for success in the real world, and enter industries in which they can make a family-sustaining wage and have the opportunity for future growth.

The notion that CTE is a pathway for students who lack what it takes to go to and succeed in college is outdated. In fact, learners who complete CTE programs of study are readier for postsecondary success than ever before. A growing body of evidence indicates that CTE students feel better prepared for academic classes,[1] perform better in academic courses,[2,3] are less likely to need remedial education,[4] and are more likely to enroll in a two-year college.[5] And the average high school graduation rate for CTE concentrators is 93 percent[6] — well above the national average of 84 percent.[7]

CTE helps postsecondary students get ahead in their careers as well. More than 30 million jobs in the United States require some postsecondary education — but less than a baccalaureate degree — and pay a family-sustaining median wage of $55,000 a year.[8] CTE can help learners earn the credentials they need to enter these occupations. In certain fields such as health care or engineering, short-term, occupational credentials can lead to higher average wages than some four-year degrees.[9] For many, postsecondary CTE is a certain path to economic prosperity.

The promise of CTE is not just about learner success — it is about macroeconomic growth. When learners succeed, everyone benefits. It is estimated that if the U.S. high school graduation rate reached the national CTE average graduation rate, the economy would experience $5.7 billion in growth, and more than 14,000 new jobs would be created.[10] Expanding CTE access not only connects individuals to opportunity — giving learners an accessible pathway into the middle class and beyond — but also bolsters the economy and improves potential prosperity for all.

"Ensuring equity in CTE means reckoning with historic challenges and intentionally implementing policy and programmatic approaches with the goal of upending all facets of bias."

— *Adenike Huggins, National Urban League*

But while completing high-quality CTE programs of study can prove extremely beneficial to students, not all learners have access to these programs. National and state leaders report that these programs are not consistently rigorous across different locales and zip codes (due to CTE data limitations, determining where these gaps occur is not possible on a national scale). The distribution of high-quality CTE programs of study across zip codes is a legacy of CTE's history. Historically, CTE — once called vocational education — was often the only option for non-college-bound secondary students. High schools used vocational

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education to "track" students, sending a disproportionate number of low-income learners, females, learners with disabilities and learners of color into terminal programs leading to jobs with uncertain promise of economic growth and prosperity.[11, 12, 13, 14]
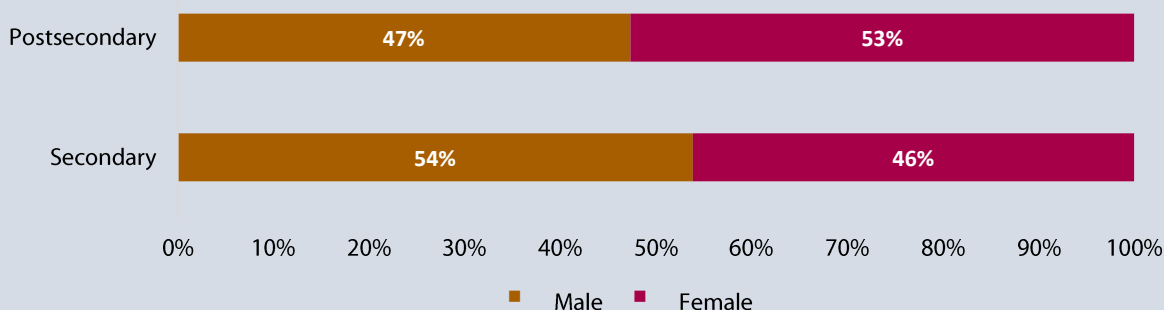
While regrettably the practice of tracking continues today, the nature of the equity challenge in CTE has transformed. Today, states are working hard to improve the quality of CTE, but many learners continue to not have access to such opportunities. Reversing historical trends and expanding access and opportunity for each learner will require tough conversations, humility, and a commitment to both quality and equity.
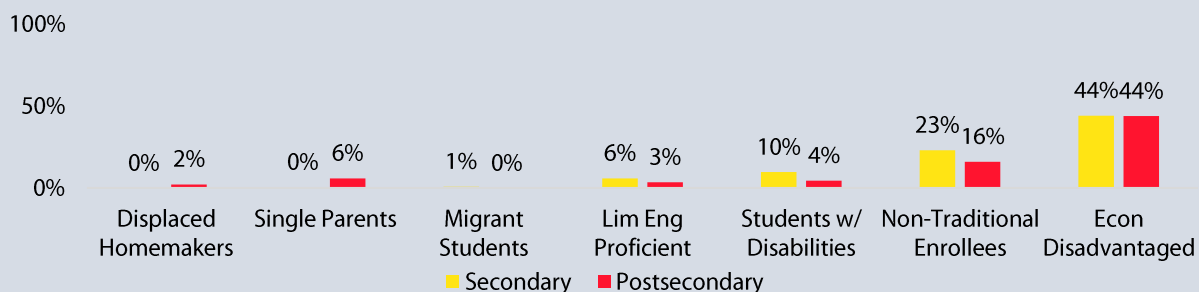
Who Participates in CTE?

CTE Participation by Race/Ethnicity, 2016-17

Secondary

- White
- Hispanic/Latino
- Black/African American
- Asian
- Other

Postsecondary

CTE Participation by Gender, 2016-17

- Male
- Female

CTE Participation by Special Population, 2016-17

- Secondary
- Postsecondary

Source: Perkins Collaborative Resource Network. Perkins Data Explorer. Retrieved from https://perkins.ed.gov/pims/dataexplorer.

2

What does equity in CTE look like? Equity in education is often defined as each student getting what he or she needs when he or she needs it.[15] High-quality CTE — which provides individualized learning on a flexible schedule to help learners identify and achieve their career goals[16] — is already well positioned to meet this need. But expanding access to all will require identifying and dismantling historical barriers — both overt and implicit — that have had an adverse effect on learners based on their race, socioeconomic background, disability and gender. It will require reimagining and reconstructing systems to support individuals as they progress along their educational and career journeys, ensuring that each learner can identify ambitious postsecondary goals; access and succeed in high-quality CTE programs of study; and acquire the knowledge, skills and abilities to achieve lifelong career success.

> *"Equity is all too often reduced to inputs and outputs about money, teachers, books, curriculum, graduation rates. Schools should be thinking about socio-emotional elements and fostering a sense of belonging. This is where CTE comes in. CTE can help students find relevance and belonging."*
>
> — *Danielle Gonzales, The Aspen Institute*

This brief, the first in a series focused on equity in CTE, attempts to confront the negative aspects of CTE's legacy and define the key challenges learners face today. It draws on research and historical data to paint a picture of CTE's conflicted history and the opportunity it can provide. This brief and those to follow were informed by a broad group of national civil rights organizations, State CTE Directors and local leaders who are each working to confront access and opportunity gaps every day.

Source: Lake Washington Institute of Technology, Kirkland, WA

Confronting CTE's Legacy

Any conversation about equity in CTE must start with the recognition that not all learners have been served equitably by CTE. This inequity is largely a result of systems and policies that reinforced the practice of tracking, which sent learners into different, isolated educational pathways — one to prepare learners for college and one to prepare learners for immediate entry into blue-collar jobs.

These job-focused pathways were less rigorous than pre-college pathways. Rather than providing a comparable education for learners with different needs, they often housed the students that schools did not consider to be worthy of their full investment. The programs were designed to give learners the specific skills they needed for a job, nothing more. Therefore, learners who found themselves in these programs could expect to receive a less academically rigorous curriculum and, as a result, were less likely to complete high school,[17] earn advanced math credits, and meet preparatory requirements to enter four-year colleges.[18] Programs often de-emphasized

academic learning, college preparedness and higher-order thinking to prepare learners for low-skill, low-wage jobs.[19, 20] Without a rigorous academic foundation, CTE graduates had little opportunity to advance in their careers or pursue additional postsecondary education. For these learners, their economic and social fate was sealed at an early age and often without their input.

Inevitably, this practice had a disproportionate effect on certain populations, resulting in the systemic over-enrollment of learners of color, low-income learners, females and learners with disabilities into low-quality, job-focused programs.[21] Throughout much of the 20th century, systems and policies were stacked against these learners, ensuring that they would not get the access, resources, quality instruction and guidance they needed to achieve lifelong career success in jobs that would allow them to grow and prosper. These systems created an environment in which overt discrimination and implicit bias could gain a foothold in national and state policy as well as local and school-level decisionmaking.

Overt discrimination — no stranger in the U.S. public education system — has manifested itself in systemic ways throughout CTE's history. In the years following the U.S. Supreme Court's historic *Brown v. Board of Education* decision, which called for an end to racial segregation in public schools, a new sorting began to take place in buildings across the country. School districts, which were prohibited from sending black learners to separate institutions, began to practice within-school segregation by tracking learners into different programs and classrooms based on race.[24] Even within programs, black learners were disproportionately sorted into fields of study leading to lower-wage occupations while their peers participated in programs that were more rigorous.[25] In effect, this practice served to hold these individuals in place, denying their true potential and securing opportunity for white students alone.

The same prejudice was exercised to maintain social and economic stratification by sorting low-income learners into low-quality, job-focused programs, often exacerbating the effects of racial discrimination. A report from the National Center for Research in Vocational Education found that, as recently as the late 1980s, schools' efforts to match students with appropriate curriculum and coursework systemically favored learners from high-income families, thus working "to the advantage of the most advantaged students."[26] The authors observed that, while non-white and low-income students were more likely to be tracked into low-level vocational programs than their peers, admission to higher-level academic courses — those more likely to lead to postsecondary opportunities and future career success — was tightly protected.

Gender Equity in Federal Law

Federal CTE law has a long history of requiring states and local communities to address and prioritize gender equity in CTE. Over time, there have been federally mandated positions, funding set asides and accountability requirements. The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) — recently reauthorized as the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) — requires states to report data on students enrolling in and completing CTE programs in fields that are non-traditional for their gender.[22] Further, states must dedicate a portion of their state leadership dollars to non-traditional initiatives. Perkins V updates these provisions slightly but retains a focus in terms of both accountability and required funding.[23]

Overt discrimination also played a role in the systemic sorting of females into low-wage occupations such as cosmetology or child care. Female learners who wished to enroll in a program that was non-traditional for their gender had to overcome overt sex discrimination or bias from counselors, teachers, and others from whom they sought advice. Those with the motivation and determination to overcome these barriers and enroll in non-traditional programs often had to endure further discrimination and sexual harassment from their peers.[27] These pressures amounted to a persistent, invisible force preserving historical gender inequities in CTE, inequities that continue today.

The aggregate impact of sex discrimination in education and in the workforce resulted in lower earnings for women. Quite often, fields that traditionally employ more women pay lower wages and have fewer opportunities for advancement than male-dominated fields, reinforcing wage gaps in the labor market.[28]

The collective impact of overt discrimination cannot be overstated, but it is also important to recognize how implicit bias can influence well-intentioned decisions in ways that affect certain learners disproportionately. Implicit bias is the everyday assumptions that individuals make about others that influence the way they interact with other people. All too often, instructors, counselors and education institution-based staff make assumptions about learners' abilities and dispositions based on their race, socioeconomic status, gender or disability that affect these learners' future educational opportunities.

For example, a school counselor or postsecondary adviser may assume that females would be interested only in traditionally female-dominated occupations such as early childhood education or nursing and thus decide to withold information about a welding program at a local career center. Or an instructor may encourage a student with a mild learning disability to pursue a job-focused track on the assumption that he or she is not fit to meet the expectations of a more academically rigorous program. On a wider scale, bias can influence decisions about which programs to create in which schools, limiting opportunity for learners in predominately low-income comunities or communities of color.

Source: Lake Washington Institute of Technology, Kirkland, WA

Ultimately, each learner has aspirations about his or her future and, given the right supports, the potential to unlock and achieve them. The manifestation of overt discrimination and implicit bias in the practice of tracking throughout the 20th century denied learners the opportunity to reach their full potential. Consequently, many communities did not and do not trust CTE as a viable means to help under-represented students achieve their postsecondary education and career goals, according to several of the national civil rights advocates that Advance CTE spoke to for this brief.
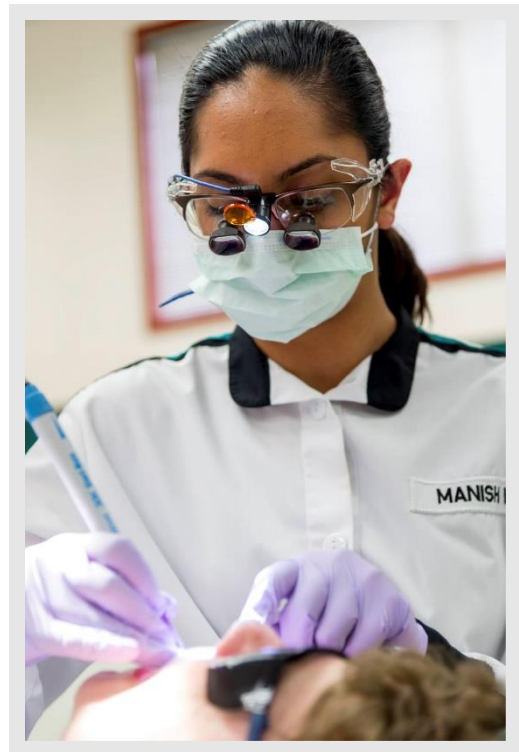
Gaps in Access to High-Quality CTE Persist Today

Overt discrimination and implicit bias persist today, and as the quality of CTE programs of study improves, many learners are barred from accessing these programs by geography, rigorous selection processes and other systemic forces. Over the past decade, the CTE community has made considerable progress on improving the quality of CTE. Policymakers at the national, state, local and institutional levels have recognized the need for a strong, diverse workforce and are working to embed rigorous academics and early postsecondary opportunities into CTE programs of study to ensure that learners, once they graduate high school, can move successfully between postsecondary training and the workforce. Major national initiatives such as New Skills for Youth[29] and Pathways to Prosperity[30] have fueled these efforts, convening groups of states and communities to improve the rigor, quality and viability of CTE programs for each and every learner. These efforts have helped counter the perception and reality that CTE is an alternative to traditional academic education and prevent the tracking of students into low-quality programs.

However, not all students have been able to access high-quality CTE. Despite interventions by the federal government and many reforms to make schools more equal and accessible, research in 2014 found that schools are as segregated as they were in the 1960s, particularly by race and social class.[31] The state and national leaders Advance CTE spoke with for this brief said that, as a result, high-quality CTE programs are often present in areas with more concentrated wealth, where communities can afford to equip classrooms with state-of-the-art equipment and attract experienced teachers with competitive salaries. And despite plenty of research demonstrating that non-white students perform better academically and have lower disciplinary rates when they are taught by educators of the same race,[32, 33] the CTE teacher workforce remains 90 percent white, while the majority of the student population is now students of color.[34]

A recent Education Week article posed the question, "Can a career tech ed. school be too popular?"[35] Its author notes that, with the advent of high-quality career academies and industry-aligned CTE programs of study, competition for these elite programs has, in some states, crowded out learners of color and low-income learners. Having improved the quality and relevance of CTE, policymakers find themselves faced with an entirely new dilemma: ensuring access for all. To make good on the promise of CTE, state and local leaders must commit to holding all programs to high levels of rigor and securing more equitable access.

Diversity in the Workforce

States, schools and institutions must strengthen diversity in CTE programs to bolster pipelines of diverse talent for future careers. While much progress has been made, workers today continue to be sorted into industries and occupations based on their race, socioeconomic status, gender and ability.

According to the Bureau of Labor Statistics, black and Latinx workers are over-represented in service occupations and under-represented in management and professional occupations.[36] Likewise, women are over-represented among nurses, teachers and accountants and under-represented among software developers, chief executives and physicians — occupations that traditionally pay higher

wages.[37] And even within these occupations, women — particularly women of color — face wage inequities on the job, earning lower wages on average than their male counterparts.[38]

For individuals with disabilities, representation in the workforce is even lower. In 2017, the unemployment rate for people with disabilities was more than twice that for people without disabilities, even across education levels.[39]

Lack of diversity in the workforce has a cyclical effect on CTE delivery. When schools and institutions struggle to attract diverse talent to serve as instructors, guest speakers and work-based learning supervisors, this lack reinforces biases about who can and should pursue certain careers. Promoting diversity in the workforce is a critical lever to strengthen the pool of industry experts and create a

Common Ways Bias Can Show Up in CTE

Bias is the everyday assumptions about a person or group of people, which can show up in both one-on-one interactions and institutionalized policy. Bias can affect student success in CTE in a number of ways. State and local leaders should recognize how bias occurs and take measures to curb its impact so that every student can access and succeed in high-quality CTE programs of study. Here are some common ways bias shows up in CTE:

Career and Academic Advising — The area where bias can have the most detrimental impact is in the classroom. All too often, learners are counseled into careers based on assumptions about their abilities and preferences. Counselors, teachers and other school-based staff should be trained to recognize and counteract bias whenever it does show up.

Geography — Where a student lives is a substantial factor in whether he or she can access meaningful CTE opportunities. High-quality CTE programs are often concentrated in areas of affluence, making it harder for certain students to access those opportunities.

Graduation Requirements — Often, learners will need a postsecondary credential to gain entry-level employment in their chosen field. High school graduation requirements that bifurcate, rather than integrate, college and career pathways, with differing levels of rigor in each, can prevent learners from maximizing their career opportunities.

Selection Criteria — As students and families come to understand the value and promise of CTE, demand for seats in high-quality CTE programs grows, requiring schools and districts to enact a selection process to determine who gets to enroll. Without clear guidelines, this process can result in "cream skimming," or selecting only the highest-performing students.

Student Accommodations — Learning should be flexible enough to bend to the needs of the student, allowing the student to maximize his or her learning. This flexibility could mean providing special testing accommodations to learners with disabilities or adjusting the master schedule at a community college to accommodate learners with children at home.

more inclusive CTE system. State CTE leaders must work in concert with workforce development leaders to make this diversity a reality.

Likewise, states have the opportunity and the responsibility to diversify the workforce by strengthening pipelines into non-traditional occupations. By educating and preparing today's learners and supporting students to pursue their career of choice states can ensure that there are pipelines of diverse talent to fill the jobs of tomorrow.

Charting a Path Forward

Throughout much of the 20th century, learners of color, low-income learners, females and learners with disabilities were tracked into low-quality CTE programs. This practice was our nation's harsh reality. It limited opportunity and maintained social and economic "classes," which preserved rigorous educational opportunities and pathways to success for those with affluence and influence. Today, parents and learners across all backgrounds demonstrate interest in high-quality CTE, according to a national survey commissioned by Advance CTE.[40] But while today's CTE programs have undergone a significant transformation, leading to academic and career success for learners, high-quality CTE programs are not universally accessible.

To counteract historical inequities and secure opportunity for each learner, state leaders must confront this legacy and actively work to dismantle policies, practices and traditions that track learners and limit opportunities. This series aims to equip state leaders with strategies and practices to begin this work. Future briefs will explore solutions including how to use data to identify and get to the bottom of access gaps, rebuild trust within under-served communities, expand opportunity for each learner, and put mechanisms in place to secure learner success.

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Examining Access and Achievement Gaps

This brief, the second in a series focused on equity in Career Technical Education (CTE), lays out a strategy for state and local policymakers to confront historical inequities by using data to examine and address gaps. It examines promising strategies from states that are using data to better understand where and how learners are being under-served, identify root causes and disrupt historical inequities.

Using Data to Identify and Resolve Inequities in CTE

State leaders can use data as a tool to understand the effects of historical inequities and arm local leaders to mitigate their impact. Data, when disaggregated to unmask differences in enrollment and performance, can be a powerful tool to diagnose problems, navigate course corrections and evaluate progress and impact. Yet there are some real challenges and limitations to CTE data. Historically, CTE data have been collected by separate, non-longitudinal data systems (with secondary and postsecondary CTE data often collected separately), relied on a mix of sound and self-reported information, and had limited distribution among stakeholders and the public. Such archaic systems limit the impact and usefulness of CTE data.

Some states, however, have invested in robust, linked data systems that allow for a closer examination of learner outcomes. In these states, policymakers have leveraged their data systems to identify and address the inequities in their own communities, working to close equity gaps by:
- Leveraging accountability to draw attention to inequities;
- Committing to data transparency; and
- Examining root causes of achievement and access gaps.

Accountability as a Lever to Highlight Equity Gaps

Accountability can be a powerful lever for promoting equity. What gets measured matters, and holding schools and institutions accountable for career readiness signals to local leaders that each and every learner should be able to access high-quality CTE programs of study and experience work-based learning, credentialing and instructional opportunities that will prepare them for success in the real world. Valuing career preparation in state and federal accountability systems also ensures that local and state leaders collect the data they need to identify access gaps in CTE programs of study and are empowered to act on this information to close gaps.

However, accountability and public reporting systems must be designed to effectively provide local leaders and community members with actionable information, as well as equip them with the skills to

Key Equity Questions for CTE

State leaders should consider the following questions as they examine CTE enrollment and performance data.

- Can all learners access high-quality CTE programs of study?

- How does your state define access?

- Are you considering the availability of high-quality CTE programs of study, transportation barriers, waitlists, admissions barriers, etc.? Just because a program is geographically close does not mean it is accessible.

- Are certain populations over-represented or under-represented in CTE programs of study? Do these trends persist within and across Career Clusters®?

- Where are the biggest achievement gaps?

- Are inequities persistent statewide, or are they isolated within districts, within schools or within programs?

- How are you engaging the learners and communities you serve to better understand the problem and identify solutions?

use this information. The widespread commitment by more than 30 states to measure career readiness in federal accountability systems should be celebrated.[1] Yet many of the indicators states chose to measure career readiness fall short of providing true transparency. For example, many states have adopted accountability measures that are commonly known as meta-indicators, which combine a menu of options for students to demonstrate college and career readiness. While this approach appropriately recognizes the many pathways to postsecondary success, it can often mask student achievement by blending different types of indicators. Without breaking down meta-indicators into their constituent parts, knowing which students are achieving college and career readiness and which pathways they are taking to get there may be impossible for the public. Furthermore, using meta-indicators may encourage school districts to focus on the students most likely to reach these benchmarks, while neglecting the rest. It is absolutely critical that states disaggregate performance data by sub-populations to highlight inequities and provide actionable information for local policymakers.

The Value of Disaggregating Data

States must commit to disaggregating data to highlight the performance of learners of color, learners with disabilities, low-income learners, female learners, etc. All too often, the achievement of these learners is masked by the performance of their peers. Being transparent with data allows families, community members and policymakers to more clearly identify where gaps exist and take action through either institution-based or policy-based solutions.

The Strengthening Career and Technical Education for the 21st Century Act (Perkins V), which was reauthorized in August 2018, includes requirements to enhance data collection and reporting for new learner populations — a move that will increase transparency in CTE. Meeting these requirements could be the opportunity state leaders need to strengthen CTE data collection

and reporting capabilities and ensure that data are available to inform decisionmaking, public accountability and learner interventions.[2]

Well-designed accountability systems allow states and local leaders to identify critical access and performance gaps and ensure that decisionmakers prioritize equity. But accountability alone is insufficient to equip students, families and policymakers with the information they need to make informed decisions. In addition to embedding career-focused indicators in their accountability systems, states must commit to CTE data transparency and make access and performance data available to the public.

Maryland's Commitment to CTE Data Transparency

In **Maryland,** any member of the public can access enrollment and performance data reports for each of the state's 24 school systems and 16 community colleges.[3] Easy-to-use dashboards display enrollment and performance data and enable users to filter results by a number of sub-populations including gender, race/ethnicity, disability status, socioeconomic status and English proficiency.

Maryland makes CTE data available to the public in two primary ways. The first way is through accountability reports such as the annual Program Quality Index (PQI) report,[4] which demonstrates student performance on the six core CTE performance indicators under the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV), and the Local Performance Accountability Report (LPAR), which examines sub-population data. These reports allow the public to see whether recipients are above or below the target for academic performance, graduation, technical skill attainment and more. Both data dashboards are updated annually.

The second way Maryland makes CTE data available is through its CTE enrollment dashboards, which display the available programs for each school system and community college and the proportion of students participating in CTE, arranged by Career Cluster.[5] This display allows state and local policymakers to quickly determine where students are enrolled in programs that are aligned with high-wage, high-skill, in-demand occupations.

In addition to making the data accessible to the public, Maryland prepares CTE teachers and administrators to use and understand the data dashboards so that they can change school-based practices to improve
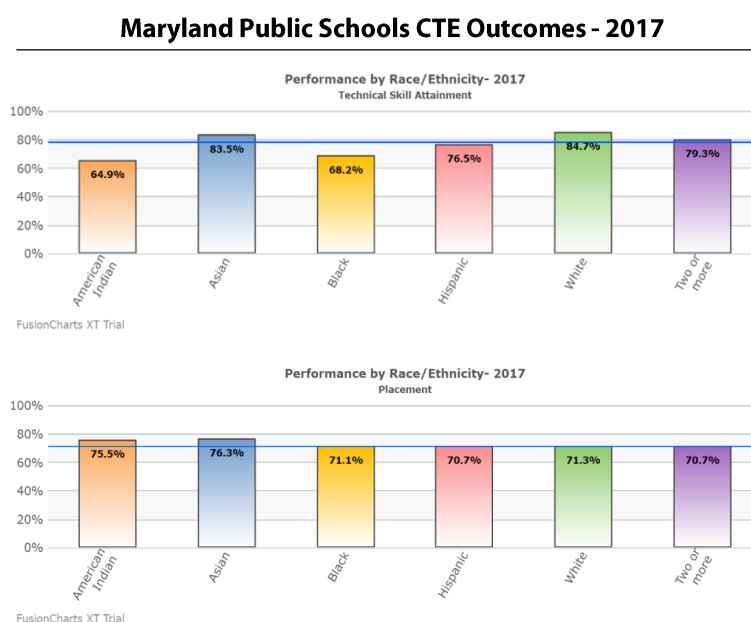
CTE performance outcomes for all Maryland public schools, disaggregated by race/ethnicity. Retrieved from https://www.mdctedata.org.

performance and ensure more equitable enrollment. Local leaders use the disaggregated metrics in the PQI and LPAR reports to make data-driven decisions when developing the annual Local Perkins Plan for Program Improvement, specifically focusing on student populations that are under-served or under-performing.

The accessibility of timely, accurate data also empowers Maryland state staff to flag performance and enrollment gaps in school systems and community colleges and, if necessary, intervene. Recently, state leaders noticed that schools with an application process for students to access CTE programs tended to create artificial barriers to enrollment. The Maryland State Department of Education convened a study group of state and local leaders and fielded a survey to gain a better understanding of the root causes behind the barriers to enrollment. As it turned out, the selection process that some school systems were using to recruit students into CTE programs relied heavily on interviews, grades, written essays and disciplinary records, making enrolling in CTE programs harder for students. With input from the study group, state staff quickly developed a Technical Assistance Bulletin (TAB) to provide guidance on more equitable recruitment practices to reduce bias in the selection process. The guidance was distributed to school system and school-based leaders in April 2017, and professional development was provided to local CTE directors. Thanks to the availability of the TAB and effective use of real-time CTE data, Maryland staff were able to intervene and expand equity and access in the student recruitment process. Many educators today are implementing the recruitment practices recommended in the TAB.

Source: Peninsula College, Port Angeles, WA

Minnesota's Graduate Employment Outcomes Tool Demystifies Postsecondary Pathways

Other states such as **Minnesota** go beyond federal reporting requirements to provide disaggregated data on labor market outcomes for graduates of different institutions of higher education. This approach aims to demystify the postsecondary system by equipping students, families and school counselors with information to make informed decisions about their postsecondary options. Additionally, Minnesota demonstrates how policymakers can use employment outcomes data to identify workforce needs and build the case for expanding pathways into the workforce.

In 2014, the Minnesota Department of Employment and Economic Development (DEED), in partnership with the Office of Higher Education, released the Graduate Employment Outcomes Tool to the public.[6] The tool was funded primarily through a federal Workforce Data Quality Initiative grant and was designed to meet the growing demand from both policymakers and prospective students for more transparent data on employment outcomes for graduates.[7]

The tool works by matching postsecondary student records with unemployment insurance data to provide wage and employment reports by institution and by program for individuals who graduated within the past few years. Learners can log in to the tool, search for a school or a program they are interested in pursuing, and quickly compare employment outcomes for different institutions.[8] Importantly, data in the Graduate Employment Outcomes Tool can be disaggregated by race, allowing users to compare outcomes for students like them.[9] To maximize awareness and use of the data, state officials at DEED and the Office of Higher Education reach out to counselors and other school-based leaders to teach them how to use the tool.
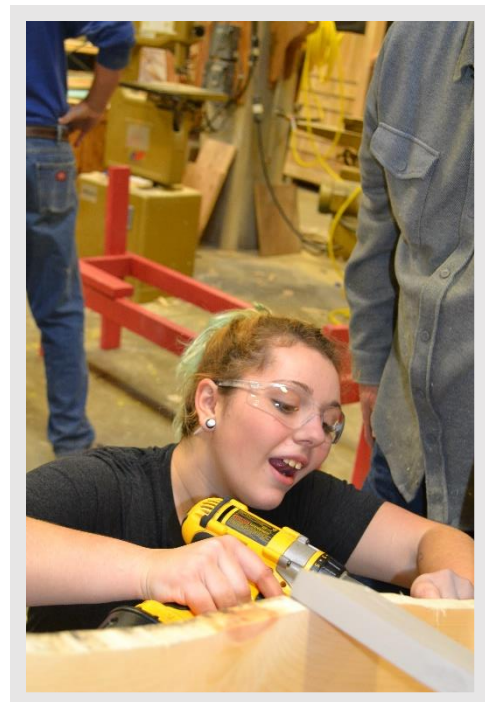
Expanding opportunities for under-served racial populations is a critical need in Minnesota. In recent years, the population of non-white Minnesotans between the ages of 18 and 64 has increased while the population of white Minnesotans has decreased. The fate of the economy, therefore, depends on an inclusive, accessible workforce. Policymakers and researchers at DEED have used the Graduate Employment Outcomes Tool to unpack workforce trends and build the case for strengthening education and training pathways into the workforce. They argue that closing racial gaps "is not only the right thing to do, it's the necessary thing to do if we're to provide our economy and its employers with the workforce necessary for success."[10]

How Delaware Gets to the Bottom of Equity Gaps through Root Cause Analysis

State leaders must understand how to unpack their data to uncover inequities. Sometimes it can be difficult to know whether to prioritize gaps in enrollment, performance or post-program outcomes. Once gaps are identified, states leaders must then intervene in a structured way.

Source: Region 10 Technical High School, Brunswick, ME

Delaware identifies gaps by sub-group through an analysis of CTE enrollment, completion and post-program outcomes data. The Delaware Department of Education (DDOE) looks at school-level, program-level and state-level data for different student populations, disaggregating data by socioeconomic status, race/ethnicity, disability, gender and more. Sub-group data are compared to the general student population to ascertain whether enrollment and performance for certain students deviate significantly from the expectation. This process is completed annually as part of DDOE's performance management.

For example, DDOE examines parity in student enrollment data across the aggregate high school population and CTE student group to identify inequities in participation. DDOE staff expect enrollment in a CTE program of study to mirror the population of students in the school and in the community. If only 4 percent of students in an allied health career pathway are students with disabilities, and the population as a whole is 16 percent students with disabilities, this finding would

Supporting English Learners in a Biomedical Science Program of Study
Beaverton, Oregon

Health & Science School in Beaverton, OR, an Excellence in Action award finalist, uses the Project Lead the Way curriculum in its Biomedical Science program of study.[11] Learners exercise hands-on, team-oriented skills and explore topics such as human medicine, physiology, genetics, microbiology and public health.

The high school is an options school, meaning it is one of six lottery-based admissions schools in the district that provide specialty education. As such, school leaders work actively to recruit a population of students that is representative of the district population. The school is 54 percent non-white, 53 percent economically disadvantaged, 33 percent English learners, and 10 percent students with disabilities.

Staff at Health & Science School use data to promote equity and deliver resources and supports to each student based on need, particularly focusing on the school's large English learner population. An equity team at the Beaverton School District provides professional development and resources to help school-based staff understand their student data. They look at graduation rates, postsecondary success, technical skill attainment and more for each student sub-group and pair this information with teacher testimony and qualitative survey data.

This information helps staff at Health & Science School work in partnership with district leaders to make programmatic changes to better serve students in need of additional supports. As a result, Health & Science School has modified teaching practices, developed resources, and embedded support staff in the classroom to allow for full inclusion of English learners.

suggest that these students do not have equitable access to that program. This analysis is facilitated by dynamic dashboards, similar to those used in Maryland, which allow DDOE staff to quickly drill down to the district, institution and program levels to closely examine student data.

When inequities are identified, a structured protocol is set into action. DDOE uses a partnership approach to performance management, opting for a collaborative conversation with school-based staff. DDOE staff provide district leaders with data reports, which illuminate specific gaps in enrollment and performance. They then co-construct a series of questions for study and conduct interviews with teachers, students and parents to identify gaps and models of support. Student and parent opinions carry the most weight in this process, ensuring that the voices of those being served are elevated.

Once the interviews are completed, DDOE and district staff debrief about the conversation and collectively develop a report summarizing the findings of the study. The report includes commendations, recommendations, compliance issues, and next steps for closing equity gaps. The report also highlights opportunities for local leaders to co-invest with the state in trainings, tool development and other interventions to support under-enrolled and under-performing students. Although local sites are not required to act on DDOE's recommendations, many recognize the need and seize the opportunity for additional state support. In this way, DDOE serves as a partner in equity,

empowering local leaders to examine root causes and pursue new strategies to achieve sub-group parity.

Delaware's approach demonstrates how states can use data to examine root causes and determine the appropriate steps to rectify inequities. The reason why gaps exist may not always be obvious. Policy barriers may prevent students from accessing and succeeding in high-quality CTE programs of study. Or classroom-based practices and behaviors may influence the choices students make about their educational options. Data alone will not answer these questions, but they can illuminate inequities and provide a roadmap for understanding root causes. In a state like Delaware, it takes a structured process to create room for collaboration and honest conversation.

A Path Forward

There is both a moral and an economic imperative for expanding access to high-quality CTE programs of study. Participating in CTE, work-based learning and other career-focused experiences provides learners with the technical, academic and employability skills to accelerate career growth and individual opportunity. For many, it can be a pathway out of poverty and into a sustainable career. Multiplied at scale, focusing on equity in CTE is a sure way to strengthen the talent pool and close critical skills gaps in the workforce.

What will it take to get there? State leaders should consider the following actions to understand the equity challenges in their own communities:

- **Acknowledge, and work toward dismantling, current and historical inequities in CTE:** Examining access and equity through a historical lens is important to contextualize equity gaps. In the past and even still today, students have been counseled into narrow, job-specific vocational programs based on income, disability, gender and race. By and large, today's CTE programs are more academically rigorous and career oriented than in the past, but work still remains to rebuild trust, stay the course on the drive for quality, and demonstrate that CTE is a viable option for career success for everyone. This history must provide the context for every decision a state leader makes to ensure that program quality, expansion and improvement are informed by a robust awareness of historical inequities in CTE.

- **Be transparent with state data:** State leaders should commit to using their data to make state policy and fiscal decisions and to making data available to the public to demonstrate how many students are enrolling and succeeding in CTE programs of study. Further, states should disaggregate data by program, institution and sub-population and make sure the data are actionable by offering professional development and training to administrators and policymakers. All too often, CTE enrollment and performance are masked by aggregating and reporting data statewide or by using meta-indicators that combine a menu of different data points. Providing transparent, disaggregated CTE data empowers students, families and counselors to make informed decisions about their educational choices and equips state and local policymakers to more easily identify gaps (although states should still exercise caution to ensure that privacy is not violated).

- **Use root cause analysis to get to the bottom of enrollment and performance gaps:** Data do not always tell a clear story. Once gaps have been identified, state leaders should investigate the root causes to better understand, and begin the work of addressing, equity gaps. This process requires speaking with school- and institution-based staff, interviewing students and families, and reflecting on the policies and practices that perpetuate historical inequities. This analysis should inform any efforts to close access and achievement gaps to ensure that resources are being used effectively.

By acknowledging and working to understand CTE's history, state leaders will have a better perspective to recognize and remedy inequities as they exist today. This work is not easy. It requires a bold commitment to equity and a willingness to confront institutionalized biases. This series aims to equip state leaders with strategies to take on this challenging work. In future briefs, we will explore how state leaders can work to rebuild trust among communities that have been historically under-served, expand opportunity for every learner, and put mechanisms in place to ensure learner success.

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Building Trust to Promote Equity in CTE

This brief, the third in a series focused on equity in Career Technical Education (CTE), maps out steps state leaders can take to rebuild trust in marginalized communities that CTE historically failed to serve equitably.[1] It examines strategies that states are using to communicate the promise of CTE and gain buy-in from state agencies, communities, and stakeholders to promote equity in CTE.

Taking Action to Build Trust and Gain Buy-In

While CTE on its own cannot solve pervasive equity issues in the United States, it can play a key role in helping to promote equitable access and outcomes for learners by equipping them with the skills, knowledge and experiences needed for lifelong career success. However, the history of inequity in CTE, as covered in *Making Good on the Promise: Understanding the Equity Challenge in CTE*, may prevent learners and their families from trusting the value and promise of CTE.[2] Through actions internal and external to the state agency, state CTE leaders can take concrete steps to build trust in communities that do not view CTE as a viable mechanism to help them achieve their college and career goals. To build trust, state CTE leaders should:

1. *Acknowledge that inequity is a problem;*
2. *Promote a culture that values equity and diversity within the state agency and instructor workforce;*
3. *Commit to transparency and advancing only high-quality CTE programs of study;*
4. *Implement strategies to gain buy-in from communities and stakeholders; and*
5. *Celebrate, lift up and replicate successful programs of study and practices.*

"Communities have been burned by misinformation. Young people were historically tracked into low-quality vocational education programs. The first step to building trust in these communities is to acknowledge the history and why there is some mistrust."

— *Adenike Huggins, National Urban League*

Acknowledge That Inequity Is a Problem

The first step to building trust in communities is to acknowledge the history of CTE and the equity gaps that exist within CTE. As discussed in the first brief in this series, state leaders need to acknowledge CTE's legacy and understand the equity gaps that exist in their state if they want to begin to address inequities.

State leaders can use data as a flashlight to illuminate gaps in enrollment and completion by population. One critical opportunity is through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V),

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which requires states to disaggregate CTE data by special populations, Career Cluster® and CTE program/programs of study. States can leverage data as a starting point to identify equity gaps and illustrate their pervasiveness, persistence and geographic distribution. States also can use the data to implement strategies to close equity gaps, as covered in *Making Good on the Promise: Examining Access and Achievement Gaps*.[3]

In addition, state leaders must acknowledge the equity gaps that can exist before enrollment, particularly gaps in information. Some students may have never heard of or been exposed to CTE opportunities, while their peers may have the resources and champions, in the form of school counselors and instructors, with the capacity to make connections between students and CTE and to facilitate their integration into and through CTE programming. States must recognize that data may not illustrate the full extent of the equity gaps that exist.

States also have to be prepared to make the case for advancing equity in CTE. Acknowledging the equity problem in CTE goes beyond identifying equity gaps and confronting the tracking that has taken place — and sometimes continues to take place. It also involves accepting that not all stakeholders may value or prioritize advancing equity in CTE. If a state leader is going to acknowledge that an equity problem exists, he or she needs to be prepared to explain the history of the problem, the scope of the current problem, and the imperative and plans for solving the problem.

Making the Case for Promoting Equity in CTE

To appeal to stakeholders who may not prioritize advancing equity in CTE, state leaders can highlight the economic imperative to close the education and skills gap across race, gender, ability and socioeconomic status. As mentioned in the first brief in this series, CTE can offer an onramp to the middle class and help grow the economy by increasing high school graduation rates and placing students on a pathway to obtain a postsecondary credential of value.[4] If the U.S. economy is going to continue to grow and remain globally competitive, leaders need to address equity gaps and ensure that all populations have equal access to the benefits of CTE, particularly as demographics shift in the U.S. For instance, by 2050 more than half of U.S. workers and consumers will be people of color,[5] and if black and Hispanic/Latino children's educational achievement rose to that of white children born in the United States, the economy would be nearly 6 percent, or $2.3 trillion, larger by 2050.[6] By strategizing how to close equity gaps in CTE across populations, stakeholders are helping to foster a talent pipeline that will strengthen a labor market in which two-thirds of jobs will require some form of postsecondary education by 2020.[7]

Promote a Culture That Values Equity and Diversity Within the State Agency and Instructor Workforce

To advance equity in CTE effectively, state CTE leadership must make it a priority and lead by example. This focus signals to administrators, instructors and other stakeholders that the state is committed to advancing equity and that funding and policy decisions will align to this priority. To promote a culture that values equity and diversity, state leaders should take a two-pronged approach: engaging teachers, staff and administrators in professional development and learning that will result in greater inclusion, and creating a more diverse teacher pipeline.

Oklahoma's Equity and Diversity Training

Some states have signaled the importance of equity in CTE by creating equity-focused staff positions. In **Oklahoma,** the Oklahoma Department of Career and Technology Education created the position of state-level equity and diversity specialist in 2016 as part of its senior leadership team. The focus of this

Source: Peninsula College, Port Angeles, WA

position is to provide trainings to agency staff, teachers, administrators, non-instructional staff and Career Technical Student Organizations to promote equity as a priority through both the secondary and postsecondary systems. These trainings raise awareness of and address issues pertaining to implicit bias, cultural awareness and diversity; they are interactive and involve role-playing to illustrate the effects of stereotypes and bias on people's everyday experiences. Since the trainings began in 2017, more than 2,100 people have participated each year. As the program continues to expand, stakeholders have requested customized training and helped to engage more groups. The trainings are evaluated to ensure that the needs of the participants are being met and to garner recommendations for continuous improvement.

Because the trainings are voluntary, in addition to advertising the trainings via media, the agency relies heavily on participants marketing the trainings through word of mouth. Urging training participants to recruit others creates a grassroots effort to shift mindsets on equity in CTE. By hiring a staff member to address issues related to equity and diversity, Oklahoma also is signaling that it values equity and is beginning the process of gaining buy-in within the state agency. While creating positions solely focused on advancing equity in CTE may not be feasible for other states, state agencies can invest in equity and diversity-focused professional development opportunities that equip staff with the knowledge to think and talk about issues through an equity and diversity lens, which helps to foster a culture that values equity.

Wisconsin's Efforts to Diversify the Teacher Workforce

Secondary students who are taught by teachers who share their gender and racial identity are more likely to understand class material and consider attending college.[8] Yet, 90 percent of the national CTE teacher workforce is white, while the majority of the country's student population is now composed of students of color.[9] Therefore, states should also examine the composition of the local CTE instructor workforce and administrative leadership. States should prioritize fostering a teacher pipeline that helps to build a teacher workforce that is more reflective of their learner populations. States can meet this goal by supporting alternative pathways to certification and working with industry-based affinity groups to develop teacher pipelines that promote a diverse instructor workforce.

Recognizing the importance of a diverse instructor workforce, the **Wisconsin** state superintendent initiated a plan to diversify the Wisconsin Department of Instruction's (DPI) staff and raise awareness about inequities in the state. Because this initiative encompasses the entire DPI staff and K-12 teaching workforce, it includes the CTE community. In 2017, 30 percent of students in the Wisconsin public school system were students of color, yet only 5 percent of teachers in the public education system were of color. To address this discrepancy, DPI established a work group to achieve parity between the demographic makeup of the DPI's teacher workforce and students in the state by 2040 in partnership with external groups, organizations and agencies, legislative allies and community partners.

The work group established a strategic plan to increase the percentage of teachers of color in Wisconsin from 5 percent in 2017 to 30 percent by 2020. This plan consists of five key strategies:
- Attract in-state high school students to a career in teaching;
- Eliminate barriers to teacher licensing for in-state and out-of-state teacher candidates;
- Recruit and develop out-of-state teacher candidates;
- Recruit and develop in-state educators; and
- Retain teachers of color.

To evaluate the success of these strategies, DPI will collect quantitative and qualitative data through annual reports and through interviews and focus groups with teacher candidates of color.

While this plan is still in its infancy, the act of bringing in external partners to strategize how to improve diversity and inclusion signals the state's commitment to promoting equity and diversity.

Commit to Transparency and Advancing Only High-Quality CTE Programs

The mistrust that exists in some communities stems from a history of learners participating in low-quality CTE programs with poor outcomes; therefore, it is imperative that states be steadfast in ensuring that they are approving and supporting only high-quality CTE programs of study that lead to positive outcomes for *each* learner. States must invest in resources, policies and programs that support and ensure quality. This effort also involves investing in processes to specifically identify and transform or close down low-quality programs. To help states understand when that may be necessary, Advance CTE's *Ensuring Career Pathway Quality: A Guide to Pathway Intervention* outlines the different types of interventions needed for programs of study to ensure that they are high quality.[10]

Ensuring that every learner has access to a high-quality CTE program of study requires attentiveness to equity. In 2017, **Massachusetts** launched the high-quality college and career pathways (HQCCPs) designation process to expand career preparation opportunities and align program offerings with priorities identified by industry. The HQCCPs take two forms: early college programs, which provide students with the opportunities to complete college-level academic coursework that articulates to postsecondary credit, and innovation pathways, which contextualize student learning through experiential work-based learning opportunities that connect students to in-demand growth sectors in the regional economy. Both the early college and innovation pathways are guided by five principles: equitable access, guided academic pathways, enhanced student supports, connection to career and effective partnerships.

By intentionally including equity as a pillar in the design of its programs, Massachusetts recognizes that a high-quality CTE program is rooted in equitable access and signals to the public that equity is a clear priority for the commonwealth. To ensure that equitable access is a priority in the design of programs, sites in the designation process must demonstrate a commitment to equity and a plan to promote equitable outcomes to receive funding. Massachusetts scrutinizes applications in their initial rounds for evidence of these requirements, such as well-designed recruitment plans and admissions processes that are free of bias. It also looks closely at the demographics of proposed cohort groups and has already withheld designation from several applicants that had not made a sufficient showing of a commitment to equity, offering technical assistance to these applicants to help them strengthen this aspect of their plans. Building pathways through the lens of equity will help to promote high-quality programs that benefit *each* learner.

## Implement Strategies to Gain Buy-In From Communities and Stakeholders

Gaining buy-in from local communities and stakeholders is necessary to advance equity in CTE and to build trust. In addition to conveying the importance of addressing equity gaps, state leaders can take concrete steps and leverage strategies to gain buy-in from communities and stakeholders.

Uplift and Engage CTE Champions

In 2017, Advance CTE, with the support from the Siemens Foundation, commissioned focus groups and a national survey to explore the attitudes of parents and students currently involved in CTE, as well as prospective CTE parents and students, to better understand the promise and opportunity of CTE. A key finding from this research was that school counselors, teachers and CTE students are among the most trusted sources of information about CTE for prospective parents and students alike.[11] By equipping these individuals with the tools to communicate the promise of high-quality CTE to school communities, state agencies can begin to address the stigma and concerns surrounding CTE.

Source: Lake Washington Institute of Technology, Kirkland, WA

States can build trust in communities by lifting up and engaging trusted CTE champions who are demographically representative of the communities states are engaging to illustrate the benefits of high-quality CTE programs of study. These CTE champions should be students, parents, teachers or business leaders who are trusted in their communities and understand the benefits and promise of CTE. Certain states, such as **Idaho,** have already begun this work.

As part of its work with Advance CTE and the Siemens Foundation to attract and recruit students into high-quality CTE programs of study, the Idaho Division of Career-Technical Education organized
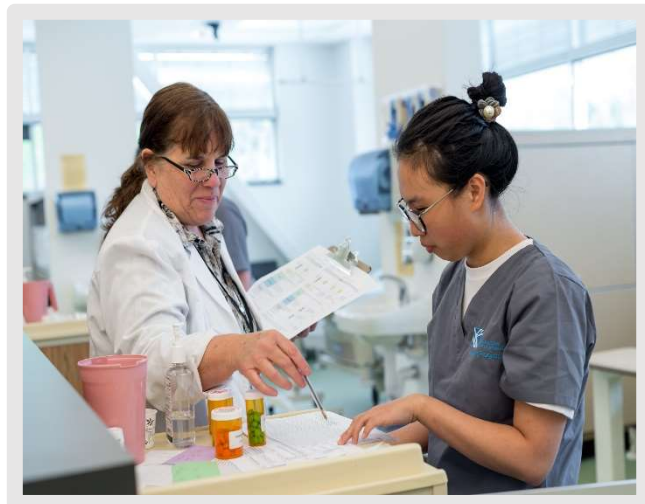
stakeholder engagement groups, which primarily consisted of school counselors and administrators, in 17 school districts across rural, urban and suburban areas. These stakeholder engagement groups equipped school counselors and administrators with the tools they need to communicate the benefits and promise of high-quality CTE programs effectively to parents and students.

During the stakeholder engagement tour, Idaho presented findings from *The Value and Promise of Career Technical Education: Results from a National Survey of Parents and Students* so that school counselors and administrators would have the knowledge to discuss the benefits of high-quality CTE.[12] Following the stakeholder engagement tour, Idaho is developing assets such as flyers, brochures and toolkits for districts to help them communicate the promise of CTE to various populations.

These communications assets are tailored to meet the needs of the specific communities. For instance, the communications strategy being developed for rural communities focuses on helping rural districts communicate with policymakers about the need to address the CTE teacher shortage, but urban districts' communications tools focus primarily on recruiting students into high-quality CTE programs. Following the development of these resources, Idaho will help the districts develop communications strategies to help their communities understand the promise of CTE.

By helping districts develop tailored communications strategies, Idaho is able to equip school counselors and administrators with the tools and knowledge necessary to gain buy-in from policymakers, students, parents and communities. This messaging strategy can be used to convince stakeholders from marginalized communities about the value and promise of CTE programs of study.

Source: Lake Washington Institute of Technology, Kirkland, WA

Message CTE to Appeal to Various Populations

High-quality CTE programs of study are associated with positive outcomes that appeal to a wide range of populations.[13] However, Advance CTE's research has found that specific outcomes associated with high-quality CTE appeal more to some groups than other groups. If states have the data to demonstrate that high-quality CTE programs are associated with positive outcomes, then they may use these outcomes and corresponding data to target their messaging to appeal to specific populations.

Outcomes Associated With High-Quality CTE

Advance CTE, with the support from the Siemens Foundation, commissioned focus groups and a national survey to explore the attitudes of parents and students currently involved in CTE, as well as prospective CTE parents and students, to better understand the promise and opportunity of CTE. When asked, "What elements [of high-quality CTE] are most important to you personally?" the following populations identified the following outcomes as most important more frequently than the average research participant:

- CTE students have a significantly higher high school graduation rate (90 percent) than the national average (75 percent).
    - Appeals more to parents and to African American, Hispanic and urban populations
- More than three out of four CTE students go on to study in college full time right after high school.
    - Appeals more to rural populations
- CTE programs provide opportunities for students to get certifications from several different industries and/or associations.
    - Appeals more to Hispanic populations

In addition, Advance CTE discovered that the following promises associated with high-quality CTE appealed across populations:
- CTE helps learners develop real-world skills through hands-on learning;
- CTE provides career benefits;
- CTE can help learners accrue college credits and scholarships; and
- CTE gives students an advantage in their future careers.

States may use these findings to convince stakeholders in specific communities about the value of high-quality CTE programs through marketing materials such as talking points, social media posts and brochures.

Elevate the Voices of Community Members in Policy and Programmatic Decisions and Solutions

States can build trust in communities by being inclusive of diverse voices and stakeholders, especially those who have been historically under-served by CTE, in conversations about policy and programmatic decisions that will affect them.

Wisconsin has begun this work through its community placemaking efforts. Notably, in 2017 the President's Committee of the Wisconsin Technical College System (WTCS) formed the Diversity, Equity and Inclusion Work Group to promote equity in WTCS. Part of the mission of the work group is to share and implement equity-minded strategies driven by data and root cause analysis to improve student success outcomes. The work group developed the WTCS System-wide Equity Report using

equity data from the state and system to identify equity gaps and determine strategies WTCS can implement to address those gaps.[14]

Though data play a key role in helping WTCS determine actions it needs to take to address equity gaps, the representation on the Diversity, Equity and Inclusion Work Group helps to elevate the concerns of the learners WTCS serves. The work group is made up of human resources representatives and diversity services professionals from all 16 technical colleges in WTCS. Each member of the work group is actively working on building trust with and addressing the needs of different marginalized student communities in their respective districts. As a result, committee members are able to bring up learner narratives and community concerns that the equity data may not be able to illustrate to help inform the programmatic and policy decisions WTCS makes.

> **Wisconsin: Elevating Community Voices to Promote Systems Alignment and Equity**
>
> As a whole, Wisconsin is strengthening cross-sector partnerships to align systems to address the needs of community members. An employer from Wisconsin spearheaded a community placemaking effort to address barriers to inclusivity in the state after witnessing the impact the lack of inclusivity had on the local economy and people's workplace, education and health experiences and outcomes.
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> As a result, in April 2019, the Wisconsin Institute for Public Policy and Service (WIPPS) is hosting the Toward One Wisconsin Inclusivity Conference, bringing together neighborhood associations, churches, employers, educational institutions, affinity groups and local organizations that advocate on behalf of special populations to gain insight into specific barriers hindering inclusivity. The conference will address barriers to inclusion in the workplace, communities, youth-serving organizations and schools and health systems.
>
> The conference will give community members the opportunity to have conversations with change makers and leaders across sectors, as they work together to brainstorm solutions to address inclusivity issues in Wisconsin. After the conference, WIPPS will produce a strategic report with goals and actionable recommendations for state and local governments, businesses, communities, educational institutions, health systems and non-profit organizations based on the findings from the conference. Additionally, WIPPS will generate performance measures for success in reducing barriers to inclusion to hold partners and institutions accountable.

Leverage Diverse Stakeholders to Inform CTE Priorities

Nebraska is using stakeholder engagement meetings to elevate the voices of community stakeholders while also gaining buy-in from industry. The Nebraska Department of Education and Nebraska Career Education held numerous stakeholder engagement meetings to help inform strategies for a strategic plan to address issues related to delivery, financing, quality and teacher supply across the secondary and postsecondary education systems.

The stakeholder meetings consisted primarily of business/industry and community leaders but also included a select number of educators from the secondary and postsecondary systems. To get business and industry to the table, the Nebraska Department of Education collaborated with the Nebraska Department of Labor and Economic Development. Nebraska sent targeted invitations for the meetings to ensure that appropriate industries and significant leadership in each of the economic regions were represented. Prior to the meetings, participants were provided with guides that contained background information on Nebraska's current approach to a CTE-related topic and possible alternative approaches to improve said topic. During the meeting participants selected their preferred approach and engaged in open-ended discussions about other ways to improve the topic.

Upon completion of the stakeholder meetings, key findings and considerations were published, which were used to inform a strategic plan to improve the Nebraska CTE system.[15] While the Nebraska stakeholder engagement meetings were focused primarily on addressing access and quality issues and not on closing equity gaps, the stakeholder engagement tour model can be adapted with an equity lens to gain employer and stakeholder buy-in and allow community members to influence strategic planning to improve CTE.

Key Equity Questions for CTE

Providing an avenue for community members and leaders to help inform policy and programmatic decisions empowers communities and increases their investment in CTE. As a result, states should establish ways for community members to provide feedback. To ensure that these opportunities for feedback result in meaningful dialogue and comments, states must make information accessible and easy for community members to understand. State leaders should consider the following questions as they examine the accessibility of their information and feedback loops:

- What languages are state plans, data, policy and program information presented in?

- Is information presented in plain language that the average layperson can understand? Is education jargon translated into layperson terms?

- What timeframe for providing feedback is given? Who may be excluded from providing feedback due to the time/date?

- What languages may community members use to provide feedback?

- What methods may people use to provide feedback (written, verbal, etc.)?

- What delivery methods may community members use to provide feedback (online, mail, in person, etc.)?

- Where are opportunities to provide feedback held? Who may be unable to access these opportunities because of the location?

Celebrate, Lift Up and Replicate Successful Programs of Study and Practices

When state and local education leaders make significant progress toward advancing equity in CTE, states should celebrate, lift up and replicate these successes. Celebrating successes allows states to

recognize the accomplishments of local leaders in closing equity gaps, provides an incentive and motivation for local leaders to prioritize equity, and elevates relevant practices that other leaders can replicate.

States can accomplish this celebration through formally recognizing high-quality CTE programs of study. **Utah** has taken this approach by establishing the Utah Excellence in Action Award, an award administered by the Utah State Board of Education that recognizes high-quality CTE programs of study in the state. The award is a state-level version of Advance CTE's Excellence in Action Award, which recognizes and honors high-quality CTE programs from across the nation.[16]

Utah began the award program in 2017. Nominees are selected based on a set of detailed criteria, including evidence that shows the CTE program provides equitable access and outcomes for learners. Award recipients are recognized during a statewide CTE Directors luncheon. Award recipients receive state-wide recognition and promotional materials.

Since the inception of the program, Utah has noticed that local CTE Directors value the award because someone outside of their local education agencies nominated them for it. Additionally, Utah has seen an interest from other local education agencies to replicate the award-winning CTE programs. The Utah Excellence in Action Award has provided the Utah State Board of Education with a new method to uplift replicable programs that have positive, equitable outcomes for each learner.

A Path Forward

States must commit to both equity and quality in CTE programs to rebuild and gain the trust of all current and potential CTE stakeholders and learners. Through actions internal and external to the state office, state leaders can take concrete steps to message CTE to gain buy-in and trust from staff, learners, stakeholders and the community. State leaders should consider the following when working toward building trust in communities historically marginalized by CTE:

- **Acknowledge inequities in CTE:** The first step to building trust with communities historically marginalized by CTE is to acknowledge the history of inequities and the current equity gaps that persist today. While data can play a key role in showcasing equity gaps, state leaders should also solicit feedback from community members and stakeholders to understand the equity gaps that exist that may not be demonstrated by data.

- **Commit to advancing equity in CTE:** High-quality CTE programs should be rooted in equitable access and promote equitable outcomes for each learner. State leaders should be transparent about the equity gaps that exist in their state and how they plan to address the gaps to promote equity in CTE.

- **Elevate the voices of community members and stakeholders:** State leaders should create avenues through which community members and stakeholders can express concerns, hold the state accountable and engage in solution-driven discussions to help promote equitable policies and practices.

Methodology

The briefs in this series were informed by a literature review and input from a broad group of civil rights organizations, state policymakers and local leaders who are each working to confront access and opportunity gaps every day. Advance CTE is grateful for their input into this series.

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This brief, the fourth in a series focused on equity in Career Technical Education (CTE), examines strategies state leaders can use to expand CTE opportunities for each learner, including low-income learners, learners of color, learners with disabilities, female learners and other historically marginalized populations. The brief also examines promising strategies that states are using to dismantle barriers that prevent learners from accessing high-quality CTE.

Barriers to Accessing High-Quality CTE Opportunities

In practice, much of the conversation about equity in CTE is centered around access. Working toward parity in CTE programs is a good focus — particularly to ensure that learners are not under- or over-enrolled in a specific program area — but such efforts must be coupled with a focus on program quality so that each and every learner is able to access and participate in a high-quality CTE program of their choice.[1]

Common Access Barriers in CTE

The following are common barriers that may prevent learners from participating in high-quality CTE programs of study:
- Geography and availability of high-quality CTE programs in their school or institution of record;
- Funding and resources;
- At-home factors (parent involvement, income, trauma, child care needs, health needs);
- Academic preparation;
- Awareness/advising;
- Cultural awareness; and
- Physical and learning disabilities.

CTE programs are widespread in high schools, community colleges and area technical centers across the country. But not all programs are designed equally, and access to truly high-quality CTE programs is less common. While 98 percent of public school districts offered CTE programs to students at the high school level in the 2016-17 school year, only one-third of districts reported that all of their CTE programs were structured as career pathways that align with related postsecondary programs.[2]

Access gaps are even starker between geographic areas. While 42 percent of urban school districts reported that all of their CTE programs were structured as career pathways that align with related postsecondary programs, only 30 percent of rural districts reported that all of their CTE programs met the same criteria.[3] This result indicates that a large swath of learners, particularly those in rural areas, do not have geographical access to high-quality CTE programs of study.

Other factors, such as income, transportation and family status, may also make accessing high-quality CTE program offerings challenging for certain learners. For instance, postsecondary learners may not be able to participate in high-quality CTE programs because they cannot secure child care or transportation. Secondary and postsecondary learners may not be able to participate in CTE programs of study because they are not aware of CTE opportunities, lack the foundational academic skills that are necessary to be successful in high-quality CTE programs, or cannot meet the entrance requirements for CTE programs.

Some states, however, have taken steps to expand access to high-quality CTE programs of study by addressing some of the systemic barriers that hinder learners' participation in CTE programs. In these states, leaders have worked to close access gaps by:
- Securing equitable resources;
- Expanding geographic access to CTE opportunities; and
- Addressing barriers to entry into CTE programs of study.

Securing Equitable Resources

Education institutions at all levels are working toward expanding access to CTE, but resource inequity presents a challenge to these efforts. To help local institutions expand access to high-quality CTE programs, states must target their investments of resources and funds to the communities that are most in need. Compared to other programs, CTE programs can be more expensive to fund due to higher fixed costs for equipment and facilities as well as costs associated with higher wages for teachers with extensive industry work experience, credential exams and paid work-based learning experiences, among other expenses. Additionally, providing sufficient funds and resources to support high-quality CTE programs in high-need areas can be difficult for states because of the distribution of funds and a lack of resources to meet learners' specific needs.

All too often, access to funds and resources at the secondary level is a function of the wealth of the community. States use differentiated structures to fund overall education at the elementary and secondary levels, with roughly 8 percent of funds for elementary and secondary education coming from the federal government. However, the remainder is split mostly between state and local funds, which allows communities with a larger tax base to generate more resources for their local schools and consequently provide greater access to opportunities for learners.[4] In fact, in the 2016-17 school year, school districts in the United States spent $23 billion more on predominantly white school districts than predominantly non-white school districts despite the districts serving roughly the same number of learners.[5] On average, predominantly non-white school districts received $2,226 less in funding per student than predominantly white districts, and high-poverty, predominantly non-white districts received $1,487 less per student than high-poverty, predominantly white school districts.[6] These funding gaps contribute greatly to resource inequities in education across communities with large non-white and low-income populations.

However, even in areas with significant funds dedicated to each learner, if there is not a commitment to quality and funds are not leveraged appropriately, access to high-quality CTE programs can still be an issue. Resource inequities can affect individual learners within the same building as well. For instance, low-income learners who qualify for free and reduced-price lunch or learners with disabilities who may need learning accommodations may require additional care and support in the classroom to unlock their full potential. Resource inequities greatly affect communities that have higher populations of learners with additional needs and have a weaker tax base to draw upon.

At the postsecondary level, the cost of attending an educational institution — above and beyond the cost of tuition — can prevent learners from accessing high-quality CTE programs of study. Many college students have to work part time or full time to support themselves through school. In the United States, 14 million postsecondary learners work more than 15 hours per week. Of those, 43 percent are low income, and about a third are over the age of 30.[7]

Postsecondary institutions have limited resources to support these learners. While programs such as the federal Pell Grant are available to support high-need learners, they are often insufficient to remove all barriers, particularly the cost of attendance at postsecondary institutions. In 1975, Pell covered 79 percent of the average cost of tuition, fees, room and board at public four-year colleges; today it covers just 29 percent.[8] This situation is indicative of a pattern of inadequate resources to support learners from historically marginalized populations, particularly in environments with rising costs, including rising tuition costs. State leaders have a responsibility to secure appropriate resources and ensure that each learner has access to high-quality CTE opportunities.[9]

> **Amarillo College Emergency Fund**
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> The cost of attending a postsecondary institution extends well beyond the cost of tuition. Housing, food, transportation and day care, among other necessities, contribute to the cost of attending a postsecondary institution. For many learners, but particularly for low-income learners, an unexpected cost can be enough to force a learner to drop a class or drop out of a postsecondary program.
>
> Recognizing how tenuous many postsecondary learners' financial situations can be, Amarillo College, a community college in Texas, established an emergency fund to cover costs, such as car repair bills or water bills, that place learners in financial crises. This fund fits within the community college's larger strategy to support learners in poverty.[8] Amarillo College also provides a legal-aid clinic, a food pantry, a low-cost day care center and free mental health counseling to learners to address the barriers that can prevent learners from participating in postsecondary programs.

Tennessee Promise

Some states, such as **Tennessee,** have taken steps to increase access to high-quality CTE programs at the postsecondary level. In 2014, Tennessee launched the Tennessee Promise program, which provides two years of tuition-free attendance at any of the state's 13 community colleges, 27 Tennessee colleges of applied technology (TCATs), or other eligible institutions offering an associate degree program.[10] The program, which is largely funded through an endowment from the state lottery, is a last-dollar scholarship, meaning it covers college costs not already covered by federal grants.

Tennessee recognized that a lack of monetary funds is not the only barrier preventing learners from accessing postsecondary opportunities. In addition to tuition scholarships, high school students receive guidance and assistance from mentors in applying for college and completing the Free Application for Federal Student Aid. Mentors come from many different backgrounds and commit to mentoring five to 10 high school seniors for a total of 10 to 15 hours per year. In 2017, the Tennessee

Legislature passed the Tennessee Reconnect Act to expand Tennessee Promise and provide tuition scholarships for adult learners.[11] Scholarships are available to eligible non-degree-holding adult students who are admitted to qualifying postsecondary institutions.

The Tennessee Promise program has greatly affected learners' ability to access postsecondary opportunities. In the first year of the program's implementation, the statewide college-going rate increased by 5.9 percentage points to 64.3 percent and has remained at this level since.[12] Additionally, enrollment at public institutions overall increased 11.8 percent in the first year of the program's implementation, with community colleges experiencing a 27.7 percent increase and TCATs experiencing a 20 percent increase in first-time freshmen enrollment.[13]

Tuition-Free vs. Debt-Free College Programs

Tennessee Promise is a tuition-free college program, meaning that it fully covers the cost of tuition at a postsecondary institution. While this support undoubtedly expands access to postsecondary opportunities for learners, such programs tend to favor high-income students whose tuition is not already covered by the federal Pell Grant. Learners in tuition-free college programs may still have to take out loans to pay for housing, books and food, among other expenses. Debt-free college programs subsidize the full cost of attending a postsecondary institution so that learners in the program do not need to take out loans to cover additional costs beyond tuition.

The program also has a positive impact on learners' graduation and transfer rates. Fifty-six percent of Tennessee Promise students who entered college in 2015 had graduated, had transferred or were still enrolled by 2017 — a rate that was 17 percentage points higher than students who had not enrolled in Tennessee Promise.[14] In total, the program has helped to facilitate more than 50,000 learners' participation in postsecondary opportunities.[15] By providing financial support and mentorship, Tennessee is able to address some of the major barriers that prevent learners from accessing postsecondary opportunities: lack of resources and advising.

However, the Tennessee Promise program does not cover the additional expenses associated with attending a postsecondary institution, such as books, food, housing and medical costs. As leaders in every state develop programs to expand access to CTE to more learners, considerations must be given to the variety of barriers that prevent learners from accessing programs.

Rhode Island Innovation and Equity Grants

State leaders can also leverage resources to promote systemic change to close equity gaps. **Rhode Island** has begun this work through its Innovation and Equity Grants. An initiative under PrepareRI, a statewide effort to equip all Rhode Island youth with the skills needed for high-wage jobs, the Innovation and Equity Grants aim to expand access to high-quality career preparation opportunities in priority industries for historically marginalized learner populations.

Rhode Island recognized the need for this grant program after using data to identify access and equity gaps within specific Career Clusters®. After state leaders at the Rhode Island Department of Education (RIDE) disaggregated Career Cluster data by sub-population, they found that English language learners, female learners, learners with disabilities, learners of color and low-income learners were not participating in CTE programs aligned with priority, high-paying industries in proportion to the larger student population.[16]

Industry	Race (non-white)	Poverty	Language	Disability	Gender (female)
Agriculture, Food & Natural Resources	3.5%	3.5%	-2.1%	4.1%	-13.2%
Architecture & Construction	-0.1%	2.4%	-3.4%	0.6%	-38.1%
Arts, Audio/Video Technology & Communications	1.7%	8.1%	-4.0%	-8.1%	5.6%
Business Management & Administration	-27.8%	-21.7%	-5.1%	-10.0%	-11.7%
Education & Training	13.8%	16.9%	-1.9%	3.3%	18.1%
Finance	5.7%	-3.3%	-5.1%	-12.0%	-17.0%
Government & Public Administration	-27.2%	-3.9%	-5.1%	1.4%	-36.0%
Health Science	19.1%	12.0%	-2.9%	-12.6%	32.1%
Hospitality & Tourism	17.3%	11.4%	-3.2%	-1.3%	19.1%
Human Services	6.5%	19.4%	-3.8%	-0.5%	50.2%
Information Technology	-19.0%	-16.7%	-5.1%	-0.5%	-27.2%
Law, Public Safety, Corrections & Security	19.8%	18.1%	-2.7%	-7.4%	6.8%
Manufacturing	11.7%	13.8%	-5.1%	-7.1%	-38.0%
Marketing	-31.2%	-14.2%	-5.1%	-10.5%	28.4%
Science, Technology, Engineering & Mathematics	-25.0%	-26.1%	-5.1%	-15.3%	-41.9%
Transportation, Distribution & Logistics	15.5%	14.8%	-1.8%	-3.9%	-41.3%

Rhode Island CTE equity gaps in 2015-16 by industry sector, as represented by the difference between the percentage of students from the disadvantaged group in CTE programs and in overall Rhode Island high school enrollment. Positive numbers indicate over-representation, and negative numbers indicate under-representation. Retrieved from the Rhode Island Department of Education.

After identifying these equity gaps, RIDE recognized an urgent need to support schools and school districts to recruit under-represented learners and, as such, reallocated state CTE funding to develop the Innovation and Equity Grants. The grants are administered competitively to local education agencies for new or existing CTE programs that expand access to CTE for learner populations that are currently under-served, align to a priority sector industry as defined by the Governor's Workforce Board and meet industry-specific content standards. Grant recipients receive up to $150,000 over two years and must provide a 25 percent local match to the amount of funding received.

The grant funds can be used to support implementation of a program for two years or to support one year of planning and one year of implementation. To ensure that the grants are actively helping to close equity gaps, the grant program is outcomes focused. Grant recipients must include outcome and implementation goals in their applications, which are evaluated in the middle and at the end of each grant year. The outcome goals must measure the impact of the program on learners and include credentials earned by the target populations and a goal related to closing credential gaps. RIDE focused specifically on ensuring that each new seat in a high-quality CTE pathway is made available for previously overlooked learners, bringing a concentrated focus on impact to a statewide investment. The implementation goals must measure whether the program carried out the plan proposed in the application and must include a goal related to equity seats, the number of new high-quality CTE seats for disadvantaged learners the program made available.

RIDE received 25 applications in 2018 and awarded a total of $1.2 million to eight recipient local education agencies. Through leveraging existing state funding for CTE, RIDE is able to provide

institutions with the resources they need to invest in improving or creating new programs that will provide more CTE opportunities to historically marginalized populations.

Expanding Geographic Access to CTE Opportunities

State leaders must also recognize the impact that location has on a learner's ability to access high-quality CTE opportunities. Many rural areas lack high-quality CTE opportunities because they do not have access to the same resources as urban communities, such as CTE teachers and employers willing to support work-based learning opportunities.[17] However, even urban areas that have more resources struggle to provide each learner with high-quality CTE opportunities because of zip code inequity. Given the history of segregation in the United States by race and class, significant structural racism and classism still exist and prohibit certain populations from accessing robust CTE opportunities because of the area in which they live. Certain communities, particularly historically marginalized communities, may be unable to participate in high-quality CTE opportunities because of transportation issues and the location of educational institutions and communities in relation to employers, among other barriers.

Ohio: Leveraging Geographical Information Systems to Expand CTE Opportunities for Each Learner

Some states, such as **Ohio,** have taken steps to ensure that each learner has access to CTE opportunities regardless of where he or she resides. Ohio uses Geographic Information Systems (GIS) to identify equity gaps in access to meaningful programming, serve learners of color and urban learners more effectively, and tighten the alignment between program offerings and local needs.

Ohio is using GIS to develop a mapping tool that will allow districts to identify key factors that support or inhibit learners' access to work-based learning and CTE opportunities. Drawing on nationally available datasets, the maps allow users to examine the availability of work-based learning and CTE programs in different communities. The maps also allow users to consider the demographics of a community, including race, class, disability and English learner status, to see which populations are most affected by the key factors, such as transportation and access to industry, that support or inhibit work-based learning and CTE opportunities.

For example, Ohio used the mapping tool to demonstrate that black and economically disadvantaged learners in one community had disproportionately fewer high-quality CTE programs in their communities than their peers. In particular, the map showed that the nearest high-quality CTE program in one neighborhood was only a mile and half away, but the program and the community were separated by a major highway. Therefore, despite the proximity of the program, learners had no way to safely access the program without transportation provided by the district. Such maps allow Ohio to create a sense of urgency around providing historically marginalized communities access to CTE programs and allow the districts that serve the communities to understand where they should focus their resources to address barriers to access.

Ohio recognizes that the data from its maps do not tell the whole story and should be used as a starting point in the state's efforts to expand access to learners. GIS helps Ohio understand the complexity of the state environment so the state can decide whom it should convene to take action to expand opportunities for each learner. Ohio plans to use the data from the maps to help districts develop action plans to address equity gaps through a new series of equity labs, which the Ohio Department of Education will pilot in the 2019-20 school year. During an equity lab, state and local

education agencies convene to examine data and identify equity gaps, including gaps in access to programming. The state agency will work with the districts to help them develop equity action plans and incorporate these plans into their local applications for the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) funds.

Addressing Barriers to Entry Into CTE Programs of Study

The introduction of entrance requirements for CTE programs of study and a lack of awareness about the CTE opportunities available are significant barriers that prevent learners from entering CTE programs.

High-quality CTE programs of study blend technical, employability *and* academic skills to prepare learners for high-wage, high-skill, in-demand occupations. Since many learners enter their program of study in the 10th or 11th grade, if they lack key foundational skills at that point in their education, they may not have the skills necessary to excel in high-quality CTE programs of study. To ensure that learners who participate in programs have the necessary skills, many states have set entrance requirements for programs of study. However, these entrance requirements can act as a significant barrier to learners' ability to access high-quality CTE programs.

Recently, some states also have introduced entrance requirements to address a demand for high-quality CTE programs that exceeds the opportunities available. When developing entrance requirements, states should examine data closely and frequently to ensure that these requirements are predictive of learner success in CTE programs and are not just a means to address an excess demand for CTE programs. They should also examine learner data to see who is disproportionately negatively affected by the entrance requirements and establish strategies to close any equity gaps that may exist. As an alternative to entrance requirements, state leaders can invest in and support programs, such as bridge programs or summer intensive programs, that will help to ensure that each learner has the foundational skills needed to succeed in CTE programs.

Key Equity Questions for CTE

State leaders should consider the following questions as they work to ensure that each learner is prepared to participate in high-quality CTE programs of study:

- How do policies related to academic/technical preparation, advising, entrance requirements, etc. prevent students from being prepared to participate in high-quality CTE programs?
- What partnerships may the state CTE office build to ensure that learners are on a path to be prepared to participate in high-quality CTE programs?

However, entrance requirements are not the only barriers preventing learners from being prepared for high-quality CTE programs of study. Opportunity gaps in CTE also exist, in part, because of a lack of awareness of CTE opportunities or a lack of access to information that would allow learners to make informed decisions. The *Making Good on the Promise: Building Trust to Promote Equity in CTE* brief outlines strategies states can use to make information accessible to learners, communities and parents.[18] Additionally, advising can play a key role in closing information and awareness gaps. Each learner should have someone in his or her life who can play the role of navigator, helping guide the

learner along his or her educational journey, determine the steps needed to take to achieve his or her academic and career goals, and identify options to dismantle prohibitive barriers.

South Carolina Education and Economic Development Act

Some states, such as **South Carolina,** have taken steps to ensure that each learner receives individualized guidance to be prepared for advanced coursework, including CTE, in high school. In 2005, the state's Legislature passed the South Carolina Education and Economic Development Act (EEDA), which established the Personal Pathways to Success program.[19] Under the program, every high school student is required to declare a "major" aligned with one of the nationally recognized 16 Career Clusters. Students are expected to take career-focused courses through their elective graduation requirements, and districts are required to offer a standards-based academic curriculum that is organized around a Career Cluster system and provides students with individualized education choices. Through this curriculum, every learner receives a rigorous academic foundation that equips learners with the skills to achieve their college and career goals, even as these goals shift.

EEDA articulates a framework for career advisement that spans the entire elementary and secondary education continuum. Under the law, school districts are required to offer career exploration in elementary school.[20] To ensure that each learner has access to a guidance counselor, at the high school level, districts are required to provide at least one counselor for every 300 students, which is significantly less than the national student-to-counselor ratio of 482:1.[21] Individual guidance and support services are connected to students' individual graduation plan, which they develop in eighth grade and update annually with support from parents, teachers and school counselors. The individual graduation plan details the student's course requirements, high school major, career aspiration and more.

As a result of this program, in the 2016-17 school year, 264,527 learners in grades eight through 12 — virtually 100 percent of the learner population — completed individualized graduation plans.[22] Through the Personal Pathways to Success program, South Carolina was able to change its education system to ensure that each learner, regardless of background, is made aware of education and career options and is placed on a path that ensures that he or she will complete the necessary coursework and experiences to achieve his or her individual academic and career goals.

A Path Forward

High-quality CTE programs of study equip learners with the real-world skills they need to succeed in the workforce. However, many learners, particularly those from historically marginalized communities, do not have access to these programs due to systemic barriers, resulting in significant opportunity gaps between learner populations. States leaders should consider the following when working toward closing opportunity gaps in CTE:

- **Secure and leverage resources to close CTE opportunity gaps:** State leaders should actively seek and reallocate resources to better serve the institutions and learners that are most in need. State leaders should leverage funding to hold institutions accountable for and incentivize institutions to close equity gaps.

- **Work with stakeholders to expand geographic access to CTE:** State leaders should identify why and where learners cannot access CTE opportunities because of geographical barriers.

State leaders should work with the appropriate stakeholders to create strategies to expand access to CTE opportunities, such as leveraging funds to provide appropriate transportation to CTE opportunities and leveraging technology to connect learners with industry experts, to address these barriers.

- **Dismantle barriers that prevent learners from entering CTE programs:** State leaders should identify the barriers that are preventing learners from being prepared to participate in CTE programs of study, whether that is a lack of academic preparation, lack of advising, entrance requirements or other barriers. State leaders should then build strategic partnerships and advocate for programmatic and policy changes that will ensure that each learner is prepared to participate in high-quality CTE programs of study. For instance, state leaders can leverage Perkins V to extend career exploration into early grades to prepare learners for programs of study.

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Career Technical Education (CTE), and the education system more broadly, has made strides in overcoming a legacy of delivering inequitable outcomes for learners based on race, gender, disability and other factors, but work remains to be done. Through the New Skills for Youth (NSFY) initiative, 10 states are actively working to dismantle historical barriers for marginalized populations and ensure that equity is a central focus in their career pathways expansion efforts. These states each received $2 million to implement a three-year action plan focused on transforming career readiness opportunities and expanding access to high-quality career pathways. NSFY is a $75 million national initiative developed by JPMorgan Chase & Co. in collaboration with the Council of Chief State School Officers, Advance CTE and Education Strategy Group.
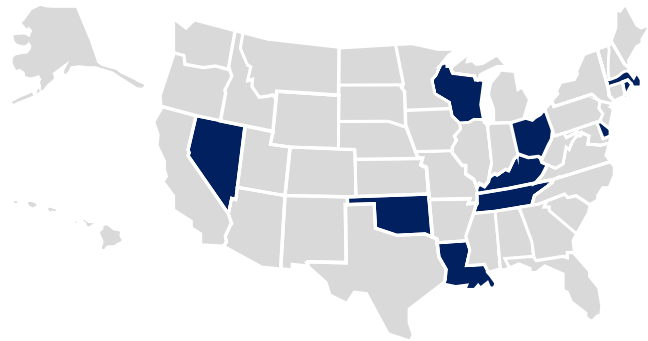
The NSFY states include Delaware, Kentucky, Louisiana, Massachusetts, Nevada, Ohio, Oklahoma, Rhode Island, Tennessee and Wisconsin.

In 2018, the third full year of the initiative, NSFY states built upon early policy groundwork to scale and expand career pathways, work-based learning opportunities and other early postsecondary opportunities. NSFY states have kept the focus on equity by:

Including **Learners With Disabilities** in High-Quality Career Pathways	Expanding **Access to Advanced Coursework**	Strengthening **Individualized Career Planning** to Support Each Learner	Improving the **Quality of Career Pathways** for Each and Every Learner

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The 2018 NSFY Snapshot series profiles specific strategies each of the 10 states implemented during the 2018 calendar year. The snapshots are meant to be instructive for other states taking on career readiness initiatives. This executive summary provides a high-level overview of the progress made across the entire cohort of states with a particular focus on equity. This publication was made possible through the NSFY initiative with funding from JPMorgan Chase & Co.

Including Learners With Disabilities in High-Quality Career Pathways

As states begin to pilot and scale high-quality career pathways, it is critical that they examine historical inequities to ensure that programs are inclusive of all learners. One population that is often left out of high-quality career pathways and certain careers is students with disabilities. Equity has been a central frame for the NSFY initiative, and many participating states are working intentionally to include students with disabilities in new programs.

Louisiana, for example, engaged in a partnership between the Department of Education and Louisiana Rehabilitation Services to expand Jump Start career pathways opportunities to students with disabilities. The state launched a pilot program called Building Employment Skills for Tomorrow in Bossier Parish, through which 29 students from six high schools experienced work-based learning and engaged directly with industry mentors. The program challenges mindsets about students with disabilities in the workplace and helps them gain the skills and experiences they need once they graduate high school. The partnership also enabled Louisiana to unlock federal Pre-Employment Transition Services funding, which matches state dollars at a rate of about four to one.

Similarly, **Delaware** launched a new program in the 2018-19 academic year to help students with disabilities access and succeed in work-based learning. Through NSFY, Delaware has invested in a statewide work-based learning intermediary, hosted out of the Delaware Technical Community College, to expand access to high-quality work-based learning for all students. To ensure that students with disabilities can also benefit, Delaware launched the PIPEline to Career Success program, which provides resources and assistance to local districts. PIPEline to Career Success is a two-year process in which school districts identify barriers to access, examine their root causes, and then implement strategies to close access gaps. The Delaware Department of Education has made grants available to three pilot districts and hopes to scale the approach across the state in the future.

Expanding Access to Advanced Coursework

Meanwhile, other NSFY states recognized the need to expand access to advanced coursework opportunities to schools and districts with gaps in enrollment. Opportunities such as Advanced Placement (AP), International Baccalaureate (IB), dual or concurrent enrollment, and CTE give learners a leg up on a postsecondary credential. Yet these courses are not always accessible to each learner, particularly in rural and low-income areas. The NSFY initiative provided states the resources and capacity they needed to identify and address some of these access gaps.

Ohio awarded

$7 million

in 2018 to expand access to advanced coursework.

Both **Ohio** and **Rhode Island** launched competitive grant programs in the 2018-19 academic year to assist local leaders in expanding access to advanced coursework. Ohio leveraged a rarely used allowance in the Every Student Succeeds Act, which lets states set aside up to 3 percent of their Title I funds for Direct Student Services grants. Ohio

used these funds to launch the Expanding Opportunities for Each Child grant and awarded more than $7 million to 17 sites in economically disadvantaged communities to either develop and expand career pathways or improve access to advanced coursework (including AP and IB). Meanwhile, Rhode Island awarded $1.2 million in funds through Innovation and Equity grants to help school districts develop and execute strategies to expand access to CTE for under-represented students. Priorities for grant recipients include connecting female students to information technology programs, enrolling students with disabilities in environmental science, and engaging low-income students in construction. Rhode Island hopes to compile best practices across all funded sites to demonstrate how other schools and districts can expand access and opportunity to each learner.

> Since the beginning of the NSFY initiative, dual credit completion in Kentucky has grown by
>
> **145%**.

Kentucky's focus has been on expanding access to dual credit opportunities aligned to learners' career pathways. This focus began in 2016 when Gov. Matt Bevin freed up funding for high school juniors and seniors to take dual credit classes. Through the NSFY initiative, state leaders in Kentucky have been working to not only expand opportunities for dual credit to underserved populations but also tighten up the quality of those courses so they are better aligned to learners' career pathways. In 2018, Kentucky successfully integrated dual credit into its statewide accountability system and leveraged postsecondary partnerships to smooth out barriers to access across the commonwealth. As a result, Kentucky has documented a 145 percent increase in dual credit completion since 2016.

Strengthening Individualized Career Planning to Support Each Learner

Pivotal to achieving equity in career pathways is a central focus on individualized career and academic planning. Career and academic planning policies help learners access the support and guidance they need to make decisions about their futures. Many states have requirements or guidelines for individualized graduation plans, but they are not often robust or aligned with regional career pathways. In states such as **Massachusetts**, **Oklahoma** and **Wisconsin**, individualized academic and career planning is a core pillar of the career pathways strategy and a necessary foundation for equity.

Equity is one of the guiding principles of Massachusetts' High-quality College and Career Pathways (HQCCP) designation program, which requires each recognized pathway to have a plan for closing access and equity gaps. To ensure that each learner gets the information and guidance he or she needs, all designated HQCCP programs use an approach called MyCAP (My Career and Academic Plan) that helps learners map out their goals and the requisite skills and experiences they need. Instead of a one-size-fits-all approach to advising, MyCAP ensures that each learner, across gender, race, ethnicity, disability and income, can explore different college and career pathways and access the supports he or she needs to be successful.

> **Massachusetts' Key Elements for HQCCPs**
>
> 1. Equitable access
> 2. Guided academic pathways
> 3. Enhanced student supports
> 4. Connection to career
> 5. Effective partnership

Relatedly, Oklahoma's Individual Career and Academic Planning (ICAP) approach, which was launched in the 2017-18 academic year, aims to provide equitable access to learner-centered supports to help each and every learner identify and pursue postsecondary opportunities. The program was first

piloted at 59 sites during the 2017-18 academic year and scaled to 134 sites in 2018-19. One of the lessons learned from the pilot is that student support is not just a responsibility of the school counselor but of the entire school leadership. As the Oklahoma State Department of Education works to scale ICAP across the state, it aims to keep learners front and center and ensure that the ICAP approach delivers the services each needs to be successful.

Wisconsin completed its first full year of implementing the Academic and Career Planning (ACP) program in the 2017-18 academic year. Passed just a few years before Oklahoma's ICAP, the ACP program is a similar whole-school approach to career and academic advising that begins in the sixth grade. ACP is a core pillar of Wisconsin's NSFY strategy, and state leaders are working to embed regional career pathways into learners' ACP planning so each learner — not just those in CTE programs — is informed about career pathways opportunities that meet his or her interests. Drawing on lessons learned through early implementation of ACP, the Wisconsin Department of Public Instruction developed training modules to help school leaders provide academic and career planning for learners with disabilities, engage families in supporting ACP, and provide more equitable supports for learners in their schools and communities.

Improving the Quality of Career Pathways for Each and Every Learner

Far too many learners attend schools and institutions with outdated or low-quality career pathways. Elevating the standards of rigor for career pathways across the state is another approach to minimizing equity gaps, ensuring that each and every learner can access a meaningful career pathway that is aligned to his or her interests and leads to a family-sustaining career.

Since 2012, **Tennessee** has worked relentlessly to improve the quality of career pathways across the state by revising CTE standards, expanding work-based learning opportunities and incentivizing industry-recognized credentials. In 2018, Tennessee took a bold step toward connecting these opportunities by launching a high-quality career pathways designation program. The program will recognize high schools and districts that effectively integrate college and career experiences, provide a focused sequence of courses, allow learners to articulate credits from the secondary to the postsecondary level and engage employers. Additional recognition will be awarded to schools that demonstrate closing equity gaps.

In **Nevada**, state leaders completed an inventory of career pathways across the state and plan to launch a "barnstorming" tour to align and transform career pathways offerings. The Department of Education developed 12 criteria to help define high-quality career pathways. The state's vision is to improve the quality of all career pathways offerings so that each and every learner in the state can achieve career success.

Looking Ahead

If implementation and equity was focus for the third year of NSFY, the priority for 2019 will undoubtedly be sustainability. States have put the structural pieces in place to transform their secondary career readiness systems and have successfully piloted new career pathways and programs. But the question remains: Will this work continue once the initiative comes to an end?

States are poised to continue and scale the successful initiatives they launched under NSFY, but the work in 2019 will determine the long-term success of these efforts. In the year ahead, states will be challenged to secure sustainable funding to fuel existing programs. They will need to get buy-in and support from newly elected officials, local leaders and communities, particularly in the five NSFY states where new governors were elected in 2018. Already, state leaders have begun to engage these officials and capitalize on campaign commitments to make the case for sustaining high-quality career pathways. Their successes will chart a path that other states can soon follow.

New Skills for Youth 2018 State Snapshot Index

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Data and Accountability	Kentucky Louisiana	Wisconsin	
Dual Credit	Kentucky		
Employer Engagement	Delaware	Oklahoma	
Graduation Requirements	Nevada		
Instructor and Leader Quality	Louisiana		
Program Quality	Kentucky Massachusetts	Nevada Ohio	Tennessee Wisconsin
Systems Alignment	Delaware	Tennessee	
Work-Based Learning	Delaware Louisiana	Nevada Ohio	Oklahoma Rhode Island

All 2018 NSFY Snapshots are available to read and download at https://careertech.org/resource/series/2018-nsfy-snapshots.