

**The Governor's
P-20 Leadership
Council of Maryland**



**Career and Technology Education
Task Force**

Final Report
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Task Force Membership

Co-Chairs:

Katharine Oliver, Assistant State Superintendent, Maryland State Department of Education

Grant Shmelzer, Executive Director, Independent Electrical Contractors (IEC) Chesapeake

Kathleen Beauman
Anne Arundel Community College

Joseph Biglin
TrainingPort Strategies, LLC

Valerie Brennan
Baltimore County Public Schools

Michelle Butt
Associated Builders and Contractors, Inc.

Peter Cevenini
Cisco Corporation/ Cisco Networking Academy

Trudy Chara
Governor's Workforce Investment Board
Dept. of Labor, Licensing and Regulation

Andy Chaves
Marriott International

Tim Corder
Cecil County Public Schools

Lisa Cox
Parent

Tom Evans
Eastern Technical High School

June Fordham
Prince George's Community College

Susan Thompson Gorman
Stevenson University (formerly Villa Julie)

Larry Greenhill, Sr.
Electrical Workers' Union No. 26 - IBEW

Joe Hairston
Baltimore County Public Schools

Jeffrey Hargraves
Mahogany, Inc.

Theresa Hollander
University System of Maryland

Dean Kendall
Maryland Higher Education Commission,

Victoria Lee
Prince George's County Public Schools

Marjorie Lohnes
Carroll County Public Schools

Kevin Lowndes
Wheaton High School

George Mayo, VI
Maryland Agriculture Education Foundation

Lynn Patterson
Baltimore City Public Schools

Mary Etta Reedy
Kent County Public Schools

Anne Spence
University of Maryland – Baltimore County

Theresa Stafford
Caroline County Career Technology Center

Jasper Wilson
Prince George's County Public Schools

Holly Woodard
North Harford High School

Terry Wolfe
Community College of Baltimore- Catonsville

Anthony Wong
Cecil College

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When the report of the Maryland Commission on Vocational-Technical Education was released in 1989, it provided a vision and framework for a new system that today is known as Career and Technology Education (CTE). Maryland's education and business leaders recognized that the increasingly competitive pressures of a global economy would result in changed educational requirements and workforce demands. At the time, the principle concern of the Commission was whether the existing system of vocational-technical Education was adequate to meet the demands of the future. It was determined that it was not. Strong leaders at both state and local levels embraced the Commission's observations and recommendations and considerable progress has been made to update, restructure, and evolve vocational-technical education to become what is now called CTE.

In appointing the Governor's P-20 Leadership Council of Maryland Career and Technology Education (CTE) Task Force in the fall of 2008, Governor Martin O'Malley had similar concerns about the ability of CTE to meet the demands of the future. This time, however, a complete transformation was not deemed necessary. The Governor's interests focused on expanding CTE, improving access, and increasing rigor. The Governor charged the Task Force to:

Create an action plan designed to expand the CTE programs that prepare students for entry into postsecondary education, apprenticeships and a career where there is current and future employer demands. Priority will be given to expanding programs that support critical infrastructure needs such as construction, health and biosciences, manufacturing, information technology, and consumer services; particularly those vital to industries related to Base Realignment and Closure (BRAC) and Science, Technology, Engineering, and Mathematics (STEM).

The Maryland State Department of Education (MSDE), Division of Career Technology and Adult Learning (DCTAL), embraced the earlier Commission's recommendations and transformed vocational-technical education into a system of CTE that is respected throughout the nation today. During the past twenty years, Maryland's extensive experience in school reform included major, innovative changes in CTE to create a new model that prepares students for both employment and continuing education. Currently, Maryland's public education system ranks first in the nation by *Education Week*. To maintain this standing and ensure the state's international competitiveness, all students must engage in high quality CTE programs of study.

While progress has been made to organize and frame the system of CTE at the state level, a major challenge is to ensure full implementation and expansion of high-quality CTE throughout Maryland that leads to high-paying, skilled jobs reflective of economic and workforce development needs. With the state CTE system in place, Maryland is ready to accelerate its efforts to expand access and availability to CTE programs in local school systems; infuse CTE with greater rigor; and direct attention to the continuous improvement of curriculum, instruction, and assessment.

Today's economy demands that students develop problem-solving and critical thinking skills in "greener" environments. The Executive Summary of the report titled *Tough Choices or Tough Times* states: "The core problem is that our education and training systems were built for another era, an era in which most workers need only a rudimentary education" (National Center on Education and the Economy, (NCEE) 2007, p. 8). The problem is not with our educators. It is with the system in which they work. Changes in the educational system will necessitate changes in workforce development.

It will be essential to prepare a workforce that has “strong skills in English, mathematics, technology, and science as well as literature, history and the arts... candidates will also have to be comfortable with ideas and abstractions, good at both analysis and synthesis, creative and innovative, self-disciplined and well organized, able to learn very quickly and work well as a member of a team and have the flexibility to adapt quickly to frequent changes in the labor market as the shifts in the economy become even faster and more dramatic” (NCEE, 2007, p.8). In Maryland, these are known as the *Skills for Success*: thinking, communicating, learning, technology, and interpersonal skills. These skills are often discussed, but are challenging to embed in instruction in a meaningful way that leads to enduring knowledge and skills that can be applied to any situation. Full implementation of the *Skills for Success* is needed in order for Maryland to achieve its goal of rigorous CTE that prepares students for college and careers.

Changing the PreK-20 system to include an expanded presence of CTE, with access for all, and increased rigor is imperative for improving the standard of living for all Marylanders. The alternative is accepting a lower standard of living. What is the legacy that Maryland wants to leave for its future generations? Will the next generation of students be the first to have less than their parents? More students must participate in CTE; there must be greater access for those who want to enroll in programs that are oversubscribed or not offered due to costs; and the academic and technical components of CTE must be enhanced to ensure that all students leave high school prepared for both employment and continuing education.

The 11 recommendations of the CTE Task Force are designed to be implemented by leaders with the courage to embrace change at every level of education. In presenting its report to Governor O’Malley, the CTE Task Force requests that the Governor require MSDE to convene a broadly representative stakeholder’s group to develop action plan specifics that will ensure the recommendations herein are fully implemented with measurable outcomes and tangible results.



Background – A New Model for Career and Technology Education

School reform in Maryland has included major changes in career and technology education (CTE). In 1989, in concert with the release of the report of the Maryland Commission on School Performance, the Maryland Commission on Vocational-Technical Education issued recommendations calling for a new model of career and technology education that prepared students for both employment and continuing education. Its recommendations provided impetus for the establishment of CTE completer programs, sequential programs of study guided by industry standards that result in students learning all aspects of the industry; the implementation of a system of career development; the use of blended or integrated instruction to ensure that students develop academic knowledge and skills as part of their technical programs; and linking learning levels using articulation agreements through Tech Prep. The commission's intent was to ensure students' access to challenging CTE programs that include academic, technical, and workplace skills.

In 1992, the State Board of Education included State-approved CTE completer programs as one of the three elective, focused programs of study required for high school graduation. Maryland's CTE programs of study provide opportunities for students to prepare for careers as they progress through high school. A CTE program of study includes a sequence of high school courses, work-based learning experiences and opportunities for career advancement through industry certifications and early college credit. All of Maryland's CTE programs connect the high school experience to career advancement and further study in various postsecondary environments. Most CTE programs also provide opportunities for high school students to earn industry certifications.

Three years later, the State Board of Education took the bold step of stating in its strategic plan that every student needed to graduate from high school prepared for both college and careers. Indeed, CTE is an integral part of Maryland high schools whether designed as a technical school, a comprehensive high school, or shared-time technical center. Virtually all high schools offer some CTE programs, and all school systems allow students to choose CTE programs of interest. Today, almost 50 percent of high school students are enrolled in courses which are part of a CTE program.

Data show that CTE completers are also preparing for postsecondary education at an increasing rate. In 2008, 22 percent of graduates completed course requirements for a CTE program of study. For the last several years, close to 50 percent of those completing a CTE program of study also completed the course requirements for admission to the University System of Maryland (USM). This contrasts with 1992, the year this was first measured, when only 14 percent of CTE completers met this level of postsecondary preparedness.

Historically, school systems, guided by their local advisory councils, determined and developed CTE programs for state approval. The Maryland State Department of Education (*MSDE's Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs of Study*) guide the development, implementation, and continuous improvement of CTE programs. Program Advisory Committees (PACs) work with teachers and administrators to guide and advise program improvement.

As the requirements for the 21st Century's global workforce have changed, CTE programs have changed to ensure Maryland's graduates are prepared for the challenges ahead. Considerable progress has been made to update, restructure, and evolve vocational-technical education to become what is now called career and technology education. The new model of CTE includes:

Career Clusters – Maryland organizes secondary CTE instructional programs within 10 career clusters that represent core business functions across broad industry areas in the State. Developed by business and industry partners in collaboration with secondary and postsecondary educators, the Clusters and their Career Pathways provide students with multiple career options leading to employment and continuing education, rather than training in specific job-related skills. Career Clusters allow students to explore a wide range of career options and to apply academic and technical skills in a career area. Career Pathways are like road maps of learning that help students plan for and pursue further education and careers.

Maryland CTE Programs of Study – Forty-eight State developed CTE programs of study (POS) have evolved from the Career Clusters and their pathways. The POSs provide a sequence of courses, generally four or more, that include foundation knowledge and skills as well as specific technical skill development and capstone work-based learning experiences. They align to industry standards and at least the first two years of subsequent postsecondary study. Prerequisite academic knowledge is applied and expanded within a program of study. Important outgrowths of the POSs include statewide instructional consistency, opportunities for statewide articulation, and efficiencies in the provision of teacher professional development.

Maryland CTE Affiliate Partnerships – Maryland is establishing new state-wide postsecondary and industry partnerships specifically aligned to a Maryland CTE Program of Study. Affiliate partners take a lead role in offering state-wide professional development, updating program curriculum, articulating college credit, and identify options for industry certification.

Career Development Framework – As of 2009, local school systems will be required to implement Maryland's K-16 Career Development Framework to ensure a cycle of career development experiences – awareness, exploration, and preparation – to inform students' educational and career decisions. The career development framework uses Maryland's Career Clusters to guide student's exploration of careers and understanding of the requirements of the 21st Century's global workforce.

Statewide Articulation – The Tech Prep movement accelerated the development of planned, sequential CTE programs of study that include at least the last two years of high school and the first two years of postsecondary education. Today's high school students may earn college credit based on the successful completion of the high school CTE program. The alignment is being strengthened by establishing statewide articulation agreements with two- and four-year colleges and universities throughout the region.

Technical Skill Attainment – CTE programs prepare students for employment and continuing education in alignment with current industry standards. The alignment to industry standards permits valid and reliable assessments providing students with an additional high school credential -- an industry-recognized certificate or license.

Accountability – At the state and local school system level, CTE program data are used for school improvement efforts as well as system level improvement. Core Indicators of Performance (student academic achievement, technical skill attainment, graduation rate, and placement after high school) measure progress toward established targets and inform program improvement efforts.

The recommendations of the task force build on this model to expand Maryland's system of CTE, strengthen the rigor of CTE programs and increase access so all graduates successfully transition to college and careers.



Charge to the Task Force

Create an action plan designed to expand the CTE programs that prepare students for entry into postsecondary education, apprenticeships and a career where there is current and future employer demands. Priority will be given to expanding programs that support critical infrastructure needs such as construction, health and biosciences, manufacturing, information technology, and consumer services; particularly those vital to industries related to Base Realignment and Closure (BRAC) and Science, Technology, Engineering, and Mathematics (STEM).

Description of Task Force Process

Co-Chairs Katharine Oliver and Grant Shmelzer convened the CTE Task Force, which was comprised of representatives from business, industry, workforce and economic development as well as secondary and postsecondary education. Appointed in late October 2008, the Task Force met five times between December 2008 and April 2009.

The initial meetings gathered input from national and state customers and stakeholders. This included panel presentations and interactions with representatives from:

- The American Youth Policy Forum,
- The National Governors Association,
- The Maryland State Department of Education CTE Leadership Team,
- Current and former CTE students,
- Secondary and Postsecondary educators and administrators, and
- Business and Industry.

The Task Force examined national and state-level requirements for CTE programs, reviewed current CTE programs, heard from customers and stakeholders regarding the delivery and outcomes for CTE in Maryland, and used a review process called SWOT to identify and analyze CTE's strengths, weaknesses, opportunities, and threats. The following major issues surfaced:

Strengths: Maryland's system of CTE is recognized as a national model. State leadership and policy support the practice and implementation of high quality CTE. Career and Technology Education provides value-added opportunities for students by offering industry-recognized credentials and developing employability skills while preparing students for postsecondary education. The contextual, hands-on nature of the CTE learning environment provides relevance and actively engages students.

Weaknesses: The perception and image of CTE are problematic. Career and Technology Education is still viewed by many parents, students as well as educators and policy makers as an instructional program that limits students' options for postsecondary education. Expansion of CTE is also challenged by a limited pool of qualified instructors. And, the process of articulating secondary CTE programs to apprenticeship and college is not transparent or easily accessible to students.

Opportunities: Opportunities for CTE rest primarily in the State's demand for a qualified, competitive workforce in a broadly diversified economy. Maryland's Career Clusters reflect the economic and workforce needs of the state. BRAC, the State's STEM infused economy, and Maryland's infrastructure needs will continue to require a robust system of CTE to ensure a pipeline of skilled workers.

Threats: Insufficient resources to keep programs current and responsive to industry standards are a major threat to high quality CTE. Costs to maintain and improve programs are difficult for local school systems to sustain, especially in today's economy. High quality, technical programs in areas such as engineering, information technology and automotive technology, schools need skillful CTE teachers with the up-to-date knowledge and skills. These skill sets, which are needed in both education and business, foster a competitive environment with business/industry that often leaves schools with a very small pool of qualified CTE teachers. The persistence of 20th century perceptions about CTE's role in preparing students for their next steps also threatens the growth of CTE. When students and their parents are painted a picture of CTE as a program for less talented, non-college bound students, enrollment and program completions will suffer.

The Task Force continually revisited and updated the SWOT as part of its ongoing environmental scanning. The ideas generated from the on-going SWOT analysis served as the basis for the development of the Task Force recommendations contained in this report.



Key Themes: Expansion, Rigor and Accessibility

Throughout the process of gathering information, examining the current system of CTE, and learning about exemplary CTE programs, several key themes emerged that shaped the formation of the Task Force recommendations. The key elements of each theme –Expansion, Rigor and Accessibility are described below.

Theme: Expand CTE program offerings to ensure responsiveness to economic and workforce development needs and provide career opportunities for all Maryland students.

While CTE programs are available in all local school systems and in virtually every high school in Maryland, there are increased opportunities for Maryland's graduates in several high-skill, high-wage career fields, such as those in STEM disciplines and in BRAC-related fields. Expanding Maryland's system of CTE to increase the number of programs in these areas will provide greater opportunities for graduates and will provide Maryland employers the skilled workforce needed to grow Maryland's economy. To expand the system of CTE, the Task Force recommends strategies aimed at: ensuring the alignment of new programs to Maryland's economic and workforce needs; increasing school system resources for CTE program delivery; and support for new and current CTE teachers.

Theme: Ensure academic and technical rigor of CTE programs that prepare Maryland high school graduates for successful transition to college and careers.

All CTE programs are designed to support the transition of high school graduates onto college and careers. All CTE programs include options for students to earn early college credit and/or industry certification as way for students to get a jump start on the chosen career. However, not all of Maryland's graduates take advantage of these opportunities. Unfortunately, many students complete high school without the full advantage of a college-preparatory academic core and CTE program of study. The Task Force recommends strategies designed to: increase the percentage of Maryland graduates prepared for college and career entry; support teachers and guidance counselors in reinforcing the requirements of the 21st Century Global Workforce; strengthen articulation agreements for early college access and transition to college; and provide support for students earning industry certification and licensure.

Theme: Increase access to CTE programs so that all of Maryland's students have opportunities for career preparation and are provided support for successful transition from high school to college and careers.

Each year, nearly half of all high school students participate in CTE programs of study and all students are provided career awareness information. There is strong evidence of the positive impact of CTE programs in terms of advanced career development, technical skill attainment and early college access, however, there remains a negative image of the "old vocational education". In an effort to increase the number of students accessing CTE programs across the state, the Task Force recommends strategies to: increase public awareness of CTE opportunities; strengthen career development implementation; and increase support services so that all students may successfully complete a CTE program of study.

The Task Force recommendations which follow are designed to accelerate the growth of Maryland's Career and Technology Education (CTE) system so that the State's high school students will have access to quality career preparation for high skill, high wage opportunities in the State's infrastructure industries, as well as those industries that will make Maryland a leader in Science, Technology, Engineering and Mathematics (STEM) disciplines and able to support the requirements associated with the Base Realignment and Closure (BRAC) initiatives. The 21st century economy demands that students graduate from high school fully prepared for next steps to begin a career and pursue the continuing learning that today's workplaces demand. The recommendations seek to build on the current strengths of the Maryland CTE system and to fully implement the many initiatives for which Maryland has gained national accolades. They also seek to address the external and internal challenges facing CTE's educators and business partners that surfaced as the result of the Task Force's environmental scanning.



Theme: Expand CTE program offerings to ensure responsiveness to economic and workforce development needs and provide career opportunities for all Maryland students.

Recommendations:

- 1. Increase the number of Maryland CTE Programs of Study. Continue working with industry to identify appropriate new Maryland CTE Programs of Study. Complete and fully implement the 48 currently identified Maryland CTE Programs of Study so that a full complement of career preparation programs is offered in each of the 24 local school systems. Ensure alignment with the GWIB's Industry Initiatives.**

Outcome: By 2012, Maryland CTE programs of study will comprise at least 50% of each school system's total CTE program offerings.

Rationale: Maryland leads the nation in the redesign of CTE programs required by the federal Carl D. Perkins Career and Technical Education Improvement Act of 2006. Using the Maryland Career Cluster Framework, MSDE and its business and education partners have identified 48 high school appropriate programs of technical study that allow students to earn college credit and/or industry certification in a career field of interest. CTE programs of study provide the opportunity for students to understand the relevance in completing high school. These programs of study include at least one foundation course, two or more specialty courses, and a capstone course that provides workplace experiences. Curriculum is aligned to Industry standards, instruction applies and extends academic knowledge and skill, and assessments result in industry certification or college credit, or both. Currently, 30 of the 48 planned programs of study are ready for implementation and all school systems are offering at least two state programs of study. This systemic expansion of CTE programs of study will ensure consistent instruction across the state, maximize the efficient involvement of industry partners, and allow for targeted, cost effective teacher professional development.

Resources Needed: In addition to the current Perkins federal and local funds that support the expansion of CTE, the Governor's budget should include resources for the development of the state programs of study and start-up costs associated with local school system implementation.

- 2. Prioritize funding to ensure CTE classrooms and equipment meet industry standards in order to successfully prepare students for industry certification and post high school technical learning.**

Outcome: By 2011, begin the phase-in of targeted actions to ensure that CTE schools and classrooms are assessed and modernization is underway so that equipment and technology meets industry standards.

Rationale: CTE programs of study are resource intensive. Equipment, software, instructional materials must be continuously upgraded to allow teachers to provide students with authentic and relevant learning experiences. In addition many CTE programs require additional square footage encompassing both classroom and lab space. This need for additional space is relevant in both CTE centers and comprehensive high schools. Unlike other states, Maryland has no dedicated funding or funding priority to ensure that CTE classrooms are kept current.

Resources Needed: In addition to the current Perkins federal and local funds that support the expansion of CTE, public/private partnerships are needed as well as additional capital dollars that support industry-standard equipment and new, renovated or expanded CTE facilities.

3. Establish policy and funding support to increase the number of CTE teachers in critical infrastructure areas.

Outcome: By 2010, establish an action plan that includes baseline and targets to increase the number of CTE teachers in critical infrastructure areas.

Rationale: CTE programs of study require a teacher that possesses an educational background, pedagogical knowledge, and specialized skill and content knowledge for the specific program of study they will teach. Currently, few of Maryland's institutions of higher education offer teacher preparation programs in CTE areas — especially, for those programs where critical shortages exist. Additionally, the specialized skill and content knowledge that is needed in the classroom is also needed by industry, so education often finds itself in competition with business/industry over the small number of qualified instructors. Therefore, local school systems often rely on recruiting staff from either out-of state or from industry and are challenged to find appropriate professional development opportunities. A solution would be to expand teacher preparation programs, at the baccalaureate level, focused on CTE teachers. Another solution would be focused statewide recruitment and a support system for CTE teachers new to the teaching profession from business and industry. For all CTE teachers, there needs to be extensive and on-going standards-based professional development and leadership preparation for central office personnel and school building leaders in order to ensure that high quality CTE programs are available.

Resources Needed: Establish policy and funding decisions to provide financial incentives for CTE teachers, one of which is tuition credits for teachers as well as their children. Establish policy to facilitate the hiring of adjunct faculty as CTE teachers.

Theme: Ensure academic and technical rigor of CTE programs that prepare Maryland high school graduates for successful transition to college and careers.

Recommendations:

4. Require all students to graduate from high school both college and career ready.

Outcomes: By 2012, sixty percent of CTE students will complete a college preparatory curriculum meeting the credit requirements for admission to the University System of Maryland. In addition, DCTAL will establish baseline and target measures for CTE students participating in higher level coursework including Advanced Placement (AP), college level courses and CTE courses that receive weighted or honors credit in local school systems.

Rationale: In the past, the demands of the workforce often did not require CTE graduates to pursue postsecondary education. Today, however, almost everyone will need some form of education after high school, whether it is employer training, an apprenticeship, a private career school, or a two- or four-year college degree. "Research demonstrates that CTE students have higher grade point averages, increased test scores, higher graduation rates, and increased college and university enrollments when there is an increase in academic course taking within a curriculum integration framework and when CTE students are placed in smaller learning communities" (Brand, 2008, p. 5). By establishing a college-and-career-ready diploma, including a college-prep curriculum for all that incorporates Maryland's *Skills for Success* and expands access to higher level academics, students will graduate with the knowledge and skills needed for entry into college and careers as well as the ability to participate in lifelong learning.

Resources Needed: Amend the Code of Maryland Regulations (COMAR) so all CTE students are expected to meet the requirements for admission to the USM. Establish annual targets for increasing the number and percent of CTE students who complete both a CTE program of study and meet the USM admission requirements (dual completer). Establish baseline data for the number and percent of CTE students who receive weighted or honors credit for participating in CTE. Integrate in the data collection system methods to identify and track the number of CTE students who take and pass AP courses. Using Maryland's CTE Programs of Study, develop consistent criteria to assist local school systems in designating CTE courses for weighted or honors credit.

5. Target professional development aligned with Maryland's Teacher Professional Development Standards to ensure high quality instruction to CTE teachers and guidance counselors. Provide CTE administrators with professional development and leadership skills necessary to implement, monitor, and evaluate high quality CTE programs of study.

Outcomes: By 2011, establish baseline and targeted increases of CTE teachers with industry-recognized credentials. By 2012, implement a CTE leadership academy to assist administrators in the continuous expansion, rigor and assess of CTE programs. By 2014, all Maryland CTE Programs of Study will have affiliate partners to provide ongoing professional development.

Rationale: There are few colleges of education in Maryland that have teacher preparation programs for CTE, thus contributing to the shortage of qualified CTE teachers. Often, potential educators are unaware of teaching strategies that employ real-world, project-based and applied learning, which is a cornerstone in CTE instruction. Teacher education programs as well as systemic professional development are needed to increase the pool of qualified teachers. Guidance counselors need current information on CTE to better inform students and parents of the advantages of enrolling and the requirements and expectations of CTE programs of study. As principals and administrators are expected to effectively use data to raise the quality of instruction and CTE program offerings, leadership training and ongoing professional development will be needed for success.

Resources Needed: On-going partnerships with professional organizations, education foundations and colleges (affiliates) to deliver intensive and on-going professional development to strengthen instruction and assessment in Maryland CTE programs of study. Common instructional resources for Maryland CTE programs of study are also needed. This would include using the same syllabus, assigning comparable work and giving the same examinations that are equivalent to courses taught at the postsecondary level or the content assessed through the award of industry-recognized credentials. Also needed are dedicated funds supporting a CTE leadership academy.

6. Expand statewide program articulation for Maryland CTE programs of study to include opportunities for apprenticeships as well as early college options such as transcribed credit and increase student access and use of articulated credit.

Outcomes: By 2010 establish baseline and targets to increase the number of statewide articulation agreements for Maryland CTE programs of study. By 2010 establish baseline and targets to increase the number of students applying for and receiving articulated credit.

Rationale: Early access to postsecondary education and training has the potential to result in substantial benefits for high school students and their families, particularly for those who may not have initially considered college. New research provides early evidence that dual enrollment programs can help students complete college faster and improve their performance (Hoffman, Vargas and Santos, 2008, p. 7) especially when the course standards are available to high school CTE programs. There is a need for improved systems allowing high school students who complete college-level courses to apply that credit to their postsecondary programs of study. Furthermore, since articulated credit often expires before students can apply it, the timeframes in which to use the credit must be more flexible.

Resources Needed: Policies are needed for better alignment and transition of students from CTE to postsecondary education as well as a longitudinal data system to track progress. Also needed is a feedback system on student performance from postsecondary to high schools to better prepare future students, especially those who are following a sequential CTE program of study. The feedback should include information on the extent to which articulated credit is applied for and awarded. Provide funds for early college access and ensure students are prepared for postsecondary work through the use of standard college placement tests to allow for remediation while still in high school.

7. Increase the number of CTE graduates who take and pass industry-recognized credentials.

Outcome: By 2010 establish baseline and targets to increase the number of CTE graduates who earn industry-recognized credentials

Rationale: "CTE leaders are responsible for contributing to the education and preparation of high school students who are academically and technically competent. The measures used to assess student learning through CTE studies must reflect rigorous and relevant content coverage and the psychometric quality necessary for making appropriate judgments about achievement. Policy-makers and educators who are less familiar with the nature of industry-based examinations need assurance that the foundations of science, mathematics, reading comprehension, logic and critical reasoning are embedded in technical examinations. The application of these skills and knowledge to work settings provides significant proof that what is learned in CTE studies has direct and productive relevance to solving real-world problems." (SREB, 2009).

Resources Needed: There is a need to provide funding to establish regional testing centers to facilitate student access to technical assessments leading to industry certification or licensure. Also needed is a public/private fund to pay the testing fee for CTE students who are near the completion of their program to earn industry-recognized credentials aligned with their CTE program of study. A partnership with industry and government leaders is needed to facilitate a process that yields the results of the technical skill assessments. The data from the assessments will then be used for improved instruction and learning.

Theme: Increase access to CTE programs so that all of Maryland's students have opportunities for career preparation and are provided support for successful transition from high school to college and careers.

Recommendations:

- 8. Establish an ongoing marketing campaign to increase public understanding of the Maryland system of CTE, including the full range of value-added opportunities provided for CTE graduates upon completion of a program of study.**

Outcome: Annually increase CTE student enrollment and completion in Maryland CTE Programs of Study.

Rationale: Although career and technical education (CTE) has been a part of the public school system since the Smith-Hughes Act of 1917, its focus has changed from one of specific procedural skill development to one that demands the acquisition of academic *and* technical knowledge and skills that can be effectively applied in new and unpredictable situations. Typically, students not considered "college-bound," were "tracked" to these vocational education programs. Despite a change in workplace expectations and requirements, many still perceive CTE as a program of study for those not interested in, or capable of, college level work. CTE, rather than being a barrier to college participation, can now facilitate student success in transitioning to higher education, yet many parents, students, administrators, and policy makers still view CTE as it was in 1917.

Resources Needed: Resources are needed to develop and implement a public awareness campaign designed to inform, students, parents, legislators, educators, and business people of the value CTE has to offer.

- 9. Fully implement Maryland's Career Development standards using resources available from MSDE.**

Outcome: Every Maryland student has a career plan aligned to the standards that is reviewed on an annual basis.

Rationale: Maryland's Career Development Framework was created in 2007 and has five standards: Self-awareness, career awareness, career exploration, career preparation, and job seeking and advancement. Part of this model ensures every student completes a four-year high school plan that is updated annually and is informed by the student's interest in college and careers. Implementing this model with the *Skills for Success* – learning, thinking, communication, technology and interpersonal skills, will ensure Maryland's students make sound educational and career choices.

The career development framework should also include opportunities for students to experience online field trips, career advisories, job-shadowing, work-based learning, mock and actual interviews, and resume writing. Partnering with business and community leaders and postsecondary institutions to expand career exploration opportunities and resources aimed at elementary and middle school students as they learn about careers and CTE programs of study will add to the value and relevance of these experiences. Lastly implementing statewide summer centers focused on CTE related programs will provide students with the opportunity to experience hands-on learning in a variety of high-skill, high-wage career options.

Resources Needed: Resources are required to provide professional development to local schools systems to implement the career development model. Resources need to be provided to the local school system to hire staff to implement and deliver the career development program. Resources to create and implement the CTE summer centers are also needed for full implementation.

- 10. Provide academic, technical and career development support services to CTE students, including those with special needs, to ensure successful completion of a CTE program and transition to college and careers.**

Outcomes: By 2012, the percent of special needs students who successfully complete a CTE program will meet or exceed the rate of all students.

Rationale: All students need to benefit from CTE. This includes students with a disability, English language learners (ELL) and those economically disadvantaged. These students may need instructional support to master technical content and prepare for industry certifications.

Resources Needed: Support collaboration among CTE, Special Education, ELL and other support staff to develop resource materials that differentiate instruction. Expand extended day/extended year CTE classes for students who need additional supports to be successful in CTE programs.

- 11. Strengthen the alignment of data collection and reporting to federal and state systems to increase accuracy of information concerning Maryland graduates as they transition to college and the workforce.**

Outcome: By 2012, complete the integration of Maryland's longitudinal data system (K-12, Higher Education, Teachers, Workforce).

Rationale: Complete and accurate data are needed to manage the effective implementation of the aforementioned recommendations. Absent a P-20 longitudinal data system and data exchange with the Department of Labor Licensing and Regulation and other research institutions regarding graduate participation in higher education, apprenticeship and employment, it will be difficult to attain the goals of the Task Force.

Resources Needed: Dedicated and sustained funding needs to be directed toward aligned information management systems and the support for data exchange.

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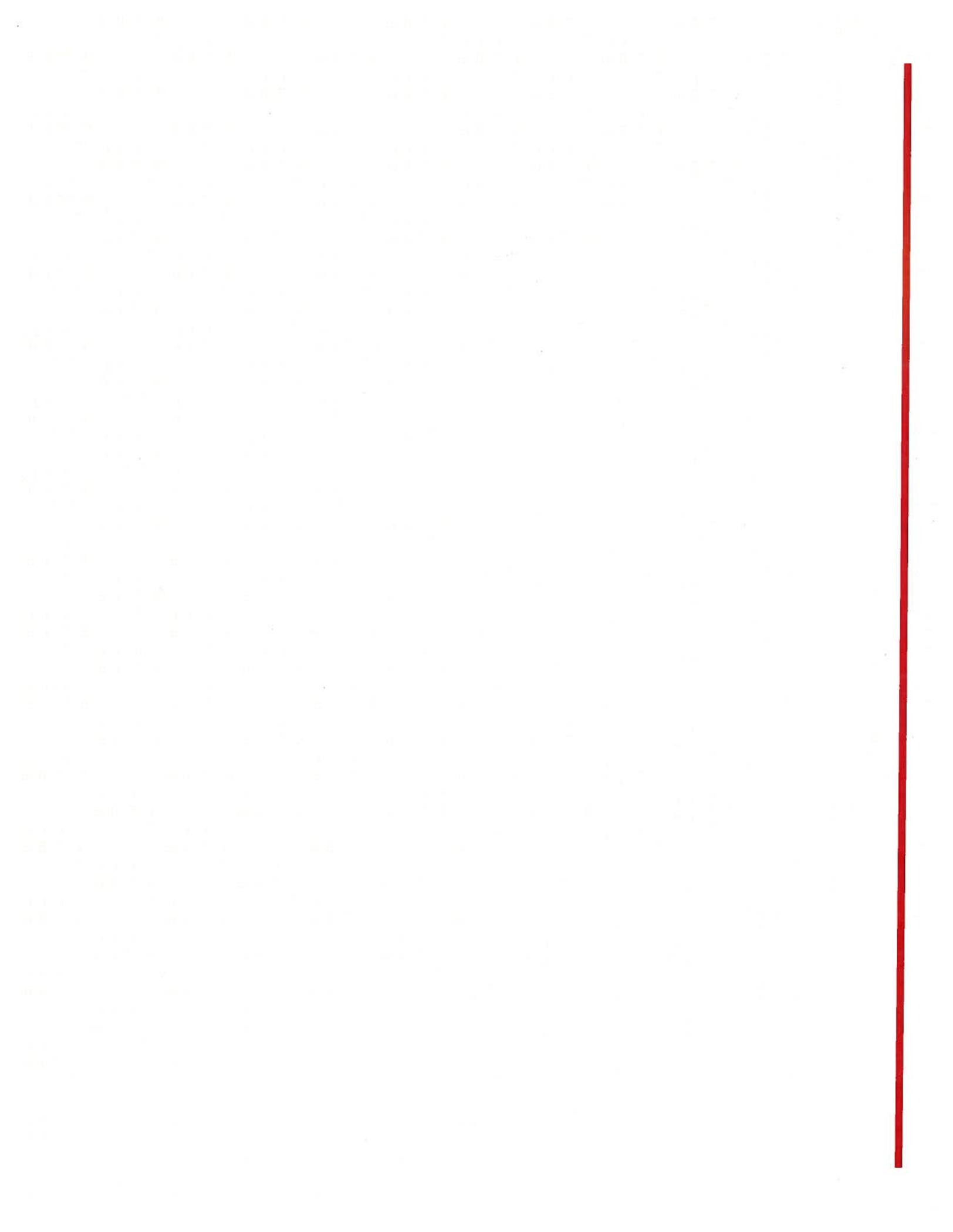
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MARYLAND CAREER AND TECHNOLOGY EDUCATION



EDUCATING TOMORROW'S WORKFORCE TODAY



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Task Force

Maryland State Department of Education
200 West Baltimore Street
Baltimore, Maryland 21201-2595
Phone: 410.767.0158
Fax: 410.333.2099
TTY: 410.333.6442
Toll free: 888.246.0015

MarylandPublicSchools.org

Martin O'Malley
Governor