

Tab 1 FY 2023 MoExcels Recommendations

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

The MoExcels initiative facilitates development and expansion of employer-driven education and training programs to substantially increase educational attainment. In FY 2020, institutions submitted 39 proposals requesting a total of \$74.8 million in state funds. That year, the Governor and General Assembly funded 18 proposals totaling \$16.3 million.

In FY 2021, institutions submitted 24 requests for new funds and two requests for continued funding from FY 2020 for a total of \$37.8 million. While these projects were not funded that year, The Governor and General Assembly funded 17 proposals totaling \$21.8 million.

For the FY 2023 application cycle, the focus of the program was adjusted to align with the department's strategic planning efforts. As a result, institutions were asked to consider how their proposals would increase educational attainment and career opportunities for populations historically underserved by higher education.

CURRENT STATUS

Staff reviewed the proposals and scored them using the attached rubric, which was posted online and distributed to institutions along with proposal instructions on July 21. Information sessions were held on July 26, August 18, and September 2 to give institutions the opportunity to ask questions regarding the application and application process. Proposals were due to the department on September 21, at which time staff followed up with institutions to seek additional information and clarify proposals. Staff from MDHEWD and the Department of Economic Development then reviewed scoring with the Commissioner on October 15, and the attached ranked list is the product of those processes.

For FY 2023, institutions submitted 26 requests for new funds and two requests for continued funding from FY 2022 for a total of \$50.8 million. Proposal summaries can be found in Attachment E.

NEXT STEPS

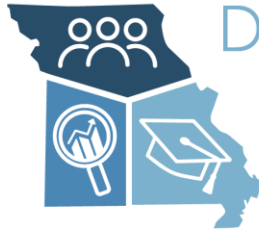
Upon approval from the Coordinating Board for Higher Education, the funding recommendations in Attachment D will be sent to the Governor's Office and Office of Administration for consideration in the FY 2023 budget.

RECOMMENDATION

Staff recommend that the Coordinating Board for Higher Education approve the attached list of funding recommendations for MoExcels.

ATTACHMENTS

- A. FY 2023 MoExcels Request for Proposals
- B. FY 2023 MoExcels Application
- C. FY 2023 MoExcels Scoring Rubric
- D. FY 2023 MoExcels Recommendations
- E. FY 2023 MoExcels Proposal Summaries



DEPARTMENT OF HIGHER EDUCATION & WORKFORCE DEVELOPMENT

MoExcels

FY 2023 Request for Proposals

The Missouri Department of Higher Education and Workforce Development (MDHEWD) is pleased to provide this MoExcels Request for Proposals (RFP). We look forward to receiving your submissions. Please send questions and submissions to Samantha Dickey at Samantha.Dickey@dhewd.mo.gov.

Background Information

MoExcels funding will facilitate development and expansion of employer-driven education and training programs to increase educational attainment and career opportunities for populations historically underserved by higher education. Funding recommended through MoExcels, if appropriated, will be available for a single fiscal year. If full funding of a project requires a multi-year phase-in, each year's funding should stand on its own in the event that funds are not appropriated in subsequent years. A core funding increase may be requested after the third year in which a funded project achieves its performance goals.

General Information

Purpose. MoExcels awards will fund projects that allow institutions to reach and serve new populations and to enhance support for underrepresented populations in order to give individuals the opportunity to train for in-demand occupations.

Who May Seek Funding. Proposals may be submitted by individual institutions or consortia of institutions. Only public institutions of higher education, including community colleges, State Technical College, and public universities, may submit proposals.

Allowable Activities. Funds appropriated through MoExcels may be used for outreach and recruitment efforts, student support services, professional and curriculum development, renovation of classroom space, the purchase of equipment, and other purposes approved in writing by the MDHEWD by September 7, 2021. Funds may not be used to pay students' tuition, fees, or other expenses.

Match. All proposals must include a match to cover a substantial portion of the cost of the new or expanded program, with a match of at least half being strongly preferred. Matching funds may be in-kind contributions but may not include the cost of staff time from the institution(s) proposing the project. The match can be provided by the institution; an organization; an

individual; a local, state, or federal agency; or a grant. While the match does not have to be in-hand, it must be firmly committed and documented.

Funding. Funding will be released as a reimbursement to institutions for project expenditures. Institutions must submit the MoExcels Reimbursement Form and supply copies of all invoices to MDHEWD to receive reimbursement.

Performance and Project Reporting. Funding recipients must report on performance on October 30, January 30, April 30, and June 30 annually until the program has achieved its objectives. MDHEWD may invite grant recipients engaging in similar activities to meet periodically to provide updates, identify best practices, problem-solve, and celebrate successes.

Proposal Requirements

Applicants must complete the MoExcels application form. You do not need to submit any additional documents unless you are asked to do so by the review committee.

Timeline

- July 21, 2021:** Call for proposals issued
- July 26, 2021:** 1:00 p.m.: Meeting to answer initial questions ([Meeting Link](#))
- September 2, 2021:** 1:00 p.m.: Meeting to answer final questions ([Meeting Link](#))
- September 7, 2021:** 5:00 p.m.: Deadline to request approval to fund expenses other than outreach and recruitment efforts, student support services, professional and curriculum development, renovation of classroom space, and the purchase of equipment
- Requests should be sent to Samantha.Dickey@dhewd.mo.gov
- September 21, 2021:** 5:00 p.m.: Deadline to submit proposals to Samantha.Dickey@dhewd.mo.gov
- November 16, 2021:** Recommendations presented to the Coordinating Board for Higher Education

Review and Award Process

Proposals will be scored by a committee comprised of staff from MDHEWD and the Department of Economic Development. The committee will score proposals based on a standardized rubric (attached). The committee's recommendations will be conveyed to the Coordinating Board for Higher Education, which will make final ranking and funding recommendations to the Governor.

Funding

MDHEWD reserves the right to recommend funding for a project in whole or in part, to request additional information, to reject any of the proposals submitted, and to re-issue this RFP and accept new proposals if the review committee determines that doing so is in the best interest of the state of Missouri. In the event that available funds exceed the total amount requested by all institutions, MDHEWD may invite institutions to submit requests for additional funding.

All costs incurred in preparation of proposals submitted in response to this RFP shall be borne by the institutions that apply for funding.

Proposal Overview

Short name of project

Institution

Contact with questions:

Name

Title

Email address

Phone number

What problem are you addressing? (no more than 200 words)

What is your proposed solution? Is your proposal a new solution or based on a previously proven approach? (no more than 200 words)

Projected credentials to be delivered

A credential is defined by USDOL as "an award in recognition of an individual's attainment of measurable technical or occupational skills necessary to gain employment or advance within an occupation"

	Baseline (AY 2021)	AY 2022	AY 2023	AY 2024	AY 2025	AY 2026
Annual Total	0	0	0	0	0	0
Five-Year Total	0					

Short Name of Project

Institution

Labor Market Analysis

For each credential listed on the proposal overview, provide evidence of current and future labor market demand.

Credential	Current Supply	Projected Demand	Gap	Link to Source	Notes

Employer/Partner Commitment

Summarize the support expressed in attached letters of commitment. Mark each applicable column with an X.

Employer/Partner	General Support	Financial Support	Input into Curriculum	Provide Work-Based Learning Opportunities or Hiring Consideration	Other (Describe)

Alignment with Strategic Plans

How does this proposal align with long-term local, regional, and statewide strategic plans for economic development?

Short Name of Project

Institution

Project Plan

Be as detailed as possible in your implementation plan, including enrollment and completion milestones for each credential proposed.

Activity	Milestone	Span of Time

Characteristics of Students Served by the Institution

Provide evidence that students anticipated to be served through this project are underrepresented in higher education or the program of study.

Student characteristics	Data demonstrating underrepresentation	Link to Source
<i>Example: students with disabilities, students of certain marginalized</i>		
<i>Example: students with disabilities, students of certain marginalized</i>		
<i>Example: students with disabilities, students of certain marginalized</i>		

Recruitment Efforts

Detail how to you will recruit and support these new students on your campus.

Educating Missouri's Workforce

Identify the geographic area in which program completers are likely to work and any special efforts that will be made to ensure completers do so.

Financial Sustainability Plan

How will this funding enable the institution to achieve discrete, sustainable objectives? How will additional operating costs be covered by the institution after the grant expires?

MoExcels Scoring Rubric

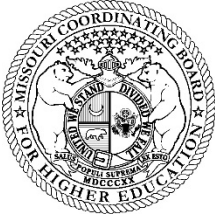
	Maximum Points	Points Assigned
Proposal provides evidence of a current and future labor market demand that is validated by Talent for Tomorrow labor market projections, MERIC, or other credible data source	8	
Proposal provides a credible plan for substantially addressing current and future labor market demand	9	
Proposal is supported by statements of need from employers and other partners in the area to be served that express real need and commitment	10	
Proposal aligns with long-term local, regional, and/or statewide strategic plan for economic development	5	
Proposal includes a detailed, realistic timeline	10	
Proposal provides evidence that students anticipated to be served through the program are underrepresented in higher education or the program of study	8	
Proposal provides a credible plan for recruiting and supporting underrepresented students on the campus	9	
Proposal identifies geographic area(s) in which program completers are likely to work and those areas are primarily in Missouri	8	
Proposal articulates a plan by which funded activities will be sustained after the funding period ends	5	
Proposal includes a detailed, realistic budget	5	
Proposal includes a funding match of at least 50%	5	
Proposal is well-written, follows the format requested, and reflects substantial thought and planning	8	
Cost per additional student served as a result of funding, annually		
In top quartile of proposals (lowest cost per completer)	10	
In second quartile of proposals	7	
In third quartile of proposals	4	
In lowest quartile of proposals (highest cost per completer)	1	
Total Points	100	0

Institution

State Fair Community College*
Metropolitan Community College*
Missouri University of Science & Technology
University of Missouri--Columbia
Crowder College
St. Louis Community College
University of Missouri--St. Louis
University of Missouri--Kansas City
Northwest Missouri State University
Truman State University
Jefferson College
St. Charles Community College
Missouri State University
Mineral Area College
Missouri State University--West Plains
Metropolitan Community College
University of Missouri--St. Louis
Lincoln University
North Central Missouri College
Missouri Southern State University
Northwest Missouri State University
University of Central Missouri
Missouri Western State University & North
Central Missouri College
Ozarks Technical Community College
State Technical College of Missouri
Harris-Stowe State University
State Technical College of Missouri
Three Rivers College

*Continued funding from FY 2022 proposals

Project Title	Funding Request
Manufacturing Programs	\$ 2,418,705
Advanced Manufacturing Institute	\$ 3,007,496
Re-engineering Missouri's STEM Workforce	\$ 815,000
Advancing Adult Learning Paths to Enhanced Credentials	\$ 1,000,000
Technical Education Improvement & Expansion	\$ 905,400
Driving St. Louis Transportation Jobs	\$ 447,064
Geospatial Curricular and Workforce Development	\$ 49,000
Student Career Pathways	\$ 1,536,000
Systems Management for Manufacturing and Agribusiness	\$ 763,211
Data Science Pathway	\$ 365,950
CIS Data Center	\$ 90,253
Technology & Logistics Regional Center of Excellence - Phase II	\$ 2,310,000
Advanced Composite Materials Workforce Training Initiative	\$ 2,550,000
Center for Excellence in Career and Technical Education	\$ 5,000,000
Hospital Simulation Training Lab	\$ 1,250,000
Enhancements to MCC Commercial Driver's License Driving Course	\$ 2,370,000
Industrial Engineering B.S. Degree	\$ 1,093,000
Emergency Response & Cybersecurity Initiative	\$ 1,000,000
Savannah Campus Completion	\$ 3,000,000
Center for Digital Media and Virtual Production	\$ 767,732
Cybersecurity Future	\$ 757,250
Arts Certification for Economic Impact and Development	\$ 1,299,000
Convergent Technology Alliance Center	\$ 9,228,445
Table Rock Campus Career Technical Center	\$ 2,750,000
Engineering Technology Center	\$ 3,000,000
Expanding and Developing Online Programs for Marginalized Communities	\$ 400,000
Automotive Technology Expansion	\$ 1,600,000
Diesel Program Project	\$ 983,500
TOTAL	\$ 50,757,006



Crowder College **Technical Education Improvement & Expansion**

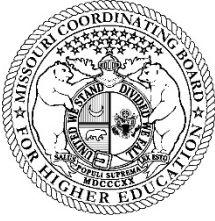
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

The Dell Reed Technical Education Center (TC), built in 1970 on CC's Neosho campus, prepares students with technical and professional skills needed to grow the workforce in southwest Missouri. We are experiencing a resurgence of interest in CTE as our business and industry partners recover from the COVID-19 recession. Our center's demand for skilled workers in critical fields has outpaced the number of graduates completing our programs. Even though demand for technicians has grown, it has continued to be challenging for our institution to fill and retain students in some of the technical education programs we offer. Other programs lack the physical space to train enough students in their field of study. The original footprint of the TC has not changed since 1970 due to a lack of substantial funding for remodeling, upgrading, or expansion. Additionally, the staff needed to grow and support these programs has not evolved much since its inception. Like most of the US, Missouri is still reeling from COVID, and we need to train and produce more technicians in SWMO. To do so, we are requesting funding to provide adequate facilities, support, and grow our CTE programs.

PROPOSED SOLUTION

CC's solution is to revitalize, expand, and better support programs through a multifaceted approach at the TC. The first strategy will be to revitalize current space in the TC through improvements to the physical space, including updated lighting, painting, improved network cabling, and communication systems. The second strategy will include a 3,100 sq. ft. expansion of the TC to provide additional classroom space for technical education programs and room for support staff that will be added to serve students in all CTE programs. Our third strategy will add faculty and staff positions to expand offerings and support recruitment, retention, and placement efforts. New positions at the college will include an advanced manufacturing technology instructor, CNS instructor, CTE advisor, CTE recruiting and retention specialist, and a marketing director/media specialist. The AMT instructor will enable us to expand our current program, providing instruction in manufacturing at a second campus. The CNS position is new to CC. All positions will be housed at the TC. Improving current space and expanding will allow us to add students to existing programs, improve students' experience, and train professionals in the latest programs of study. A consultant has confirmed that our proposed timeline is realistic and attainable.



Harris-Stowe State University **Expanding and creating online programs for marginalized communities**

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Traditionally, Harris-Stowe State University, the only HBCU in St. Louis, has been a traditional university, focused on in-person learning. The pandemic helped us realize that there is an immediate need for well-structured online programs built on a sustainable platform and infrastructure. Current scholars, and a new market of individuals seeking to return to school to complete their education but may have other work and life responsibilities, will benefit from online programs.

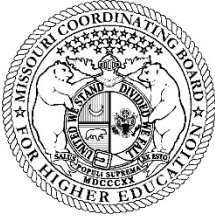
We've also learned that the majority of our traditional faculty members need development in order to teach effectively and create active learning ecosystems in the online environment.

Expanding and creating new online programs for Harris-Stowe will provide opportunities to individuals to return to school, obtain a degree, and enter the workforce or advance in the workforce. It will also provide faculty with new teaching strategies, methodologies, and technologies that will improve the learning environment.

PROPOSED SOLUTION

HSSU has identified four online programs that we feel are essential to the growth of Harris-Stowe State University and the community that is served.

1. Master of Business Administration (MBA)
2. Healthcare Management Certificate
3. Cybersecurity Certificate
4. Social Justice Certificate



Jefferson College CIS Data Center

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Providing a skilled IT workforce for Jefferson County and surrounding areas

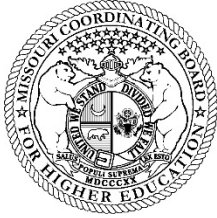
The shortage of skilled IT personnel is critical in Missouri and in the St. Louis area. The underrepresentation of rural populations and women in STEM fields represents a challenge to the region's ability to cultivate and maintain an adequate domestic scientific workforce.

With a high percentage of rural and female students, Jefferson College CIS Programs, including a new Cybersecurity Degree option, are in a good position to bridge the gap to meet some of the region's urgent IT and cybersecurity needs. Our program offers opportunities for IT certification not found in many metropolitan areas. The program needs a security datacenter to provide students real world implementation of security measures that they currently perform either in a limited capacity, or only through simulations. These experiences are needed to achieve higher numbers of industry certifications and supplement the existing IT workforce in the region.

PROPOSED SOLUTION

Our solution is twofold:

1. Increase recruitment and support of female and local high school students in the CIS programs
2. Create a Datacenter to provide:
 - a. Course delivery of virtual machines in multiple operating systems - all classroom equipment and delivery mechanisms to be supported by students.
 - b. Infrastructure to allow students access to equipment for hands on labs for networking, routing, and switching for both beginning and intermediate coursework.
 - c. Security portion for new Cybersecurity Degree option to allow for security labs without affecting college IT infrastructure.



Lincoln University

Emergency Response & Cybersecurity Initiative

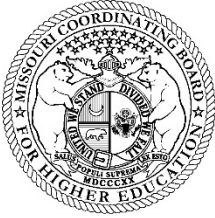
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Lincoln University will enhance the preparedness of professionals in law enforcement and social work to address crisis management from individual, community, and global perspectives. Individual support for front-line workers, seamless community response, and enhanced cyber security are needed resources in Missouri. Lincoln University recognizes the need for trained mental health, law enforcement and cybersecurity professionals. On September 17, 2020 Governor Mike Parson stated, "Missouri is hundreds of people short of being able to put them in uniforms, simply because people are not wanting to work in that area." According to the US Bureau of Labor Statistics, the need for trained cyber security professionals is set to increase 18% in the next decade. Across the nation, the issue of mental health in law enforcement and first responders not only personally but as they respond to the needs of their community, has risen to crisis levels. The American Psychological Association states that at least 20% of calls that LEO respond to involve some sort of mental health issue. Furthermore, 35% of police officers and 21% of first responders overall suffer from PTSD.

PROPOSED SOLUTION

To provide certification, education, and training for individuals seeking employment or advancement in law enforcement, criminal justice, emergency operations, cyber security, and mental health services. Mental Health Certification: To develop and implement curriculum for degree-seeking or currently licensed mental health professional that leads to a certification in the first responder related-mental health. Cybersecurity Certification: To develop and implement curriculum for current degree-seeking students or external recruits that leads to a certification in the cybersecurity. Emergency Operations Center Certification: To develop and implement curriculum for degree-seeking or existing LEOs that leads to a certification in the management of an Emergency Operations Center. Policy Academy: To enhance the training of policy academy cadets with expanded training opportunities through obstacle course and indoor shooting range training as well as mental health training for LEOs.



Metropolitan Community College MCC Advanced Technical Skills Institute

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

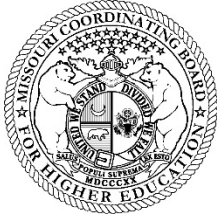
Metropolitan Community College (MCC) is progressing forward with the greater Kansas City area Advanced Technical Skills Institute (ATSI). It was determined via a program study and a facilities analysis that the MCC Business and Technology (MCC BT) facility that houses the career and technical education (CTE) programs is no longer a viable option for the technical skills institute. The cost to renovate and bring the facility up to code is cost-prohibitive. Upon this discovery, MCC has formulated a plan to establish a state-of-the-art technical skills institute by relocating the programs at the Business and Technology Campus to the Manual Career & Technical Center, which is currently owned by the Kansas City Public School District and will require some renovation.

PROPOSED SOLUTION

The ATSI will serve as a center of excellence for the advanced manufacturing field, providing a one-stop comprehensive student model with five pathways to completion, and workforce development to support regional needs and statewide economic goals.

MCC has negotiated with the Kansas City Public School (KCPS) District the opportunity to combine resources and use a KCPS facility located in the urban core of Kansas City to house the career and technical education (CTE) programs. KCPS owns the identified facility. The burden of renovations will be their responsibility with MCC partnering on the project. KCPS and MCC will enter into a long-term lease agreement for use of the facility.

Between FY 2013 and 2018, MCC claimed 1,481 graduates (completers) with certificates or AAS degrees supporting the manufacturing industry. Using this historical data and a conservative growth of 20% each year, the ATSI is expected to graduate (completers) 4,601 students with credit certificates or Associate of Applied Science degrees over the next 5 years.



Metropolitan Community College Enhancements to MCC Commercial Driver's License Driving Course

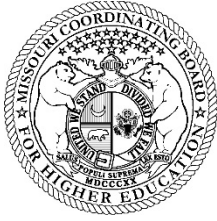
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

As part of Metropolitan Community College's (MCC) efforts to provide training in high-demand industries, MCC's Continuing Education provides a training program that prepares individuals to receive their Commercial Driver's License (CDL). This industry is in demand as the movement of goods across the region and the nation continues to grow. The COVID-19 pandemic has further increased the demand for cargo and truck drivers. Additionally, significant numbers of workers in this industry are retiring. MCC provides a program to help prepare the next generation of drivers. The proposed expansion would increase scheduling capacity resulting in MCC's ability to expand CDL, driver's education, passenger operation and motorcycle safety training.

PROPOSED SOLUTION

With the close of the MCC Business and Technology campus in early 2022, the CDL program will relocate to the MCC Blue River campus and share the driving track/course with the Public Safety Institute. The current track is in need of updates and upgrades to accommodate all uses. The existing track floods in certain areas and is deteriorating due to age. It will not be able to accommodate the needs of program growth. MCC issued RFP #20-7414-C1R4 on October 23, 2020 (contract with multi-year renewal options) to contract for trainers for the CDL Program. Apex CDL Institute LLC is partnering with MCC to allow the continued offering of the CDL program. MCC also has contracts with local police agencies. Driver's education and motorcycle safety are offered directly through the college.



Mineral Area College Center for Excellence in Career and Technical Education

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Mineral Area College lacks adequate space on campus to deliver the skilled and technical programs that are needed by the employers it serves. Currently, the Industrial Technology Department is housed in a building that was designed to be used as a day care and community use facility and shares the facility with the TRIO Upward Bound program that serves around 10 school districts, and they have had to give up the largest classroom for a nursing class.

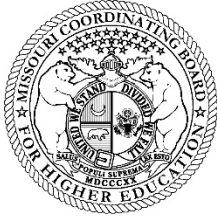
As employer needs have changed, the Technology Department has made adjustments where possible, but the building does not have the space or design to hold everything it needs. Local need for welding is very high as is the need for machine tooling, and now fiber optics. In addition to this constraint, we are adding three new healthcare programs that the industry has pleaded with us to add for years. This puts a growing strain on our Allied Healthcare Division that has already had to double simulation lab sizes due to loss of clinical sites. The college literally has no space to train residents for these high-wage, in-demand jobs.

PROPOSED SOLUTION

The college proposes building a Center for Excellence in Career and Technical Education. In 2019, the college was awarded MoExcels, CDBG, and NAP funds for the construction of Phase 1, which consists of two 4800 sq. ft. metal buildings that will house all new programs for Welding, HVAC Assistant, and Residential Plumbing and Wiring. MoExcels funds were released July 2021 and construction began September 1.

Phase 2 is an 80,000 square foot facility that finishes out construction of the Center for Excellence. All Industrial Maintenance Programs, Engineering Technician (AutoCAD) and Machine Tool would move to the new facility, freeing up the North College Center for Allied Health program expansion. New programs requested by our employers will also be added to Phase 2, including Fiber Optic Technician, Construction, and a two-year Commercial HVAC Technician Program. This is in addition to the new Certified Welding, HVAC Assistant, and Residential Plumbing and Wiring Programs being added in Phase 1 of the project.

The State of Missouri has set aside \$5 million in House Bill 19 appropriations for Phase 2, but a total of \$10 million is needed for construction and equipment.



Missouri Southern State University Center for Digital Media and Virtual Production

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

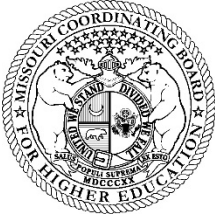
Labor market projections provide ample evidence that there is a need (both current and projected) for qualified workers in the field of Digital Media Production. Digital Media Production is a broad field that includes work areas in marketing, news media, film and commercial production and many more specialty areas. Most often, labor market projections are broken into specific areas rather than the broad area of digital media.

The Bureau of Labor Statistics (BLS) noted that Film and Video editors and Camera Operators to be among the top 20 “fastest growing occupations” for the 2020-2030 outlook. Additionally, the Bureau found the areas of Special/Visual Effects and Animation, Producers and Directors, and Broadcast, Sound and Video Technicians to be growing at a rate of 16%, 24%, and 21% respectively. O*net also confirms these outlooks. All positions typically expect some level of college credential, most expecting at least a bachelor's degree.

With the increased need for virtual collaboration and cost savings, advancement in the area for virtual and collaborative production is more essential than ever. The significant opportunity for remote and travel-based jobs within this market allows professionals to remain in Missouri as their primary residence while working both locally and nationally.

PROPOSED SOLUTION

Though renovation of studio space and purchase of modern of tools used in professional fields of media and virtual production, students and area workers will gain the experience and skills needed to become and remain effective and competitive in the continually evolving and expanding area of media production. As seen in the workforce data projections, individuals skilled in the various areas of digital media production are anticipated to increase significantly, but access to equipment is cost prohibitive to many who are interested in advancing in the discipline. By providing a center for teaching, professional development and research in the field, Missouri Southern will become a recognized industry leader in educating and advancing workforce skills in media by providing hands-on and professional experience with the most advanced and modern tools used in the media industry. Through renovating studios, updating computer labs, and purchasing advanced equipment for use in virtual filmmaking, cinematography, virtual and augmented reality and experiential environments, students and industry professional will have the opportunity to advance their skills in areas that would otherwise be cost prohibitive. This continually evolving media hub will focus on maintaining excellence in education of the constantly progressing areas of media technology.



Missouri State University

Advanced Composite Materials Workforce Training Initiative

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Advanced composite materials ("ACMs," sometimes called "lightweight materials" or "lightweighting") are the future. Primary industries driving growth in the application of ACMs are aerospace, transportation, infrastructure, marine, and sporting goods. Boeing in St. Louis is on the cutting edge of ACMs application as are other large aviation centers, businesses, and communities near Springfield.

The ACMs industry is challenged by the lack of a trained workforce to draw upon. Given the specialized nature of ACMs, workforce data—particularly in Missouri—is sparse. However, groups that have studied the issue uniformly indicate a large and growing labor gap in ACMs (e.g. https://iacmi.org/wp-content/uploads/2016/04/IACMI_SupplyDemand_FINAL_Oct-2015.pdf, <https://lift.technology/lightweighting-related-employment-reached-new-heights-in-2018/>, <https://lift.technology/wp-content/uploads/2016/01/Tennessee-Sept-Oct-2015-Data-Packet.pdf>). Industry recommendations to bridge this gap include enhancing ACMs learning lab facilities (<http://34clme3x4wcr42ioeq38uj7d.wpengine.netdna-cdn.com/wp-content/uploads/2018/11/4-Aligning-Technology-and-Talent-Development-Final-Report.pdf>) and creating short-term training opportunities (<https://www.aplu.org/library/aligning-technology-and-talent-development/file>).

The workforce challenges are even greater for businesses using novel, emerging applications of ACMs. Many of the potential employees in such businesses are degreed engineers and materials scientists who require additional training in ACMs and the emerging manufacturing processes used for their application.

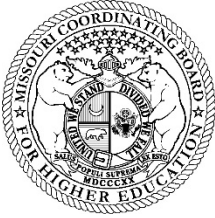
Data also indicate a substantial underrepresentation of women in ACMs jobs (https://iacmi.org/wp-content/uploads/2016/04/IACMI_SupplyDemand_FINAL_Oct-2015.pdf).

PROPOSED SOLUTION

MSU and Physical Sciences, Inc. (PSI) piloted a process to manufacture components for hypersonic vehicles by braiding ACMs. The pilot was successful, and plans are underway to scale the process. The demand is strong—PSI has secured millions in defense contracts and new opportunities continually emerge.

MSU could rent off-site industrial space to house the braider system. However, MSU can help address the ACMs labor gap if it constructs a 6,600 square foot campus facility to serve the dual purpose of housing the braider system and creating a ACMs learning lab and classroom. The commercial-scale braider will provide a unique learning tool for ACMs workforce training. MSU will leverage the facility to immediately establish short-term, non-credit certificate programs designed to meet the workforce needs of the ACMs industry, with a particular focus on novel, emerging applications of ACMs. The university will explore curricular changes and for-credit degree and certificate opportunities in the longer term.

To address the underrepresentation of women in ACMs jobs, MSU will market the program through Rosie (<https://rosiesgf.com/>) and NAWIC of Southwest Missouri (<http://nawicsouthwestmo.org/>) and will design a cohort designated for women.



Missouri State University – West Plains Simulated Hospital Training Lab

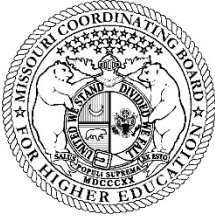
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

South central Missouri needs more certified allied health professionals. Even prior to the pandemic, clinical space and hands-on learning experiences for students at hospitals in this area were limited; today, however, these experiences are now even more limited and, of course, more dangerous. While Missouri State-West Plains has two newer (4 years old) simulation mannequins for use by its allied health programs, additional mannequins are needed. Other equipment is old, antiquated when compared with existent hospital and long-term care environments in the area, incompatible to current patient care software programs, and, in some cases, no longer functional. But more concerning, none of our simulation areas are close to resembling a hospital setting with its varying types of complex care units. Ultimately, the hands-on training at MSU-WP lacks the quality educational experiences needed to better meet today's need for these professionals. A new simulation training lab will also allow, one, the restart of our certified nursing assistant program that ended with the start of the pandemic as healthcare institutions restricted access to their facilities; two, a perfect transition point for the registered apprentices who will be in these programs; and three, free up needed space for our nursing program to expand.

PROPOSED SOLUTION

Hospital simulation training labs are not new; however, an updated, total system-focused simulation lab for MSU-WP would be. Furthermore, as the pandemic continues, the need for a lab is even more critical to provide an pandemic-fueled expansion of training in a learning environment that is safe and accessible. To that end, in a review of the most recent literature concerning simulated learning environments during COVID-19, one researcher said "simulation became a vital tool that provided solutions to the many challenges we faced." He also noted that simulation across the system was important to "address clinical operational issues that came with the influx of patients. Focus was placed on optimizing infection prevention, identifying safety gaps, and refining protocols to maximize workflow efficiency as well as patient and staff safety." (doi: 10.1097/SIH.0000000000000535). Another researcher said the simulation lab provided an opportunity to prompt quality care before the student entered the actual healthcare environment, saying "Our single-center preparedness intervention demonstrated multiple latent safety threats in relation to COVID-19, which can be recognized through simulation before translating into actual patient care." (doi: 10.1097/SIH.0000000000000504)



Missouri University of Science & Technology

Re-engineering Missouri's STEM Workforce

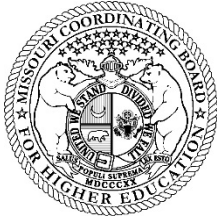
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

COVID has had a significant impact on the preparation of Missouri high school students for university STEM (Science, Technology, Engineering and Math) degrees, especially students in underserved communities where access to upper-level math and science courses is already limited. Students who were forced into on-line or hybrid courses are not nearly as well-prepared for the rigors of university STEM courses as their earlier peers who were taught by in-person teachers, and many of those students then need to make-up foundational STEM courses when they arrive at a university, slowing their progress to their ultimate degrees. In addition, students in underserved school districts, without access to advanced math and science courses, whether on-line, hybrid, or face-to-face, never consider careers in STEM. Likewise, Missouri workers in STEM-aligned businesses, including manufacturing, found their options for advanced or supplemental training limited by COVID-related restrictions, particularly hands-on training for advanced manufacturing processes. Such workers may be better prepared for on-line training, but like high school students, learn more in live settings, and hands-on experience with the equipment and in the facilities that will drive 21st century manufacturing cannot be reproduced on-line.

PROPOSED SOLUTION

Missouri S&T will develop two programs to help re-engineer Missouri's STEM workforce. The first is "Accelerated Math Placement" (AMP), a program designed to allow HS students to progress at their own pace, review fundamental concepts and develop confidence in solving problems, with on-line access to university personnel for tutoring when needed. This program will be based on a smaller program recently developed for students admitted to Missouri S&T who required supplemental training to prepare them for the first-year math courses they need to keep pace with their better prepared peers, but will be designed for and made available to high school students, particularly those in underserved communities. The second program, designed for Missourians already in the STEM workforce, is new and is based on requests from Missouri companies who want access to Missouri S&T facilities and faculty to learn about the latest advanced manufacturing and materials (M&M) processing techniques. We will retrofit labs on campus with additional manufacturing stations and will develop materials and experiences to provide hands-on training workshops. We will also upgrade our "global engineering" facility in St Louis to provide access for local manufacturers to S&T experts, face-to-face and on-line, to supplement this training.



Missouri Western State University & North Central Missouri College Convergent Technology Alliance Center (CTAC)

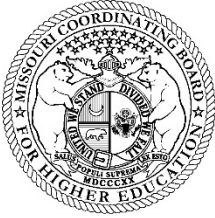
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Northwest Missouri's manufacturing base requires a diversified workforce with 25% of those employed in St. Joseph consisting of skilled positions in creation and manufacturing of Food Products, Bio & Ag technology, Industrial Products and Heavy Construction industries. St. Joseph, Missouri is the third largest exporter in the state after Kansas City and St. Louis. These major industrial producers in the area have again heightened their requests to hire individuals with a strong acumen at middle and advanced understanding of these strong technical based industries. These requests have been made directly to Missouri Western State University (MWSU) and North Central Missouri College (NCMC) leadership.

PROPOSED SOLUTION

Missouri Western State University (MWSU) and North Central Missouri College (NCMC) are collaborating by aligning educational priorities to launch a much-needed and sustainable workforce development initiative targeting St. Joseph and the Northwest communities. Together, MWSU and NCMC are creating a unique partnership in convergent technology which targets the strengths of both MWSU and NCMC's proven approach focusing on applied, hands on learning. Our proposal, termed as: The Convergent Technology Alliance Center (C-TAC), will be the home of collaborative educational programming featuring applied experiences in high-tech manufacturing utilizing content fundamental to our local industries along with innovative service technologies that are emerging within these industries such as artificial intelligence, information technologies, and security systems for critical infrastructure. By combining resources into the C-TAC that are needed by both institutions, the center will be efficient. A joint venture between MWSU and NCMC will complement well with local technical training institutions but will advance skilled-training at a hands on level while promoting and creating a strong pipeline to advanced learning in all these areas. We believe this is a collaborative and innovative undertaking, one that creates a viable model for partnerships among other community colleges and universities throughout the state.



North Central Missouri College Savannah Campus Completion

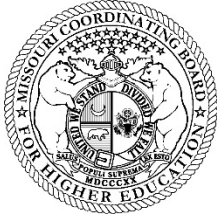
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

North Central Missouri College (NCMC) wishes to fully serve the students and employers in the western portion of its service area, providing better access to high quality nursing and allied health programs. Northwest Missouri includes many extremely rural, isolated communities. Both these and the city of St. Joseph trail state averages in income and college attainment. NCMC currently offers nursing programs in space leased from school districts in Maryville and Bethany. Classrooms are crowded with no room for future expansion, lab space is less than ideal, and many services must be accessed online or through travel to another location. In addition, the St. Joseph School District recently stopped offering three allied health programs for adults (radiologic technology, surgical technology, and sonography). Graduates of these programs met a critical employer need in northern Missouri, which is no longer being addressed. There is also strong need, both locally and nationally, for certified medical and nursing assistants. The data in the Evidence of Need tab is based on the Northwest labor market region alone, but many graduates will also seek employment in the Kansas City area, which offers many additional openings and exhibits similar critical workforce needs.

PROPOSED SOLUTION

NCMC proposes to complete construction of a new building that will house the nursing programs currently operated at a leased facility in Maryville, as well as provide space for three in-demand expansion programs in the allied health area. Regional employers report great need for graduates of all these programs. Locating these programs in one facility will allow for more efficient operation, improved student services, and a better campus experience. NCMC operates highly regarded, proven nursing programs with excellent licensure pass rates and employment opportunities for graduates. The three allied health expansion programs ran successfully for many years before being discontinued by the school district. These programs all meet a well-established need and have a track record of strong performance. In addition, NCMC will be able to offer medical assistant and nursing assistant programs onsite to help students enter a nursing or allied health career track. Other stackable credentials such as sterile processing certification and an estimated 100+ annual Basic Life Support (BLS) will be delivered, but are not included in the count below.



Northwest Missouri State University Protecting Missouri's Cybersecurity Future

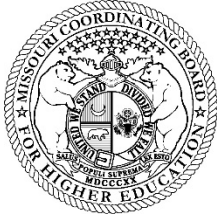
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

The state of Missouri is facing a labor shortage of trained cybersecurity professionals. The National Initiative for Cybersecurity Education, a program of the National Institute of Standards and Technology in the U.S. Department of Commerce, estimated that as of March 2021 there were 7,593 unfilled cybersecurity jobs in Missouri and the supply of Missouri cybersecurity workers is very low as compared to other states. Similarly, the Workforce 2020: A Call to Action report, developed by the Missouri Chamber of Commerce and Industry, states that Missouri needs to provide more public-private partnerships to provide opportunities to handle occupational needs and trends - and particularly trends in technology. In the fall of 2018, Northwest Missouri State began offering a new Cybersecurity major, and has recently added an "Information Assurance" emphasis to the Computer Science major. While these programmatic changes have laid the groundwork, Northwest needs to expand facilities to better fill the cybersecurity workforce gap, creating an education pipeline in cybersecurity training starting with regional high schools in northwest Missouri, and ultimately leading to more cybersecurity professionals in the state.

PROPOSED SOLUTION

Northwest is proposing to expand the number of students graduating with cybersecurity credentials by developing cybersecurity awareness and interest in secondary schools as a possible major to students attending Missouri's universities, providing appropriate cybersecurity training in higher education, and working with industry and government to fill open cybersecurity internships and jobs. We plan to address Missouri's cybersecurity labor gap by updating and expanding our cybersecurity program facilities and equipment, providing university faculty professional development, and offering cybersecurity outreach and programs to secondary schools. These outreach sessions, held on campus, will allow computer science faculty the opportunity to hold workshops, competitions, and other cybersecurity-related activities with advanced high school students throughout the northwest Missouri region. A key compliment to this outreach is the creation of a Cybersecurity Laboratory on the first floor of Colden Hall. The Lab, which would feature dedicated servers and compartmentalized, self-contained security rooms disconnected from the campus network, would not only facilitate advanced cybersecurity education in a secure environment, but also create a glass-walled demonstration space to drive cybersecurity interest among campus visitors. The Lab, coupled with enhanced faculty professional development and secondary school outreach, will drive interest, enrollment, and ultimately a higher number of cybersecurity degrees.



Northwest Missouri State University Systems Management for Manufacturing and Agribusiness

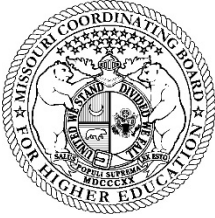
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

According to the Missouri Economic Research and Information Center (MERIC), the manufacturing industry represents over 12% of the total private sector employment in the state. A lack of highly trained and skilled workers, however, has left many of Missouri's manufacturers with persistent and harmful labor shortages. In 2020, MERIC reported over 40,000 manufacturing job openings across the state. In northwest Missouri, the lack of skilled workers in the manufacturing field is compounded by significantly limited regional opportunities to learn the skills and earn the certifications essential for today's modern production facilities. The skills and certifications required for production workers are closely aligned with another key Northwest Missouri industry cluster, agribusiness. Agribusiness – referring to food production, maintenance, storage, and support – is strongly concentrated in the region, with the Food Manufacturing industry showing the highest MERIC-derived "location quotient" of 5.1, or much higher than the national average of 1.0. Though concentrated, northwest Missouri agribusiness industries are facing similar labor shortages. Both the manufacturing and agribusiness industry clusters are in critical need of uniquely skilled and certified workers. Training for these skills, generally termed here as "systems management", is not readily accessible in northwest Missouri, exacerbating the labor shortage for these clusters.

PROPOSED SOLUTION

Northwest Missouri State University (Northwest) is proposing to increase the labor force for the manufacturing and agribusiness industry clusters by offering comprehensive Systems Management training and skill development, and certifying those skills with industry-recognized stackable credentials. Northwest will develop or expand courses that can be taken stand-alone (earning non-credit certifications), or "stacked" to earn a credentialed Systems Management badge. Coursework can be further aggregated to earn a systems management emphasis or minor to a Bachelor of Science or Applied Science degree. This multi-mode process allows complete flexibility for both the potential employee and the industry employer. According to the needs of the employer, a student/employee could choose a single certification, a stacked badge, or complete the full Systems Management minor. Equally beneficial, the student can work towards the next level of credential at a pace that meets their work requirements and current employment schedule. Stackable credentials proposed here include welding, precision measuring, electronics/electricity, mechatronics, PPE/safety, and other industry-standard certifications. To deliver the Systems Management credentials, Northwest will renovate a current education building, the McKemy Center, to include laboratory space, equipment (including a welding simulator), and safety and infrastructure upgrades. One FTE is requested to develop course curriculum.



Ozarks Technical Community College Table Rock Campus Career Technical Center

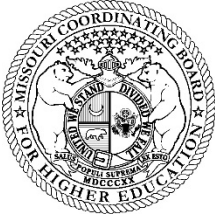
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

The lack of access to in-demand technical training programs for high school and postsecondary students at the Table Rock Campus. The current educational attainment levels in Taney County are significantly below the state average, and a significantly higher percentage of students at area schools are eligible for the Free and Reduced Lunch program. While OTC has recently added a building to the Table Rock Campus to expand technical training programs, there is need for more space for technical training and to allow for the delivery of Career Center programs in partnership with local schools districts. Local employers have expressed the need for additional training in areas that OTC offers at other locations currently, as well as new programs that this project would allow the college to begin offering.

PROPOSED SOLUTION

By constructing a Career Center facility at the Table Rock Campus to provide needed programs in partnership with surrounding school districts. This is a proven approach of providing high quality, low cost Career Center programs that allow high school students to gain workforce skills and credentials before they graduate. This has been proven to help students prepare for a quality job after graduation while also earning college credits that can accelerate their path toward advanced postsecondary degrees if they continue their education. This is achieved in partnership with the school districts as well as area employers, community organizations, and local governments who all contribute toward curriculum development tailored to local workforce needs. The programs in this sheet are some that have already been identified and the college will continue to work with area stakeholders for further development.



St. Charles Community College Technology & Logistics Regional Center of Excellence – Phase II

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

St. Charles Community College (SCC) continues development of its Technology & Logistics Regional Center of Excellence with a focus on growing in-demand workforce programming across industry sectors. This Center is the focus of SCC's ongoing efforts to develop and expand resources to address the lack of:

- Qualified workers in key career pathways.
- Access to technical training programs and resources.
- Access to equipment to support in-demand programs.

Center will serve students from SCC's service area to include St. Charles, Lincoln, Warren, Montgomery, Pike and Callaway Counties. This area spans over 3,239 square miles with limited and/or no access to technical training facilities and where public transportation does not exist. The region includes 30 high schools and three of Missouri's largest school districts per Niche's 2022 report.

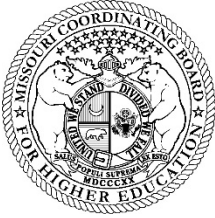
The National Association of Manufacturers' 2021 Third Quarter Outlook Survey, 80% of manufacturers indicate inability to attract a quality workforce as their top challenge. The Associated General Contractors of America and Autodesk 2021 Survey indicates 89% of employers are finding it difficult to find qualified workers. Supporting, Deloitte's 2015 report that nearly 3.5 million jobs will open before 2025 as boomers retire and estimated that 2 million will go unfilled due to a skills gap.

PROPOSED SOLUTION

SCC's proposal is critical to the economic growth and success of the region and will help meet the workforce development needs of business and industry. The need to meet the demand for a trained workforce in technical programmatic areas continues to be a key priority for the college. The proposed Technology & Logistics Regional Center of Excellence will be strategically positioned to maximize access for the businesses and residents throughout the region – specifically the counties: St. Charles, Warren, Lincoln, Pike, and Montgomery. Plans for the Center include a focus on programming to address workforce skills needs and demands in the areas of:

- Advanced Manufacturing and the regional industry clusters of automotive and aerospace manufacturing.
- Agriculture Technology and the region's precision agriculture and food production industry.
- Industrial Technical Skills including Maintenance and Controls to support infrastructure maintenance and development.
- Transportation and Logistics.

Funding from taxpayer approved of Proposition CC and MoExcels Phase I has allow SCC to begin the process. However, programs proposed are expensive – equipment and infrastructure - SCC is seeing estimated costs rise at a steep rate due to supply chain challenges. This funding will assist with further development of the Center and its proposed programming.



St. Louis Community College Driving St. Louis Transportation Jobs

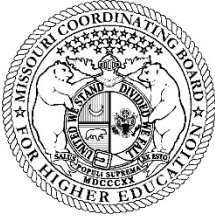
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Missouri's transportation employers support almost 300,000 transportation and logistics workers. MERIC Occupational Data (<https://meric.mo.gov/workforce-research/occupational-projections>) shows transportation in the top five occupational groups with projected employment of 70,581 and 8,977 annual openings by 2028. Expanded short-term training programs are needed to provide workers with CDL-A&B licenses and auto technician credentials to meet competitive, high-demand workforce needs. Since 2015, e-commerce buying grew by 21.3% creating strong demand for long-haul and light-delivery truck drivers. In 2018 alone, there was a national shortage of 60,800 drivers, up 20% from the previous year (American Trucking Association). New DOT-Federal Motor Carrier Safety Administration restrictions, effective February 2022, will require registered training providers for CDL-A&B training. This will create demand for STLCC training previously provided by the employer. STLCC will train forty-four drivers/year for regional employers, including Schneider, Environmental Restoration, Paper Transport, and TransAm Trucking. There is a shortage of technicians trained to service vehicles at new car dealerships and service facilities, which support 45,500 Missouri jobs. The Certificate of Specialization, Vehicle Inspection and Certificate for Vehicle Service will address the shortage of trained automobile service technicians, estimated by the National Automobile Dealers Association at approximately 37,000 each year. A Toyota/STLCC partnership will train fifteen annually.

PROPOSED SOLUTION

STLCC is beginning a multi-phased strategy for a Transportation Center of Excellence to align with the needs of Missouri's almost 20,000 transportation and logistics employers. This initial phase will renovate lighting and add a covered area to STLCC's Forest Park campus truck driver training location. This will expand capacity allowing for new evening classes to prepare an additional sixteen students annually for CDL-A credentials over the current daytime-only enrollment. Two crew-cab trucks will be purchased to begin a new program for the CDL-B (light truck driver) credential at the same location. Crew cab trucks increase the number of students per course and reduce waiting time for students to receive hands-on training. Classes will provide CDL-B credentials to 28 students annually. STLCC will be authorized by the DOT-FMCSA Training Provider Registry for this training. Both CDL-A and CDL-B students will receive Certificates of Completion (required by DOT-FMCSA ELDT) to then apply and test for CDL-A and CDL-B licenses. Finally, STLCC will partner with Toyota to launch a new auto technician training program that will train 60 credentialed service technicians in AY2023-26 for employment in regional auto dealerships and service facilities.



State Fair Community College Center for Excellence in Advanced Manufacturing

Coordinating Board for Higher Education
November 16, 2021

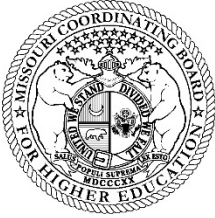
BACKGROUND

Currently, industry and manufacturing has identified access to highly trained and skilled workers as a concern, especially in specific advanced manufacturing and automation areas that are not readily available in rural Missouri locations. With Missouri unemployment currently at 3.3%, fewer people are seeking employment, thereby shrinking the number of available workers even further. Economic Leadership (a firm involved with the Missouri Chamber of Commerce Workforce 2030 report), reports that in Missouri, "the ability to attract the types of workers with the right sets of skills is an acute problem. The pool is not big enough, and we don't have enough people." Access to workers trained in Advanced Manufacturing and Automation has become a significant barrier to workforce and economic expansion in the central Missouri geographic area. Companies are willing to invest financially to train and/or "up-skill" current employees, but this often results in shutting down a portion of the facility to facilitate this type of training reducing productivity. An accessible space for local industry to install their own equipment is not available in the central Missouri area.

PROPOSED SOLUTION

State Fair Community College (SFCC) will remodel existing space to create a Center for Excellence in Advanced Manufacturing and Automation Training at the main campus in Sedalia, Missouri. By expanding dedicated space and purchasing new equipment, this center will be a focal point for providing both students, and those already employed, high-quality training and certification using state-of-the-art technology and equipment.

New training and certification opportunities will be created in such in-demand fields as Robotics; Welding; Climate, Energy and Refrigeration Control Technology; Machining; and Certified Production Technicians. We will work in coordination with other programs at SFCC, including the funded Missouri Apprenticeships in Manufacturing Programs (MoAMP). Through these opportunities, we will provide industry and manufacturing partners in central Missouri with more highly skilled graduates and we will provide them customized training opportunities to up-skill their current workforce using the Center's equipment or space in the Center for their own equipment. As part of the Center for Excellence in Advanced Manufacturing and Automation Training, we will guarantee completers a valid job offer, we will recruit additional prospective workers and place them in local industry. Through this project, we will increase the supply of trained workers in specialized Advanced Manufacturing, Automation and Robotics.



State Technical College of Missouri Automotive Technology Expansion

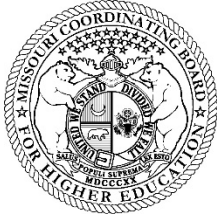
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

The auto service industry is suffering a shortage of qualified workers and a transformation from gas to electric power cars. This shortage will be compounded as the current workforce is not prepared to work on advanced systems such as self-driving cars and collision avoidance systems. The organization "TechForce" has indicated demand for technicians currently outpaces supply by nearly 3 to 1. Nationwide 642,000 auto/diesel/collision techs are needed between 2020 and 2024. State Tech's automotive facility has not been updated in thirty-five years. This project will modernize State Tech's automotive facility with an emphasis on emerging technology.

PROPOSED SOLUTION

State Tech has grown more than 60% over the last five years. A key to that growth has been state of the art facilities and a modern curriculum. The automotive program at State Tech is one of the oldest and largest academic programs, but filling this program has become increasingly challenging in recent years. Modernizing the curriculum and facilities will allow this program to grow while meeting critical skills asked for by employers.



State Technical College of Missouri Engineering Technology Center

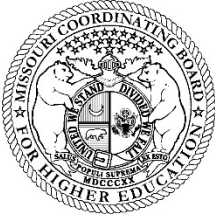
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

State Tech is Missouri's Two-Year Technical College. State Tech has grown over 60% over the last 5 years, is ranked #1 in the country, and has a graduation rate that is second only to Truman State and is second in the country at the two-year level. State Tech is poised for continued growth which can only be accomplished with additional renovated space. COVID-19 has exposed significant deficiencies in the nation's supply chain. The speed of which processes are being automated is expected to increase significantly as a result of the pandemic. All of the academic programs utilizing this space will educate technicians for roles in a highly automated workplace.

PROPOSED SOLUTION

This project would renovate the Engineering Technology Center, Welding Technology Center, and add a structure that connects the two buildings. Six academic programs would be expanded including electrical, automation and robotics, welding, precision machining, facility operation and maintenance, and electronics. The space freed up by the renovation would allow for the later expansion of digital marketing, agribusiness, heating ventilation and air conditioning, and business. All of the previously listed programs are full or close to being full. This approach will allow State Tech to scale all of them. Scaling programs by doubling their size is a proven approach that has resulted in State Tech's growth. The entire transformational project will touch nearly 100k SF of space. The first phase touches 89,321 SF at an estimated cost of \$25,000,000. Multiple funding sources will be utilized to complete the project.



Three Rivers College Diesel Program Project

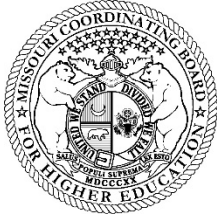
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Southeast and South Central Missouri have experienced challenges with workforce shortages during the COVID-19 pandemic. Technicians with experience in maintenance and repair of diesel engines are in short supply and this has a negative impact on the transportation/truck driving industry. Trucking and other transportation companies in both regions are desperate for technicians with knowledge and experience in diesel technology. Currently, students who successfully complete Three Rivers College's diesel program are finding jobs, having multiple job offers in most cases. We need to increase the training capacity for this program to meet the needs in both regions.

PROPOSED SOLUTION

Training capacity needs to be increased for the diesel program. This program is a short-term training designed to get students both prepared and into the workforce as quickly as possible. This project will be accomplished through the renovation of classroom space, purchase of equipment, and curriculum development. Renovation of an existing building will create lab space necessary to teach the various components of the program. Curriculum for credit and non-credit courses will be developed. Equipment will be purchased for the diesel technology lab which will allow students to complete hands-on elements needed to prepare them for the workforce, expanding existing capacity.



Truman State University Data Science Pathway

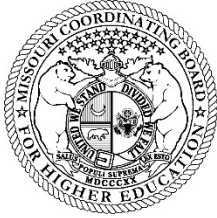
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

This project aims to address two separate, but related, problems. First, students from underrepresented groups are historically poorly represented in STEM fields which excludes them from many of the most high-paying jobs in Missouri and the nation. Second, the field of Data Science (also referred to as Data Analytics, Business Analytics, and other applied statistical jobs) continues to experience a shortage of qualified personnel - despite the growth of educational opportunities in Missouri and elsewhere. Because of the vast quantities of data that are being produced by science, commerce, healthcare, education, finance, and other fields, the demand for analysis will continue to outstrip the supply of analysts. If Missouri can improve its capacity for producing highly qualified data analysts and analytically-minded graduates, employers will have an incentive to locate operations in the state. Moreover, as businesses make a concerted effort to employ more underrepresented individuals, Missouri stands to be a more attractive state for its increased population of talented and prepared underrepresented students.

PROPOSED SOLUTION

This project aims to address two related problems. First, historically underrepresented students are poorly represented in STEM and business fields, excluding them from many of the most high-paying jobs in Missouri. Second, the Data Science/Analytics field continues to experience a shortage of qualified personnel. We contend that this is partly due to a lack of outreach to the K-12 and 2-year college sector to build interest and manifest pathways for students to attain higher credentials in the field. A recent query projecting data science job demand revealed 11.72% and 11.81% increases in demand over the next ten years at the bachelor's and master's degree levels, respectively, compared to 4.5% in overall job growth during the same period. Degree holders can expect median salaries of \$82,000 (bachelor's) and \$92,000 (master's) (Burning Glass Technologies 8/30/21). Because of the vast quantities of data being produced by science, business, healthcare, education, and other fields, the demand for actionable analysis will continue to outstrip the analyst supply. If Missouri can improve its capacity for producing highly qualified analysts, and generally analytically-minded graduates, employers will have an incentive to locate operations to the state – particularly if they can improve their hiring of historically underrepresented practitioners.



University of Central Missouri

Arts Certifications for Economic Impact and Development

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

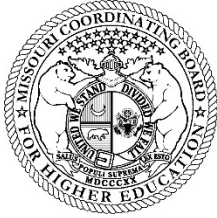
The arts play a significant role in urban revitalization and economic development and were significantly impacted during COVID. The arts attract residents and tourists who in turn enhance the profitability of surrounding businesses, property values and the tax base. The arts attract a well-educated workforce—a key incentive for new and relocating businesses. Finally, the arts contribute to the creativity and innovation of a community.

Sustaining a local arts district requires a skilled regional workforce to meet the rapid growing demand. As evidenced by labor statistics and input from business partners, there is significant demand for trained arts professionals, particularly those focusing on the technical and entrepreneurial aspects of the arts: arts-trained workers move into many fields, from event planning to entertainment, video games to media. The U.S. Bureau of Labor Statistics projects significant jobs growth in arts and arts-adjacent fields: we need to develop the workforce to fill those positions. Finally, many artists start their own small businesses to work as freelancers, designers, and entrepreneurs, developing creative solutions to a wide range of problems and further stimulating the local economy. Arts entrepreneurship training will enable artists to develop these businesses more successfully, providing additional community benefits.

PROPOSED SOLUTION

UCM proposes an expansion of arts credentialing in the Kansas City metropolitan area through collaboration with an established community space known as the Keystone Innovation District within the KCMO urban core. Building on UCM's longstanding history of training highly successful arts professionals through undergraduate and graduate degree programs, we will repackage existing curriculum into modular offerings, workshops, and courses appropriate for working professionals. In some cases, we plan to develop new curriculums as stackable certificates and micro-certificates, aligning these to various manufacturer certifications wherever possible. The Keystone Innovation District, centered at 18th and Troost, between the Historic 18th and Vine Cultural District and the Crossroads Arts District, between Hospital Hill and Downtown will be the home to a community where universities, corporate partners and philanthropic organizations unify ideas across programming, partnerships and initiatives. Keystone aims to advance the regional goals of shared prosperity, and accelerate economic opportunities for all.

In addition to the community benefits the arts provide, arts-related training helps artists to develop their skills, produce higher-quality output, and often directly benefits non-arts enterprises. Corporate and other events, website development, product and user experience design, marketing, and advertising all draw directly from arts training, as do many other fields.



University of Missouri – Columbia **Advancing Adult Learner Paths to Enhanced Credentials**

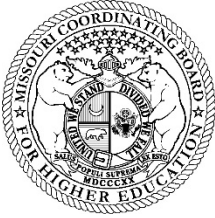
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Adult learning is more important than ever in this fast-paced, constantly evolving, global market that both Missouri employers and employees find themselves facing. All Missouri businesses are working to bounce back from the effects of the COVID pandemic but according to the MERIC 2020 employer survey skilled trades are continuing to battle a larger functional area shortage when compared to other business needs (patient care, manufacturing/maintenance, information technology, etc.). The 2020 MERIC found that 60% of businesses that employ skilled trades workers are experiencing a shortage of applicants up from 49% in 2019. With the labor shortage and the increased pressure to modify how skilled trade businesses conduct their day-to-day the interest in both upskilling current employees for manager positions as well as seeking out new employees ready and prepared for open positions is crucial. Skilled labor is not the only sector seeing a need for upskilling employees. The business sector may hire for technology specialties or healthcare, but need to train these exceptionally skilled workers to understand the overall financial planning/forecasting; talent management; diversity, equity, and inclusion; strategic client consulting; and many others. There is a need for quality training and education without obtaining another full degree.

PROPOSED SOLUTION

The University of Missouri-Columbia is uniquely positioned to expand employer-driven education and strengthen workforce preparation as a land-grant institution. Not only is MU known for undergraduate and graduate degrees, but through extension MU has a network of county extension councils throughout the state unlike any other institution in the state. Through MoExcels, MU will create a Center for Lifelong Learning that will serve as the hub for industry-driven certificates based on immediate needs from employers around the state. We will create an advisory group to identify gaps from a grassroots approach in order to create an agile process to react to those needs and provide adult-centered education. During the MoExcels funding year 2022-23 we will create certificates in Construction Management and a business certificate to include multiple stackable training options, in addition to customizing our Supply Chain certificate throughout the state. MU will partner directly with individual businesses to create custom certificates to meet their individual needs along with marketing packaged certificates to adults across the state. The certificates will help adult learners progress toward their next career milestone, shift careers or start something new; these programs will also provide a pathway to a full degree, if desired.



University of Missouri – Kansas City Student Career Pathways

Coordinating Board for Higher Education
November 16, 2021

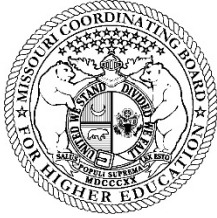
BACKGROUND

UMKC seeks to be responsive to the needs of underserved students through holistic student services and to evolving regional workforce demands. In sum, our objective is to help students reduce barriers so that they can attain their educational goals and achieve good paying jobs within in-demand professions. Professional Mobility Escalators™ is a new, innovative program that will increase access and improve retention and graduation rates of historically underrepresented, first-generation, low income, and underprepared students from the Kansas City area. Additionally, existing UMKC mentoring/support programs* that directly target the population of interest lack the needed career guidance, development, and placement services. Our mission to prepare future leaders who will fuel economic development in Missouri can be furthered by this MDHEWD MoExcels initiative.

*First Gen Roo Scholars (n=80, <https://www.umkc.edu/asm/first-gen-roo/>), ACCE (n=80, <https://info.umkc.edu/multiculturalstudentaffairs/aace/>), Avanzando (n=165, <https://info.umkc.edu/multiculturalstudentaffairs/avanzando/>), and Summer Bridge (n=45, <https://www.umkc.edu/asm/summer-bridge-scholars/index.html>).

PROPOSED SOLUTION

Professional Mobility Escalators™ offers a unique and engaging cohort-based model responsive to regional workforce needs that expands student's pathways to economic opportunity. Targeted outreach and recruitment efforts will focus on area high schools and community colleges with historically underserved student populations for the fall semester 2023 cohort. The tracks of Healthcare, Education, Business/Engineering, and Law & Justice were established through community input as part of the UMKC Forward process and will launch fall semester 2022 for FTC and transfer students, serving 200 students. The escalators are defined by five components: ongoing career guidance and development, community professional/ faculty expert mentoring, an applied learning experience, professional access preparation, and a credentialed leadership development program. Students will choose a track independently from their major. For example, one student from the conservatory may be interested in using their degree to educate others by becoming a dance teacher, while another may want to open a dance studio business. These students would have different mentors, applied learning experiences, and professional preparation. Students can also change tracks as the result of career discovery. Programming and services developed will also be made available to support students in existing programs that directly target the population of interest.



University of Missouri – St. Louis Geospatial Curricular and Workforce Development

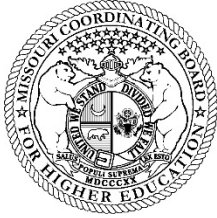
Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

In 2024, the \$1.7 billion National Geospatial-Intelligence Agency West (N2W) will open its new headquarters on 97 acres in historic St. Louis Place, an underdeveloped neighborhood in North St. Louis with high levels of poverty and decades of disinvestment. N2W represents one of the largest federal investment in Missouri history and will complement the existing National Geospatial-Intelligence Agency (NGA) campus, located just a few miles away. The establishment of N2W arrives with tremendous potential to create a geospatial innovation hub in the St. Louis region and Missouri generally, to grow diverse talent pipelines to meet the needs of geospatial employers, to advance geospatial research and entrepreneurship, and to strengthen the neighborhoods surrounding N2W. These opportunities are interconnected. To build a geospatial innovation hub, the region must take bold steps now to address critical skill gaps, to ensure equity and inclusion in talent pipelines, and to advance community-led development work in the neighborhoods surrounding N2W. The Geospatial Collaborative at the University of Missouri-St. Louis (UMSL) is poised to be a driving force in helping the St. Louis region and Missouri realize its potential as the nation's leading hub for geospatial education and innovation.

PROPOSED SOLUTION

The vision of the UMSL Geospatial Collaborative is to fully integrate within the broader St. Louis geospatial ecosystem and become a recognized leader in bridging academia, industry, and government to solve community issues through advanced geospatial tradecraft. The Collaborative's mission is to transform, secure, and empower our communities through geospatial knowledge. The Collaborative will become a cornerstone in the rapidly developing geospatial ecosystem. With this grant, the Geospatial Collaborative will focus on increasing the geospatial talent pipeline into the growing regional and Missouri economy by helping to build a Geospatial Emphasis Area to the already existing UMSL Data Science and Analysis BS Degree. Graduates from this program will directly support the growing St. Louis Area Geospatial Ecosystem (SAGE) as called for by the GeoFutures Report (2020). Building degrees to match employment opportunities is a proven approach to grow a skilled and diverse workforce in St. Louis and across Missouri.



University of Missouri – St. Louis Industrial Engineering B.S. Degree

Coordinating Board for Higher Education
November 16, 2021

BACKGROUND

Industrial Engineering is an essential discipline that involves the design, development, analysis, and improvement of integrated systems which depend on a variety of materials and technologies. It is a vital and growing field, especially in Missouri. Industrial Engineers combine scientific, mathematical, and statistical methods that optimize processes, which in turn maximize profits and efficiencies. Industrial Engineers are employed in private industry, as well as government and nonprofits. A Bachelor of Science (BS) degree program in Industrial Engineering at the University of Missouri-St. Louis will significantly contribute to growth and development of the aerospace, agricultural, biological, chemical, computer, advanced materials, medical, pharmaceutical, and other industries in the region and across the state. Corporations such as Bayer, Boeing, Nidec, Pfizer, and Roeslein Associates have asked UMSL for its creation as they need graduates from this program now. According to MERIC and Burning Glass, the job demand is expected high and grow by 9.58% in St. Louis and 11.08% statewide in Missouri in the next 7 years.

PROPOSED SOLUTION

The University of Missouri-St. Louis (UMSL) will create a new industrial engineering undergraduate degree program. Housed in the College of Arts and Sciences, this degree program in Industrial Engineering will provide rigorous, relevant, and affordable engineering education to the diverse and talented population of the St. Louis region and of the state in order to address the evolving needs for engineers and to support workforce development and the economic growth of Missouri. UMSL already has existing and successful engineering programs. This new degree will build upon those successes. This proposal helps to fund the cutting-edge teaching and research laboratories required to launch this new academic program.