FINAL REPORT
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The need for employees with STEM knowledge has never been greater and the STEM fields continue to grow at a rapid rate.

Technological innovations in the workplace will continue to expand into the 21st century. STEM education enables the next generation of innovators and the salaries earned by those in STEM careers often exceed their non-STEM peers.

STEM-related occupations in Missouri are projected to grow 11.3 percent by 2024 from where they were a decade before, nearly doubling the projected statewide job growth rate of 6.1 percent, according to the 2017 Missouri Economic Research and Information Center (MERIC) Report. This translates to nearly 40,000 new STEM-related jobs in the state by 2024 and as demand for skilled STEM workers skyrockets, Missouri’s community colleges have been putting forward-thinking strategies into place through MoSTEMWINs to train the STEM workforce of the future.

For the 13 community and technical colleges in the consortium, this U.S. Department of Labor grant allowed member institutions to create, expand, and redesign new and existing STEM programs to fill gaps identified by STEM employers in multiple industries. MoSTEMWINs also addressed underlying barriers that previously prevented the target population from entering and completing STEM programs.

When I reflect on the success of MoSTEMWINs over the past four years, I am extremely proud of the impact we had on the students we served, and equally proud that we helped fortify STEM-related businesses throughout the state. Systematically, alignment between the colleges—via the Missouri Community College Association—and the higher education and workforce systems at the state-level have been strengthened. While the MoWINs collaborative experiences and innovations were quite successful, it was evident to our college leaders to sustain this network. In 2017, we launched the Missouri Community College Workforce Development Network to aid in addressing a longstanding challenge facing Missouri businesses: the availability of a skilled workforce. For more information, turn to page 20.

This final report shares best practices from each of the consortium colleges, as well as the innovations being sustained long after MoSTEMWINs sunsets.

Brian Millner
President and CEO
@BrianMillner
In 2014, under the Missouri Community College Association (MCCA), a consortium of 13 community and technical colleges received $19.7 million from the United States Department of Labor’s Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant program to aid eligible workers to receive the skills and training needed.

Missouri’s Great Recession jobs market began its comeback in 2013 with aid from the Missouri STEM Workforce Innovations Network (MoSTEMWINs) which created, expanded, and redesigned new and existing science, technology, engineering, and mathematics (STEM) programs at consortium institutions to fill gaps identified by STEM employers in emerging sectors. It also helped colleges implement practices like stackable credentials and competency-based education, and design innovative student support services like intrusive advising.

TAACCCT enabled colleges to focus on the needs of their adult and working learners, a segment of students often not well-served by programs designed for traditional age students. Today, college leaders and instructors often cite TAACCCT as a catalyst for transforming how their institutions serve adults.

The following pages highlight institution, employer, and student success.

STRATEGIES

1. **Accelerate entry into career programs** by refining assessment, transforming developmental education, and adding support services to meet the needs of TAA-eligible and other participants.

2. **Create clear pathways to STEM careers** by expanding access to and/or developing new stacked and latticed credentials in programs that meet employer needs.

3. **Improve employment attainment** by working with industry, local Workforce Investment Boards (WIBs), the state, and community-based organizations to engage, guide and employ participants.
MoSTEMWINs Final Report

2950 PARTICIPANTS
BY ELIGIBILITY

196 VETERANS
52 TAA
1213 UNEMPLOYED
1200 UNDEREMPLOYED

49%
51%

33.1 MEDIAN AGE

1213
196
52
1200

489 LOW-SKILLED

4309

2048 PARTICIPANTS EARNED AT LEAST ONE CREDENTIAL

289

869 WERE EMPLOYED ANYTIME AFTER EXIT

1905 COMPLETED AT LEAST ONE PROGRAM

* CONSORTIUM
Crowder College
East Central College
Jefferson College
 Metropolitan Community College
 Mineral Area College
 Moberly Area Community College
 North Central Missouri College
 Ozarks Technical Community College
 St. Charles Community College
 St. Louis Community College
 State Fair Community College
 State Technical College of Missouri
 Three Rivers College

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Crowder College

Driving a Legacy: Strategies for Sustainability

Crowder College’s (CC) Transport Training program has been in existence for over 20 years, but has seen the most significant growth in the past three years – post Great Recession. One of the reasons for such growth is due to heightened employer engagement needing STEM skill sets due to industry mandated changes. Skills, such as digital literacy for automated road logs, along with enhanced basic skills, support longevity in living life on the open road. Meeting these new workforce skill sets for employers has been an integral part of the MoSTEMWINs grant process.

In one particular case, CC reached out to a local trucking partner, and after several months of collaborating, reached an agreement to offer four-week training classes specifically designed to meet their needs. The partnership is structured such that the employer sends a set amount of students to start classes every Monday. The students are not paid while in school but the employer is covering all room and board expenses. This partnership also allows CC to continue to offer its classes in tandem along with its hybrid-online class format for students who want to learn at their own pace.

Before CC joined the MoSTEMWINs consortium, sustainability of the transport training program was the first consideration. This unique partnership was a fit for MoSTEMWINs and allowed the program to continue, but more importantly grow along with the industry. MoSTEMWINs grant funds allowed CC to expand its video library, update its technology by adding two additional trucks to its fleet, and new high tech driving simulators. All of these enhancements provide students with additional hands-on training opportunities, current industry skill sets, and employers with a well trained workforce.

One of the most important components of the partnership is the involvement of employers in the development of the training program. This fostered an environment where the employers were able to customize and design the training curriculum specific to their needs. This partnership has led to an increase in the number of students coming through the program, allowing CC to grow the number of instructors, thus increasing the number of instructors for personalized student training and advising.

IN THE NEWS

The American Trucking Association says that the United States is 50,000 truck drivers short of the number it needs now and projects that the shortage could balloon to more than 174,000 over the next eight years. Darrin Pfeifly, director of Crowder’s transport training program, says people may be starting to come around to the idea of a career in trucking. The school’s classes have swollen from roughly 140 per year in 2010 to nearly 500 last year, he said.  The Joplin Globe, June 10, 2018  »» bit.ly/MoSTEMWINsCC
EAST CENTRAL COLLEGE

Sustaining Grant-funded Projects for Long-term Success

East Central College’s (ECC) grant vision was to offer non-credit to credit pathways, and to integrate non-credit courses within the credit framework in support of information technology (IT) occupational pathways.

ECC offered a total of 17 industry-recognized stackable credentials in the non-credit Computer Information Systems (CIS) program of study. The most popular of those certifications included CompTIA A+, CompTIA Network+, CompTIA Linux+, and CompTIA Security+, as well as the Microsoft Office Specialist (MOS) certification.

After instruction ended on March 31, 2018, those non-credit courses transitioned to ECC’s Center for Workforce Development and will continue to be offered in an online, self-paced format. ECC remains a Certiport authorized testing center, so anyone enrolled in the online curriculum can test on campus.

After nine years of working at a job he didn’t enjoy, Michael Askins knew he had to make a change. “The job paid the bills but I didn’t take any joy in it at all.” Michael enrolled in the MoSTEMWINs program at East Central College (ECC) with a goal of completing his A+ certification. The certification landed him a job in the IT department at Phelps County Regional Medical Center (PCRMC) in Rolla as a workstation analyst. The decision has been life changing.

“Once I started here, I realized how much I enjoy working in IT. Working on computers and has made my life better. My wife has noticed that I’m much happier and it has made a great impact.”

Michael is one of 64 students who completed an IT certification at ECC through MoSTEMWINs. For area businesses, the certification legitimizes a job candidate. “Getting a certification shows that ‘hey, I can do this,’” says Travis MacMillan, network administrator at PCRMC, “A lot of companies look for certifications rather than degrees because it specifically pinpoints a certain area.”

The ECC program offered IT certifications of CompTIA, CiscoCCNA and Windows Server at no cost to the students and provided current IT workers with the opportunity for promotion. “People had a job in IT but were pigeon-holed into positions and couldn’t be promoted or advance their salary because they didn’t have a certification,” says Anna Schwein, MoSTEMWINs instructor, “Through certifications they were able to prove to their bosses and human resources that they were willing and able to move forward in their careers.”

Michael Askins
Former student, East Central College

WATCH MICHAEL ASKINS’ SUCCESS STORY
»» bit.ly/MoSTEMWINsECC
Jefferson College

Prior Learning Credit

MoSTEMWINs supported the integration of data in reviewing college-level prior learning assessments and facilitated initial steps in creating a statewide course data mapping crosswalk. In addition, credit for prior learning (CPL) activities provided a variety of data at the college-level regarding methods and course mappings to be reviewed when revising the current processes and procedures.

Jefferson College’s (JC) first CPL guide was approved by the JC Curriculum Committee in November 2013 under the guidance of the MoHealthWINs (Round 1 TAACCCT grant program). During MoSTEMWINs, the college’s guide was revised. The guide provides extensive information supporting JC’s CPL process and methodology, and also includes a process flowchart, forms, and approved course mappings for earning college credit.

The professional development provided by the TAACCCT grants over the past seven years, and most recently through MoSTEMWINs CPL initiatives, ensures JC follows best practices to provide a comprehensive and well-informed approach for assessing and applying credit for prior learning in order to accelerate completion.

Intentional Advising

At JC, intentional advising involves persistent contact with students in order to help them best achieve their academic and personal goals. This type of advising differs from others in that it is the advisor’s responsibility to proactively make the initial contact with students.

During MoSTEMWINs, several navigators executed this method of advising and found student responses to be very positive. With systems such as PREP (Personal Resource and Education Plan), which provides students with a personalized map to their academic and career success, intentional advising has become more efficient and straightforward.

Recently, a student survey was administered addressing areas such as satisfaction with navigator services, delivery of desired resources, and the explanation of the PREP system. The outcomes from this survey yielded all around positive results. Over the past four semesters, 100% of students were satisfied with the services provided to them from the Health Professions navigator and Health Professions Tutoring & Resource Lab (HPTRL) coordinator. Students also made an effort to mention their appreciation for the staff’s support, advisement, and availability. Intentional advising has provided the opportunity to not only increase student success, but also build and maintain student relationships.

Jefferson College’s Anatomage Table is the most technologically advanced anatomy visualization system. The table is housed in the college’s Health Professions Tutoring & Resource Lab and leveraged as a resource for MoSTEMWINs participants.
Metropolitan Community College

Thanks to MoSTEMWINs, Metropolitan Community College in Kansas City developed a new medical assistant program, with the first cohort starting in June 2015. Students attend class four hours a day for six months, followed by a clinical externship.

“It really changed my life,” says student Rashaunda Fisher, adding that the program resulted in not only better job opportunities but also a better financial situation for her and her children.

Audra Hina had worked “behind the scenes” in a medical laboratory but wanted to take care of patients. She enrolled in MCC’s medical assistant program after reading about another student’s experience. “The whole program, including administration, is really close and supportive,” Hina says.

Offered at MCC’s Health Science Institute, the program prepares students to work with doctors and nurses to treat patients of all ages. They acquire front- and back-office skills and customer service training.

At MCC, MoSTEMWINs also funded supplemental instruction for computer science and information systems (CSIS) students. The goal: to increase successful course completion and prepare them to pass industry certification exams.

CSIS instructor Alex Hamilton says that whenever he sees a student succeed in the classroom — learn the skills, perhaps get certified — “it makes me feel really, really good.”

Job Placement

Through MoSTEMWINs, Metropolitan Community College (MCC) has developed employment pipelines with the University of Kansas Health System, a nonprofit, academic medical center located in Kansas City, Kansas; Saint Luke’s Health System; and HCA Midwest Health, Kansas City’s largest award-winning healthcare network.

Students are first surveyed by the preceptor and other clinical staff during their clinical rotation. The pipeline includes participation by all three institutions by serving on the Medical Assistant Advisory (MA) Committee, making presentations to MA cohorts, providing clinical opportunities, and maintaining strong communication with MA staff.

During clinicals, students have the opportunity to showcase knowledge, skills, and ability to adapt to the medical office’s routine. Through this experience, many students are offered jobs upon completion, provided they complete the MA program and successfully obtain an MA national certification.
MINERAL AREA COLLEGE

Professional Development

Mineral Area College (MAC) placed high emphasis on professional development for grant staff and instructors. Even though some staff were retained from previous TAACCCT grant rounds, there was still much to be learned regarding instruction, advisement, and implementation of new processes and programs relating to MoSTEMWINs.

Grant funds provided instructors further certification or the opportunity to attend trainings. Additionally, instructors were sent to workshops to further enhance skills on Aidex equipment—the Midwest's premiere resource of advanced educational technologies, curriculum, and training materials—used in MoSTEMWINs classes.

Several grant staff members attended the Missouri Community College Association’s Annual Convention offered each year. Convention session tracks focused on MoSTEMWINs processes, new strategies, and best practices. In addition to MCCA’s annual meeting, grant staff also attended the Council for Adult and Experiential Learning’s (CAEL) training opportunities to assist with credit for prior learning assessment matrix and policy implementation.

Grant-funded program support specialists participated in various webinars and professional development programs to improve their knowledge regarding educational programs, developmental education, agency procedures, recruitment, retention, credentials, employment, supportive services, assessments, and outcomes.

Finally, staff participated in three MCCA Annual Conventions, seven MoSTEMWINs grant leads and retention specialists trainings, and seven MAC required professional development sessions.

IN THE NEWS

Ten students graduated from Mineral Area College’s MoSTEMWINs Pharmacy Technician program on Dec. 21, 2017.

Pam Watkins, who assists in overseeing the grant that makes the program possible, pointed out the graduates were part of an elite group. “This is a highly-selective program,” she said. “When a new program begins, it’s not uncommon for 70 to apply, and we end up with 12-14 students. However, they’re only allowed minimal leeway for mistakes and failure, so usually, the program loses a few students along the way. You should feel proud of your accomplishments.”

The Daily Journal, January 4, 2018
»» bit.ly/MoSTEMWINsMAC
MOBERLY AREA COMMUNITY COLLEGE

Workforce Partners

Several colleges developed new ways to leverage the services of their local Workforce Investment Boards (WIBs), reporting improvements in their partnership.

Moberly Area Community College (MACC) continues to build on its partnership with both the Northeast Missouri Workforce Development Board, Inc. and the Central Region Workforce Investment Board by building stronger lines of communication and by creating new opportunities for WIB clients.

This year, the Central Region Workforce Investment Board in Columbia formed a NEXUS group bringing together all partners, including MACC, who provide services for WIB clients once a month. This alliance has allowed partners to directly share resources and opportunities for individuals, thus smoothing the pathway of clients by answering needs unmet by one organization alone.

MACC has offered free Adult Education and Literacy (AEL) classes for several decades. AEL provides a flexible classroom setting where adults who are at least 17 years of age have the opportunity to learn at their own pace. MACC’s AEL has also implemented High School Equivalency Test (HiSET) program classrooms and testing centers at the Hannibal and Columbia Job Centers to ultimately assist students in successfully achieving educational and lifelong goals.

Proactive Advising

All students meet one-on-one with their academic advisor and enrollment specialist each semester. This allows reassurance the student is enrolling in required classes for their degree program, which in turn allows for courses to be covered by financial aid (if awarded).

One way the grant assisted in this initiative is by providing advisors to work one-on-one with students in the Certified Production Technician (CPT) program, a MoSTEMWINs grant supported course and a nationally recognized certification that prepares individuals for front-line production work in manufacturing.

The grant advisor is housed at the Columbia location and works directly with mechatronics students, as the office is located next to the full-time faculty lead and instructional labs. This open door approach has allowed the advisor to connect and work with students through any educational or life concerns, which can include scheduling jobs, childcare, and more. This has allowed students and employers to know their schedule in advance and allows ample opportunity for them to adjust and plan accordingly. The retention rate for mechatronics is 83% and is considered a huge success.
Sustaining Programs

North Central Missouri College (NCMC) focused on two programs of study during MoSTEMWINs: The UP program and Certified Production Technician. The UP program was the college's major effort to accelerate students by decreasing their time spent in developmental math as students are on-boarded and transitioned to college-level programs more quickly and effectively.

The UP program consisted of four elements: Brush Up, Team Up, Skill Up, and tutoring. Brush Up was a one week intensive and accelerated workshop allowing students one-on-one, focused instruction in an effort to help them score at a level sufficient for placement into their required college level math course. In 2016 the success of the UP program pass rates increased from 67% to 75%. The college is planning to scale the co-requisite courses throughout the Math department and work to duplicate the model with English courses where possible.

Students seeking to stay on track with their academic plan, but who did not meet the placement score for their degree-required math class, were eligible for Team Up. Team Up was an innovative, co-requisite (dual enrollment) model of delivery where students were enrolled simultaneously in a higher level math course than they placed, along with the level that they did place (the workshop course) in an effort to accelerate them through their required math sequence. Generally, the results of this approach were positive for grant participants. In fact, during the life of the grant, the college scaled this approach for the college level English course. The college will sustain and offer a six hour workshop approach for the college level required math and English courses.

All students participating in Team Up were required to enroll in a comprehensive college success course called Skill Up. This course included training for students to learn appropriate academic strategies, including evaluating information, effective study skills, navigating Blackboard, SAIL, Turn-it-in, and business/soft skills such as time management, critical thinking, team work, leadership skills, self-motivation, and career assessment. Toward the end of the grant, all college associate degree students were also required to complete a course based on Skill Up. At this time, Skill-Up will likely be sustained.

Online tutoring was available for students in developmental and college level math courses, providing them with access to help and instruction whenever needed—day or night—regardless of working hours, college in-session or not in-session. Results of this approach indicated that participants did not utilize this service and, for those that sought tutoring, they contacted the instructor or visited in-person tutors in NCMC’s Academic Resource Center. Additionally, a new method was piloted late in the grant — student mentors. Research showed that students felt more comfortable with peers when they needed assistance. The college experimented with this approach during the final semester of instruction to see if it might be worthy of further college support.

Manufacturing Skill Standards Council Certified Production Technician courses were enhanced by making curriculum adjustments and additions based on company needs through supplemental online resources. These courses and the tailored delivery for industry and students proved to be of great interest in the region during MoSTEMWINs. The college will sustain this coursework and flexibility to customize as needed for companies and incumbent workers and students.
Ozarks Technical Community College

A Dynamic Digital Library and Network

Throughout the lifecycle of the grant, the Ozarks Technical Community College (OTC) grant project coordinator, adjunct instructors, and many others have used several open educational resources (OER)—freely accessible, openly licensed assets useful for teaching, learning, and assessing—for a variety of purposes.

Using the SkillsCommons repository, OTC’s Chemical Laboratory Technology (CLT) curriculum was able to be developed and refined. Instructional materials and other academic resources were used, remixed, and improved upon.

Hands-on Learning

Obtaining a CLT certificate provides students with a year of hands-on, real-life laboratory experience — currently in high demand by most employers. “One of the reasons I was drawn to the program initially is that it is lab-based, which lets us as students hone our lab skills and gain confidence while still in an academic setting,” Megan Westwood, an upper-level Chemistry student stated.

To date, OTC’s CLT program is only the second one offered in the state. The skills it imparts are critical for Megan’s transition to gainful employment. “As an undergraduate student, the instrumentation I used allowed me to have an upper hand when applying for research and internships, because I don’t require additional training. A requirement of the program is to take lab courses in several branches of science, which makes the students who graduate start out as more knowledgeable laboratory employees. The real-life scenarios of the labs permit me to apply the techniques I learned to actual situations and train me on the etiquette of reporting data to clients properly.”

One adjunct instructor chose to use OER materials because the focus of the CLT course differed so much from a traditional course. Many students in this class did not have a biology prerequisite course, and with the content of the course clearly lab-focused, rather than theory, this meant that the organizational structure and focus of a traditional textbook was not appropriate.

An extensive, multi-institution study published in the Journal of Computing in Higher Education (JCHE) provides evidence that students in OER courses perform as well as or better than students in courses using commercial textbooks with regard to withdrawal rates, passing with a C or better, and course grade.
MoSTEMWINs Final Report

Discovering Opportunities

St. Charles Community College (SCC), in partnership with the Missouri Job Center of St. Charles County, hosted a community job fair on May 4, 2018 that brought nearly 600 job seekers to SCC.

MoSTEMWINs participants were encouraged to attend and meet with a variety of employers seeking the skills they learned through the program. The fair not only provides opportunities for job seekers to find job leads and job search information, but a great place for networking.

“Job Fair 2018 is a great opportunity for job seekers to put themselves out there and see what jobs are available,” said Jenny Hahn Schnipper, SCC career services manager. “The job fair also provides employers the opportunity to access all the best job candidates in the area — both SCC students and non-students alike.”

The collaboration brought 127 employers in various career pathways, including MoSTEMWINs employer partners such as National Cart. SCC and the Missouri Job Center of St. Charles County has partnered to bring this event to the community for 25 years. SCC and the Workforce Investment Board (WIB) will continue to collaborate on this project. Other initiatives, specifically coding and welding, targeting individual and employer needs have also evolved through the MoWins TAACCT projects. Because of MoSTEMWINs, SCC has developed career pathway activities, such as Manufacturing Day, allowing prospective individuals an opportunity to engage with strategic employer partners to learn more about who they are and careers within their industry. Events such as these benefit individuals and employer partners, as well as strengthen regional workforce development.

Sustaining Operations

The grant supported SCC’s welding program and has successfully transitioned from a non-credit to a credit program, including three certificates, and a full two-year Associate in Applied Science (AAS) degree. Key factors to success as a credit program are offering American Welding Society (AWS) certifications, SCC’s reputation in the community, and partnerships with local companies that employ welders and fabricators.

The Certified Logistics Technician (CLT) and the Certified Production Technician (CPT) programs—developed in alignment with the respective Manufacturing Skills Standards Council (MSSC) industry credential—have been integrated into an Associate of Applied Science Supply Chain Logistics and Manufacturing Technology degree and will also be sustained with credit courses that will begin in fall 2018.

Grant staff established a successful model with the Adult Education and Literacy (AEL) partnership using the Integrated Education and Training (IET) model of education. Staff continues to seek additional funds to sustain this program.
Shepherding Students to Success

Intrusive advising involves intentional contact with students with the goal of developing a caring and beneficial relationship that leads to increased academic motivation and persistence.

MoSTEMWINs participants at St. Louis Community College (STLCC) worked with Laurie Hawkins, career pathway coach, throughout the entire grant period. She provided intrusive advising to 477 participants enrolled in one of the nine programs of study, as well as hundreds of potential participants that went through the onboarding process but were not enrolled in a program. Laurie began the intrusive advising relationship by providing career coaching, workplace readiness training, and supportive services. During this pre-training program she completed a career blueprint, a customized career and academic plan, and utilized the results of comprehensive assessments to identify which courses were required.

Laurie followed students through their workforce training program as well. While a beneficial relationship was built during the Portal program, support was needed to break down any barriers affecting participants’ attendance and academic performance. Laurie was persistent, and her efforts are largely responsible for a 76% completion rate for the Portal program and an overall 83% completion rate for the workforce training programs of study.

To complete the MoSTEMWINs intrusive advising life cycle, Laurie worked diligently to provide job placement assistance to those graduating from the workforce training programs.

Across all four career pathways: health science, life science, information technology, and engineering technology; 305 graduates secured relevant employment with assistance from Laurie.

St. Louis’ vision aligned with one key grant priority in particular—to deliver developmental education to students through a flexibly paced, modularized, and technology-enabled Adult Learning Academy (ALA), contextualized to career pathways and staffed by professionals. The ALA offered students an opportunity to work through literacy and math coursework in a lab setting, navigating material at their pace with individual and small-group instructional support. The model showed students in the ALA completing their developmental education courses in up to half the time of the college’s traditional programs with success rates of approximately 70%. The ALA has been designated as a promising practice by the U.S. Department of Education, and the college is considering scaling the program to its core curriculum. The ALA, along with intrusive advising/coaching and other aspects of the MoSTEMWINs Portal, resulted in measurable student success.
For State Fair Community College (SFCC), the MoSTEMWINs grant was all about intrusive advising. In third quarter 2014, SFCC launched the intrusive advising program, which assigned students to a navigator who, not only advised them academically, but provided a holistic approach to meeting their needs. Prior to navigation, part-time advisors and instructors primarily performed advising. Neither of those parties had access or knowledge about resources for student needs. After a survey was done of over 500 students who withdrew from college, it was discovered that most students who withdrew from college left due to life issues. Many times, the resources that could have helped them stay in college were offered on campus, but students did not have guidance.

Intrusive advising was the answer. Not only would students receive quality academic advising from navigators that are embedded in faculty offices and programs, they would also have an advocate — someone to hold them accountable and offer a helping hand when needed.

Prior to navigation, SFCC had a 58% Integrated Postsecondary Education Data System (IPEDS) (first-time, full-time) retention rate. After one year of the program, the IPEDS retention rate was 64%. Overall, the completion rate has increased from 28% to 48% over the life of the program. Clearly showing that the program pays for itself, all aspects of the program will be sustained.

MoSTEMWINs has assisted many areas of campus, including the various areas that have become familiar with open educational resources (OER).
Demonstrated Knowledge

State Technical College of Missouri (State Tech) has taken great strides toward expanding the Credit for Prior Learning (CPL) Policy.

The MoSTEMWINs grant, along with past MoWINs grants, has funded and supported research, education, and comparisons between consortia members on policies that are currently in use and ones that are being developed.

Grant staff have attended several Council for Adult Experiential Learning (CAEL) conferences that have been integral in the expansion of CPL at State Tech. CAEL was tremendously helpful during program mapping.

State Tech currently uses equivalency exams as the avenue for CPL, but continues to strive to develop additional practices. The equivalency exam has been used across campus and is displayed on the college website. It is included in all grant funded education and outreach pieces, as well as in discussions with grant participants at time of enrollment.

This credit for prior learning opportunity has been cited as a priority on the State Technical College of Missouri President’s 2019 Strategic Growth Plan.

Stronger Together

Through grant outreach efforts, State Tech was able to form an extremely strong relationship with the Missouri Department of Corrections. Their partnership with the Missouri Central Region Workforce Investment Board has expanded their grant computer concepts inside the prison walls. The computer concepts program of study launched at two Missouri correctional facilities. Justice-involved individuals were issued laptops for the duration of the program that they were allowed to take back to their cells — an unprecedented move in the state of Missouri.

Several avenues of sustaining the computer concepts program are in discussion with the Department of Corrections, the Central Region Workforce Development Board, and the college. Further discussions with the Department of Corrections are underway for how manufacturing apprenticeships can be expanded to their soon-to-be released population.
Three Rivers College

The Three Rivers College (TRC) vision for the grant provided manufacturing skills readiness training which resulted in the Fundamental Industrial Readiness Skills Training (F.I.R.S.T.) program. The college grant team utilized Opened Education Resources (OER) through SkillsCommons as a resource during the development of and continuous revision of program curriculum content, during alignment of program curriculum and during mapping of program curriculum. Additionally, OER SkillsCommons was utilized as a resource when establishing alternative college credit opportunities for their students. The program availed the students to earning up to five stackable credentials within the industry.

Tasha Hicks wanted to further her education to get the skills she needed to advance in her job. A program at Three Rivers College funded by the MoSTEMWINs grant allowed her to do just that.

“The program was very challenging but fun at the same time. It was hands-on and I got to use different tools,” Tasha said.

“Manufacturing skills are the most in-demand skills in the United States,” said James Dow, Instructor of Industrial Technology at Three Rivers. “People like Tasha are willing to say, ‘I can work a little harder for a while to prepare myself to do something better.’ ”

Three Rivers College held the MoSTEMWINs classes at its location in Sikeston. A layoff at a large manufacturing plant in that area had affected about 800 employees.

“We saw that with MoSTEMWINs we could retrain people who had been working at a plant, some of them for 39 years,” said Missy Marshall, director at Three Rivers College – Sikeston. The classes focused on training in new manufacturing technologies to increase students’ marketability and get them back into the workforce quickly.

“This program doesn’t require a lot of previous knowledge, but students do have to come in ready to work, and Tasha was a hard worker,” Dow said.

Tasha said the classes allowed her to further her education and move up at her job.

“I don’t think I could have done this without this grant,” Tasha said.

WATCH TASHA HICKS’ SUCCESS STORY

»» bit.ly/MoSTEMWINsTRC
IMPROVED STATEWIDE DATA COLLECTION, INTEGRATION, AND USE

Supplemental Round 4 Project

The Missouri TAACCCT grant programs and the college consortium recognized the importance of improving and building on statewide data resources. The consortium was awarded an additional $4.7 million in supplemental funding to improve statewide data integration and use. The MoSTEWMINs grant supplemental award supported the integration of data systems and policies in three key areas: (1) performance and employment outcomes for students who undertake noncredit coursework; (2) MoSTEWMINs grant participant real time data system; (3) the application of prior learning assessments to the program of study for students seeking degrees and certificates; and 4) a statewide data repository library for grant innovations and more. This grant changed the approach Missouri’s community and technical colleges take in reporting and using data about students and program performance. Having a single state data repository to house all the grant born innovations for the colleges to reference for many years long after the grant ends served to be an investment in sustaining grant born innovations, policies, models, and programs.

MoSCORES

For many years, institutions have regularly provided student information on traditional credit programs. Through this project, files were built for the institutions to report students in non-credit programs and to send program inventories to populate informational fields in the system, making Missouri one of the first states in the nation to link outcomes on noncredit credential programs. A user manual and data file layouts were created so new and existing institutions have a training resource to send the information required for participation.

Branded as MoSCORES (Missouri School Credentials for Occupations Resulting in Employment Success), the scorecard is a comprehensive statewide system that allows users to explore career opportunities at different education and training levels, including traditional credit programs and noncredit credentials. Key student performance measures allow colleges to quantitatively determine the successfulness of individual programs.

Results for employment rates, wages, graduation/credential rates, and industries hiring graduates are displayed by school for each program. Users can also look at tuition, program requirements, and training locations as they compare programs. The intent of the MoSCORES system is to assist students and adult learners in making decisions on how to invest their training dollars wisely for their desired outcome.
MoSCORES continued

Missouri Connections is used by the state’s secondary schools for career exploration. Through the grant, an adult-focused version of the tool was developed. The system incorporates Missouri data on in-demand occupations through Career Grades and Career Pathways. Assessment tools help to identify individual strengths, and work preferences then match to potential career options.

Reporting tools also answer frequently asked questions in the search for careers. Each report is customizable by selecting the education level or school and contain data on program outcomes for graduates. The tools are intended to be used together as an individual researches careers and potential education and training options.

The multi-year project has involved collaboration among the Missouri Community College Association; the Missouri Economic Research Information Center (MERIC), the research division of the Missouri Department of Economic Development; the Missouri Division of Workforce Development; the Department of Higher Education; and the Department of Elementary and Secondary Education. In addition, community college staff from institutional research, workforce, and those working with the Eligible Training Provider System provided guidance from the school perspective throughout the project.

Credit for Prior Learning Crosswalk Matrix and Statewide Digital Repository

The MoWINs Credit for Prior Learning (CPL) data project utilized the Council for Adult Experiential Learning (CAEL) to manage the project work activities.

Their role provided subject matter experts (SMEs) guidance, research, facilitation, training, and resources for the development of a statewide online course matrices mapping crosswalks for Missouri’s community and technical colleges as part of the MoWINs data integration initiative.

The grant deliverable was an online crosswalk matrix which is now housed in MCCA’s Digital Repository (samplelibrary.mccatoday.org) for member colleges to access, update, maintain, and reference long after the grant ends. Additionally, a sustainability report was developed and shows how the colleges’ work will continue to play a role in sustaining CPL, as well as at the Missouri system-wide.

Establishment of the CPL taskforce was implemented with a designated chairperson at each college. The taskforce includes representatives from academic, registrar, CPL coordinators, and administration. Today, the colleges have crosswalked 26 career and technical education programs of study to the national standard. The result of this first-ever online crosswalk matrix resource illustrates how each college is currently mapped to national standards, as well as how some colleges have also mapped their courses to additional academic and non-academic student learning opportunities. Additional work is planned at many of the colleges as they move from process understanding and into future student opportunities and process sustainability.

MoWINs has added valuable attributes to provide quality CPL opportunities to students. There is a willingness at all campuses to be part of the industry-need solution and work collaboratively with industry and each other to create a valuable crosswalk system.
MoHealthWINs

In 2011, the U.S. Department of Labor announced that Missouri was among the first round awardees of federal grants to train community college students for careers in growing healthcare occupations. The TAACCCT grant program launched a four-year expansion of healthcare education among a 13-member consortium of Missouri community colleges. The program, MoHealthWINs, was aimed at workers who had lost jobs as a result of increased imports, were unemployed or underemployed, and those who were low-skilled or lacked academic preparation for college or a career.

Five out of 10 best-paying jobs requiring an associate degree are health related, and individuals with an associate degree earn an average of $435,000 more over the course of their working lifetimes than those with only a high school diploma.

MoHealthWINs made it possible for students to achieve stackable credentials toward certificates or degrees. The program served more than 4,200 individuals, many of whom moved into one of four career pathways in high-demand healthcare fields with more than 229 industry partners: health

MoManufacturingWINs

In 2012, a nine-member consortium received $14.9 million from the U.S. Department of Labor to meet the growing demand for manufacturing labor. Since then, these nine colleges have made transformative changes to more than 40 programs, engaged more than 200 employers and helped 4,547 individuals improve their skills.

The MoManufacturingWINs initiative was built around four strategies that challenged both long-standing practices as well as the very culture of the consortium institutions. Despite these challenges, the colleges forged ahead, adapting along the way to meet both student and employer needs. The consortium’s efforts during those four years exceeded many of the target performance measures set in the initial grant application. MoManufacturingWINs has truly changed the lives of thousands of Missourians—more than anyone thought possible.
WORKFORCE DEVELOPMENT NETWORK

Sustaining the Consortium Collaboration

The Missouri Community College Association Workforce Development Network is a voluntary organization established to address the workforce development and training needs of every community and business in Missouri by improving collaboration between Missouri’s 13 community and technical colleges. Part of this effort includes the colleges’ commitment to sharing resources, allowing individual colleges to assure businesses they will be able to address the needs by drawing on the support of other colleges. The Network operates through the MCCA Workforce Liaisons Committee, a committee comprised of workforce development representatives from each of the colleges.

Since the organization is voluntary, the Network must build consensus and support among all member colleges for any proposed statewide initiatives. This buy-in component is one of the most important aspects of the Network because it ensures all initiatives address the at time disparate needs of different regions and communities across the state. It also makes the colleges equal stakeholders in the initiatives, making them more likely to work toward the successful implementation and development of the initiatives. It’s true that it can take time to reach consensus, but the final initiatives benefit from the input and expertise of the workforce development professionals who best understand the needs of their communities.

The increasing demand for apprenticeships highlights the importance of both types of attainment to educational institutions and businesses. Brookings' 2016 report, Preparing America’s Labor Force: Workforce Development Programs in Public Community Colleges, recommends colleges “promote students’ long-term success as well as immediate labor market outcomes” and incentivizes “the academic and vocational sides of community colleges to work together" and gather “detailed program data and link it to student record data in order to evaluate new programs.” The Community College Research Center at Columbia University’s 2016 joint report, Tracking Transfer: New Measures of Institutional and State Effectiveness in Helping Community College Students Attain Bachelor’s Degrees, echoes the latter recommendation, while also recommending
FROM THE DIRECTOR

Dear Friends,

Missouri’s Workforce Innovations Network (MoWINs) grants have proven to move the needle greatly since we started back in 2011. Within this final U.S. Department of Labor Employment & Training Administration (ETA) Round 4 TAACCCT grant report, you will learn how it reflects on the past four years. However, I would be remiss to leave our readers with how all three consortium grants have changed and left our state’s 13 community and technical colleges as a stronger workforce education and training system over these past seven years.

Since the consortium was formed, 11,711 unemployed or underemployed, veteran, veteran spouses and low skilled Missourians have benefitted from more than 100 workforce job training programs created or transformed as a result of these consortium supported efforts. The impact of these grants awarded over 10,000 industry credentials and goes much further than the adult students served. As a result, the state, along with the colleges as a whole, has seen tangible progress in addressing higher education reforms: first ever credit for prior learning policies and practices; advanced career pathways; intrusive advising models; contextualized developmental education curriculum; strengthened employer engagement and partnerships; and statewide non-credit data collection system.

All of these systemic changes are the result of many lessons learned that would not have been possible without the TAACCCT grants and the army of college personnel and stakeholders. At a time when budgets are extremely tight, the grant provided the consortium institutions the opportunity to increase access, expand capacity, and continue innovation.

Serving as the MoWINs Project Director has truly been rewarding and one of the best leadership experiences I could have ever undertaken. I am truly grateful for all the college staff and their college leadership who entrusted me with this opportunity to serve them.

Together, we are now positioned to serve even more adult learners in years to come with state-of-the-art workforce job training programs to support our state’s workforce and employer needs.

Dawn Busick-Drinkard
Statewide Grants Director
@wdprof
Our final grant leads retreat in Lake Ozark

To the Executive Advisory Committee, grant leads, and college administrators...

Thank you!

MOWINS EXECUTIVE ADVISORY COMMITTEE

<table>
<thead>
<tr>
<th>Brent Bates, SFCC</th>
<th>Brian Millner, MCC</th>
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<tr>
<td>Dawn Busick-Drinkard, MCCA</td>
<td>Maria Moody, OTC</td>
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<td>Kristi Davis, MO DWD</td>
<td>Don Robinson, STLCC</td>
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<td>Kelly Deloch, STLCC</td>
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<td>Joel Doepker, ECC</td>
<td>William Skains, MO WIB Chair</td>
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<tr>
<td>Monica Johnston, MCC</td>
<td>Alan Spell, MERIC</td>
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GRANT RECIPIENT/LEAD HOST INSTITUTE

- Metropolitan Community College
  - Patricia Amick
  - Grant Signatory
  - Susan Serrano
  - Grant Compliance Accountant

MISSOURI COMMUNITY COLLEGE ASSOCIATION

- Dawn Busick-Drinkard
  - MoWINs Project Director
- Bobby Remis
  - Communication Director
- Will Stevens
  - Data Analyst Specialist
- Ramona Mundwiller
  - Grant Administration Director
- Debbie Cheesher
  - Administrative Assistant
- Taylor Prichard
  - Workforce Network Director

THIRD-PARTY EVALUATOR

- Cosgrove & Associates
- Bragg & Associates

CONSORTIUM COLLEGES

- Crowder College
  - Kathy Collier
- East Central College
  - Tammy Stowe
- Jefferson College
  - Laura Klaus
- Metropolitan Community College
  - Tina Langston
- Mineral Area College
  - Bev Hickam
- Moberly Area Community College
  - Amy Wise
- North Central Missouri College
  - Jason Helton
- Ozarks Technical Community College
  - Ronda Long
- St. Charles Community College
  - Amanda Sizemore
- St. Louis Community College
  - Dianne Lee
- State Fair Community College
  - Lori Blalock
- State Technical College of Missouri
  - Nancy Wiley
- Three Rivers College
  - Dr. Dan Lauder

PARTNERS

- Western Governors University
- Missouri Department of Economic Development
- Division of Workforce Development
- Missouri Economic Research & Information Center
- Alan Spell
- Ronda Anderson
- Laura Lester
- 14 Local Workforce Investment Boards
- Missouri Department of Labor
- Employment Security Department
- Missouri Department of Higher Education
- 30+ Employers
MoSTEMWINs created, expanded, and redesigned new and existing science, technology, engineering, and mathematics (STEM) programs at member institutions to fill identified gaps between existing education and training opportunities, versus the needs of STEM employers.

To address these gaps, MoSTEMWINs implemented three major strategies:

1. Accelerate entry into career programs
2. Create clear pathways to STEM careers
3. Improve employment attainment
**EAST CENTRAL COLLEGE**

**116 PARTICIPANTS BY ELIGIBILITY**

- 7 VETERANS (42%)
- 6 UNEMPLOYED
- 81 UNDEREMPLOYED (58%)
- 40.3 MEDIAN AGE
- 22 LOW-SKILLED
- 107 INDUSTRY-RECOGNIZED AWARDS AND CREDENTIALS RECEIVED BY PROGRAM PARTICIPANTS
- 36 COMPLETED AT LEAST ONE PROGRAM
- 21 INCUMBENT WORKERS SAW A WAGE INCREASE AFTER ENTERING A PROGRAM OF STUDY

**ABOUT MoSTEMWINs**

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111
PARTICIPANTS
BY ELIGIBILITY

89%
VETERANS

11
17
34

11
LOW-SKILLED
3
TAA

27.1 MEDIAN AGE

46
UNDEREMPLOYED

INDUSTRY-RECOGNIZED AWARDS
AND CREDENTIALS RECEIVED BY
PROGRAM PARTICIPANTS

13
STUDENTS ENROLLED IN
ANOTHER EDUCATION
PROGRAM AFTER
COMPLETING

2
WERE EMPLOYED ANYTIME AFTER EXIT

24
INCUMBENT WORKERS SAW A
WAGE INCREASE AFTER ENTERING
A PROGRAM OF STUDY

11

11%

11%

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