Report of the Commission on Strategic Partnerships for Work-Ready Students

SREB

Partnerships to Align Education and Careers

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Southern Regional Education Board

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Executive Summary

A Vision for Alignment

As the United States grapples with COVID-19 and the dangerous dislocations it has brought to the American economy, it may be hard to turn our attention to an ongoing issue like workforce development. But we would argue there is no better time. While jobs have been returning, an unprecedented 26.5 million Americans filed for unemployment over a five-week period ending in April, 2020. This crisis provides an opportunity to consider how Americans are prepared for jobs; what jobs they are prepared for; and how resilient and adaptable American workers, and the workforce system as a whole, can be.

The COVID-19 shock to the economy has been severe, and it comes at a time when other disruptions are also widening the gap between the workforce we have and the one that we need. A McKinsey & Company report, *Jobs Lost, Jobs Gained*, estimated that by 2030, 38.6 million Americans would need to retrain for another occupation due to the impacts of automation.

> The time is ripe for thinking deeply about how we prepare workers for work.

The time is ripe for thinking deeply about how we prepare workers for work. In 2018 SREB convened a commission to examine the role of industry sector partnerships in supporting and advancing work-based learning and other policies and practices necessary to prepare the workforce of the future. Leaders representing the private and public sectors, industry, and secondary and postsecondary education served on the commission, contributing generously of their time. Following its deliberations and research, the commission adopted the following 11 recommendations as most promising and timely. These are presented in summary form here, and in expanded form with more details, examples and evidence in the full report.

Recommendations of the Commission

1. **Engage business and industry leaders in forging and strengthening regional industry sector partnerships in support of career education.**

   Robust **industry sector partnerships**, highlighted as a strategy in the Workforce Investment and Opportunity Act, should be supported and strengthened. These partnerships will be indispensable in aligning the education system with current and future needs and in identifying credentials of value.

   industry sector partnerships bring together employers in related businesses and industries requiring similar skillsets in their workforces.

2. **Prioritize state resources and efforts to develop career pathways in critical industry sectors as identified by regional business partnerships.**

   With finite resources at hand, states should carefully direct career and technical education dollars, scholarships, apprenticeship incentives and other supports toward career pathways with the most value for individual earners and for the local economy.

3. **Adopt a business-friendly statewide policy for K-16 and work-based learning that promotes a continuum of experiences beginning in the middle grades and extending through postsecondary.**

   From career awareness in middle school through registered apprenticeship programs in community college, work-based learning should be a valued and integral part of the curriculum available to all students. Coherent and comprehensive statewide policies should support and provide substance to this vision.

4. **Recognize the importance of work-based learning in high school by including those experiences in graduation requirements and school accountability ratings.**

   Work-based learning will only be taken seriously when rewards value both college and careers.

5. **Provide policy solutions for workers' compensation and liability insurance for work-based learning placements.**

   One of the major barriers to work-based learning opportunities for secondary students is concern over liability in the event of a student being injured. States have been addressing this through legislation that allows districts to cover students under their workers' compensation policies, and in some cases by using third-party staffing agencies to handle student placements.

6. **Support industry sector partnerships with braided funding from multiple sources — federal, state, local, private and philanthropic.**

   braided funding draws from multiple sources but tracks funds to individual recipients.

   Industry sector partnerships can be supported through local funds, state funds and a variety of federal programs. Major federal funding sources include Perkins and vocational rehabilitation and adult education program funds from the U.S. Department of Education, and workforce investment, H1-B, and displaced worker funds from the U.S. Department of Labor. The private sector may also be willing to invest in partnerships that meet industry needs.

7. **Provide incentives for employers that offer paid work-based learning experiences.**

   Half of the SREB states provide financial incentives to employers who offer such experiences. Most of these incentives are provided through tax credits.

8. **Develop the capacity of teachers, school counselors, school leaders and other educators to support students in all stages of career readiness, from career awareness to apprenticeships.**

   Schools and districts need high-quality professional learning to build capacity among educators to meet career readiness goals. Teacher externships in industry are an important way to make curriculum and instruction more relevant. Counselors also need professional learning and resources to support career advisement.

9. **Promote Simulated Workplace and other virtual solutions to expand work-based learning opportunities in rural and hard-to-serve communities.**

   Where students cannot go to work-based learning, bring the work-based learning to them. The Simulated Workplace initiative gives secondary students the experience and skills to succeed in the workplace.

10. **Designate a state agency or special council to work with employers and secondary and postsecondary education agencies to identify, evaluate and approve industry certification examinations, technical skills assessments, dual credit courses and end-of-course assessments that are part of a system of stackable credentials.**

    stackable credentials are progressive and sequential postsecondary awards, such as degrees or licenses, demonstrating competency to progress along a career pathway.

    Governor's-cabinet coordination of workforce development strategies is necessary to bring coherence to the many disparate agencies and programs involved in workforce development. This provides high-level direction to the development of career pathways within the state, including the identification of credentials of value.

11. **Promote structured dual enrollment programs for career pathways and establish uniform statewide policies so students can earn credits toward high school graduation that are automatically added to students' transcripts at postsecondary institutions.**

    Dual enrollment programs offer high school students an opportunity to jump-start their work toward a degree and career and can reduce the burden of student debt. Dual enrollment should be integrated into overall workforce development strategies as a cost-effective way to help students graduate from high school college- and career-ready.

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Partnerships to Align Education and Careers

Introduction: Building Bridges

Right now in America there is a disconnect between education and the workplace. We can see this in youth unemployment rates, in youth underemployment, in employers' reports of a lack of soft skills among young people entering the workforce for the first time, and in the shortage of technical skills that prevents employers from filling middle-skill jobs paying a middle-class wage.

For many American youth, the transition from school to the workplace is haphazard and left to chance. Educators work hard to teach students to the academic standards set by their states, but employers fret over the poor-quality candidates applying for open positions at their companies. These educators and employers may live next door to each other, but in many cases they might as well live in different worlds. Students entering the workforce pay the price for the chasm between schools and the workplace.

There are, of course, exceptions. In **Kentucky**, the Tech Ready Apprentices for Careers in Kentucky (TRACK) youth apprenticeship program offers high school students the chance to earn industry-recognized credentials and enter registered apprenticeships. In **Colorado**, 750 businesses are active partners with schools and colleges in 14 regions of the state. In **Georgia**, a metro Atlanta health care industry partnership that includes five local workforce boards, eight technical colleges and seven school districts is helping to prepare workers for well-paying middle-skill jobs — for example, certified nursing assistant and environmental technician — in hospitals and other health care settings.

Educators and employers may live next door to each other, but in many cases they might as well live in different worlds. Students pay the price for the chasm between schools and the workplace.

Another example is in **Texas**, where UpSkill Houston has created career pathways that help women prepare for careers in construction. These and other partnerships bridge the gap between education and the workplace, benefitting states, workers, employers and communities across the 16-state region served by the Southern Regional Education Board — and beyond.

The need for strategic industry sector partnerships to bridge the gap between education and the workplace can be seen in workforce statistics. In its 2019 survey of future workforce needs, *Unprepared and Unaware: Upskilling the Workforce for a Decade of Uncertainty,* SREB reported that the U.S. has lost 7 million manufacturing jobs since 1979. What's more, according to McKinsey, 44% of current U.S. jobs will be subject to automation between now and 2030. Although the automated workplace of the future will require greater education, nine million adults in the SREB region lacked a high school diploma in 2017, and another 21 million had no education beyond high school.

Our youngest citizens are simply not as well prepared for the workforce as their parents were. In September 2019, the Bureau of Labor Statistics reported that the U.S. unemployment rate was 6.3% for ages 20-24 and 12.2% for ages 18-19, but only 2.8% for workers over the age of 25. Teens today are less likely to participate in the workforce than they were two decades ago. In 2000, 56% of U.S. teens aged 16-19 were in the labor force, but by 2019 that percentage had fallen to just 35%.

Youth *under*employment is perhaps an even bigger problem. In *Failure to Launch: Structural Shift and the New Lost Generation*, labor market economists at Georgetown University's Center on Education and the Workforce observed that between 1980 and 2010, the percentage of young workers in blue-collar occupations fell from 35% to 19%, while the share of young workers in food and personal service occupations increased from 15% to 27%.

That trend has continued. According to state employment projections for at least six SREB states — Arkansas, Delaware, Florida, Mississippi, North Carolina and Oklahoma — the occupation with the largest projected growth in employment from 2016 to 2026 is "combined food preparation and serving workers, including fast food." With a median annual wage in 2018 of $21,250, food service is not an occupation that will allow a person to support a family, or an industry upon which a community can base an economy. Yet this is often the best or only job option that young adults find available.

Teens today are less likely to participate in the workforce than they were two decades ago.

Many experts argue that the problem lies on the supply side of the equation — that is, young people are not prepared for the workplace. In 2018 the *Hechinger Report* quoted Mark Butler, commissioner of Georgia's Department of Labor: "The biggest reason people aren't getting work right now is not so much a lack of technical training, it's really their lack of soft skills. Most employers are desperate for workers, and willing to train people to do those jobs." Butler based his comments on the findings of a survey of 1,100 Georgia employers, 87% of whom were concerned about workers' ability to think creatively and solve problems. Eighty-five percent of employers in the same survey were concerned about young workers' attendance, punctuality, attitude, respect, discipline, character and work ethic.

> *"We did a study of who's out of work in Virginia, and 21% of people out of work here have bachelor's degrees. Only 19% have high school diplomas. Our No. 1 degree is psychology. We have a huge gap in mental health, behavioral health and substance abuse, and we have all these psychology majors who are underemployed."*
>
> **— Megan Healy, Chief Workforce Development Advisor, Virginia**

Teenagers are not only less likely to find work, they are also less prepared for it when they do enter the workforce. In a 2015 Brookings Institution report on youth employment trends, Ross and Svajtenka argued that "learning how to function in a work environment — to be responsible, assess situations, accept feedback, identify when to seek assistance, and so on — are best learned through direct experience."

James R. Stone III, director of the National Research Center for Career and Technical Education at SREB, notes that one of the major benefits of a work-based learning experience is acculturating students to the workplace. Work-based learning is not just about technical skills. It is also about learning how to function in the world of work.

In the current education-to-work system — to the extent that there is such a system — youth are not being prepared to transition successfully from school to the workplace and a career. Employers are not satisfied with the quality of the workforce emerging from secondary and postsecondary education. Strategic industry sector partnerships are needed to bridge this gap and open communications between educators and employers so that workforce supply and demand are in alignment. Doing so will improve economic competitiveness, spur job growth, increase prosperity and improve efficiency both in education and in industry hiring practices.

Industry sector partnerships open communications between educators and employers so that workforce supply and demand are in alignment.

Glossary of Terms

Blended funding	Multiple funding sources are drawn upon with all of the funds going into a common pool which is then used for delivery of programs and services. Blended funding simplifies accounting but reduces accountability.
Braided funding	The practice of drawing funding from multiple sources but continuing to track the funding from the source to the level of individual recipients.
Good jobs	The Center on Education and the Workforce at Georgetown has defined good jobs as those with minimum earnings of $35,000 per year for workers age 25-44 and $45,000 per year for workers age 45 and older.
H-1B Visa	A specific visa available for foreign workers in specialty occupations, typically requiring a bachelor's degree or similarly advanced knowledge and skills.
Industry recognized credentials	Credentials that have gained broad acceptance within an industry as certifying that their holders possess skills necessary for employment in that industry. Examples include the Automotive Service Excellence (ASE) certification for auto mechanics; the North American Technician Excellence (NATE) certification for HVAC technicians; and a large number of very specific certifications offered by Microsoft, Cisco and other companies recognizing skills in high demand in information technology occupations.
Regional industry sector partnership	State workforce agencies divide their states into regions for service delivery and for the collection and analysis of labor market and economic data. An industry sector is a grouping of related businesses and industries, such as manufacturing, healthcare, hospitality and tourism, construction, or information technology, to name a few. A regional industry sector partnership then brings together employers that are located in the same region and labor market and require similar skillsets in their workforces.
Registered apprenticeship	Work-based learning programs that have met guidelines set by the U.S. Department of Labor. They must have a paid work component and an educational component, and they must culminate in an industry recognized credential upon successful completion.
Stackable credentials	Progressive and sequential postsecondary awards, such as degrees, certifications, licenses, or even micro-badges, that allow an individual to demonstrate the competency to progress along a particular career pathways. In nursing, for example, a certified nursing assistant is an entry level position, a licensed practical nurse (LPN) is an intermediate credential, and a registered nurse (RN) has attained a high-level credential along a continuum.
Pre-apprenticeship	The U.S. Department of Labor defines a pre-apprenticeship as "a program or set of strategies designed to prepare individuals for entry into Registered Apprenticeship Programs or other job opportunities. Pre-apprenticeships may last from a few weeks to a few months and may or may not include wages or stipend. Pre-apprenticeship programs have varied program elements; however, at the core, they place an individual on a pathway to employability."
Youth	Defined in Workforce Innovation and Opportunity Act as ages 14-24.
Youth registered apprenticeship	The U.S. Department of Labor uses this term for registered apprenticeships for secondary students.

About the Commission on Strategic Partnerships for Work-Ready Students

Throughout SREB's history, governors have taken the lead on critical education issues by convening state policymakers. SREB commissions bring greater attention to these topics, build consensus and make recommendations to address the challenges. The focus of a commission often arises from SREB's Goals for Education; commission recommendations always inform revisions of the Goals.

In late 2018, members of SREB's Commission on Strategic Partnerships for Work-Ready Students began meeting to explore how work-based learning experiences in middle grades schools, high schools and community colleges can prepare more students for the world of work. The commission's charge was to recommend promising practices that engage business and industry and create systemic change so that education-industry partnerships and career pathway programs can provide students with these essential learning experiences.

This report offers the commission's 11 recommendations. Each state will implement them in its own way. But across all states, it will take committed leadership to bring together the many different agencies, offices, councils and boards involved in workforce development and help them agree on a path forward.

Recommendations

Process

1. Engage business and industry leaders in establishing regional industry sector partnerships in support of career education.
2. Prioritize state resources and efforts to develop career pathways in strategic industry sectors as identified by regional business partnerships.

Supportive Policies

3. Adopt a business-friendly statewide work-based learning policy for K-16 and workforce agencies that promotes a continuum of experiences beginning in the middle grades and extending through two- and four-year colleges.
4. Recognize the importance of work-based learning in high school by including those experiences in graduation requirements and school accountability ratings.
5. Provide policy solutions for workers' compensation and liability insurance for work-based learning placements.

Funding

6. Support industry sector partnerships with braided funding from multiple sources — federal, state, local, private and philanthropic.
7. Provide incentives to employers that offer students paid work-based learning experiences.

Educator Effectiveness and Capacity

8. Develop the capacity of teachers, school counselors, school leaders and other educators to support students in all stages of career readiness, from career awareness to apprenticeships.

Tools and Mechanisms

9. Promote Simulated Workplace and other virtual solutions to expand work-based learning opportunities in rural and hard-to-serve communities.
10. Designate a state agency or special council to work with employers and secondary and postsecondary education agencies to identify, evaluate and approve industry certification examinations, technical skills assessments, dual credit courses and end-of-course assessments that are part of a system of stackable credentials.
11. Promote structured dual enrollment programs for career pathways and establish uniform statewide policies so students can earn credits toward high school graduation that are automatically added to their transcripts at postsecondary institutions.

Process

Recommendation 1

Engage business and industry leaders in establishing regional industry sector partnerships in support of career education.

Industry sector partnerships are industry-led local or regional partnerships that work collaboratively to address common challenges related to workforce needs and current and emerging skills gaps. Such partnerships seek to align industry, education and human services systems. They also help create job training pipelines that help local residents secure stable, well-paying employment and help employers locate well-qualified workers. Industry sector partnerships are most often focused on a single industry or a group of related industries, such as manufacturing, construction or health care, that require workers with common skillsets.

A key principle of industry sector partnerships is that employers must lead them. Since the purpose of a partnership is to prepare workers who meet the needs of employers, employers must assume a leadership role in clarifying what they want and need from the partnership. For example, what skills — such as technical skills and soft skills — do future employees need? What education and experiences must individuals have to build those skills? What certifications or credentials must they have? And if no existing certification meets employers' needs, what might such a certification or credential look like?

According to the Ohio Manufacturers' Association, industry sector partnerships provide an opportunity to:

- Identify common issues
- Identify current and emerging skill gaps
- Identify priority needs
- Communicate industry priorities with a single voice to educators, policymakers and workforce development partners
- Align educational standards, curricula, training programs and credentials to actual needs
- Work collectively and collaboratively to find solutions

The Workforce Innovation and Opportunity Act of 2014 requires states to include industry sector partnership in their plans. WIOA specifies that Title I-B funds allocated to local areas be used in part to "develop, convene, or implement industry or sector partnerships."

Industry sector partnerships have expanded since the passage of WIOA, but they are not yet ubiquitous. A major barrier is that many states see sector partnerships as an unfunded mandate. The National Skills Coalition's 2019 white paper *Partnering Up* reported, "While WIOA requires the implementation of industry or sector partnerships, it includes no dedicated funding.... Some states, like Georgia, have invested their WIOA Governor's Reserve funds to expand industry partnerships, but this approach is unsustainable as those funds are over-stretched and rely on the strategy being a priority for a current Governor." Those limited funds must also cover other necessary expenses, such as information and data management systems and program evaluations.

KY FAME Industry Sector Partnership

The Kentucky Federation for Advanced Manufacturing Education — KY FAME — was launched by Toyota in 2010 with 12 students who worked at Toyota's Georgetown, Kentucky, plant while taking classes at Bluegrass Community & Technical College. By 2015, KY FAME had grown to 104 students enrolled at six community and technical colleges.

Robert Bosch Automotive Steering became interested in the success of KY FAME and led the development of a northern chapter of the program in 2015, focusing on developing pipelines for skilled maintenance and digital automation technicians. In 2015, the Northern KY FAME Chapter began with 12 sponsoring companies and 25 apprentices. By 2017, the chapter had grown to include 17 member companies.

The KY FAME governing board of directors includes representatives from industry (the Kentucky Association of Manufacturers), education (the Kentucky Community and Technical College System) and government (the Kentucky Cabinet for Economic Development). Regional chapters include almost 100 companies and local economic development and workforce organizations. Besides Toyota and Robert Bosch Automotive Steering, prominent companies partnering with KY FAME include 3M Manufacturing, General Electric and L'Oréal. Key economic development partners include the Northern Kentucky Tri-County Economic Development Corporation and the Central Kentucky Business Education Network.

A major barrier is that many states see sector partnerships as an unfunded mandate.

Participants in KY FAME earn an associate degree while completing 1,800 hours of paid on-the-job training over two years. Over the course of five semesters, participants spend two days a week on a Kentucky Community and Technical College System campus in simulated manufacturing instruction, plus another three days in an apprenticeship working with a mentor at a partner company. Participants serve most of their apprenticeship with their sponsoring company but rotate through all other companies in the local chapter for a broader exposure to business and manufacturing processes. Students also earn an Advanced Manufacturing Technician credential, an industry certification developed by KY FAME. Some member companies also reimburse completers for their tuition as a hiring bonus. Many students are hired into team leadership roles as soon as they complete the program.

The KY FAME program of study was originally based on Toyota's manufacturing principles, which included six personal behaviors and five core skills in manufacturing. The personal behaviors are attendance, initiative, diligence, interpersonal skills, teamwork and communication. The core manufacturing skills are safety culture, efficient workplace organization, lean manufacturing, problem-solving and machine reliability.

In 2013, the U.S. Department of Labor's National Career Pathway Network recognized KY FAME as the "Best Career Program in the U.S." Eight chapters have been established in Kentucky, two more Kentucky chapters are of being created, and Toyota is extending the model to its plants in Alabama, Indiana, Mississippi, Missouri, Tennessee, Texas and West Virginia.

What Works in Industry Sector Partnerships

The industry sector partnerships movement has been around for about 15 years and has grown in sophistication. The Next Generation Sector Partnerships Community of Practice was created with support from the JPMorgan Chase Foundation, the state of California and the Colorado Workforce Development Council. This organization provides training and a free toolkit for organizing and sustaining sector partnerships. Lessons learned over the past 15 years, especially from sector partnerships in Colorado and Oregon, are captured in the table below.

What Works and What Doesn't in Industry Sector Partnerships

Works	Does Not Work
Clusters of companies	Individual firms
Employers as partners	Employers as customers
Industry-driven	System- or institution-driven
Regionally based	Statewide or local
Existing industry strength or emerging specialty	Wishful thinking
Industry competitiveness/growth	Workforce only
Opportunity-focused	Problem-driven
Employer priorities first	Target populations first
Champion-driven	Representation-oriented
Coalitions of the willing	The futile search for consensus
People and relationships	Organizations and jurisdictions
A disciplined, replicable process	A mysterious, unique occurrence

Source: *Next Generation Sector Partnerships Training Manual*, 2019.

To be viable and productive, industry sector partnerships need the active involvement of industry leaders who are business owners, presidents, chief executive officers and other high-profile decision-makers. To justify their commitment of time, those leaders need to see that partnerships go beyond workforce development.

For example, the health sector is a major employer in almost all areas of the country. In the case of the Northeast **Louisiana** Healthcare Alliance, one of the challenges this industry sector partnership addressed was disparate Medicare and Medicaid reimbursement rates based on whether hospitals were designated as rural. The industry sector partnership was able to coordinate patient care across hospitals throughout the region, identifying specialty nursing skills and balancing demand for hospital beds. While many of the topics the Northeast Louisiana Healthcare Alliance took on did not seem directly connected to workforce development, these strategic problems had to be addressed to maintain the financial health of hospitals in rural areas — hospitals that serve as critical employers in their communities.

In September 2017, Bryan Wilson of the National Skills Coalition reviewed U.S. sector partnership policies and found that 32 states had policies supporting sector partnerships. In the SREB region, these states were Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, Tennessee, Texas and Virginia. Florida, Georgia, Kentucky and Texas used federal funds to support their sector partnership policies, while Maryland, Mississippi and Tennessee appropriated state funds to support the partnerships.

States can provide invaluable technical assistance in establishing industry sector partnerships and in assisting their continued operation. For example, CareerSource **Florida** developed toolkits and a series of technical assistance workshops to help advance industry sector partnerships. **Virginia**'s Community College System has created an online Sector Strategies and Career Pathways Academy to support partners and practitioners as they do this work. **Georgia**, **North Carolina** and **Oklahoma** provide state staff to help with facilitation, while Georgia and **Tennessee** help partnerships with employer engagement.

The Workforce Innovation and Opportunity Act contains a requirement that local workforce development boards report annually on their progress in establishing and supporting industry sector partnerships. As evidence continues to mount that these partnerships are critical to achieving the goals of any workforce development strategy, state leaders and policymakers should hold local workforce development boards accountable for meeting this requirement and provide them with the tools and resources needed to do so.

> States can provide invaluable technical assistance in establishing and continuing industry sector partnerships.

Recommendation 2

Prioritize state resources and efforts to develop career pathways in strategic industry sectors.

The 16 states in the SREB region all have different economies and workforce demands. Alabama, Kentucky, Mississippi, Tennessee and Texas are among the top 10 states in the country for automotive manufacturing. The petroleum industry is critical in Oklahoma, accounting for 14% of the state's gross domestic product, as well as in Texas (9.3%) and Louisiana (7.5%). Mining is still the leading industry in West Virginia, while tourism is critical in Florida and Louisiana. Alabama, Georgia and Texas all derive more than 2% of their state GDP from the aerospace and defense industry. Delaware, Florida, Georgia, North Carolina and Tennessee are leading states for renewable energy**.** Broadcasting and telecommunications is the largest industry in Georgia and Maryland, accounting for 6.5% of the state GDP in Georgia and 3.8% in Maryland. Chemical

manufacturing accounts for 5% of the state GDP in North Carolina. In Arkansas, the steel industry has grown by 39% since 2009. Distribution, logistics and supply chain management is another key industry in Arkansas, in part because the state is home to Walmart, the world's largest retail company. Information technology is especially strong in Florida — home to 21,000 information technology firms; in Georgia — thanks to Atlanta and the Georgia Institute of Technology; in North Carolina — home of the Research Triangle Park and SAS; in Texas — home of Dell and 24,000 other IT firms; and in Virginia, which serves the U.S. government and a large number of government contractors.

Given the diverse economies of our region, industry sector partnerships should be tailored to local needs and matched to careers that are available and in demand. States should play a critical role in using economic workforce data to identify, prioritize and invest in the development of industry sector partnerships and in aligning policies and resources to support them.

Given the diverse economies of our region, industry sector partnerships should be tailored to local needs and matched to careers that are available and in demand.

Alabama, Mississippi and Texas identified industries in which to invest using partnerships. Alabama's Accelerate Alabama economic development plan has prioritized aerospace and aviation, agricultural and food products, automotive, chemicals, forestry products, metals and advanced materials, and bioscience. Mississippi has targeted advanced manufacturing, agribusiness, aerospace, automotive, energy, health care, shipbuilding and tourism. In 2004, then Governor Rick Perry of Texas established a commission that set as statewide workforce priorities advanced technologies and manufacturing, aerospace and defense, biotechnology and life sciences, information and computer technology, petroleum refining and chemical products, and energy.

> *The jobs of the future are really in areas like cybersecurity, unmanned aerial systems, biotechnology, artificial intelligence, data collection and data analysis. We've got to be nimble and really start looking at how we can best train our youth for those jobs. Working with the business community is very important, and understanding what their needs are, and then communicating their needs to our education system."*
>
> **— Virginia Governor Ralph Northam**

State leaders catalyze the creation of industry sector partnerships by collecting information from industry leaders on their workforce needs, convening and facilitating meetings, and sharing information on successful partnerships. With finite resources and so many possible directions in which to go, states need a strategy to invest in industry sector partnerships, apprenticeships and other workforce development programs. As the saying goes, if everything is a priority, nothing is.

If everything is a priority, nothing is.

SREB reviewed state websites and made inquiries with state workforce development boards to create the list of state-designated strategic industries in the following table. We were not able to identify officially designated strategic industries for Delaware, Florida or Georgia. The number of state-designated strategic industries ranged from four or five — in Alabama, Kentucky and Oklahoma — to 10 or 11, as in West Virginia and North Carolina.

State-Designated Strategic Industries, SREB States

State	Industries
Alabama	Automotive; Chemicals; Forestry products; Metals and advanced materials; Bioscience
Arkansas	Aerospace and defense; Corporate and shared services; Distribution and logistics services; Food and beverage; Metals; Paper and timber products; Software development and data management services; Transportation equipment manufacturing
Kentucky	Advanced manufacturing; Business and IT services; Construction; Health care; Transportation and logistics
Louisiana	Advanced manufacturing; Aerospace; Agribusiness; Automotive; Energy; Entertainment; Process industries; Software development; Water management
Maryland	Advanced manufacturing; Aerospace and defense; Agribusiness; BioHealth and life sciences; Energy and sustainability; Financial services; Information technology and cybersecurity; Military and federal
Mississippi	Advanced manufacturing; Agribusiness; Aerospace; Automotive; Energy; Healthcare; Shipbuilding; Tourism
North Carolina	Aerospace and defense; Automotive, truck and heavy machinery; Biotechnology and pharmaceuticals; Business and financial services; Energy; Food processing and manufacturing; Furniture; Information technology; Plastics and chemicals; Textiles; Tourism
Oklahoma	Aerospace and defense; Agriculture and biosciences; Energy; Information and financial services; Transportation and distribution
South Carolina	Advanced manufacturing; Construction technologies; Energy; Healthcare; Information technology; Tourism and service industries; Transportation; Distribution and logistics
Tennessee	Aerospace and defense; Appliances and electrical; Automotive; Chemicals; Distribution and logistics; Food and agriculture; Headquarters, finance and tech; Healthcare and life sciences; Rubber, ceramics and glass
Texas	Advanced technologies and manufacturing; Aerospace and defense; Biotechnology and life sciences; Energy; Information and computer technology; Petroleum refining and chemical products
Virginia	Corporate services; Food and beverage processing; Information technology; Life sciences; Manufacturing; Supply chain management; Unmanned systems
West Virginia	Aerospace and defense; Agriculture; Automotive; Building products; Chemicals and polymers; Energy; Fulfillment distribution; Information technology; Manufacturing; Metals

Source: SREB review of publicly available data or contacts with state agencies.

All SREB states with designated strategic industry sectors had at least one industry in the manufacturing sector. Manufacturing is a critical strategic investment given the decades-long decline of American manufacturing and the continuing importance of manufacturing to the overall health of the U.S. economy. In a 2019 report, *Upskilling and Downsizing in American Manufacturing*, labor market economists at the Georgetown University Center on Education and the Workforce highlight what is at stake and the types of industries and occupations most likely to generate well-paying middle-skill jobs for the citizens of SREB states:

> Manufacturing has an enduring legacy as the pre-eminent source of good jobs available to workers without a bachelor's degree. In 2016, despite decades of employment decline, it still provided the largest number of good jobs for workers without a bachelor's degree, with 4.8 million, or 16% of all those jobs. It is the top industry for **good jobs** for workers without a bachelor's degree in 35 states.
>
> **good jobs** have minimum earnings of $35,000 per year age 25-44, $45,000 per year age 45 and older.

Half of jobs in manufacturing for workers without a bachelor's degree are good jobs — about the same proportion as in 1991 (48%). But the pockets of opportunity vary within industry sectors and occupations. The aircraft (71%), chemical (69%), paper (69%) and steel (63%) manufacturing sectors offer the highest shares of good jobs. More than half of the jobs in the machinery (52%), machine shops (52%) and motor vehicles (51%) sectors are good jobs.

Supportive Policies

Recommendation 3

Adopt a statewide policy for K-16 and work-based learning that promotes a continuum of experiences beginning in the middle grades and extending through postsecondary.

Work-based learning has been identified by many organizations and researchers — including the U.S. Department of Education, the U.S. Department of Labor, the National Governors Association Center for Best Practices, the Organisation for Economic Co-operation and Development, and the National Research Center for Career and Technical Education at SREB — as a necessary educational component of preparing students for success in adulthood. Work-based learning is best thought of as a set of experiences on a continuum that begins with career awareness in the elementary grades, offers more in-depth career exploration during the middle grades and expands to more intensive career preparation and training in high school and college. In high school, juniors and seniors need to participate in structured, supervised work-based learning experiences that further their career aspirations and allow them to earn academic credit toward graduation.

> Introducing students to real work conditions is an essential goal.

Career awareness (grades K-12): Learning about work, such as visiting parents at work, guest speakers, field trips or workplace tours

Career exploration (grades six-12): Learning about work, such as career fairs, informational interviews or job shadowing

Career preparation (grades nine-12): Learning through work, such as student-run enterprises, virtual enterprises, career-technical student organizations, mock interviews, service learning, introductory compensated internships or mentorships

Career training (grades 11-14): Learning at work, such as youth registered apprenticeships (for secondary students), clinical experiences, on-the-job training, work experiences, or extended internships required for a credential or entry to the occupation

A too-narrow definition of work-based learning can lead schools and districts to focus too much on what they *can't* do, rather than thinking positively and creatively about what they can. Within the walls of a school, students can receive valuable work-based learning experiences by running the school store, producing videos for the school, designing websites, completing graphic design projects for paying customers and catering school events. Schools and districts should also strive to offer juniors and seniors opportunities to engage whenever possible in off-campus compensated internships, capstone experiences or apprenticeships with partnering businesses.

A core principle of work-based learning is authenticity, so introducing students to real work conditions is an essential goal. As commission member Megan Healy, Chief Workforce Development Advisor for Virginia, notes: "You can't be what you can't see."

> You can't be what you can't see.

To address the need for earlier career awareness, the latest iteration of the Perkins legislation governing career and technical education — the 2018 Strengthening Career and Technical Education for the 21st Century Act, known as Perkins V — allows federal funds to be used for career awareness programs as early as the fifth grade. While the work-based learning continuum model has been around since the 1990s, this is the first time legislation has put muscle behind career awareness efforts in the early grades, and states and school districts should take full advantage of the change. States submitting Perkins plans that have taken advantage of this include Maryland, Mississippi, Nebraska, New Mexico and South Carolina.

> *"We have to flip the conversation from 'Where are you going to school?' to 'What do you want to do? What are your interests, what are your passions?' and then find the education to go with it."*
>
> **— Brenda Clark, President and CEO, MBA Research and Curriculum Center**

Career awareness and exploration should continue through the senior year of high school. Commission members recommend that by the end of eighth grade students complete an individualized learning plan that prepares them to achieve a career goal. Students, parents, teachers and counselors should meet annually to review and revise those plans, which should be designed to give students the widest range of postsecondary and career opportunities possible — not lock them in to a single path. For example, a student who wants to become a veterinarian will use her plan as a reminder to take the four years of college-preparatory math and science courses she needs to pass organic chemistry as an undergraduate. But because eighth graders are still learning about the world and their career plans can change, individualized learning plans need to change, too.

One of the positive outcomes of work-based learning is that it helps students learn what they *don't* want to do. If a student participates in an accounting internship and discovers that accounting isn't the right career choice, that's a better lesson to learn at 17 than at 27. The commission believes that ongoing career awareness and exploration throughout K-12 can open doors of opportunity instead of closing them.

As students enter high school, career awareness and exploration should expand to include a stronger focus on career preparation and training. The goal is to ensure that when a student graduates, he or she is prepared either to continue with postsecondary education or to enter the workforce with skills that will earn a competitive wage.

The gold standard for postsecondary work-based learning is a registered apprenticeship. The U.S. Department of Labor currently tracks over 9,000 active registered apprenticeship programs. A typical time-based apprenticeship combines 2,000 hours of on-the-job training and 144 hours of classroom instruction each year. The DOL also recognizes competency-based residencies and some hybrid models which include both time and mastery components. Despite their promise, apprenticeship programs currently serve fewer than 10% of postsecondary CTE students. Both the Obama and Trump administrations have made apprenticeships a workforce development

priority, and since 2013 the number of students in apprenticeships has grown by 100,000. Still, in 2017 only 258,000 out of almost 3 million postsecondary CTE students were in a registered apprenticeship program.

The rewards of completing an apprenticeship can be substantial. Mathematica found that 10 years later, apprenticeship completers earned $6,500 more annually than non-completers of similar age and demographics. A study of apprenticeship completers in Florida found that the median annual wage in the year after completion was $48,000, much higher than first-year earnings for recipients of an associate degree ($29,000) or a bachelor's ($35,000).

Many of the best apprenticeship programs in the country can be found in the SREB region, according to a 2018 American Enterprise Institute report. State apprenticeship programs highlighted by AEI included South Carolina's Apprenticeship Carolina and Georgia's Worksmart. Individual community colleges identified as leaders in apprenticeships included Central Piedmont Community College in North Carolina and Chattanooga State Community College in Tennessee.

Although almost all SREB states have adopted a statewide work-based learning policy, states must ensure that such policies are reviewed regularly, at least every five years. State work-based learning policies should also include a career awareness curriculum for elementary students. Perkins V allows federal funds to be used to support career awareness as early as fifth grade, and districts should be encouraged by their state agency managing Perkins funds to use them in that way.

Work-Based Learning Policies in SREB States

State	Has a State Policy	Employer WBL Subsidy	Secondary WBL	Liability for Secondary	Subsidized Postsecondary Apprenticeship Instruction
Alabama	Yes	Tax credit			
Arkansas	Yes	Tax credit	Pre-Apprenticeship		
Delaware	Yes				Yes
Florida	Yes				Yes
Georgia	Yes		Pre-Apprenticeship AND Other WBL	Yes	
Kentucky	Yes		Pre-Apprenticeship and Youth Apprenticeship	Yes	Yes
Louisiana	Yes	Tax credit	Other WBL		
Maryland	Yes	Tax credit	Other WBL	Yes	
Mississippi					
North Carolina	Yes		Pre-Apprenticeship		
Oklahoma	Yes		Pre-Apprenticeship		
South Carolina	Yes	Tax credit	Pre-Apprenticeship		
Tennessee	Yes	Tax credit		Yes	Yes
Texas	Yes			Yes	Yes
Virginia	Yes	Grants and tax credit			
West Virginia	Yes	Tax credit			

Sources: Wilson, B., & Mehta, S. (2017). *Work-based learning policy: 50-state scan.* Washington, DC: National Skills Coalition; SREB analysis of state work-based learning policies.

The SREB region compares favorably with the U.S. for work-based learning policies. Fifteen of 16 states in the SREB region have such policies, compared to 35 out of 50 states..

State policies should require that middle grades career exploration include career interest and aptitude assessments that help students identify careers that might be a good fit for their interests and talents. Policy should require all students to complete an individualized learning plan by the end of the eighth grade that sets college and career goals, laying out a sequence of studies that will prepare the student to attain those goals. These plans should be annually reviewed and revised by students, parents, teachers and counselors. State policies must ensure that middle grades counselors have access to training and resources to help students and parents make informed decisions.

> *"The students in the rural areas don't have the work-based learning opportunities that students do in the larger city, so Molly Spearman, our state superintendent, has broken down some barriers so that students can cross county lines to go to career centers to benefit from some other programs or work-based learning experiences."*
>
> **— David Mathis, Deputy Superintendent, Division of College and Career Readiness, South Carolina Department of Education**

State policies should also ensure that all students and parents are aware of, and have access to, opportunities to participate in work-based learning. For example, **Virginia** policy requires local education agencies to notify parents about Advanced Placement, dual enrollment and work-based learning opportunities.

Recommendation 4

Recognize the importance of secondary work-based learning by including those experiences in graduation requirements, grade-point average calculations and high school accountability ratings.

According to Jennifer Zinth of the Education Commission of the States, "Reporting on work-based learning program outcomes messages that the state is monitoring student access to and participation in work-based learning experiences and the effectiveness of partnerships and providers."

Students and parents should receive the message that work-based learning is valued, and including these experiences in graduation requirements is one way to achieve that. Another is to weight such experiences, or registered youth apprenticeship programs, the same as Advanced Placement, International Baccalaureate, honors or dual enrollment courses in students' grade-point averages. As long as career and technical education and work-based learning are weighted less than programs like AP, students and parents will perceive them to be inferior options. Registered youth apprenticeships and capstone courses offered at the end of approved CTE programs of study are complex and rigorous. Completing them provides evidence of student mastery of readiness benchmarks.

> In the past 20 years America has gone from more than half of young people aged 16-19 having a job to just over a third.

In the past 20 years America has gone from more than half of young people aged 16-19 having a job to just over a third. The young person who does not have a job misses out on learning experiences that will be valuable over a lifetime, because workplace culture is not the same as school culture. Soft skills of communication, teamwork, accountability, punctuality and adaptability are lifetime skills, and getting and keeping that first job prepares a young person for a lifetime of productivity, success and fulfillment.

> *"We're putting more incentive on how many individuals have jobs when they come out of community college rather than how many have diplomas. Even at the high school level, we're putting more emphasis on vocational and technical training."*
>
> **— Virginia Governor Ralph Northam**

Recommendation 5

Provide policy solutions for workers' compensation and liability insurance for work-based learning placements.

One of the barriers to work-based learning for secondary students — especially in manufacturing settings — is employers' concerns about workers' compensation and liability in the event of an injury to a student. Five states in the SREB region have passed legislation to address this concern, including Georgia, Kentucky, Maryland, Tennessee and Texas.

For example, **Tennessee** adopted legislation — Senate Bill 1649 — that allows local education agencies to provide workers' compensation coverage for students participating in work-based learning. SB 1649 also protects employers from liability for workplace injuries unless they are found guilty of gross negligence. Tennessee's SB 1231 extended workplace liability rules to community and technical college students in work-based learning settings. In **Georgia**, House Bill 402 gives employers a discount on workers' compensation premiums when they hire students as young as 16. In **Texas**, House Bill 639 has allowed local education agencies to purchase workers' compensation coverage for students in work-based learning programs.

Both **Kentucky** and **Ohio** have worked with a private-sector staffing agency to solve workers' compensation issues for secondary students participating in work-based learning. State CTE departments have encouraged districts and employers interested in work-based learning partnerships to use the staffing agency as the employer of record to handle payroll, workers' compensation insurance and adherence to all appropriate federal and state labor laws and reporting requirements. As the employer of record, the staffing agency conducts its own safety checks to ensure that work-based learning placements are safe and appropriate for students.

Barriers to Work-Based Learning

The commission identified nine challenges or barriers to work-based learning:

1. **Stigma.** Career and technical education still carries a stigma and is considered inferior by many students, parents, teachers, counselors, school and district leaders, and policymakers. Where is the stigma coming from? Are educators, parents and policymakers not considering technical college options? Do GPA weighting practices discourage students from taking CTE classes? Do other policies encourage this stigma?

2. **Time.** Commission members recognized that it is difficult for schools to find or make enough time in the day, especially at the high school level, for work-based learning experiences that are meaningful for students and can be justified by employers. Do graduation credit policies make it difficult for students to include work-based learning experiences in their individualized learning plans? Many districts and schools like to schedule CTE students in academic classes in the morning and work-based learning in the afternoon. Does this practice make sense for some industries or businesses but not others? Can schools offer more flexibility in the timing available for work-based learning?

3. **Funding.** Work-based learning can be costly in time, personnel and resources. What does it cost to offer work-based learning, especially at scale, and where is the money going to come from?

4. **Distance.** Rural areas typically have fewer employment options than metropolitan areas. What work-based learning experiences are available locally? What can be done in rural areas to provide students with quality work-based learning opportunities in diverse fields?

5. **Low-income students**. Work-based learning may be especially beneficial for low-income students, who may lack exposure to quality career options after high school. But low-income students may face additional barriers to participating. Do they need transportation? Can they afford to participate? Do their current financial circumstances and obligations prevent them from taking advantage of an opportunity that might increase their long-term earning potential?

6. **School capacity**. Even in districts that place a high priority on work-based learning, high schools may not have enough qualified staff to supervise hundreds of work-based learning experiences at once. How much capacity do schools have to offer work-based learning? How can it be scaled up to include more students and businesses? How many teachers are qualified to supervise work-based learning? Do counselors know about available work-based learning opportunities and how they might benefit students? Do school administrators understand work-based learning enough to support it?

7. **Student age concerns**. Both employers and school districts worry about child labor laws, fair labor standards, workers' compensation, and safety and liability issues. All these concerns are important, but a lack of understanding and an overabundance of caution may cause districts and employers to miss opportunities for work-based learning. Some businesses, for instance, may only see work-based learning as an option for postsecondary students.

8. **Small business capacity**. Most employment opportunities in the U.S. are with small businesses, but they have limited capacity to take on and supervise work-based learning placements. They may also view work-based learning reporting requirements as onerous.

9. **Gender stereotypes**. Considerable efforts have been made since the passage of Title IX in 1972, which prohibited sex discrimination in education, to encourage women to enter careers in science, technology, engineering, math and other well-paying fields in which women have been traditionally underrepresented. However, it is still common to see high school CTE programs in which boys are disproportionately represented in the skilled trades and girls are disproportionately represented in fields like the health sciences.

Funding

Recommendation 6

Support industry sector partnerships with blended funding from multiple sources — federal, state, local, private and philanthropic.

Tennessee and **Maryland** lead the way in funding industry sector partnerships, providing $10 million and $8 million respectively to these initiatives. In both cases, state general funds have funded competitive grants. Tennessee's Labor Education Alignment Program (LEAP) has provided 24 awards of up to $1 million to support sector partnerships, while Maryland's Employment Advancement Right Now (EARN) has provided 46 awards of up to $500,000. Mississippi has provided state funding on a more modest scale; each of its four regional workforce development boards received $50,000 in state funds to invest in industry sector partnerships.

The governors of Florida, Georgia, Kentucky, North Carolina and Texas have all used their WIOA Governors' Reserve Funds to support industry sector partnerships, ranging from $350,000 in Kentucky to $3 million in Georgia. Both Georgia and Texas chose to distribute these funds through competitive grants.

H1-B America's Promise grant funding from the U.S. Department of Labor is another potential source of significant federal funding to support these partnerships. In 2016, the Greater Memphis Alliance for a Competitive Workforce was awarded a $6 million H-1B America's Promise Grant to support pathways and credentials in the medical device manufacturing industry. This grant served counties in three SREB states — a metropolitan region serving three counties in Tennessee, one in Arkansas and five in Mississippi. Similarly, the West Virginia Higher Education Policy Commission received $3.6 million for a program in health care and advanced manufacturing serving parts of four states — West Virginia, Maryland, Pennsylvania and Virginia. Altogether 26 states received $111 million in funding through the H1-B program, nine of them SREB states: Alabama, Arkansas, Delaware, Florida, Maryland, Tennessee, Texas, Virginia and West Virginia.

> WIOA Governor's Reserve Funds and H-1B grants are among the most common sources of funds to develop and support sector partnerships.

While state funding, the use of WIOA Governor's Reserve Funds and H-1B grants appear to be the most common sources of funds to develop and support sector partnerships, other creative funding solutions abound:

- **Louisiana** has used emergency U.S. Department of Labor grants for displaced workers to support three industry sector partnerships. The National Dislocated Worker Grant program is found in section 170 of WIOA and was formerly known as National Emergency Grants.
- **Arkansas** has used a Temporary Assistance for Needy Families block grant to fund its Career Pathways Initiative, which has served 30,000 students in 400 career pathways. Because of funding and eligibility rules, 90% of Arkansas CPI beneficiaries have been women and most are single parents. CPI participants on average earned $3,000 more than non-CPI TANF recipients. A return on investment study found that over five years, Arkansas recouped $1.79 in returns for every dollar spent on the program.

- In its state WIOA plan, **South Carolina** reported that it was using a combination of lottery funds and H-1B grants to support scholarships for its technical colleges. South Carolina highlighted the resourcefulness of Central Carolina Technical College, which had raised $250,000 from local governments, workforce development boards and corporate sponsors to offer a free tuition program for incoming students from four counties.
- In **Alabama**, Governor Kay Ivey established a Governor's Office of Education and Workforce Transformation. This office will braid funding from Alabama's WIOA and CTE funding streams to support apprenticeships for in-school youth. Governor Ivey has tasked this office with coordinating the career pathways work of the Alabama State Department of Education, the Alabama Community College System and local workforce development boards. One of the goals of this office is to promote co-enrollment in adult education programs and postsecondary CTE programs.
- Another promising practice in providing state and federal funds for industry sector partnerships can be found in the match required by **Texas** in its competitive grant program.

On September 17, 2019, Secretary Betsy DeVos issued U. S. Department of Education guidance clarifying that both Individuals with Disabilities Education Act Part B and Vocational Rehabilitation system funds can be used for tuition, books and fees for CTE dual enrollment for K-12 special education students with Individualized Education Programs.

Bosch Automated Steering has estimated that it costs the company $10,000 to replace a skilled technician, while the cost of training a worker through the KY FAME partnership was only $2,500. If an industry sector partnership has been well designed and aligned with occupations for which there is a high demand, it should be possible to find matching funds.

One caution to states considering funding solutions is that braided funding is preferable to blended funding for legal reasons, especially when using federal dollars. Many federal programs fund workforce training for specific populations, such as parents of young children or English language learners, making it necessary to ensure that recipients meet program qualifications.

Recommendation 7

Provide incentives to employers who offer paid work-based learning experiences.

Paid work-based learning experiences are especially valuable, because many low-income students are not able to participate in the unpaid variety. They cannot afford transportation or forgo the opportunity for paid work. Rachel Hirsch of the National Skills Coalition notes, "Being able to 'earn and learn' is especially important to low-income people with pressing financial needs and obligations." Paid work-based learning may also be taken more seriously by students and employers. Students know they must earn their wages, and employers feel justified in setting expectations for a paid employee.

Employers reap benefits from work-based learning programs because they increase the pool of qualified applicants and help them identify and recruit the best candidates. But employers also incur costs from participating, such as the paperwork and financial burdens of complying with federal and state labor laws and reporting requirements for the participants' sponsoring schools. State policy should incentivize employers to offer high-quality work-based learning placements.

The most common approach is to offer tax credits, something that half of SREB states currently do. In the region, tax credits range from $500 in Tennessee to $2,000 in Arkansas, Virginia and West Virginia, but most states — for example, Alabama, Louisiana, Maryland and South Carolina — offer $1,000. West Virginia targets its tax incentives to the construction trades. Maryland offers students a $2,000 scholarship in addition to the employer tax credit. Beyond its $2,000 tax incentive, Virginia is the only state that also directly reimburses employers for work-based learning costs. However, the state caps participation at 10 students per business, a practice that effectively allows it to target support to small businesses, recognizing the economies of scale that large businesses can achieve. Arkansas allows tax credits of $2,000 or 10% of the student's earnings, whichever is less — linking the value of the incentive to the value of compensation the employer provides.

When employers are willing to invest in students through work-based learning opportunities, they should be supported so that they will want to continue.

In addition to financial incentives, high-quality training and support is needed for businesses and employers to serve as mentors and supervisors of work-based learning experiences. Training should be available at times and in formats convenient to employers. When employers are willing to invest in students through work-based learning opportunities, they should be supported so that they will want to continue.

Educator Effectiveness and Capacity

Recommendation 8

Develop the capacity of teachers, school counselors, school leaders and other educators to support students in all stages of career readiness, from career awareness to apprenticeships.

Just as students benefit from internships, teachers may benefit from externships that help them explore the existing and emerging career fields their students may enter. Kelly Lindsey, a National Board-certified math teacher at Boone County High School in **Kentucky**, was part of a group of teachers who participated in a manufacturing externship in the summer of 2016 thanks to the KY FAME industry sector partnership. After an orientation, Lindsey worked on a manufacturing assembly line at a Bosch Automotive Steering production plant, where she saw firsthand how math, teamwork, problem solving, quality control and continuous improvement come together in the context of a modern manufacturing job. Such insights have helped her teach her students how to prepare for the world of work, bridging the gap between education and industry at the level of the factory floor and the classroom. Districts can support externships by offering teachers small stipends, and states can encourage industries to participate by offering small grants.

School counselors and classroom teachers need training and curricula that help them offer career awareness and career exploration programs. School counselors, in particular, are already overextended — they are expected to assess students for special services, address behavioral issues and students' mental health and emotional well-being, help students select courses and understand college entrance requirements, assist students in crisis and work with teachers and administrators to establish social-emotional learning programs.

Texas OnCourse Academy is one example of a program that addresses this problem, offering critical resources, curricula and training to help school counselors meet students' career awareness and career exploration needs. Organized by grade level with resources for students and families, teachers, counselors and advisers, and administrators, OnCourse offers the "out of the box" critical support that busy school counselors and classroom teachers need. Currently most high school counselors are prepared to help answer student questions about how to go to college. But they need training and support to help students consider *why* they are going to college, and how that fits into their long-term objectives in life.

High-quality professional development also helps teachers provide students with safe work-based learning opportunities. The **New Jersey** Safe Schools project offers professional learning through a center at Rutgers University. Since the program began in 2004, 2,500 teachers have been trained, and there have been no serious injuries to work-based learning students. Six days of professional development defines what teachers must know and do to ensure the health and safety of students and comply with child labor, wage and hour requirements, and learning standards. After completing this professional learning, any teacher with one year of successful teaching and a standard teaching certificate can supervise students in structured work-based learning experiences. The state intentionally structured the program to give school districts flexibility in deciding which teaching staff will supervise work-based learning.

One insight from the New Jersey program is that work-based learning need not be overseen by CTE teachers. For example, if a student wants to study law, an internship with an attorney could be supervised by a social studies teacher. Similarly, an English language arts teacher could supervise a journalism internship and a science teacher could supervise a meteorology or watershed management internship. This approach makes all adults in the school responsible for career readiness, not just CTE teachers.

High-quality professional development also helps teachers provide students with safe work-based learning opportunities.

Educators also need better tools to help them understand workforce data in their own states or regions — tools, analyses and datasets that can be understood or navigated in minutes rather than hours. Teachers and counselors need the ability to quickly drill down into data related to strategic industries to gather more specific information based on student interests. For instance, if a student is interested in health care, educators need to be able to procure information about what areas of health care are in demand in their region and supply potential wage and educational attainment information. Most career information resources provided by the U.S. Department of Labor and by state employment agencies were created with economists and public employment officials in mind as end-users — not educators. Educator-specific portals, guides and briefs for employment data can be of enormous benefit to teachers and counselors who are pressed for time, need very specific information and are not employment experts or research professionals.

Tools and Mechanisms

Recommendation 9

Promote simulated workplace programs and other virtual solutions to expand work-based learning opportunities in rural and hard-to-serve communities.

In **West Virginia**, nearly 24,000 students are working for 1,200 companies that belong to the state's Simulated Workplace program. Managed by the Office of Governor's Economic Initiatives, Simulated Workplace solves the problem of students not being able to get to work-based learning sites by bringing work-based learning to the students.

Students must interview to be accepted into the program, and they sign in and sign out just as they would for a real job. The program emphasizes the soft skills that are essential to employability: attendance, punctuality, work ethic and teamwork. Due to the workforce impact of the opioid epidemic in West Virginia, industry representatives insisted that random drug testing be a required component of the initiative. Each year, 40% of students are tested at random, and data show that 98.4% of tested students are drug-free.

In Simulated Workplace, students serve as the officers and employees of companies that make products or deliver services that are appropriate to the CTE courses they take. Work products are evaluated for quality by business and industry representatives from the community, and the simulated companies earn money based on the difficulty of the projects they successfully complete.

West Virginia's Simulated Workplace program enjoys a 97% satisfaction rate with students, and 92% of students credit the program with increasing their critical thinking skills. The success of the program in West Virginia prompted Madison County Public Schools in **Virginia** and shared-time technology centers in **Alabama** to adopt similar initiatives. Alabama sent teams to West Virginia to observe Simulated Workplaces, and SREB provided technical support to the Alabama State Department of Education and individual technology centers to implement the program.

> *"Simulated Workplace creates a student-led education environment that transforms the learning experience and empowers students to develop their potential. The Simulated Workplace essence was captured best by a student: 'Simulated Workplace makes average students great and great students leaders.'"*
>
> **— West Virginia Associate State Superintendent Kathy D'Antoni**

While these programs in West Virginia and Alabama simulate an entire business environment that focuses on employability skills like teamwork and dependability, **Kansas** and **Montana** offer workplace simulations that focus on developing technical skills. Montana's community colleges have invested heavily in virtual reality simulators like welding simulators and commercial driving simulators. Welding simulators reduce expenditures on consumables, while commercial driving simulators allow students to practice driving semi-trucks over mountain roads in icy conditions — circumstances in which virtual reality is clearly an advantage.

The Kansas Community College system has created simulated but highly realistic physical hospital settings with human patient simulators that allow students to practice responding to real-life medical situations. Simulations are real enough to be included in the region's emergency planning for catastrophes and to be used for the training of future medical professionals and the ongoing professional development of experienced physicians and nurses.

Recommendation 10

Designate a state agency or special council to work with employers and secondary and postsecondary education agencies to identify, evaluate and approve industry certification examinations, technical skills assessments, dual credit courses and end-of-course assessments that are part of a system of stackable credentials.

The sheer number of state departments, agencies, offices, commissions, councils and boards involved in workforce development makes it imperative for all agencies to come to an agreement and shared understanding of roles, responsibilities and leadership. State departments of education are responsible for career awareness and exploration in the elementary and middle grades, the use of Perkins funds, career and technical education programs in high schools, graduation requirements, teacher licensure, school accountability and the adoption of statewide assessments and student information systems. Community college systems are responsible for postsecondary Perkins, most workplace apprenticeship programs, and most dual enrollment programs, courses and credits. University systems must ensure that dual enrollment credits are transferable, support the implementation of career pathways that lead to bachelor's or advanced degrees, and help current and future educators and counselors understand the career pathways available to students. Vocational rehabilitation agencies serve people with disabilities. Labor and commerce departments and employment commissions are critical to identifying growth industries, hiring trends and in-demand skills. Without high-level coordination, it is easy to see how a complex system like this can break down.

The National Skills Coalition recommends that governors establish a skills cabinet to coordinate interagency workforce development initiatives and strategies. Arkansas, Alabama, Kentucky and North Carolina have created such multiagency cabinets — for example, Arkansas created a Governors' Workforce Cabinet. Governor Ralph Northam of Virginia created a cabinet-level coordinating position for a Chief Workforce Advisor to the Governor. In West Virginia, the state legislature codified the establishment of a Workforce Investment Interagency Collaborative Team to meet this need.

SREB states have taken different approaches to identifying lead state agencies to provide technical assistance to industry sector partnerships.

SREB states have taken different approaches to identifying lead state agencies to provide technical assistance to industry sector partnerships. In Maryland and Mississippi, state departments of labor have taken the lead, while in Oklahoma, the Department of Commerce has this role. The Tennessee Higher Education Commission and the Virginia Community College System provide technical assistance in their states. The National Skills Coalition's 50-State Scan of Sector Partnership Policy did not identify any state in which the state education agency assumed the

lead role in providing technical assistance for industry sector partnerships. However, a state could choose to do so using its CTE curriculum specialists as statewide facilitators and bridge-builders. Using the state's K-12 education agency could help open work-based learning opportunities for middle grades and high school students with industry sector partners.

There are almost as many solutions to the problem of interagency coordination as there are states in the SREB region. Each state needs to examine how partnerships and workforce development will be coordinated, then clearly communicate that information to encourage complementary efforts.

Three pieces of federal legislation — the Every Student Succeeds Act, passed in 2015, the Workforce Innovation and Opportunity Act, passed in 2014, and the Strengthening Career and Technical Education for the 21st-Century Act (Perkins V), passed in 2018 — call for states to establish a coordinated response to meeting workforce needs. However, SREB's reviews of state plans for each of these laws found that state efforts continue to be fragmented, with cross-agency collaboration still the exception rather than the rule.

Coordination at the highest level helps prioritize the use of resources, braid funding and build bridges between agencies.

Coordination at the highest level helps prioritize the use of resources, braid funding and build bridges between agencies. It also allows for statewide scans to identify systemic barriers and bottlenecks, which state-level agencies have the political and regulatory capability to address or remove. For example, a state labor commissioner might be cautious about increasing the risk of workplace injuries without being fully informed about secondary CTE or how risk can be mitigated in high school work-based learning programs. A higher education leader might be concerned about the budgetary impacts of dual enrollment on tuition revenues at particular colleges. State-level coordination can help identify policy barriers and promote resolution through interagency dialogue and cooperation.

Recommendation 11

Promote structured dual enrollment programs for career pathways and establish uniform statewide policies so students can earn credits toward high school graduation that are automatically added to their transcripts at postsecondary institutions.

Dual enrollment or dual credit programs allow high school students to take college courses for both high school and college credit before graduating. Dual enrollment programs can advance the goal of college and career readiness by exposing secondary students to college-level work and allowing them to attain more quickly the credentials they will need to enter into rewarding careers. In their review of the research on dual enrollment, Carrie Myers and Scott Myers found that college students who earned dual enrollment credit in high school had "better first-year and overall GPAs, better course sequencing, less major switching, more credits earned in the first year, and shorter times to degree completion." After it adopted a statewide dual enrollment initiative, Ohio estimated that 52,000 high school students saved $110 million in tuition costs in the program's first year.

An Irvine Foundation study of eight career pathway dual enrollment initiatives in California reported that, even after controlling for prior test scores, dual enrollment had a significant positive effect on high school graduation rates. The authors also found a significant positive effect on enrollment in a public four-year college within the state. Dual enrollment students also had higher persistence rates beyond their first year of postsecondary study and were less likely to have to take remedial courses.

The Irvine Foundation's study is particularly relevant as it is one of the few studies to specifically examine dual enrollment in a CTE context. The Irvine Foundation's Concurrent Courses initiative funded eight different dual enrollment programs in California, all CTE-related. Two programs focused on health careers, one on architecture, engineering and construction, one on teaching, one on technology, one on multimedia and two on multiple career pathways. Lead partners for these different programs included a college, a high school district, a single high school and a regional occupational program.

Although Cecilia Speroni of the National Center for Postsecondary Research has suggested that dual enrollment has greater promise for academic courses than for CTE, the Irvine Foundation's Concurrent Courses initiative in California shows that dual enrollment is a promising strategy for industry sector partnerships.

Conclusion: A Vision Possible Through Partnership

Preparing students to be career-ready is important and complex work, beyond the ability of K12, higher education, adult education or workforce investment boards to do on their own — or even together, without industry sector partnerships. Building up a strong workforce requires partnerships that bring private and public sectors together to formulate common plans addressing common concerns. Work-based learning, broadly conceived — ranging from career awareness at the elementary level through registered apprenticeships supported by community colleges — provides students with the technical skills and soft skills employers are looking for. State policies encourage work-based learning through incentives. Dual enrollment helps students reach their goals sooner, with less debt. Stackable credentials, vetted by industry, set milestones along career pathways that lead to living wages for workers in their 20s and middle-class wages and home ownership in their 30s.

Though too much for any of us to do on our own, this is possible in partnership.

This is a vision for individuals to achieve lifetime success, and for American industries to increase productivity, reduce turnover and compete successfully in a global economy. Though too much for any of us to do on our own, this is possible in partnership. The commission encourages each SREB state to fully engage business and industry partners in preparing a bright future for all its citizens.

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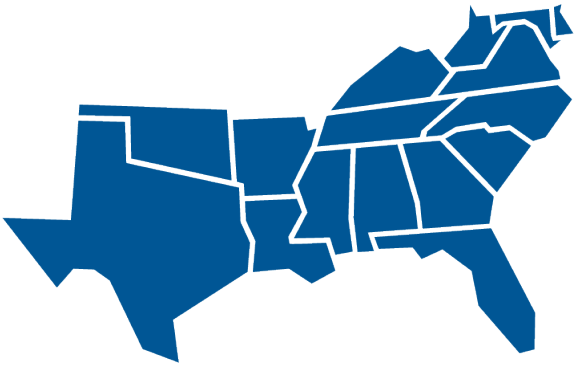

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