

Consolidated Annual Report, Program Year 2016 - 2017 Wyoming

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

Section 113(b)(A)(ii) says that States must develop an indicator relating to “student attainment of career and technical skill proficiencies, including student achievement on technical assessments that are aligned with industry-recognized standards, if available and appropriate.”

Secondary:

During the 2016-2017 program year, the State of Wyoming continued to partner with its assessment vendor NOCTI, utilizing its industry-based credentials and industry certifications for career and technical education programs assessment and measurement of technical skill attainment.

Besides state-developed, industry-aligned exams, industry-certified exams were also used to generate data for students in specific pathways where educators have elected to use those assessments such as Project Lead the Way, ProStart, ASE Electrical Systems and Engine Performance, and Wyoming Certified Nursing Assistant exam. CTE concentrators in other cluster and pathway/program areas without state-developed online assessments or industry-certified exams were assessed using the 21st Century Skills Assessment through NOCTI.

During this program year, Agriculture General, Ag Mechanics, Business Marketing, Manufacturing Welding, Cabinetmaking and Woodworking, and Residential/Commercial Carpentry, assessments were due for review. Subject Matter Experts from secondary, post-secondary and business/industry were pulled together to review each assessment and determine whether or not a full assessment revision was necessary. NOCTI, the CTE assessment vendor currently contracted with the WDE for assessment development and delivery for Perkins reporting, facilitated the assessment review and revision process. Assessments were thoroughly revised, submitted for college credit recommendation through the National College Credit Recommendation Service (NCCRS), and digital badges were developed to align with each.

The State also utilized Perkins funds during this program year to create a pilot project to introduce hands-on CTE performance assessments to LEAs through its assessment vendor NOCTI. The pilot project took place at Park County School District #1 during the 2016-2017 program year. Performance Testing will be available as an option for any Wyoming school district to administer starting this year (2017-2018). NOCTI Performance Assessments are one component of the NOCTI Job Ready Assessments.

Postsecondary:

The definition of indicator 1P1 reflects the percentage of CTE concentrators in the identified entry cohort who received an industry-recognized credential, certificate, or degree at any point between when they were classified into the cohort and the current reporting period (same as 2P1).

Overall, 43.3% of CTE concentrators attained a Credential, Certificate or Degree as compared to 56.7% that did not receive a credential, certificate or degree.

This represents a 9.4% increase from the prior program year. Highlights and key findings from the results for indicator 1P1 (Technical Skill Attainment) by the subgroup of special populations include: the highest proportion of special population students, with significant numbers, to meet this indicator were individuals with disabilities (51.0%).

During the 2017 legislative session, the Wyoming school accountability model was changed. The Wyoming Advisory Committee for School Accountability recommended that three options be considered for students to demonstrate post-secondary readiness. The second option is demonstrated for the purpose of school accountability when a graduate had completed (i.e., passed) a three course sequence within a Wyoming recognized career pathway and either (a) obtained a passing score on a WDE-approved CTE exam, or, (b) had earned a WDE-approved industry recognized certification. Due to this tie-in with the accountability model, the WDE CTE team worked closely with the WDE Accountability team to develop a model for evaluating and validating industry-recognized certifications.

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?

No

Secondary:

The CTE team at the WDE continued its work with the WDE software development team to fine tune the WDE in-house WyCTE data collection, analysis, and reporting process during the 2017-18 program year.

Consolidated Annual Report, Program Year 2016 - 2017 Wyoming

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?

Twenty school districts (Albany, Big Horn 1, Big Horn 3, Campbell, Carbon 1, Carbon 2, Converse 1, Fremont 14, Fremont 25, Goshen 1, Hot Springs, Natrona, Park 1, Platte 2, Sheridan 1, Sweetwater 1, Uinta 1, Uinta 4, Weston 1 and Weston 7) and three community colleges (Northern Wyoming Community College District, Northwest College, and Western Wyoming Community College) were monitored during the 2016-17 program year.

- Perkins CTE grant activities approved for funding in the 2015-2016 Perkins Grant application were completed;
- Grant expenditures were used for allowable activities, accurately charged by program, and used for identified students and/or staff;
- Equipment and non-expendable property purchased with Perkins funds were marked and inventoried;
- Personnel whose salary was funded 100% from a single federal fund submitted a bi-annual certification, and personnel whose salary was split funded maintained accurate Personnel Activity Reports;
- Academics were integrated with CTE programs through a coherent sequence of courses to ensure learning in the core academic and CTE subjects;
- Students were provided with experience and understanding of an industry;
- The employment needs of the region were considered by the Perkins advisory committee in the planning of CTE programs;
- Career guidance and academic counseling was provided for students participating in CTE programs;
- Professional development activities for teachers, counselors and administrators in best practices for CTE programs and techniques were provided.

The districts and colleges that weren't able to provide adequate documentation during the desk audit phase of monitoring were visited by CTE consultants who assessed the CTE programs on-site and provided technical assistance. They were required to follow up with corrective action plans for the monitoring items that were not in compliance.

In addition to monitoring and reporting requirements, district and college site visits were scheduled throughout the 2016-2017 program year. CTE consultants visited sub-recipients to view programs, talk with educators, administrators and grant managers about program improvement, and to provide technical assistance when needed or requested. During these visits, opportunities for program growth and innovation were explored and books and resources were provided by the WDE.

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

2017 Roadmap to STEM

Using Perkins state leadership funds, CTE section at the Wyoming Department of Education sponsored the 2017 Roadmap to STEM (Science, Technology, Engineering, (Arts) & Mathematics) conference, August 2-4, 2017 in Gillette, Wyoming. The theme for the conference was "Full STE(A)M Ahead." The conference provided activities and hands-on experiences that will assist educators to incorporate STEM principles, lessons, activities and ideas into their learning environments. Targeted attendee groups included K-16 STEM educators, counselors, administrators, after-school providers, and others interested in STEM education. Participants discovered many of the natural wonders, STEM programs and industries, and historical landmarks of Northeast Wyoming.

Keynote speakers included:

Dianna Cowern (The Physics Girl):

Dianna researched dark matter with Prof. Jocelyn Monroe as an undergraduate at MIT, and low-metallicity stars with Prof. Anna Frebel as a post-baccalaureate research fellow at the Harvard-Smithsonian Center for Astrophysics, before going to General Electric where she worked as a Software Engineer designing mobile apps. Eventually, she started exercising the nerdy side of her brain on YouTube as Physics Girl before (and while) heading over to University of California San Diego as a science outreach coordinator.

Dr. Lodge McCammon:

Dr. Lodge McCammon's YouTube videos and presentations have inspired thousands of educators, K-20, across the world to make significant changes in their practice. He has created lessons and resources that have impacted teachers at every school level, across all subject areas. During this 75-minute workshop, Dr. Lodge discussed and modeled his research-based teaching method that uses music and movement to engage learners. His kinesthetic strategies can be used by any teacher, every day to ignite the brain and enhance the STEM learning environment.

Two days of sessions included:

Share-a-thon/Vendor Fair

Walking Tour of Gillette College Nursing SIM Center

STEM Educator of the Year Award Ceremony and Reception

Total Solar Eclipse on August 21, 2017

A Day in the Museum

Encouraging Gender Diversity in STEM

Understanding Clouds

Wyoming Interactive Floor Maps

Little Bits Creation Hour

The Science of Diesel Technology

Using Apps to Collect and Use Data Real-time

Coding in the Classroom

Making It Fit: Integrated Elementary Science Activities

STEM and Arts: Artistic Inquiry in the Engineering Design Process

STEM for Primary Education

Dual Enrollment Machine Tool - Gillette College and Campbell County High School

Wyoming Science Standards Unit Design - Where Do We Begin?

Educational Flash Mobs and Curriculum Music, OH MY

Bridging Literacy with STEM

Integrating CNC and 3D Printing in the Classroom

Pi Isn't Just for Math!

Putting the CC in STEM

LEGO EV3 Programming

Innovation in Drone Technology - Global Air Media

Invite the Solar Eclipse into Your Classroom

Engaging Student and Industry through Computer Science

Robotic Innovation - Real World Application

Math? I Thought This Was Culinary Class!

Teaching in the Affective Domain

Getting Students Thinking Using the New Wyoming Science Standards

It Takes a Village: Collaborating on Behalf of Students' Academic and Career Success

Information Technology Security - Test Your Knowledge

Creative Action to the Core: Emphasizing Creativity in STEAM and Applications to the Core Curriculum

Beyond the Bells: Addressing College and Career Readiness Through STEAM

Introduction to Computer Coding with Scratch

Come Fly with Me

3-2-1 Lift-Off Using NASA's Beginning Engineering Science and Technology (BEST) Curriculum

Setting Up Your Google Classroom

Enhancing Scientific Understanding through Drawing

The Future of Electric Cars

Before the Puck Drops - Teaching STEM Skills Through the Game of Hockey (NHL)

Conference attendees had the opportunity to participate in the following tours/activities:

1) Explore Devil's Tower - Geology in STEM. This session will start with a 45 minute preliminary discussion on geology of the area, setting the context for exploring Devil's Tower with a STEM perspective. A true Wyoming STEM adventure facilitated by a Geology professor from Gillette College.

2) WyDOT - Connecting with Careers. Wyoming Department of Transportation discussed STEM employment opportunities within the department while exhibiting the latest technology in highway maintenance and construction.

3) Build A Drone Workshop. GLOBAL AIR MEDIA is an FAA licensed Unmanned Aerial Systems (UAS), or drone, mapping and cinematography company based in Baltimore, MD, USA. The company was formed by a team of dedicated and qualified professionals with years of experience in construction, engineering, and project management. Their mission is to conduct, develop, and validate UAS operations through the use of innovative technology, improved safety, and project efficiency. Their passion and attention to detail continues to separate their firm in this new and emerging industry. Educators learned about FAA guidelines and ethical use of drones in personal, professional and educational settings.

4) Buckskin Coal Mine Tour. Attendees learned the "who, what, where, and how" of coal by touring the mine and participating in hands-on activities to implement in their classroom. One of the most productive mines in the U.S., the Buckskin Mine produces more than 27 million tons of coal per year from the Anderson and Canyon Seams located within the Fort Union Formation. Since 1981, Buckskin has shipped more than 406 million tons of high-quality, low sulfur coal from the Southern Powder River Basin.

5) Durham Bison Ranch Tour. The Durham Ranch Tour let folks take an adventure through time and experience one of the world's largest and oldest working buffalo ranches. With around 3,000 bison currently on 55,000 acres, Durham Ranch has been actively engaged in the raising of bison since the mid 1960s. Learn about the animal that is a main symbol of the western U.S. as well as how Durham Ranch manages its resources holistically; maintaining a large herd of grazing animals while improving the rangelands they live in. Attendees were able to see the special working facilities for the buffalo that have been designed and developed over the last 50 years. They also discussed how the ranch incorporates history, agriculture and STEM into everyday life, and how this could be molded into any classroom at any age level.

6) Solar Energy. Solar (photovoltaic) energy systems make a wonderful platform for learning about our world. Solar energy systems provide a real-world application for mathematics and economics, concepts such as energy and power, while also demonstrating how government policy can impact society. In this half-day experience, participants were introduced to a grid-interactive solar energy system through hands-on activities utilizing Gillette College's working solar array. Participants performed solar energy calculations and compared those calculations to real-world and real-time measurements. Participants gained insight to a fast growing sector of the energy industry.

7) Integrating Aerospace Education - Flight. Under the direction of an instructor each teacher was given the opportunity to pilot their aircraft and perform basic maneuvers. This exciting program of instruction, discovery, and flight allowed teachers to share their flight experience with students to increase their aerospace interest and knowledge. The Teacher Orientation Program (TOP) Flight missions allowed teachers to experience orientation flights in Civil Air Patrol aircraft.

Attendees also toured Gillette College technical programs including nursing, welding, diesel technology, and machine tool technology.

The conference continues to be a platform for changing perspectives on CTE, and highlighting excellence in CTE and STEM Education. The purpose was to inspire and motivate educators to form partnerships and work together to deliver content in the best possible ways to Wyoming youth, and to provide practical ideas for the integration of STEM education principles in all classrooms.

CDF

Two of the WDE CTE section staff are certified as Career Development Facilitator (CDF) Instructors, and they delivered two Career Development Facilitator courses during the 2016-17 program year. The first started on November 6, 2016 and ended on January 26, 2017, with 17 participants total from school districts and colleges all over Wyoming. The second course started June 11, 2017 and ended August 13, 2017 with 14 participants. This 120-hour course was taught in a blended format, which allowed educators and counselors from all over Wyoming to access content and participate remotely. Participants earned the Career Development Facilitator certificate, and were eligible to apply for the Global Career Development Facilitator credential through the Center for Credentialing in Education.

This course provides a complete set of best practices and resources for educators, counselors, administrators, and anyone else with a role in career development at the secondary or post-secondary level for the implementation of quality career exploration, work-based learning, and other career-related programs. The course aligns with the WDE strategic plan and vision, which is to "to significantly increase the percentage of Wyoming students who are college, career or military ready by 2020." The strategic goal related to the CDF course is to increase the number of schools (K-12) in Wyoming with staff who completed the CDF course. The CTE section plans to continue offering the CDF course twice per year.

UW ECHO

The University of Wyoming is a global super-hub for a new and innovative virtual professional development platform called Project ECHO. The ECHO model supports collaborative networking among education professionals, and provides a mode of accessing expertise and support that isn't always locally available in our rural state. The WDE CTE section, UW, and multiple educational stakeholders from across Wyoming partnered during the 2016-17 program year to develop and deliver a series of ECHO sessions specifically focused on Career Development.

This program allows P-16 CTE instructors, afterschool providers, school counselors, administrators, Career Development Facilitators and others in Wyoming schools to develop knowledge and collect resources necessary for quality career development programming. The initial pilot project kicked off in January 2017. Twelve weekly sessions occurred throughout the spring semester on a variety of Career Development topics. Participants simply clicked a link or called in via phone to join the sessions, and had the opportunity to earn professional development credit toward maintaining teacher certification, as well as University of Wyoming graduate credit. The project received such positive feedback, it will be continued for the 2017-18 program year, with topics planned to include virtual tours of career academies, simulated workplace models in education, agriculture as more than just farming/ranching (e.g. vertical farming), careers in the culinary arts industries, etc.

Technology Grants

State CTE funding was provided to the Wyoming Boys School and Sheridan County School District #2.

The Wyoming Boys School used the funding to purchase the equipment and technology necessary to support and expand their computer programming and coding program, and Sheridan County School District #2 purchased Project Lead the Way (PLTW) curriculum in order to elevate the STEM and coding interest of their students.

High school students, are able to experience, investigate and document various case-based and project based learning studies, and began to explore possible careers and post-secondary options through PLTW Engineering and PLTW Biomedical Science. PLTW's four-year Engineering and Biomedical Science programs help build student interest and engagement in engineering and biomedical science. Students can take advantage of the full program or incorporate the classes as seen appropriate for their learning path. For example, students can enroll in the initial Computer Science and Software Engineering course as the third course in the PLTW Engineering program. Concepts covered include sustainability, structures, aerodynamics, digital electronics and circuit design, the environment, and more. The exposure to multiple disciplines provides the students with many experiences in the engineering field and biomedical sciences before starting their post-secondary education.

The CTE section continues to work closely with the WDE Communications team to work collaboratively on leveraging social media platforms and audio-visual technologies. For example, the WDE CTE team purchased over \$3000.00 worth of equipment to live-stream statewide CTE events.

Westedge (Social Media)

CTE stakeholders from around the state of Wyoming, both secondary and post-secondary, identified during the WyoSIMPL process (data-driven strategic planning process for CTE) that they would like to see a more focused effort on behalf of the state to "market," or effectively provide informational resources, to the general public re: What is Career and Technical Education, and Why is it Important? After soliciting feedback from multiple school districts and colleges regarding what kind of informational resources should be provided, and in what format, the WDE CTE section contracted with a marketing company called WestEdge Collective in the summer of 2017. This company's deliverables are to facilitate the launch of a focused and intentional social media campaign around CTE, including the production of a high quality locally produced video showcasing some of the highest quality CTE programs in the state.

Planning and organization of the statewide social media campaign have been underway since April, 2017, with a planned launch date of February 1st, 2018 (in recognition of CTE Month).

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?

Project-Based Learning

The WDE CTE section provided a two-day (May 2-3, 2017) workshop through contractor (Marty Sugerik). The workshop focused on Project-Based Learning (PBL), specifically Blended and Balance Learning for teachers, faculty, administrators, and career guidance and academic counselors at the secondary level to collaborate in creating an authentic project relevant to classroom instruction.

The two-day workshop focused on pedagogy, partnerships, classroom innovation and hands-on learning. Participants worked together to identify elements in a project that could be embedded throughout the school into other forms of instruction, across curriculum and assessment. The workshop provided participants a toolkit including bell-ringers/warm-ups through short and medium cycle formative assessments such as stations and labs, building a progression to support school-wide, community-wide partnerships and project-based learning in classrooms and throughout the school.

Roadmap to STEM Conference 2017: See Question 2 above.

Facilitating Career Development Course: See Question 2 above.

Grants for CTSO Professional Development

The WDE CTE Section used maintenance of effort state funds to award \$24,600.00 in professional development grants to all five of the state's career and technical student organizations (CTSO(s)). Family, Career and Community Leaders of America (FCCLA), was awarded \$2,400 to provide professional development to high school FCCLA advisors. Future Farmers of America (FFA), received \$9,600.00 to provide professional development to secondary and post-secondary agricultural educators and purchase quizlet, an online platform that allows teachers to create custom study sets. Future Business Leaders of America (FBLA) was awarded \$4,000.00 and DECA received \$4,600 for secondary business and marketing teachers, and SkillsUSA was awarded \$4,000.00 to provide professional development opportunities for CTE teachers who also serve as CTSO school advisors.

CTE Newsletter

A CTE electronic newsletter is also published on a quarterly basis to over 2,600 CTE teachers and constituents throughout the state. Grant information, spotlighting CTE programs, new opportunities for innovation in CTE, technical assistance and professional development opportunities, Perkins and state CTE legislative updates, among many other topics are covered in the newsletter.

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?

The WDE provided multiple professional development opportunities for education professionals and counselors in the areas of non-traditional professions and exposing students to high skill, high wage occupations. At the 2017 Roadmap to STEM Conference, there were two trainers in particular who focused heavily on these areas: Dianna Cowern and Dr. Lodge McCammon.

Dianna Cowern (The Physics Girl):

Dianna researched dark matter with Prof. Jocelyn Monroe as an undergraduate at MIT, and low-metallicity stars with Prof. Anna Frebel as a post-baccalaureate research fellow at the Harvard-Smithsonian Center for Astrophysics, before going to General Electric where she worked as a Software Engineer designing mobile apps. Eventually, she started exercising the nerdy side of her brain on YouTube as Physics Girl before (and while) heading over to University of California San Diego as a science outreach coordinator.

Dr. Lodge McCammon:

Dr. Lodge McCammon's YouTube videos and presentations have inspired thousands of educators, K-20, across the world to make significant changes in their practice. He has created lessons and resources that have impacted teachers at every school level, across all subject areas. During this 75-minute workshop, Dr. Lodge discussed and modeled his research-based teaching method that uses music and movement to engage learners. His kinesthetic strategies can be used by any teacher, every day to ignite the brain and enhance the STEM learning environment.

Additional resources were provided at the STEM Conference that focused on preparation for nontraditional fields in current and emerging professions, and other activities that expose students, including special populations, to high skill, high wage occupations at the “Share-A-Thon.” There were numerous vendors, Civil Air Patrol, WDE Hathaway Scholarship representatives, and industry partners with tables of information to be shared with attendees. During this block of time, attendees could share and receive information on best practices and recruitment of students into STEM programs/fields. This included emphases on special considerations for nontraditional and special populations. It was an excellent way for attendees to put items into their toolbox and take that back to their classrooms.

NAPE

The WDE state coordinator for the Methods of Administration attended the 2017 National Alliance for Partnerships in Equity (NAPE) - National Summit for Educational Equity (NSEE) in Washington, D.C. The NSEE brings together leaders in educational equity to build capacity, knowledge, and skills to transform education, enrich classrooms, and improve student success. The conference offers workshops and sessions that engage participants in learning about new research tools, and strategies for improving policies and practices to close achievement, participation, and interest gaps. Presented at the NSEE a workshop on “The Quest for Equity: Ensuring CTE Programs Provide Equal Access for all Students at the Secondary and Postsecondary Level. It was a collaborative effort between Oregon, Idaho, Washington, and Wyoming that this presentation was a success.

Program Improvement Process for Equity (PIPE)

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins) requires every state education agency (SEA) to set negotiated performance measures and annually report their progress on reaching those measures to the U.S. Department of Education, Office of Career and Technical and Adult Education (OCTAE). If at any time a state does not meet at least 90% of its negotiated performance measure with OCTAE it is then required to develop and implement an improvement plan outlining the action the state will take to improve its performance on the underperforming measure. Included in the Perkins accountability system are two measures focused on gender equity in career and technical education (CTE). These measures are to increase the participation and completion rates of underrepresented gender students in nontraditional CTE programs. In this context, nontraditional CTE programs are those programs that prepare students for occupations where less than 25% of those employed in the field are of one gender, for example, women in engineering technology and men in nursing. These accountability provisions also apply to every local education agency (LEA) in the state as the same process of setting negotiated performance measures and tracking annual performance is part of the SEA administrative responsibility under the Perkins Act.

What Is PIPE?

The NAPE Education Foundation (NAPEEF) has designed a process to translate current research on gender equity in CTE into practice and transfer this knowledge to and through state offices of education, especially those responsible for the implementation of the Perkins Act. NAPE will utilize PIPE, an institutional change model developed originally by NAPE via consultation to the Office of Vocational and Adult Education, U.S. Department of Education (USDoEd, 2002), to assist state education agencies as they provided technical assistance and professional development to local education agencies to improve their performance on the accountability measures defined in the Perkins Act. PIPE is a research-based, effective professional development program designed for school teams to increase the participation and success of female students—particularly girls and women of color—in science, technology, engineering, and mathematics (STEM), and other underrepresented students in nontraditional career preparation programs. PIPE training includes five modules:

Module 1: ORGANIZE. How to organize a pipeline team. NAPE provided all the tools necessary to coordinate project orientation, collect pilot site baseline data, and prepare the school teams for training.

Module 2: EXPLORE. How to analyze national, state, and school gendered performance and participation in STEM and nontraditional CTE by comparing performance levels among schools, student populations, and programs over time. School teams used summary statistics and basic graphs and charts to document performance gaps, based on gender, race/ethnicity, and other available disaggregated data, and to identify improvement priorities.

Module 3: DISCOVER. How to determine the most important and most direct causes of gendered performance gaps that can be addressed by improvement strategies and specific solutions. Institutional teams used multiple methods to identify and evaluate potential causes and select a few critical root causes as the focus of improvement efforts. The cornerstone resource for this and the next step is a distillation of the past 20 years of research literature on nontraditional career preparation, especially on women’s access to STEM careers.

In a two-day professional development format, such as the one proposed, NAPE's Explore Nontraditional Careers Toolkit and Kudos cards will be incorporated into the Discover Module in order to deepen understand and expand tools to address equity gaps in nontraditional career preparation programs:

Explore Nontraditional Careers.

The reasons for the under-representation of students in nontraditional career preparation programs are complex, but a primary reason is that the strategies often employed have not addressed the key cultural factors that create barriers to these students. Culture shapes our beliefs and forms our biases about people based on their age, gender, race, language, (dis)ability, class, income level, or other factors often without our realization. We communicate our biases through small, subtle, unconscious, but often powerful, messages called micromessages. The accumulation of these micromessages affects a person's self-efficacy—the belief in their ability to be successful in a program, course, college, or career.

The NAPE Culture Wheel (Micromessaging Framework), which acts as the foundation of the NAPE Explore Nontraditional Careers Toolkit, provides a model with supporting activities to assist educators in implementing intentional interventions to counteract negative messages with positive micro-affirmations. These interventions can have a positive impact on students' interests in nontraditional careers. It can also begin to shift cultural norms, which will open more career options for every student.

Module 4: SELECT. How to use the results from the DISCOVER process to align team-identified root causes with potential solutions to gendered performance gaps, including both improvement strategies and program models. Teams reviewed and evaluated the underlying logic of these solutions and the empirical evidence of their effectiveness in achieving performance results.

Module 5: ACT. How to explore practical and rigorous methods and tools for evaluating solutions before full implementation and then develop plans to implement research-based interventions for program improvement.

Work Plan

The following steps summarize the approach to the completion of this process:

1. Planning Meeting will be conducted with representatives from the seven participating community colleges and Wyoming Department of Education coordinators to create an implementation plan for the identification of campus teams and the provision of the training and technical assistance. This meeting will be conducted virtually.
2. Data Collection and Analysis will be accomplished through the development of a statewide data dashboard that includes data for all seven community college LEAs, in order to create a tool for teams to conduct a performance gap analysis for their campus. Data will be provided by the Wyoming Department of Education or the institutions on the participation and completion of students in nontraditional CTE programs disaggregated by institution, by program, by gender and by race/ethnicity and special population. NAPE will work with the designated data contacts to obtain the data in the appropriate format.
3. Program Improvement Process for Equity Training will be conducted with a cohort of seven community college site-based teams in one location:
 - i. PIPE Days One and Two was provided in Fall 2017 (November 2-3, 2017): Orientation, Explore and Discover (including Explore Nontraditional Careers toolkit) (2 days)
 - ii. Team homework - teams conduct root cause action research
 - iii. PIPE Day Three will be provided in February 6, 2018: Select & Act
 - iv. Teams will implement selected strategies during winter/spring 2018 and after
4. Postsecondary Teams: Ongoing Telephone/Email/Online meetings will be conducted with the participating community college site leads and members of the participating community colleges to support the implementation of the program improvement process. Six (6) one-hour conference calls will be provided. Online collaborative workspace, online meeting capacity, and conference call line access will be provided by NAPE to manage the teams' work on a virtual online workspace.

5. Postsecondary Teams Showcase (one-day onsite) in May 2018, where each campus team will share their results and receive additional professional development.

Objectives

The purpose of this initiative is to increase the participation and completion of underrepresented gender students in nontraditional CTE programs at each of the participating community colleges.

Technical Assistance Training (March 2017)

The CTE team facilitated one major technical assistance opportunity for the 2016-2017 program year in Casper, Wyoming from March 27-28, 2017. The training was designed for new and returning Perkins Coordinators from the seven community colleges. Each had a designated coordinator for Perkins/CTE, and staff responsible for technical skills assessments, data collection and reporting, grant administration, and program coordination were invited to attend the technical assistance training sessions. Content included: timeline for various Perkins accountability items; guidance on Perkins Annual Reports and data collection/reporting; information on Perkins assessments and data collection; nontraditional definition and relevance to Perkins funding; and special populations in CTE. A key topic for the training was developing a Pell Count formula that is accurate and consistent throughout the seven community colleges.

Summer Technical Assistance Retreat (STAR) June 6-8, 2017

The WDE STAR professional development event focused on training for LEAs participating in federally funded education programs. During the course of the three day retreat there were three 60 minute sessions on each day covering the Methods of Administration (MOA). Sessions covered the selection process, onsite reviews (interviews/document review/facilities), findings, corrective actions, and some of the most common findings found over the years. There were 32 attendees that participated in the three sessions.

Women's Corrections (Wastewater Treatment)

The CTE team awarded Perkins leadership funds during the 2016-2017 program year to the Wyoming Women's Center in support of the expansion of the institution's current Wastewater Treatment education training program for female inmates.

Cathedral Home for Children (Greenhouse)

The CTE team also awarded Perkins leadership funds during the 2016-2017 program year to the Cathedral Home for Children. Funding was used to support the purchase and care of an on-site greenhouse to facilitate learning beyond the constraints of the summer growing season and expand students academic skills in science and agriculture.

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?

State Institutions Funding - 2016-2017 Program Year

The CTE team provided support, using Perkins leadership funds, to the Wyoming Boys School, Wyoming Women's Center, Wyoming Medium Correctional Institution, and Region V BOCES/C-V Ranch, Wyoming State Penitentiary, and the Cathedral Home for Children during the 2016-17 program year. All of the facilities listed serve individuals who are determined to be at risk for a variety of reasons, including learning disabilities, economic difficulties, substance abuse, family dysfunction and mental health issues. The funding provided equipment for computer science and coding software and supplies, expansion of a Wastewater Treatment education training program, welding education and certification training, culinary trades program, expansion of an AutoCad program, the purchase and maintenance of an on site greenhouse facility, and various other supplies and equipment supporting CTE programs at the institutions. CTE provides opportunities, in some cases the only opportunities, for students and inmates in these facilities to develop the skills necessary to compete for high wage, high skill, and high demand occupations.

Methods of Administration (MOA)

The WDE state coordinator performs the duties mandated by U.S. Department of Education's Office for Civil Rights (OCR) under the program guidelines of MOA . The responsibilities include site visits to local education agencies and community colleges to ensure mandatory compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794 (Section 504). Under the provisions of MOA these areas are reviewed: 1) documentation, 2) interviews, and 2) facilities. Under document review there are areas such as administrative, site location and student eligibility criteria, recruitment, admissions, student financial assistance, career counseling programs, services for students with disabilities, work studies, employment and accessibility. Under the compliance of federal laws the MOA program has ensured the access to programs for special populations is being allowed. The program consists of a state submitting a targeting plan and a biennial report. The cycle for Wyoming is every even year.

Targeting Plan - Wyoming's targeting plan for selecting subrecipients to receive civil rights on-site reviews for the 2017-2018 and 2018-2019 school years has been approved by the U.S. Department of Education. The subrecipient universe consists of all recipients of financial assistance from the U.S. Department of Education that offer one or more CTE programs. For this purpose, a vocational program is a series or concentration of CTE courses. The universe is not limited to recipients of Perkins funds.

The Wyoming universe list consists of 48 secondary school district subrecipients and seven colleges. This number is consistent with the number of subrecipient universe during the 2016 biennial review period. As Wyoming notes, your agency is required to conduct the minimum number of reviews, that is, 2 on-site reviews each year. The targeting plan states that Wyoming will conduct on-site reviews at three secondary schools and one community college during the 2017-2019 period.

Biennial Report - OCR's leadership of the MOA program is designed primarily to enhance the quality and comprehensiveness of state agencies' on-site compliance reviews, toward the common goal of preventing, identifying, and remedying discrimination on the basis of race, color, national origin, sex, and disability in subrecipients' career and technical education (CTE) programs. In support of this goal, OCR evaluates each state MOA agency's efforts as documented in the biennial report, in accordance with the standards outlined in the Guidelines, the 1996 MOP, and the 1998 "Dear Colleague" letter. To further support quality improvement, OCR provides ongoing technical assistance and conducts the annual MOA Coordinators' training conferences to assist state agency personnel in enhancing all aspects of their civil rights compliance programs.

Established to prevent or eliminate harm to students resulting from unlawful discrimination, the MOA program operates on the principles of continuous quality improvement.

WyCTE

The Wyoming Career Technical Education (WyCTE) data collection system houses data from the secondary schools and postsecondary institutions to include special populations. The special population areas reported on include; individuals with disabilities; individuals from economically disadvantaged families, including foster children; individuals preparing for nontraditional fields; single parents, including single pregnant women; other educational barriers, displaced homemakers; individuals with other barriers to educational achievement; and individuals with limited English proficiency. In the WyCTE Collection, Special Populations data is disaggregated down to career technical course sequences, career technical certificate and degree programs. All the special population subgroups are monitored for progress and overall career technical results. Districts and colleges are provided technical assistance on how to interpret and analyze the data in a way that can inform change in practices.

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

Technical Assistance Training (March 2017)

The CTE team facilitated one major technical assistance opportunity for the 2016-2017 program year in Casper, Wyoming from March 27-28, 2017. The training was designed for new and returning Perkins Coordinators from the seven community colleges. Each had a designated coordinator for Perkins/CTE, and staff responsible for technical skills assessments, data collection and reporting, grant administration, and program coordination were invited to attend the technical assistance training sessions. Content included: timeline for various Perkins accountability items; guidance on Perkins Annual Reports and data collection/reporting; information on Perkins assessments and data collection; nontraditional definition and relevance to Perkins funding; and special populations in CTE. A key topic for the training was developing a Pell Count formula that is accurate and consistent throughout the seven community colleges.

Summer Technical Assistance Retreat (STAR) June 6-8, 2017

Over the course of the three day retreat there were three 60 minute sessions on each day covering the Methods of Administration (MOA). Sessions covered the selection process, onsite reviews (interviews/document review/facilities), findings, corrective actions, and some of the most common findings found over the years.

7. Serving individuals in state institutions

Part I: State Correctional Institutions

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

23798

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

155

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

The CTE unit used Perkins leadership funds to support CTE services and activities carried out in state correctional institutions in the following ways: 1) WY Department of Corrections - State Penitentiary - the purchase of equipment and technology necessary to support the expansion of the current AutoCAD program; 2) WY Medium Corrections Institution - the training required for the Welding Instructor to earn the Welding Educator and Welding Inspector Certifications;; and 3) WY Boys School - to support the expansion of the current Computer Coding/Programming course to include 2D and 3D CAD curriculum, Beginning Aeronautics, Robotics, and Virtual Reality and extend the CTE and Computer Science opportunities in a cross-curricular fashion.

Part II: State Institutions Serving Individuals with Disabilities

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

19798

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

216

Describe the CTE services and activities carried out in institutions serving individuals with disabilities.

The CTE unit used Perkins leadership funds to support CTE services and activities within institutions serving individuals with disabilities in the following ways: 1) Wyoming Boys School - to support the expansion of the current Computer Coding/Programming course to include 2D and 3D CAD curriculum, Beginning Aeronautics, Robotics, and Virtual Reality and extend the CTE and Computer Science opportunities in a cross-curricular fashion; and 2) Region V BOCES/C-V Ranch - support the development of a culinary trades program, specifically with the funding of supplies and equipment used to prepare students for high-skill, high-demand careers both inside and outside of the kitchen.

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

No

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

Yes

State CTE Demonstration Grants

The WDE continues to support its career technical education demonstration project grant program with \$500,000 per biennium from state funds to LEAs through the competitive demonstration project grant. The demonstration grant helps to prepare high school students for postsecondary options, which connect academic and technical curriculum grounded in academic and industry standards and provide innovative strategies for ensuring students have access to career choices.

The new biennium, 2016-2018 brought about a new set of applications for the demonstration project grant. The projects selected, that support family and consumer sciences programs include the development of an Early Childhood Development program in Fremont #24, and an update of a culinary program in Carbon County School District #2.

Projects selected for the 2014-2016 biennium finalized at the end of the 2015-2016 program year, schools reported successful outcomes in; Fashion Design, Production and Merchandising, Textile Arts: Bridging the Gap of Core Curriculum and CTE, and Creating E-Books in the Culinary Classroom.

Family Career Community Leaders of America Support

The WDE CTE section also supports Family, Career, Community Leaders of America (FCCLA) in a variety of ways. The CTE section has provided resources and professional development for the FCCLA state advisor, participated in the FCCLA state conference as judges for multiple competitions, and provided a professional development grant for curriculum development for chapter advisors. This career technical student organization (CTSO) has approximately 500 Wyoming chapter members, 33 high school chapters, and is directly connected to FACS classroom curriculum.

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?

Yes

The WDE CTE team and Northern Wyoming Community College District offered an educator professional development conference in Gillette, Wyoming entitled The Roadmap To STEM. Since the start of the annual STEM conference we recognize educators in the Elementary, Secondary, and Postsecondary institutions the "STEM Educator of the Year" award at a recognition ceremony. These highly motivated and diligent educators are encouraged to mentor other educators who are interested in replicating their programs and ideas. They are also asked to present their models and best practices at future conferences.

Small speaker stipends were awarded to those representatives who were able to showcase their programs as models of best practice in CTE and STEM. Grant awardees included University of Wyoming, Gillette College, Campbell County School District 1, Wyoming Arts Council, Park County School District 16, Sheridan County School District 2, and more.

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

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

As discussed previously, two WDE CTE team members and the FBLA State Advisor were certified as Global Career Development Facilitator (GCDF) Trainers in February of 2016. For the past five years, the GCDF course has been offered for educators, counselors, and others in Wyoming to become certified as Global Career Development Facilitators (GCDF). Bringing a third-party trainer to Wyoming in order to facilitate the course was the only option, and was expensive and becoming more and more cost prohibitive. Since the goal in Wyoming is to certify at least one staff member at each of the 353 schools in the state, it was important to find a more cost-effective solution to sustain the GCDF training effort.

Now, with three certified trainers working collaboratively to leverage existing state resources for course delivery, the course can continue to be taught at a minimal cost twice a year. This also allows the curriculum for the course to be enhanced with Wyoming-specific labor market examples and real-world application of concepts that are relevant to the various regions of Wyoming.

Career development facilitation is a best practice certification training developed by the NCDA to ensure career advisors and counselors have a high level of competency when providing career guidance (for some of our schools this may be a CTE teacher providing career guidance). This course provides best practices for career development, with a focus on helping students understand all postsecondary options for college, apprenticeship, career, military, etc. The course also provides information on preparing students for the next step utilizing existing resources, such as the Bureau of Labor Statistics' Occupational Outlook Handbook and O*NET to determine minimum education requirements and job outlook information for various occupations.

As more and more educators become certified, the need to provide continuing education in Career Development rises. In order to maintain the GCDF credential, educators must earn 75 hours of continuing education hours in a five-year period. The CTE team worked during the 2016-17 program year on providing options for GCDFs to earn these hours, including Project ECHO in Career Development.

Project ECHO in Career Development

The University of Wyoming is a global super-hub for a new and innovative virtual professional development platform called Project ECHO. The ECHO model supports collaborative networking among education professionals, and provides a mode of accessing expertise and support that isn't always locally available in our rural state. The WDE CTE section, UW, and multiple educational stakeholders from across Wyoming partnered during the 2016-17 program year to develop and deliver a series of ECHO sessions specifically focused on Career Development.

This program allows P-16 CTE instructors, afterschool providers, school counselors, administrators, Career Development Facilitators and others in Wyoming schools to develop knowledge and collect resources necessary for quality career development programming. The initial pilot project kicked off in January 2017. Twelve weekly sessions occurred throughout the spring semester on a variety of Career Development topics. Participants simply clicked a link or called in via phone to join the sessions, and had the opportunity to earn professional development credit toward maintaining teacher certification, as well as University of Wyoming graduate credit. The project received such positive feedback, it will be continued for the 2017-18 program year, with topics planned to include virtual tours of career academies, simulated workplace models in education, agriculture as more than just farming/ranching (e.g. vertical farming), careers in the culinary arts industries, etc.

Perkins Monitoring

As part of the monitoring process, WDE CTE consultants evaluate the articulation/transfer agreements established between LEAs and postsecondary institutions, and between community colleges and four-year institutions. The large majority of LEAs have articulated dual and/or concurrent enrollment for CTE and academic core courses, and all seven community colleges have transfer agreements in place with multiple four-year institutions for those CTE programs (i.e. Engineering) in which bachelor's degrees or higher are available. Some technical assistance was provided to LEAs and IHEs on establishing articulation agreements, as well as on reviewing and updating the agreements. The CTE section plans to continue facilitating more in-depth technical assistance opportunities on these topics every year, as some requirements have changed given new accreditation regulations (released fall 2015) at the postsecondary level. The emphasis is to provide secondary students with opportunities to earn postsecondary credits in CTE prior to leaving high school. This can benefit students in a variety of ways, which are discussed during technical assistance sessions.

Many high schools and colleges have fully-staffed on-campus career centers specifically designed to provide students with services related to post-secondary and job/career transitions. Counselors and staff work with CTE special population students and provide them with resources such as resume' development, interest inventories and a Career Information Services (CIS) inventories to prepare them for high-skill, high-wage, and high-demand occupations.

In addition, the Hathaway Scholarship is available to all Wyoming high school graduates, as well as Wyoming students who earn a GED. During the 2016-2017 program year, the CTE team continued to work extensively with the WDE Hathaway Scholarship team to better align program requirements for CTE students. This is relevant because the Hathaway Scholarship requires that students, including CTE students, follow what is called the Hathaway Success Curriculum in order to be eligible to receive the scholarship upon graduation. The idea being that helping students determine their interests prior to high school will enable them to make an informed decision about pursuing pathways/programs in high school that will prepare them more effectively for post-secondary options. That partnership will continue, as the need for inclusion and career readiness measures for CTE (and all) students is of high priority to WDE.

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Wyoming

Step 3: Use of Funds: Part C

1. 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?

Perkins funds are used for the integration of academics with career and technical education at the state level in the form of technical assistance and professional development. Local school districts and colleges also use Perkins funds for academic/CTE integration. For example, there are many school districts that are providing integrated construction and math (geometry and algebra) programs. Similarly, the new Pathways Innovation Center (PIC) at Natrona County School District #1, a fully integrated academy model facility serving 10th, 11th, and 12th grade students from all district high schools, offers the following fully integrated programs: 1) Architecture, Construction, Manufacturing & Engineering (ACME) - integrated construction trades, welding, art, mathematics, language arts, science, robotics, and others in a project-based learning model; 2) Business, Agriculture & Natural Resources (BANR) - integrated earth sciences, culinary arts, horticulture, agricultural sciences, business marketing, mathematics, and others in a way that each content area effectively contributes to the others; 3) Creative Arts, Communication & Design (CACD) - integrates broadcast journalism, production, visual arts, business, mathematics, marketing, and other disciplines in a real-world applied learning setting; and 4) Health Science & Human Services (HSHS) - integrates biological and physical sciences, advanced mathematics, pre-physical and occupational therapies, CNA, and others into a comprehensive program for students. The PIC opened fully for students in the fall of 2016.

At the postsecondary level, Laramie County Community College offers an applied mathematics course, which integrates many of the concepts, projects and standards of the technical programs on campus (e.g. automotive technology, machine tool technology, HVAC, etc.). Students may take this course to satisfy their mathematics requirement for graduation with an Associate of Applied Sciences degree. Also offered is a technical writing course, which provides students with an applied/technical reading and writing experience that directly relates to their CTE program of study. This course also fulfills a writing requirement for graduation. Central Wyoming College intentionally integrated trigonometry and calculus into their innovative green automotive technology program. These are just a couple of examples of many post-secondary integrated programs supported with Perkins funds.

Intentional academic and CTE integration is something that is reviewed very closely during the annual secondary and post-secondary monitoring process. If it seems like a district or college is struggling with the integration, the WDE CTE section provides technical assistance, information about best practices, and resources to assist in developing more integrated programs.

Project Based Learning - See response to Part B. 3.

Career & Technical Student Organizations (CTSOs)

The integration of CTE with core academics is effectively reflected in all five Wyoming state-recognized CTSO's - FFA, FBLA, SkillsUSA, DECA, and FCCLA. The integration is evident in the state competitions, student projects, and co-curricular requirements. Members of the WDE CTE team judged the FFA Agriscience at the State and National level. This is a competition for FFA chapter members who are interested in the science and technology of agriculture. To participate, the FFA member must conduct a scientific research project pertaining to agriculture and/or food science industries. They then presented their findings to a panel of judges with a display and a report. The Agriscience fair and the Wyoming State Science Fairs are quality examples of the collaboration and integration of core subjects within the CTE curriculum. FFA is a CTSO that is intimately tied to the agriculture curriculum. Wyoming currently has 2969 FFA members in 53 chapters.

CTE Demonstration Project Grant

As stated previously, the WDE, continues to support its career technical education demonstration project grant program with \$500,000 per biennium from state funds for LEAs through the competitive demonstration project grant. The competitive demonstration project grant are innovative and provide students opportunities to collaborate and apply ideas across curriculum. The new biennium, 2016-2018 brought about a new set of applications for the demonstration project grant, the projects selected included the development of an Early Childhood Development program in Fremont #24, an update of a culinary program in Carbon County School District #2, and the expansion of project based STEM curriculum in grades K-12 in Sheridan County School District #2. Johnson School District #1 was awarded grant funding to provide Buffalo High School the capability to offer students the opportunity to attain college credits and certifications in four critical college and workforce areas; metal fabrication with an entrepreneurial certification, manufacturing technology certification, computer generated imagery certification, and pre-education certification, and Natrona County School District #1, was awarded funding for the full integration of industrial CTE courses (Construction, Welding), high level math and language arts courses, industry recognized certifications and curriculum, and pathway alignment that extends from grade 9 through 14 through the building of a tiny cabin/house.

Projects selected for the 2014-2016 biennium finalized at the end of the 2015-2016 program year, schools reported successful outcomes in; Fashion Design, Production and Merchandising, Textile Arts: Bridging the Gap of Core Curriculum and CTE, and Creating E-Books in the Culinary Classroom.

Roadmap to STEM Conference: See response Part B. 2.

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.

Apprenticeships

During the reporting year, the WDE CTE Section intentionally partnered with the U.S. Office of Apprenticeship liaison in Wyoming, Michael Broad, to support the development of direct or indirect entry pre-apprenticeship programs in Wyoming high schools. The development of pre-apprenticeship document templates, waiver forms, and standards was key during the 2016-17 program year. The focus for the first year was to identify existing programs with many or all of the necessary elements in place already, including a sustainable industry partnership, so that the registered apprenticeship link would be natural. The pilot program in this initiative is a hospitality, culinary and housekeeping apprenticeship program with Little America Resort and Convention Center in Cheyenne, WY.

Wy Counseling Assoc./WY School Counseling Assoc.

The CTE Section continued fostering a meaningful partnership with both the Wyoming Counseling Association (WCA) and the Wyoming School Counseling Association (WySCA). Several CTE staff members presented at the WCA Fall Conference (October 2016) and the WySCA spring conference (April 2017) on the topics of CTE and career development. One CTE section staff member serves as a liaison to school counselors in Wyoming, providing them bi-monthly email updates on state and federal legislation, resources, training opportunities, and important events. The two organizations also contributed significantly to the development and sustainability of the ECHO Project.

Career Readiness Council

In November 2014, the Council of Chief State School Officers issued a report called "Opportunities and Options: Making Career Preparation Work for Students." The Wyoming Department of Education's response to this report was to establish the Wyoming Career Readiness Council (CRC), a cross-sector of representatives from secondary education, post-secondary education, business and industry, non-profits, and other state agencies (including Wyoming Department of Workforce Services). The purpose of the council was to work with community businesses and colleges to create a strategic plan to improve K-16 career readiness support and resources. During the 2016-17 program year, the CTE section continued developing a strong partnership with the CRC. They attended meetings, provided resources (including CTE data), and facilitated a data-driven strategic planning session with them to develop goals and strategies for the coming year. A primary goal for the CRC for 2017 is to support a statewide information-sharing/marketing initiative about CTE (definition, benefits, data) and re-imagining career readiness in Wyoming (expanding awareness of post-secondary options).

Work-Based Learning National Peer Networks

In the spring of 2017, the CTE section joined two national Work-Based Learning (WBL) Peer Networks - one focused on rural WBL resources and opportunities, and the other focused on working with intermediaries to improve WBL. These networks are sponsored and facilitated by the American Institutes for Research (www.air.org) and meet virtually once per month. These networks have fostered unique and meaningful partnerships between the WDE and other state educational institutions, and has allowed an intentional sharing of resources and best practices that will increase the support of WBL in Wyoming. It has also fostered creative brainstorming about how to best serve students equitably in sparsely populated areas such as Wyoming.

Wyoming Workforce Development Council

The Wyoming state director of career technical education serves on the Wyoming Workforce Development Council (WWDC) on behalf of the Superintendent of Public Instruction. The director serves on the council's career pathway committee.

Under the federal Workforce Innovation and Opportunity Act (WIOA) law, each state has Workforce Development Boards charged with directing federal, state and local funding to workforce development programs. Workforce Development Boards also oversee the workforce centers, where job seekers can get employment information, find out about career development training opportunities and connect to various programs in their area. Wyoming has one state-level Workforce Development Board which advises the Wyoming Department of Workforce Services and its 20 full-service Workforce Centers in the State. In Wyoming, this board is called the Wyoming Workforce Development Council (WWDC) and serves in the capacity as "Local Board(s)" as well.

The WWDC is a 30-member board charged with assisting the Governor in directing Wyoming's workforce development system, ensuring the system is fundamental in supporting robust regional and state economies and producing a high quality, self-sufficient workforce valued by Wyoming employers. Members represent a range of groups including business and industry, organized labor, state Legislature, education, social service agencies and others who have a stake in employment and training issues. The WWDC regularly assesses Wyoming's employment needs, advises the Governor on setting performance goals and priorities to improve workforce development system and helps leaders to shape workforce development policy at the local level. The WWDC has been empowered by the WIOA and the Governor to promote, fund and oversee Sector Strategies and Career Pathways and Apprenticeships for the State of Wyoming.

Every Student Succeeds Act (ESSA)

The Wyoming Department of Education collected extensive stakeholder input through listening sessions, town halls, public meetings, individual stakeholder meetings, and online feedback opportunities to ensure that this plan puts Wyoming's priorities first.

Wyoming Department of Education career and technical education staff participated as a member of the department's ESSA Internal Design Team in the writing of Wyoming's state plan for the Every Student Succeeds Act.

Long-Term Goals for Schools:

- The long-term goals are based on schools that performed among the 65th percentile of all public schools in Wyoming. In the 2015-16 school year, the top 35% of schools had a graduation rate of at least 88%. The goal is for all schools to perform at the same level within 15 years.
- The long-term goals for reading and math are also based on schools that performed among the 65th percentile in 2015-16, but these goals will be revisited once baseline data is available from the new statewide assessment, Wyoming Test of Proficiency and Progress (WY-TOPP), which will be given for the first time in the 2017-18 school year. The current goals were set using PAWS results for Grades 3-8 and ACT results for Grade 11.
- Stakeholder consultation will continue through the Advisory Committee, which developed the method for setting goals.

Support for Schools Schools with a graduation rate below 67% or the bottom 5% of Title I schools will be identified for Comprehensive Support and Improvement. They will participate in state-led supports such as data reviews, assessment literacy training, professional learning communities, and implementation of Multi-Tiered System of Support. Schools with a group of students performing in the bottom 10% will be identified for Targeted Support and Improvement. These schools will participate in supports and interventions determined by the local schools and districts.

Support for Educators Wyoming's vision of excellent educators and school leaders includes:

- Make each student their priority, focus on high expectations for all, acquire deep content knowledge, and pair these with evidence-based instructional practices
- Provide supports necessary to meet every student where they are and help them grow academically and emotionally
- Create cultures of trust and a climate of learning
- Are accountable, professional, solution-oriented role models who contribute to collective efficacy throughout the educational system
- Build and collaborate in highly effective teams and networks

Stakeholder consultation will continue through a statewide needs assessment survey distributed to all Wyoming school districts and relative stakeholders. This needs assessment will be used to determine state-coordinated professional development activities.

Support for Students:

- Promote strategies that foster safe, positive, healthy, culturally competent, and inclusive learning environments and address students' varied needs in order to improve educational outcomes for all students
- Utilize a Multi-Tiered System of Support to ensure every student receives evidence-based academic and behavioral support
- Support English learners in achieving high levels in academic subject areas by assisting teachers and other school officials with the development, implementation, and sustainment of effective language instruction educational programs
- Train and support school staff to ensure homeless students have access to school and activities, as well as assistance with school records, supplies and transportation
- Assist students who have had contact with the juvenile justice system by maintaining academic support and facilitating transitions

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

Yes

The University of Wyoming is a global super-hub for a new and innovative virtual professional development platform called Project ECHO. The ECHO model supports collaborative networking among education professionals, and provides a mode of accessing expertise and support that isn't always locally available in our rural state. The WDE CTE section, UW, and multiple educational stakeholders from across Wyoming partnered during the 2016-17 program year to develop and deliver a series of ECHO sessions specifically focused on Career Development.

This program allows P-16 CTE instructors, afterschool providers, school counselors, administrators, Career Development Facilitators and others in Wyoming schools to develop knowledge and collect resources necessary for quality career development programming. The initial pilot project kicked off in January 2017. Twelve weekly sessions occurred throughout the spring semester on a variety of Career Development topics. Participants simply clicked a link or called in via phone to join the sessions, and had the opportunity to earn professional development credit toward maintaining teacher certification, as well as University of Wyoming graduate credit. The project received such positive feedback, it will be continued for the 2017-18 program year, with topics planned to include virtual tours of career academies, simulated workplace models in education, agriculture as more than just farming/ranching (e.g. vertical farming), careers in the culinary arts industries, etc.

Project ECHO will strengthen efforts already in progress in our state to provide relevant and impactful services to CTE students ready to transition to postsecondary education, technical training, a career, or the military. It will also help counselors and others guide students to make more intentional decisions regarding secondary pathway and program of study planning. One especially important focus is to help younger students (elementary and middle school level) explore possible secondary pathways so that they have exposure to options and can more effectively decide which coursework to pursue in high school and beyond.

Also, the CTE Section continued fostering a meaningful partnership with both the Wyoming Counseling Association (WCA) and the Wyoming School Counseling Association (WySCA). Several CTE staff members presented at the WCA Fall Conference (October 2016) and the WySCA spring conference (April 2017) on the topics of CTE and career development. One CTE section staff member serves as a liaison to school counselors in Wyoming, providing them bi-monthly email updates on state and federal legislation, resources, training opportunities, and important events. The two organizations also contributed significantly to the development and sustainability of the ECHO Project.

In addition, the Hathaway Scholarship is available to all Wyoming high school graduates, as well as Wyoming students who earn a GED. During the 2015-2016 program year, the CTE team continued to work extensively with the WDE Hathaway Scholarship team to better align program requirements for CTE students. This is relevant because the Hathaway Scholarship requires students, including CTE students, to follow what is called the Hathaway Success Curriculum in order to be eligible to receive the scholarship upon graduation. The idea is that helping students determine their interests prior to high school will enable them to make an informed decision about pursuing pathways/programs in high school that will prepare them more effectively for post-secondary options. That partnership will continue, as the need for inclusion and career readiness measures for CTE (and all) students is of high priority at the WDE.

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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?

No

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?

No

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

Yes

Approximately 29.6% of CTE concentrators (unduplicated N=1,049) participated in a Career Technical Student Organization (CTSO) during the 2016-2017 school year. This represents slight decrease in the percentage of students participating in CTSSO as compared to 29.8 in 2015-16. The highest percent of concentrators participating in CTSSO were members of FFA (57.3%), and this is consistent with past years. There was an increase in FCCLA participation from 4.9% for 2015-2016 to 6.4% in 2016-2017.

CTE concentrators who participated in CTSSOs had higher overall technical skill proficiency (83.1%) than those who did not participate in CTSSOs (71.8%).

Wyoming supports five CTSSOs -DECA, Future Business Leaders of America (FBLA), Family, Career, and Community Leaders of America (FCCLA), Future Farmers of America (FFA) and SkillsUSA. Wyoming provides each organization a state advisor to oversee and coordinate ongoing programs, initiatives and conferences for students and local chapters.

Wyoming also employs a WDE consultant with funds to monitor activities of State CTSO Advisors and CTSOs. The WDE consultant maintains state advisor contracts, administers the advisor selection process, provides oversight, training, legislative updates, and processes state advisor invoices for payment. All WDE CTE consultants provide technical support such as funding for professional development to CTSO local advisors, judging at and providing oversight for conferences, contests, workshops and conventions for the CTSOs. This year, one of the goals was to increase awareness of all CTSO organizations throughout Wyoming via a marketing campaign including printed material sent to administrators, legislators, business/industry, media blasts, social media presence, as well as WDE being present at multiple local, state, and national events.

As stated previously, all five Career and Technical Student Organizations CTSO(s) applied and were awarded \$24,6000 in funding to provide professional development for secondary and post-secondary teachers and advisors across the state of Wyoming.

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

STEM Conference - See response from Part B. 2.

Technical Assistance Training (March 2017)

The CTE team facilitated one major technical assistance opportunity for the 2016-2017 program year in Casper, Wyoming from March 27-28, 2017. The training was designed for new and returning Perkins Coordinators from the seven community colleges. Each had a designated coordinator for Perkins/CTE, and staff responsible for technical skills assessments, data collection and reporting, grant administration, and program coordination were invited to attend the technical assistance training sessions. Content included: timeline for various Perkins accountability items; guidance on Perkins Annual Reports and data collection/reporting; information on Perkins assessments and data collection; nontraditional definition and relevance to Perkins funding; and special populations in CTE. A key topic for the training was developing a Pell Count formula that is accurate and consistent throughout the seven community colleges.

Career Readiness Council

In November 2014, the Council of Chief State School Officers issued a report called "Opportunities and Options: Making Career Preparation Work for Students." The Wyoming Department of Education's response to this report was to establish the Wyoming Career Readiness Council (CRC), a cross-sector of representatives from secondary education, post-secondary education, business and industry, non-profits, and other state agencies (including Wyoming Department of Workforce Services). The purpose of the council was to work with community businesses and colleges to create a strategic plan to improve K-16 career readiness support and resources. During the 2016-17 program year, the CTE section continued developing a strong partnership with the CRC. They attended meetings, provided resources (including CTE data), and facilitated a data-driven strategic planning session with them to develop goals and strategies for the coming year. A primary goal for the CRC for 2017 is to support a statewide information-sharing/marketing initiative about CTE (definition, benefits, data) and re-imagining career readiness in Wyoming (expanding awareness of post-secondary options).

Work-Based Learning National Peer Networks

In the spring of 2017, the CTE section joined two national Work-Based Learning (WBL) Peer Networks - one focused on rural WBL resources and opportunities, and the other focused on working with intermediaries to improve WBL. These networks are sponsored and facilitated by the American Institutes for Research (www.air.org) and meet virtually once per month. These networks have fostered unique and meaningful partnerships between the WDE and other state educational institutions, and has allowed an intentional sharing of resources and best practices that will increase the support of WBL in Wyoming. It has also fostered creative brainstorming about how to best serve students equitably in sparsely populated areas such as Wyoming.

Apprenticeships

During the reporting year, the WDE CTE Section intentionally partnered with the U.S. Office of Apprenticeship liaison in Wyoming, Michael Broad, to support the development of direct or indirect entry pre-apprenticeship programs in Wyoming high schools. The development of pre-apprenticeship document templates, waiver forms, and standards was key during the 2016-17 program year. The focus for the first year was to identify existing programs with many or all of the necessary elements in place already, including a sustainable industry partnership, so that the registered apprenticeship link would be natural. The pilot program in this initiative is a hospitality, culinary and housekeeping apprenticeship program with Little America Resort and Convention Center in Cheyenne, WY. The CTE section will use a State Reserve of Perkins funds during the 2017-18 program year to fund the "Workforce Discovery" grant, a competitive grant to support innovative CTE initiatives at the secondary and post-secondary levels, specifically those that do the following: 1) develop more comprehensive and robust career pathways leading to viable career or post-secondary training options for students; 2) provide work-based learning experiences for students that are in industries closely related to CTE pathways; 3) develop meaningful partnerships between schools/institutions and business/industry representatives. In order to be eligible for the grant, both secondary and post-secondary applicants must have at least one formal partnership established with business or industry (this may include a registered apprenticeship).

Exemplary Programs

The Wyoming Career Readiness Council sponsored coding camps for students at two community colleges in the state during August 2016. The coding camps kicked off a year-long pilot utilizing students to create a career exploration software application that students and parents can use to plan for a future career. The outcome of this work is the website www.wyocareerexplorer.com, which is a Wyoming-based career development site that intentionally connects local industry with secondary and post-secondary training options (within the state). The soft launch of the new platform happened in the summer of 2017, with a more intentional marketing and launch planned for the spring of 2018.

The teachers, staff and administration at the Pathways Innovation Center (PIC) in Casper, WY (a career academy model CTE capstone school) worked hard over the 2016-17 program year to build more robust and meaningful advisory committees for each of their academies. In particular, the core construction, welding and automotive programs were able to recruit representation from over 30 local business and industries (collectively), as well as two post-secondary institutions in Wyoming (Casper College and Northern WY Community College District). The committees have a more active advisory role, and inform curriculum, program goals and initiatives, credentials and certificates, internship and work-based learning opportunities, and more. Many of the industries have donated either their time or money to help grow the programs.

Campbell County School District has partnered with Gillette College and a local oil and gas drilling company called Cyclone Drilling to create a community makerspace/STEM Center. The purpose of the center is to provide a high quality space that allows students and community members to use industry-standard equipment to create products, design prototypes, projects, and more. The space is especially unique in that it targets the afterschool programs, which largely serve special populations.

In postsecondary institutions, business/industry advisory boards are specific to individual CTE content areas, meaning that faculty and staff rely heavily on their advisory boards in order to better align specific program curriculum and equipment (e.g. nursing, radiography, HVAC, wind turbine technician, etc.) to national industry standards.

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

STEM Conference - Business and Industry Partnerships

Business/industry and education partnerships in STEM fields was a concept emphasized at the 2017 Roadmap to STEM Conference sponsored by the WDE CTE section.

Conference attendees toured Devils Tower, an astounding geologic feature that protrudes out of the prairie surrounding the Black Hills. It is considered sacred by Northern Plains Indians and indigenous people. Hundreds of parallel cracks make it one of the finest crack climbing areas in North America. They also toured the Buckskin Coal Mine, one of the most productive mines in the U.S., the Buckskin Mine produces more than 27 million tons of coal per year from the Anderson and Canyon Seams located within the Fort Union Formation. Since 1981, Buckskin has shipped more than 406 million tons of high-quality, low sulfur coal from the Southern Powder River Basin. Tours were also facilitated at Wyoming Department of Transportation, Durham Bison Ranch, Gillette College's Solar Array, and the Civil Air Patrol at local airport. All of the tours provided opportunities for attendees to learn about business and industry needs and particular applications of skills learned in CTE, apply skills required in business/industry to their particular curricular area, as well as to develop partnerships that would enable them to follow up with class field trips and mentorship opportunities.

Project Based Learning - See response to Part B. 3.

Coders of the West

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Career Readiness Council

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WyoSIMPL

As mentioned earlier, the WDE CTE section engaged secondary and post-secondary stakeholders from across the state in a data-driven strategic planning initiative. As part of that planning process, stakeholders reviewed local employment projections, economic indicators, and relevant workforce sectors for the region. One of the recommendations that came from that planning process was to increase efforts to build business/industry and CTE partnerships. During the 2017-18 program year, the WDE CTE section will more intentionally implement those supports, which include pre-apprenticeship templates, work-based learning opportunities, advisory committee resources, and more.

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

Perkins funds have been used to support the improvement and development of many new CTE programs over the course of the 2016-17 program year. For example, the new Pathways Innovation Center (PIC) at Natrona County School District #1, a new integrated academy model facility serving 10th, 11th, and 12th grade students from all district high schools, offers the following fully integrated programs: 1) Architecture, Construction, Manufacturing & Engineering (ACME) - integrated construction trades, welding, art, mathematics, language arts, science, robotics, and others in a project-based learning model; 2) Business, Agriculture & Natural Resources (BANR) - integrated earth sciences, culinary arts, horticulture, agricultural sciences, business marketing, mathematics, and others in a way that each content area effectively contributes to the others; 3) Creative Arts, Communication & Design (CACD) - integrates broadcast journalism, production, visual arts, business, mathematics, marketing, and other disciplines in a real-world applied learning setting; and 4) Health Science & Human Services (HSHS) - integrates biological and physical sciences, advanced mathematics, pre-physical and occupational therapies, CNA, and others into a comprehensive program for students. The PIC opened fully for students in the fall of 2016.

Campbell County School District has partnered with Gillette College and a local oil and gas drilling company called Cyclone Drilling to create a community makerspace/STEM Center. The purpose of the center is to provide a high quality space that allows students and community members to use industry-standard equipment to create products, design prototypes, projects, and more. The space is especially unique in that it targets the afterschool programs, which largely serve special populations.

The WDE CTE section worked directly with Teton County School District and Sheridan County School District #1 to plan more intentional CTE programming that aligns with local economic needs and post-secondary training options. For example, Teton County School District is planning to expand their culinary arts program so that students involved in that program have opportunities to work with the many prestigious five-star chefs in the Jackson Hole community in job shadows and internships. Jackson Hole, WY is well known across the world for its unique dining and cultural opportunities, and relies heavily on Hospitality and Tourism for economic development. Healthcare is also a leading industry there, so the school district plans to build a health sciences academy for students that will lead to CNA, Phlebotomy, and Medical Records certificates (among others). In Sheridan County School District #1, the two high schools plan to partner with the local John Deere dealership to develop direct-entry employment opportunities for their agriculture students. The students will start with an internship with the company, and if they pass that, they will be eligible to apply for a work-based blended training program with John Deere after graduation.

In the post-secondary arena, the CTE section has worked directly with Central Wyoming College to develop only the second community college cosmetology program in the state. A private cosmetology training institution in the community closed down, and the college purchased the facility. They plan to remodel, hire faculty, and build the program to launch in the fall of 2018. Laramie County Community College is working to develop a Culinary Arts program, as well as an apprenticeship program for veterans interested in learning a trade. Eastern Wyoming College built a brand new Career and Tech Center that houses a state-of-the-art cosmetology program, adult learning, welding and health technology.

Project Based Learning - See response to Part B. 3.

WyCTE Collection

Again for the 2016-17 program year, LEAs and IHEs were required to take a much closer look at their career cluster/pathway/course structures. They continued reorganizing their program structures in order to better align to industry standards and the national career cluster and pathway framework. Much of this work was supported with WDE technical assistance, which occurred in person, by email, and by phone.

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

Yes

Twenty-one school districts in Wyoming offer entrepreneurship courses in business and/or agriculture clusters. The entrepreneur courses are often tied with capstone projects within a pathway, supervised agricultural experience (SAE) in FFA, and projects in DECA and FBLA. The WDE also supports entrepreneurship education by purchasing a statewide membership of MBA Research as a curricular resource for all business, marketing and entrepreneurship educators.

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?

No

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

Yes

CDF

As mentioned before, the CTE section offers a course titled “Facilitating Career Development” for K-16 counselors and educators in Wyoming. A significant focus in this course is access and interpretation of occupational and employment information resources. For example, participants are taught how to navigate sites such as O*Net, Occupational Outlook Handbook, and www.wyocareerexplorer.com. They are also informed on how to access and interpret the Wyoming economic trends reports put out by the WY Department of Workforce Services. They are also encouraged to explore and utilize their local workforce centers, workforce advisory groups, and business/industry partners.

Project ECHO in Career Development

The University of Wyoming is a global super-hub for a new and innovative virtual professional development platform called Project ECHO. The ECHO model supports collaborative networking among education professionals, and provides a mode of accessing expertise and support that isn't always locally available in our rural state. The WDE CTE section, UW, and multiple educational stakeholders from across Wyoming partnered during the 2016-17 program year to develop and deliver a series of ECHO sessions specifically focused on Career Development.

This program allows P-16 CTE instructors, afterschool providers, school counselors, administrators, Career Development Facilitators and others in Wyoming schools to develop knowledge and collect resources necessary for quality career development programming. The initial pilot project kicked off in January 2017. Twelve weekly sessions occurred throughout the spring semester on a variety of Career Development topics. Participants simply clicked a link or called in via phone to join the sessions, and had the opportunity to earn professional development credit toward maintaining teacher certification, as well as University of Wyoming graduate credit. The project received such positive feedback, it will be continued for the 2017-18 program year, with topics planned to include virtual tours of career academies, simulated workplace models in education, agriculture as more than just farming/ranching (e.g. vertical farming), careers in the culinary arts industries, etc.

Project ECHO will strengthen efforts already in progress in our state to provide relevant and impactful services to CTE students ready to transition to postsecondary education, technical training, a career, or the military. It will also help counselors and others guide students to make more intentional decisions regarding secondary pathway and program of study planning. One especially important focus is to help younger students (elementary and middle school level) explore possible secondary pathways so that they have exposure to options and can more effectively decide which coursework to pursue in high school and beyond.

WyoSIMPL

As mentioned earlier, the WDE CTE section engaged secondary and post-secondary stakeholders from across the state in a data-driven strategic planning initiative. As part of that planning process, stakeholders reviewed local employment projections, economic indicators, and relevant workforce sectors for the region. One of the recommendations that came from that planning process was to increase efforts to build business/industry and CTE partnerships. During the 2017-18 program year, the WDE CTE section will more intentionally implement those supports, which include pre-apprenticeship templates, work-based learning opportunities, advisory committee resources, and more.

CTE Newsletter

A CTE electronic newsletter is also published on a quarterly basis to over 2,600 CTE teachers and constituents throughout the state. Grant information, spotlighting CTE programs, new opportunities for innovation in CTE, technical assistance and professional development opportunities, Perkins and state CTE legislative updates, among many other topics are covered in the newsletter.

Share-A-Thon & STEM Conference

The Share-A-Thon was one small portion of the 2017 Roadmap to STEM Conference where approximately 140 educators attended over 24 displays or exhibits provided by Wyoming STEM/CTE educators, business/industry representatives, military and college representatives, and others. Multiple sessions in the STEM conference, such as industry tours and half-day STEM Experiences focus specifically on tying classroom curriculum to both local, national, and international workforce.