Step 3: Use of Funds: Part A

1. During the reporting year, did your state use Perkins funds to develop valid and reliable assessments of technical skills?

Yes

MD has formed a state-wide CTE Technical Assessment Workgroup to establish the guidelines for the identification and use of technical assessments that align with MD’s State CTE POS and meet the “gold standard”. The CTE Technical Assessment Workgroup includes representatives from secondary and postsecondary education as well as industry partners, key to the development and success of CTE POS. These assessments must lead to industry-recognized credentials or provide students with college credit. MD developed a chart for use by LSSs and CCs that identify each of these assessments. (http://www.marylandpublicschools.org/MSDE/divisions/careertech/career_technology/funding_reporting/perkins_IV_secondary.htm)

The workgroup established guidelines for: the process for identifying appropriate technical assessment options for CTE program areas; ensuring access to technical assessments for CTE students based on their POS; and supporting student success in attainment of industry certification, licensure, and/or college credit. MD has also partnered with industry and assessment providers to increase access to certification exams throughout the state. Through state-wide partnerships with CompTIA, Cisco, Certiport, Autodesk, and other assessment providers, CTE programs have increased access and alignment to the industry requirements. An on-going challenge is the lack of financial support for costs associated with industry certifications. In some cases, industry certification exams may cost as much as $125.00. MSDE has statewide agreements with CompTIA, Cisco, and other assessment providers to reduce these costs in some areas (IT and Automotive), but cost remains a challenge for many students. In PY14, an increasing number of students earned industry certification (5,123). Despite increasing costs associated with access to industry certifications, this is a 3% increase in the number of students with access to industry certification (6,666, up from 6,485 in PY13).

2. During the reporting year, did your state use Perkins funds to develop or enhance data systems to collect and analyze data on secondary and postsecondary academic and employment outcomes?

Yes

MSDE collects, analyzes, and disseminates performance information on LSS and CC CTE students in partnership with the MHEC and the DLLR. The files collected by the CTE enrollment and outcome systems form the framework for much of this performance data. Currently, data collected through these files are used for the following:

Determining eligibility for federal funds at the state level;

Communicating overall CTE program performance to key stakeholders;

Reviewing local Perkins Plans for alignment of resources and opportunities for improvement;

Evaluating CTE student performance as part of the LSS’s Master Plan;

Providing LAC and PAC with performance data on which to evaluate program performance;

Identifying lowest relative performing programs to be targeted for revision; and

Establishing performance levels and targets for increasing CTE student achievement, as required in Perkins IV.

In addition to these uses of data for accountability and program evaluation, high quality data will allow local CTE staff to engage in “management by fact.” Analysis of accurate data will support evaluation, decision-making and operational improvement. Major steps have been taken to ensure the accuracy of CTE data including:
Incorporating CTE data collection elements into the State Longitudinal Data System (SLDS);
Aligning CTE programs and CIP designation to the SLDS Transcript project to ensure student progression through CTE POS;
Expanding data-sharing agreements based on the SLDS to increase data quality;
Using internal statistical controls and data validation steps to ensure accurate reporting of CTE student outcomes;
Updating file management and record-matching protocols to ensure alignment with federal NCLB measures and Perkins Core Indicators of Performance;
Generating new data collection and report functions in order to capture student access and attainment of technical skills;
Increase report generation and alignment to EDEN file submissions to meet new federal submission requirements; and
Increasing collaboration with information management and institutional researchers to ensure accurate and complete file submissions.
Technical assistance on issues of data quality or the analysis and use of performance data for program improvement is available from DCCR staff on an on-going basis. Accountability updates are provided as a part of quarterly meetings with LSS CTE Directors and at Perkins Regional Meetings with CCs.
Step 3: Use of Funds: Part B

1. During the reporting year, how did your state assess the career and technical education programs funded under Perkins IV?

MD’s tools to assess Career Technology Education (CTE) programs funded under Perkins IV include: local recipients’ Interim and Final programmatic reports; Final Financial Reports; the Local Plan for CTE Program Improvement (Local Plan) Annual Updates; the Bridge to Excellence (BTE) Master Plan (MP) Annual Updates, CTE on-site monitoring, as well as the approval process for all new CTE programs based on The Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs. (http://www.marylandpublicschools.org/MSDE/divisions/careertech/career_technology/programs/)

The Local Plan requires local recipients to analyze program performance and describe plans to improve CTE programs in order to meet/exceed targeted levels of the Perkins Core Indicators of Performance. These include increasing the number and/or percentage of students achieving rigorous levels for academic, technical and related workplace skill proficiencies. CTE students must meet the same graduation requirements as any student seeking a high school diploma in MD. This includes passing state High School Assessments (HSAs) in Algebra/Data Analysis, English II, Biology and Government. The first two assessments constitute MD’s required secondary assessments under No Child Left Behind (NCLB). Student achievement on English II and the Algebra/Data Analysis exams are used to determine success on core indicators of performance 1S1 and 1S2. The annual percentage and increase of CTE concentrators/completers who receive a high school diploma, 4S1, is also significant as the students will have to be successful in meeting the challenging academics that are part of high school graduation program requirements.

MSDE provides each local recipient with an annual Program Quality Index (PQI) Report that describes the success in meeting Perkins Core Indicators of Performance, as well as in the case of secondary participants, how well Local School Systems (LSSs) are preparing CTE completers to meet the entrance requirements of the University System of Maryland (USM). These reports are reviewed in annual Regional Meetings where local recipients identify root causes so the Local Plan can address continuous improvement.

MD’s Bridge To Excellence (BTE) legislation requires that the Master Plan (MP) annual Update “shall include goals, objectives, and strategies” for the performance of students enrolled in CTE programs. This section of the MP is reviewed and approved by the CTE Systems Branch.

During Program Year (PY) 14, four LSSs and three Community Colleges (CC) received on-site monitoring visits. The monitoring team consisted of MSDE staff, representatives from LSSs, CCs, the Department of Labor, Licensing and Regulation (DLLR), the Governor’s Workforce Investment Board (GWIB), the Department of Business and Economic Development (DBED) and The MD Higher Education Commission (MHSC). Each of the seven sites received a follow-up report detailing strengths, opportunities for improvement, and recommendations which are to be incorporated into the next planning cycle for program improvement. Prior to the monitoring visits, each local recipient completed a self-assessment which provided the monitoring framework. PY 14 marked the beginning of the second five-year monitoring cycle.

2. During the reporting year, how did your state develop, approve, or expand the use of technology in career and technical education?

MD’s 24 LSS are responsible for ensuring that teachers are competent in using and integrating technology into student learning activities as per the MD Plan for Technology in Education.
As outlined in The MD Educational Technology Plan for the New Millennium: 2007-2012, teachers and library media specialists are working to meet state-established standards for technology-related knowledge and skills. CTE staff are represented on the MD Information Technology Advisory Council which oversees the plan. Through the adoption of statewide CTE Programs of Study (POS), MSDE has developed opportunities for on-going professional development (PD) related to instructional technology. Teachers are working to successfully integrate instructional technology into classrooms through the support of face-to-face and online PD experiences. Both formal and informal opportunities exist to showcase best practices and to discuss the use of emerging technologies. Further, MSDE has incorporated recommendations made in the Investing in Instructional Technology: Accelerating Educational Reform in Maryland, June 2011 report by providing digital resources to teachers and students. Through an instructional tool known as a common course syllabus, CTE POS provide teachers with the opportunity to work across the state to develop and share instructional resources, engage in professional learning communities and focus on increased student achievement. The resources shared within a common course syllabus are often instructional tools that help educators differentiate instruction and help students apply content knowledge. Common course syllabi are developed in partnership with postsecondary program affiliates and shared electronically.

A number of steps have been taken to improve and expand the use of technology in CTE. For example, staff have incorporated the use of Blackboard (MSDE’s webinar service and learning management system) to provide technical assistance to school system administrators and teachers. Additionally, staff have worked to record digital content which are posted online for LSS access. Additional examples of technology use include: Wikis, Whiteboard, Webex, Voice Thread, online learning platforms and social media which have been integrated into CTE curriculum and teacher PD.

Local CTE administrators are also making use of these technologies as they oversee and manage all of the CTE program offerings in their LSS. One example of this is the annual submission of the CTE Local Plan. During PY 08-09 MSDE staff developed a web-based application process for local CTE administrator use. MSDE staff continues to work with Information Technology staff to make the use of the online application process more user-friendly.

Enhancements to the web-based plan are made on an annual basis, as feedback is gathered and technology advances. Local CTE administrators also use DocuShare to upload all grant applications, program proposals, amendments and the required Interim and Final Perkins reports.

3. During the reporting year, what professional development programs did your state offer, including providing comprehensive professional development (including initial teacher preparation) for career and technical education teachers, faculty, administrators, and career guidance and academic counselors at the secondary and postsecondary levels? On what topics?

MD’s CTE system of Career Clusters and state-developed POS provide MSDE with the opportunity to target comprehensive, technically focused PD aligned with industry standards. Since many of MD’s State CTE POS align with national technical standards, MSDE has partnered with statewide/national organizations and/or associations to deliver up-to-date, technically relevant PD for faculty and administrators. Some of the partnerships include: MD Restaurant Association, National Center for Construction Education and Research (NCCER), National Automotive Technicians Education Foundation (NATEF), NAF AOF, and Graphic Arts Education Research Foundation.

MD has also partnered with Stevenson University, the University of Maryland at Baltimore County and at College Park, Towson University, University of Maryland Eastern Shore, Frederick Community College and the Community College of Baltimore County to offer PD aligned to the following MSDE CTE POS: Project Lead the Way (PLTW) Biomedical Sciences and Pre-Engineering, Curriculum for Agricultural Science Education (CASE), Teacher Academy of Maryland (TAM), IT Networking (Cisco), IT Database Management, Business, Management and Finance, Homeland Security and Emergency Preparedness, and Automotive Technology. Faculty participating in the PD had the opportunity to earn graduate level credits from these institutions. Continuing PD Credit (CPD) was also offered by MSDE to teachers who participated in the PD events. The Career Research and Development (CRD) POS, formerly known as diversified education continues to be upgraded to ensure that the two, one-credit courses taught in school are focused on preparing students for the 21st Century workplace.

To ensure CTE teachers are prepared for the new principal/teacher evaluation system MSDE staff provide PD on developing Student Learning Objectives (SLOs). CTE teachers also receive PD on the Common Core State Standards, specifically on literacy in technical subjects. PD on literacy includes gauging text complexity and increasing students’ mastery of the literacy associated with their CTE Program of Study and is called disciplinary literacy. Many of MD’s CTE POS require teacher participation in the state-sponsored PD. MSDE offers LSS and CC grant opportunities for PD through the Perkins Reserve Fund to help defray costs.
An online comprehensive PD catalog was developed to assist LSS CTE administrators in planning PD for CTE teachers and staff. It is updated on a fiscal year basis.

To assist counselors and school administrators to better understand the implementation of CTE, MD sponsors an annual CTE Counselors’ Conference focused on the state’s Science, Technology, Engineering, and Mathematics (STEM) related CTE POS. Participants become familiar with the CTE programs as well as learn strategies focused on recruitment and retention of students in CTE POS.

4. During the reporting year, how did your state provide preparation for non-traditional fields in current and emerging professions, and other activities that expose students, including special populations, to high skill, high wage occupations?

MD has developed partnerships with other agencies and educational institutions to promote non-traditional occupations to students across the state. State-wide initiatives to expand STEM programs in CTE have also included a focus on non-traditional fields and emerging professions. One example of this is the technical assistance that MD provides to the National Alliance for Partnership in Equity and the CCBC for their National Science Foundation grant focused on improving the participation, completion and performance of females and other underrepresented students in STEM-related CTE programs of study.

MD has also identified several non-traditional State CTE POS, such as construction, engineering, manufacturing and health professions, for expansion as a state-wide initiative. Incentive funding is provided to support expansion of these programs.

5. During the reporting year, how did your state provide support for programs for special populations that lead to high skill, high wage and high demand occupations?

As CTE programs are updated and new programs are designed, LSS and CCs are required to identify how they will meet the needs of members of special populations and prepare them for high skill, high wage, and high demand occupations. The CTE Local Plan requires local recipients to address how members of special populations will be served on a designated strategy worksheet, B-4, and in other areas throughout the Local Plan. As part of the BTE MP Annual Update, each LSS includes a summary of actions taken to ensure access and success for every CTE POS student, including students who are members of special populations.

MD has successfully used the Support Services Team approach, which provides both direct and indirect services to special populations enrolled in CTE POS. During the transition year, MD convened Students in CTE with Disabilities Workgroup to identify strategies to ensure success for CTE students who are members of this special population. The workgroup meets annually and the outcomes focus on strengthening collaboration with guidance, special educators, transition coordinators and other individuals who work closely with members of special populations, to share best practices and create joint PD opportunities. In addition, MD has two Memoranda of Understanding (MOU) to ensure success for members of special populations. One involves coordination among other Divisions within MSDE and the other addresses collaboration among several state agencies serving students/individuals with special needs.

6. During the reporting year, how did your state offer technical assistance for eligible recipients?

Leadership and technical assistance to local recipients of CTE funds is provided by the staff of the three CTE branches within MSDE’s DCCR, which administers the system of CTE. This Division is led by an Assistant State Superintendent who reports to the State Superintendent of Schools.

The CTE Instructional, CTE Student and Assessment Services, and CTE Systems Branches deliver services to implement and assess the CTE programs within the LSS and CCs. Staff from all three branches provides direct programmatic technical assistance as members of the ten Career Cluster Teams as they lead the development of MD’s state-developed CTE POS.

The CTE Instructional Branch is responsible for providing: leadership; coordination; technical expertise; program development; and program improvement activities to local programs of CTE. This includes all 24 LSSs, 16 CCs and other agencies and groups in the occupational program areas. The instructional areas of technology education, technical preparation, curriculum development, and the integration of academic education with CTE fall within this branch.
The CTE Student and Assessment Services Branch is responsible for developing systems of assessment and accountability for CTE programs. In addition they are responsible for providing leadership, coordination, and technical assistance for the CTE student organizations, CTE equity and special populations services, work-based learning products and services, and CTE student organizational assessment and credentialing.

The CTE Systems Branch is responsible for managing all CTE grants including: the CTE Local Plan; Reserve Funds; Leadership Grants; and state general fund revenues. The branch is comprised of regional coordinators who provide technical assistance to the primary contact for the 24 LSSs and 16 CCs in MD within an assigned region of the State. Additionally the branch has responsibilities for federal and state legislation; fiscal procedures; equipment inventory control, CTE program approval, monitoring, and assistance with program implementation.

The three CTE branches meet with the 24 LSS CTE Directors at least four times a year to discuss local and State initiatives that impact CTE. These meetings are held to provide technical assistance to these individuals and their staff. In addition, other meetings are scheduled throughout the year such as regional planning meetings which take place to assist local recipients with the CTE Local Plan and technical assistance to support the implementation of CTE POS.

MD convenes joint meetings of LSS CTE Directors and CC Perkins contacts on an as needed basis to provide technical assistance and discuss items of mutual concern regarding CTE POS.

7. Serving individuals in state institutions

Part I: State Correctional Institutions

Amount of Perkins funds used for CTE programs in state correctional institutions:

141511

Number of students participating in Perkins CTE programs in state correctional institutions:

7656

Describe the CTE services and activities carried out in state correctional institutions.

In order to provide quality education and workforce skills training to inmates in PY 2014, Correctional Education (CE) offered 23 occupational programs taught by 39 instructors in nine institutions. Over the course of PY 14, due to the length of stay in the institution, student enrollment was 2,174 (adults) with 990 students earning DLLR state certificates, the highest number of graduates since 2010. In addition, 852 of those students earned national certification in their trades. In addition, 5,482 students were enrolled in the Juvenile Services Education (JSE) program.

Occupational Program

National Certificate

Number Awarded

Automotive Maintenance and Inspection

Automotive Service Excellence (ASE) Refrigerant Test

10

Construction Programs: CORE, Carpentry, Electrical Wiring, HVAC/R, Masonry, Plumbing, and Sheet Metal

National Center for Construction Education and Research (NCCER)

CORE-313

Trades- 287

Fabric Cleaning
Step 3: Use of Funds: Part B

Pro Clean College
18

HVAC/Refrigeration

EPA Universal
160

Office Technology

Microsoft Office Specialist (MOS)
58

Printing & Graphics

Printing Industries Association
6

Total:

852

Occupational Programming Focused on the following Priorities:

Fill Vacant Instructional Positions

Instructors were hired in the following content areas: Introduction to Word and Excel at MCTC and Patuxent, Pre-Apprenticeship Masonry at MCTC, Pre-Apprenticeship Plumbing at OCTC and Print Communications at WCI.

Increasing the number of National Certifications offered:

In the spring of 2013, the Graphic Arts Education Research Foundation (GAERF) awarded the Graphics and Design program at MCI-J Print Ed certification. This is the second Correctional Education (CE) program to be so certified. Maryland has the third largest number of PrintEd certifications in the country. Internet security issues, for the moment, have delayed plans to expand Internet testing for Microsoft Office Specialist certification, and to begin Adobe Creative Suite and CADD national certification testing.

Training and Certifying Staff to Issue National Certifications

New instructors in Pre-Apprenticeship Masonry and Plumbing completed two week training program and became certified NCCER instructors. In addition, the Graphic Arts and Design instructor at ECI-W is completing work in preparation for PrintEd certification.

Expanding the Joint Skills Training Partnership (JSTP)

Correctional Education has expanded the JSTP program which was started three years ago. Its focus is to document the skills that inmates learn while working in prison jobs, mainly food service and maintenance. CE works with supervisors in these areas to develop competency sheets that reflect the skills inmates can learn. There are no classes or textbooks; JSTP is strictly an “OJT” initiative. This year, CE expanded “outside the fence” to include inmates who work on DPSCS public sector community projects. For example, inmates worked on replacing broken curbs and installing curb wheelchair access areas in Westminster, Maryland. Other inmates worked on the restoration of a 19th century “skipjack” boat on the Eastern Shore. Additional public sector projects are planned for 2014-2015. In June 2014, there were 175 students in 28 JSTP programs.
Juvenile Services Education (JSE) was able to expand and improve on Career Technical Education programs and certifications. The following are accomplishments of PY 14:

- Contracted with C-Tech for training and materials related to providing instruction in copper wiring and cabling. Training for instructors was provided in October 2013. The telecommunications program was implemented at five facilities in January 2014.
- Contracted with WorWic Community College to provide ServSafe instruction at two new facilities during the 2013-2014 school-year. This addition allows JSE to offer the Serve-Safe certification at all 14 facilities.
- Core/Construction instructors received training and became OSHA 10 certified.
- All classes offered at the Juvenile Service Institutions are being aligned with the Maryland State Standards. The Maryland Career Research and Development has been adopted and replaced the “Life Skills Class”.

**Part II: State Institutions Serving Individuals with Disabilities**

**Amount of Perkins funds used for CTE programs in state institutions serving individuals with disabilities:**
0

**Number of students participating of Perkins CTE programs in institutions serving individuals with disabilities:**
0

**Describe the CTE services and activities carried out in institutions serving individuals with disabilities.**
N/A.

8. **During the reporting year, did your state use Perkins funds to support public charter schools operating career and technical education programs?**

Yes

No change from the information submitted in PY13, which stated that working with CTE leaders in Baltimore City Public Schools, three construction-related CTE POS were approved for the 2009-2010 school year at the Reach! Partnership School. In addition, Baltimore City Public Schools support several charters and "Innovation Schools" which offer CTE POS in Engineering and Biotechnology. MATHS High School is a public charter which offers a CTE program in Biotechnology. Two Friendship Academy innovation schools offer CTE programs in Pre-Engineering. These programs continue to provide students with upgraded instruction.

9. **During the reporting year, did your state use Perkins funds to support family and consumer sciences programs?**

Yes

As a part of the instructional program for Family and Consumer Sciences (FACS), FACS supervisors are redesigning elective courses to align with the state CTE POS. MSDE also convene tri-annual supervisors' meetings to provide ongoing technical assistance to LSSs, identify potential partnerships and discuss curriculum initiatives in the area of financial literacy and nutrition education. MSDE began development of a statewide course in Personal Resource Management using instructional materials developed by Take Charge America (TCA) from the University of Arizona. Since then, a number of resources have been developed and disseminated to students; for example, MSDE worked with TCA to develop a video series. Accompanying each video is a lesson as well as additional instructional resources. MSDE received another $75,000 grant from the MHEC supporting its financial literacy initiatives, including PD for teachers. Funds were targeted for scholarships for teachers to participate in the PY 14 PD. In an annual report developed for the State Board, all LSSs are continuing the implementation of personal financial literacy for all students in the elementary, middle, and high school learning years. As part of the RTTT grant, MSDE is developing an online course in financial literacy.
10. During the reporting year, did your state use Perkins funds to award incentive grants to eligible recipients for exemplary performance or for use for innovative initiatives under Sec. 135(c)(19) of Perkins IV?

No

11. During the reporting year, did your state use Perkins funds to provide career and technical education programs for adults and school dropouts to complete their secondary school education?

No

In Adult Correctional Facilities.

13P. During the reporting year, did your state use Perkins funds to provide assistance to individuals who have participated in Perkins assisted services and activities in continuing their education or training or finding appropriate jobs?

Yes

All CTE programs of study offer guidance and support for successful transition to college and careers. In PY14, additional emphasis was placed on the expansion of pre-apprenticeship programs in partnership with the DLLR. As part of statewide Maryland Apprenticeship and Training Council meetings, MSDE staff invited industry sponsors to increase engagement with CTE students through a range of work-based learning opportunities and through CTSO participation and support.
Step 3: Use of Funds: Part C

During the reporting year, how did your state provide support for career and technical education programs that improve the academic and career and technical skills of students through the integration of academics with career and technical education?

Integrating Academic and Career and Technology Education

MD supports the integration of academic and CTE through a variety of initiatives. State sponsored PD, geared specifically to the state CTE POS, serves as a catalyst for LSS to adopt the state CTE POS where academic and technical education is fully integrated into the high school program. MD’s Career Clusters, adopted or integrated into all 24 LSS, provide a functional framework for the integration of academic and technical studies. MD also supports schools redesigning around career-focused smaller learning communities that result in upgrading CTE programs around broad career clusters and pathways. The smaller learning community model creates a system where all students are challenged to higher academic achievement through a sequence of courses and instructional practices that require students to demonstrate mastery of both academic and technical content. MD supported this initiative in the following ways:

State staff worked with LSS and individual high schools to align courses and CTE POS around career clusters and pathways. The development of career pathways includes sequencing academic and technical courses at the secondary and postsecondary levels to ensure student success after high school.

MSDE uses Perkins Reserve Fund Grants (RFG) to incentivize the adoption and implementation of the State CTE POS and to strengthen specific components of a LSS’s or CC’s CTE system. The RFG provides a process that enables teachers to receive PD on both academic and technical content.

Improving the Academic and Technical Skills of Students Participating in Career and Technology Education Programs

MD currently has in place a number of initiatives that are designed to raise academic expectations. These initiatives include the MD School Assessment Program which is helping to ensure that more students enter high school ready for 9th grade level work. The HSA Program, which became a graduation requirement for the Class of 2009, established higher academic expectations and provided a series of supports including a Bridge Plan for Academic Success resulting in increased academic success for CTE students. The statewide assessment system promotes rigorous higher-level skills, which are demanded in the workplace and higher education. In addition, MD is a leader in promoting access and achievement in Advanced Placement (AP). MD’s State CTE POS show students how they can include CTE and AP courses into their high school plan. Additionally, all State CTE POS proposals include a matrix that is designed to include the academic courses most aligned to the CTE program. Another initiative that is currently underway is the implementation of the College and Career Readiness and College Completion Act of 2013, which emphasizes increased academics and dual enrollment opportunities for all students. CTE programs are aligned with these initiatives and support students taking challenging academic and technical coursework. As part of its emphasis on career and college readiness, MD has Skills for Success, standards-based workplace knowledge and skills, which are integrated into both academic and technical instructional programs across the state.

MD has identified technical assessments by career cluster and program. Students can receive national or state certifications or licenses and/or early college credit when they pass these industry recognized technical assessments and state licensures. The Program Certification Chart is updated annually to ensure the most current technical assessments, certifications, licenses, and/or early college credit opportunities are listed.

Ensuring That Participants in Career and Technology Education Programs are Taught Challenging Academic Proficiencies
MD is one of 45 states that adopted the Common Core standards and is one of 22 member states in the Partnership for Assessment of Readiness for College and Careers (PARCC). The goal of PARCC is to create an assessment system and supporting tools that will help states dramatically increase the number of students who graduate high school ready for college and careers and provide students, parents, teachers and policymakers with the tools they need to help students, from grade three through high school, stay on track to graduate prepared. With increased alignment to the common core standards, graduation requirements include the passing of HSAs and participation in the PARCC.

MD received a Rigorous Program of Study (RPOS) grant for the Transportation, Distribution, and Logistics Cluster. One of the goals of the grant is to create a curriculum aligned with NATEF industry standards and the Common Core Academic Standards. The grant allowed MSDE to hire a reading specialist to work directly with automotive instructors to increase students’ ability to read informational text, a key Common Core standard. MD also has four CTE projects in its Race To The Top grant. In one project, MD is developing a program of study in Construction Design and Management. Six school systems are piloting the course materials and assisting in the development of the curriculum. Another project includes statewide adoption and implementation of a STEM curriculum based on the International Technology and Engineering Educators Association standards and instructional materials. The third project is targeted to 10 low-performing middle schools on implementing PLTW’s Gateway To Technology program. The fourth project is to develop online courses aligned to STEM and/or fit within a CTE program of study, such as: Computer Science, Cyber Security, Forensic Science, Foundations of Technology and Personal Financial Literacy.

MD also continues to promote and invest in challenging CTE POS that include rigorous academic study, such as PLTW’s Pre-Engineering and Biomedical Sciences programs, Cisco Networking Academy, Oracle Database Academy, Computer Science, Teacher Academy of Maryland and Curriculum for Agriculture Science Education (CASE).

2. During the reporting year, how did your state support partnerships among local educational agencies, institutions of higher education, adult education providers, and, as appropriate, other entities, such as employers, labor organizations, intermediaries, parents, and local partnerships, to enable students to achieve state academic standards, and career and technical skills.

Involving Parents, Teachers, Local Businesses and Labor Organizations in Career and Technology Education Programs:

MD statute requires every LSS to establish a Local Advisory Committee (LAC) to advise the board of education and each postsecondary institution in the jurisdiction that receives federal support for CTE on the adequacy of the program, the distribution of funds, and program accountability. In addition to educators and administrators, each LAC must include representatives of business, industry, and organized labor. MD CTE Policies and Procedures require each state or locally developed CTE POS to have a Program Advisory Committee (PAC).

Thus, MD’s history of education reform is based on a collaborative model inclusive of many stakeholder groups. Groups such as the High School Assessment Task Force, MD Business Round Table (MBRT), GWIB, and the LACs all involve parents, teachers, business and industry. Most notably, MD has continued to use these as well as specific industry stakeholder groups in developing CTE POS related to MD’s 10 Career Clusters.

In PY 08 – 09, the Assistant State Superintendent for CTE co-chaired a CTE Task Force appointed by MD’s Governor that was broadly representative of parents, teachers, businesses and labor organizations. The Task Force made 11 recommendations on ways to expand CTE while ensuring MD CTE POS supported the needs of the State’s economy and included sufficient rigor and relevance to allow CTE students to graduate from high school prepared for both college and careers. MD remains focused on the 11 recommendations and continues to make progress.

In PY 14, continued progress was made on implementation of the CTE Task Force recommendations. The CTE marketing campaign expanded to include a new CTE website (www.mdtепrograms.org) and expanded partnership among the Division of Career and College Readiness (DCCR), the Division of Library Development and Services, Public Libraries and LSS CTE Offices. Each program year, LSS CTE POS are featured at the public libraries. To date, 27 presentations in five school systems have been made. The most recent CTE marketing campaign focused on recruiting students into non-traditional careers by featuring role models working in various career areas non-traditional for their gender. Lastly, all 24 school systems are implementing the career development standards by offering a program of instruction in career development.

Career and Technology Education and State and Regional Occupational Opportunities
MD’s workforce development agencies collaborate on numerous economic priorities. These agencies include: MHEC, GWIB, DLLR, DBED as well as local entities such as LSSs, CCs and representatives of private and public baccalaureate institutions, business and labor. This collaboration has led to the development of cluster templates for MD’s growing industries. The mapping of ten career clusters has led to the development of new CTE POS that prepare students to enter the workplace in high growth and high wage areas. Recent examples of CTE program development in response to new occupational opportunities is the incorporation of cyber security in the Information Technology (IT) Career Cluster and the development of a new Computer Science CTE program of study. In partnership with CyberWatch, Cisco, and Microsoft, new CTE courses and program options are available throughout the state. In PY14, more than 1,000 CTE students participated in cyber security courses and competitive events. Six schools implemented the new Computer Science program in PY14.

Methods for Joint Planning and Coordination of Perkins IV Programs with Other Federal Education Programs

MD CTE faculty and staff serve on the committees of the GWIB, MD’s workforce development entity, to develop and continually improve MD’s workforce preparation system. The State Superintendent of Schools is a member of the Board and its Executive Committee. The Assistant State Superintendent for the DCCR serves on GWIB’s Interagency Workforce Committee. The local superintendent of schools and the occupational dean of the community college serve on the Local Workforce Investment Boards (LWIB). LSS CTE directors are also significantly engaged in the work of the LWIBs, with many having representation on the LAC.

GWIB’s Center for Industry Initiatives was established as a cluster-based approach to workforce development. GWIB has shifted to a demand-driven workforce development system. CTE faculty and staff are a part of each targeted industry for the state.

The Governor’s P-20 Leadership Council of MD includes the Assistant State Superintendent for DCCR as a member. The Council seeks to improve interagency and intersegmental coordination to improve learner outcomes in preparing students for full participation in the MD economy. The Governor’s P-20 Leadership Council includes the Secretaries of DLLR and DBED to promote an aligned educational system with workforce and economic development. The expansion of CTE programs, increasing alignment to the economic development needs in Maryland, and expanding opportunities for work-based learning were included in the Council’s priorities for PY14.

3. During the reporting year, did your state use Perkins funds to improve career guidance and academic counseling programs?

Yes

Maryland’s Career Development Model

MD’s Career Development Framework (MCDF) standards and indicators, adopted into the Code of MD Regulations (COMAR 13A.10.04) in June 2008, require that by September 2009 and each five years after, local superintendents of each LSS must certify that the instructional programming in grades kindergarten-12 meets the requirements set forth in the regulation. This comprehensive instructional program shall provide for diversity of student needs, abilities, and interests at the early, middle, and high school learning years and shall include the career development content standards. In addition, the COMAR requires that prior to grade 9 all students must develop an academic and career plan that is updated in subsequent years.

The framework is a companion document to the MD Career Clusters and MD CTE POS booklet. The purpose of this standards-based framework is to enable students to make informed decisions when choosing a CTE POS and developing an appropriate program sequence. Decision-making is a cross-cutting skill that is included in each of the standards. The sequenced POS becomes part of a secondary-postsecondary academic and career plan in reference to the COMAR for Pupil Services.

MD’s Career Development Framework was designed in 2003, by a large stakeholder group called the State Career Development Council. The Council is made up of representatives from several organizations including CCs, LSS, MHEC, USM, GWIB, DLLR, DBED and leadership from CTE, and Student, Family and School Support Divisions from MSDE. The framework is based on the National Career Development Association (NCDA) Career Development Guidelines. The six NCDA standards define the process for implementing an instructional program in career development for all students. Decision-making skills are incorporated as indicator statements for each standard. Additional content is derived from the revised MD’s Skills for Success, and the American School Counseling Association (ASCA) National Standards for School Counseling Programs.
Supporting the MCDF are companion resources to assist with implementation. A MD Career Counseling and Advisory Resource Guidebook was developed for LSSs to support systemic implementation of career advisory programs.

The MCDF serves as the instructional foundation for the Career Research and Development (CRD) CTE POS. The purpose of the CRD program is to prepare students with the academic, technical and workplace skills necessary to seek further education and employment in a career field of their interest upon graduating high school. The overall goals of CRD are to help students: become aware of personal characteristics, interests, aptitudes and skills; develop an awareness of and respect for the diversity of the world of work; understand the relationship between school performance and future employment choices; develop a positive attitude toward work; and formulate a process for evaluating skill development.

In the PY14, Stevenson University became the postsecondary affiliate for the CRD program. Faculty from Stevenson have partnered with MSDE staff to identify master teachers to begin the work of developing model lesson plans that will be shared with CRD teachers throughout the state. “Understanding by Design” was the model used to develop the lessons which aligned to the College and Career Readiness Standards (Maryland’s name for the Common Core Standards). They also included strategies to assist teachers in implementing disciplinary literacy and Universal Design for Learning. The lessons along with training on Dependable Strengths served as the basis for the summer professional development.

The MSDE DCCR staff continue to participate in Pupil Services Monitoring Visits. These visits provide opportunities to see and provide feedback on LSS implementation of career development and to determine how best to provide PD for and work with school counselors on the value-added components that CTE has to offer students and parents. The process occurs every five years for each LSS. Since 2009, DCCR staff has participated in eighteen visits.

In PY 13, Maryland’s General Assembly passed the College and Career Readiness and College Completion Act of 2013. Part of the legislation requires the State Board of Education to partner with institutions of higher education in order to develop a plan that will improve college and career counseling that is provided to students in middle and high schools. CTE staff partnered with staff from MSDE’s Division of Student, Family and School Support to organize a statewide design team to author a legislative report titled, “College and Career Counseling in Maryland.”

4. During the reporting year, did your state use Perkins funds to establish agreements, including articulation agreements, between secondary school and postsecondary career and technical education programs to provide postsecondary education and training opportunities for students?

Yes

A number of processes are in place for students to gain advanced standing at the postsecondary level. In MD, Cluster Team members collaborate with secondary and postsecondary educators to develop statewide articulation agreements. Examples include the TAM and the Pre-engineering program through Project Lead The Way. The Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs define the requirement for the development and implementation of articulated CTE POS. In addition, many LSSs provide opportunities for students to dually enroll in postsecondary education while in high school.

MD articulation agreements describe the State CTE POS and delineate the responsibilities of students, LSS, MSDE and the postsecondary partner in order for the student to earn the articulated or transcripted credit. Apprenticeship opportunities also exist for programs in the Construction and Development Career Cluster. Apprenticeship is a value added option for students in the Construction Trades and the Construction Maintenance State CTE POS.

5. During the reporting year, did your state use Perkins funds to support initiatives to facilitate the transition of sub baccalaureate career and technical education students into baccalaureate programs?

Yes

As previously noted, an important feature of MD’s State CTE POS is the establishment of statewide articulation agreements with its two- and four-year postsecondary institutions. MSDE continues to work with statewide industry and postsecondary advisory groups to update and expand CTE programs to reflect emerging occupations and opportunities in Maryland’s economy. A recent example of this is the development and growth of Computer Science and Cyber Security program.
Prior to PY14 nine statewide Articulation Agreements had been signed. Currently, there are 14 statewide articulation agreements. Some of the previous agreements include national programs such as Lodging Management, which are recognized by industry and have both secondary and postsecondary components. In some instances a CTE POS may have a statewide articulation agreement with more than one postsecondary institution, which provides CTE completers with additional options when selecting a college or university.

6. During the reporting year, did your state use Perkins funds to support career and technical student organizations?

Yes

Career Technology Student Organizations (CTSOs) help students acquire the employability and leadership skills that will enable them to succeed in the workplace. Through participation in MD sponsored CTSOs (Future Business Leaders of America, DECA, FFA, and SkillsUSA), students develop learning, thinking, interpersonal, technology, and communication skills, also known as MD’s Skills for Success. Through participation in leadership and technical competitive events, students apply their leadership, academic, and employability skills to solve real-world problems.

In PY 14, more than 11,000 secondary CTE students participated in one of the four MD CTSOs. MSDE partners with the MD CTSO Boards and the National CTSO Chapters to provide leadership and technical assistance to CTSOs. MSDE provides state-level staff and administrative support to each of the four organizations as well as directs and hosts an annual CTSO Officer and Advisor Training. In PY 14, 34 CTE Student Officers and 110 CTE teachers and administrators were trained. MD’s Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs require local recipients to include an appropriate CTSO as a part of CTE POS development and implementation.

7. During the reporting year, did your state use Perkins funds to support career and technical education programs that offer experience in, and understanding of, all aspects of an industry for which students are preparing to enter?

Yes

MD CTE POS are designed around ten broad career clusters, based on all aspects of an industry, designed to help students make informed decisions regarding career pathways. Broad career clusters share a common core of knowledge and skills that provide students with an understanding of all aspects of the industry that they are planning to enter. For each cluster, the common core includes planning, management, finances, technical and production skills, underlying principles of technology, labor issues, and health and safety. Each State-developed CTE POS includes a foundation course and capstone experience to teach and reinforce the knowledge and skills supportive of understanding all aspects of the industry. Learning and instruction are supported further by appropriate career development activities aligned with the MCDF to help inform students’ decisions and prepare them for lifelong learning.

8. During the reporting year, did your state use Perkins funds to support partnerships between education and business, or business intermediaries, including cooperative education and adjunct faculty arrangements at the secondary and postsecondary levels?

Yes

MSDE is an integral member of the GWIB which functions to ensure a state workforce system that assures coordination and collaboration among partner workforce agencies. GWIB is a business-led group of 45 members, a majority of whom represent the private business community. Other members include cabinet secretaries, college presidents, the State Superintendent of Schools, elected officials, labor, and representatives of nonprofit organizations.

The GWIB has identified industry sectors where there is a need to attract and retain a future workforce in areas of high skill, high demand, high wage, and critical shortage areas. State CTE staff work closely with the GWIB on workforce development issues by serving as participants on these industry sector workgroups. Summits and symposia have been held with state and national experts addressing the identified issues. A monograph produced after each summit/symposium documents not only the issues but action plans as well. Working with GWIB keeps CTE state staff on the leading edge of MD’s workforce and economic development initiatives and helps to reinforce and coordinate development, implementation, and updates to CTE statewide POS.
The MD Workforce Development Corporation, established by the MD General Assembly during the 2010 General Session, is a quasi-government entity holding the IRS designation as a non-profit, and as such garners resources through grants and other means. The State Superintendent serves as a member of the Board of Directors but has designated the Assistant State Superintendent, DCCR to serve in her stead. Additional Board members include leaders of other workforce development agencies, business and industry representatives, higher education, labor unions, and related partners. This corporation seeks funding to provide solutions to MD's workforce development needs and emerging opportunities such as green construction.

MD partnered with key stakeholders to develop CTE POS at the state level. Each of MD’s ten Career Clusters has a statewide PAC. These individuals cover all aspects of the industry. At the local level a specific PAC, consisting of the same stakeholders identified above, provides the required input for planning, developing, implementing and evaluating CTE programs.

A CTE Program Review Panel, consisting of economic and workforce representatives, higher education, local recipients, parents, labor and industry, reviews each locally developed secondary CTE POS that is submitted for state approval. This provides stakeholder input on program development, implementation and evaluation to ensure that CTE programs are relevant to economic and workforce needs in MD and provide “value added” opportunities for MD students.

The process for the development and approval of postsecondary CTE POS has the required Advisory Committee and must also follow the approval process of MHEC, MD’s governing body for postsecondary programs. Once MHEC approves the technical program it is submitted to MSDE for inclusion on the CC’s list of CTE programs eligible for the use of Perkins funds.

9. During the reporting year, did your state use Perkins funds to support the improvement or development of new career and technical education courses and initiatives, including career clusters, career academies, and distance education?

Yes

Career Cluster Frameworks

MD’s Career Cluster system is described in a document first published in 2003, which includes an overview and guide to the State’s 10 Career Clusters. This publication is updated annually and available on-line. The Career Clusters were developed and validated in facilitated, employer focus group sessions and represent key economic sectors of MD’s economy. Each career cluster is defined by the core business functions of the industry. These core functions became the career pathways for each cluster. Each career pathway also includes the full range of careers from those requiring an associate’s degree or less, a bachelor’s degree and those with more than a bachelor’s degree.

To facilitate the development of new programs and the continuous improvement of existing programs, MD has identified State CTE POS. These CTE POS not only meet the requirements for state program approval, but also include curriculum and PD resources that ensure high quality and allow for local replication. MD’s State CTE POS have been either partner developed (e.g. Pre Engineering – PLTW) or developed through a statewide collaboration process following the state policies and procedures (e.g. TAM). The following key elements are a part of all programs of study:

Standards-based curriculum aligned to industry/technical skill standards, academic standards, and Skills for Success;

Value-added options for students through industry certification, advanced standing, or college credit earned while in high school;

Work-based learning opportunities for students directly related to the CTE POS;

Oversight and quality assurance through program certification and/or industry advisory groups;

Teacher PD for initiation and continuous upgrades of the program; and

Program sustainability plans for costs associated with implementation and ongoing quality to keep pace with industry requirements.

Credentialing of Student Learning
MD State CTE POS meet additional standards for program quality including the certification or credentialing of students through industry certification and/or postsecondary credits. MD has 43 CTE POS, most of which have industry certifications students can earn while in high school. (http://www.marylandpublicschools.org/MSDE/divisions/careertech/career_technology/programs)

Additional program areas under development for State POS designation in PY 14 included:

Legal Support Services; and

Environmental Studies.

10. During the reporting year, did your state use Perkins funds to provide activities to support entrepreneurship education and training?

Yes

Entrepreneurship education is included as part of all CTE programs of study within the Business, Management, and Finance Career Cluster. In addition, several student organizations and business partners (FBLA, DECA and NFTE) provide opportunities for career exploration and competitive events in entrepreneurship.

11. During the reporting year, did your state use Perkins funds to improve the recruitment and retention of career and technical education teachers, faculty, administrators, or career guidance and academic counselors, and the transition to teaching from business and industry, including small business?

Yes

Partnering with the Division of Educator Effectiveness (formerly Certification and Accreditation), MD has adopted procedures that help with recruitment and retention of CTE teachers. In PY 12, the State Board of Education approved COMAR updating CTE teacher certification requirements. This was done to expand the pool of qualified applicants as well as to assist those coming from industry transition into the classroom. Other examples of recruitment and retention efforts include: online teacher education programs as well as the ability to access certification records via the internet. Another MSDE initiative is UTeach, which is a new way to prepare secondary science and mathematics teachers through an advanced, field-intensive curriculum. Teaching degree plans are streamlined to allow students to complete both a Bachelor of Science degree and all course work for middle and high school teacher certification in Maryland in four years. The UTeach project also involves developing a STEM certification program for secondary teachers.

MD provides PD through summer training institutes and year-long PD with representatives from business and postsecondary education to help retain teachers. MD encourages teachers from industry through alternate pathways to certification, such as Troops to Teachers. MD’s Resident Teacher Certification program offers LSSs the option of growing their own pool of teachers to support the transition to teaching from business and industry. LSSs select potential teacher candidates from among individuals with baccalaureate degrees or higher; however, the degree areas are not necessarily in education. The candidates are employed and coached while taking courses as part of the process to becoming fully certified.

MSDE, working in conjunction with LSSs, organized an open positions list for Technology Education. There continues to be a shortage of Technology Education teachers in MD and MSDE is encouraging the use of this list to assist in filling vacancies. The document is shared with potential graduates from nearby colleges and universities that have Technology Education pre-service programs. A continuing result is the ability of LSSs to fill vacant positions.

In PY14, MD worked to implement the recommendations from the Minority Teacher Recruitment Task Force established by the Maryland General Assembly in 2013. The Task Force was charged with studying and making recommendations on certain strategies to increase and improve minority teacher recruitment, preparation, development and retention in elementary and secondary education in the State. One of the recommendations was to expand the Teacher Academy of Maryland (TAM) CTE POS and to increase enrollment in FEA.

12. During the reporting year, did your state use Perkins funds to support occupational and employment information resources?

No
Step 4: Technical Skills Assessment

Provide a summary of your state’s plan and timeframe for increasing the coverage of programs entered above.

1. The program areas for which the state has technical assessments

MD continues to increase the percentage students with access to industry certifications through expanding CTE programs aligned to an industry certification and increasing the number of students attempting to earn the certification. In 2014, 75% of all CTE Concentrators who exited secondary education in 2014 were enrolled in a program with technical assessments aligned to industry certification, licensure and/or early college credit in the technical area. Although there was a decline in CTE enrollment overall, this is an increase in the percent of CTE concentrators in programs aligned to technical assessments (from 60% in 2013).

2. The estimated percentage of students who are reported in the state’s calculation of career and technical concentrators who took the assessments

MD’s percentage of students who are reported in the state’s calculation of career and technical concentrators who took the assessments has remained constant. Some 6,666 CTE Concentrators took technical assessments related to their program in an attempt to earn industry certification and/or licensure. A higher number and percentage of these students are successfully earning industry certification, with 5,123 or 76.9% passing. While the number of students enrolled in these program areas has increased, the cost of assessments/industry certifications remains a challenge for many students and LSSs. To address this challenge, MSDE has partnered with colleges and universities as well as business to sponsor students and/or schools as they establish assessment centers and/or provide vouchers for students.

3. The state’s plan and timeframe for increasing coverage of programs and students reported in the future

As detailed in number 14, section B1b, MD has a workgroup that reviews the process for identifying appropriate technical assessment options for CTE program areas; identifies strategies for ensuring access to technical assessments for CTE students based on their POS; and identifies support for student success in attainment of industry certification, licensure, and/or college credit. MD continues to make progress toward the goal for increasing coverage of programs and students while facing economic challenges which limit state and LSS-level support for the costs of industry assessments/certifications.

Enter the number of students assessed for technical skill attainment, and the total number of CTE concentrators reported for the program year. The percent of students assessed for technical skill attainment will be automatically calculated.

<table>
<thead>
<tr>
<th>Population</th>
<th>Number of Students in the Numerator</th>
<th>Number of Students in the Denominator</th>
<th>Percent of Students Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Students</td>
<td>-9</td>
<td>-9</td>
<td>100</td>
</tr>
<tr>
<td>Postsecondary Students</td>
<td>-9</td>
<td>-9</td>
<td>100</td>
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</tbody>
</table>
Step 8: Program Improvement Plans

Extension Requested?
No

Required Program Improvement Plans

Directions: Your state has failed to meet at least 90% of the state adjusted level of performance for the core indicators of performance listed in the table below. Please provide a state program improvement plan addressing the items found in the column headings of the table below.

<table>
<thead>
<tr>
<th>Core Indicator</th>
<th>Disaggregated categories of students for which there were quantifiable disparities or gaps in performance compared to all students or any other category of students</th>
<th>Action step to be implemented</th>
<th>Staff member responsible for each action step</th>
<th>Timeline for completing each action step</th>
</tr>
</thead>
<tbody>
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### Staff member
Local recipients share actions they are implementing in targeted programs not meeting the measure (especially for boys)

### Timeline
06-30-15

#### Local Program Improvement Plans
According to MD’s CTE Program Quality Index for 2013-2014, 23 out of 24 LSSs did not meet at least one indicator by the 90% threshold. In most cases, the secondary performance indicators not met at the local level were Non-Traditional Participation (6S1) and Non-Traditional Completion (6S2). Twenty (20) Local School Systems did not meet the locally agreed upon goal for 6S2, and 18 did not meet their goal for 6S1. Additionally, five (5) LSS failed to meet the goal on Placement (5S1) with performance below the state average of 75.89%.

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Career Cluster Team Leads and CTE Leadership Team

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### Disaggregated categories of Action step to be implemented

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### Staff member

Team Leads and CTE Leadership Team

### Timeline

At the postsecondary level, 14 out of 14 CCs missed 90% of at least one of the Local Agreed Upon Performance Levels (LAUPL) threshold. In most cases, the performance indicators not met at the local level were Placement (4P1) and Non-Traditional Completion (5P2). Eleven (11) Community Colleges did not meet the locally agreed upon goal for 4P1, and eight (8) did not meet their goal for 5P2. Additionally, four (4) Community Colleges did not meet the goal for 2P1 and performed below the state average of 47.3%.

MD’s Local Improvement Plan requires LSSs and CCs not meeting the 90% threshold, to respond to the following questions and submit action plans as part of the CTE Local Plan. The Improvement Plan requires responses to the following questions:

- Identify the Core Indicator(s) of Performance that did not meet the 90% threshold.

- Analyze why the indicator was not met, including any disparities or gaps in performance between any category of students and performance of all students.

- For PY 15, indicate the section/subsection in the CTE Local Plan where the improvement plan/strategy is described.

Approval of Improvement Plans was required prior to the release of Perkins funds. In PY15 MD will require an update on progress of the Improvement Plan to be included in the Interim report.