MiSTEM Network Region Strategic Plan

MiSTEM Network Region Name:

Greater West Michigan Region (Allegan, Kent, Montcalm, Muskegon, Newaygo, Ottawa Counties)

MiSTEM Network Regional Director:

Kris Pachla

Date Range:

October 1st, 2018 through September 30, 2019

Key Objective #1 - Create a STEM culture	
Goal 1:	Create a regional MiSTEM communication plan as part of a statewide MiSTEM communication plan.
Baseline:	● Business and education do not have a common working language ● There is a lack of knowledge about who does what related to STEM and the strengths in our area ● There is not a centralized system, regional or statewide, that showcases talent needs that connect to specific STEM career opportunities ● Currently, there is not a mechanism to showcase STEM offerings/events/programs ● There is not a common definition of STEM that is acknowledged by all stakeholders within the region Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and Business, Community, and Education Liaison (Diane Miller) with support from community stakeholders
Grant Criteria:	99(s)7(a) 99(s)7(c)
Strategies to Reach the Goal:	
(a) Collaborate with the MiSTEM Executive Director, Regional Directors, and the Department of Technology, Management, and Budget on messaging, branding, and communication for the MiSTEM state initiative and contribute to the development of the following: ● Website (regional and statewide) ● Print materials (regional and statewide) ● Social media presence (regional) ● Regional newsletter	
(b) Identify the regional audience (education, business, parents, government, and community members) and develop an implementation plan and timeline/calendar for which form of media communication is best for each audience	
(c) Ensure accessibility of communications to all stakeholders including rural/socioeconomic disadvantaged populations and those with little/no access to technology	
(d) Create a regional communication working budget	
Description, including stakeholder involvement and applicable funding sources: N/A	

Goal 2:	Build STEM awareness and promote the value of STEM education and careers
Baseline:	● Stakeholders see many STEM offerings being done in silos and find a lack of communication between educators, parents, and the community on STEM events, offerings, value of STEM, and connections to STEM career pathways ● Currently the region does not have a practical or centralized system to connect and collaborate on STEM projects or programs ● Not all students in this region have access to Career Quest or MiBright Future tools for career options and pathways ● Not all parents have access to information or resources related to STEM fields or career pathways ● There is not a common definition of STEM that is acknowledged by all stakeholders within the region Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and Business, Community, and Education Liaison (Diane Miller)
Grant Criteria:	99(s)7(a)i 99(s)7(a)ii 99(s)7(b)

Strategies to Reach the Goal:

a) Complete an environmental scan of STEM related businesses in each county

b) Complete an environmental scan of STEM events, programs, and resources

c) Work with stakeholders to create a clear definition of STEM education and careers

d) Create and populate a dashboard on the Greater West Michigan regional MiSTEM website for parents, students, community members, and businesses showcasing and promoting STEM programs/events, talent needs, internship, apprenticeships, and career fairs that connect to specific STEM career pathways

e) Provide a visual presence at 6 school career fairs and/or industry trade events and 4 professional conferences to promote awareness and value of STEM

f) Evaluate the utility of a STEM awareness survey, modified from the Iowa model

Description, including stakeholder involvement and applicable funding sources: N/A

Considerations for Action Planning		
What <u>assets</u> can be leveraged to help your regional/state team get this work done?	*What <u>barriers</u> should you anticipate as you implement these strategies?*	*What unintended consequences or trade-offs should be considered?*
● Business/industry in-kind donations ● Existing STEM education programs and professionals	● Business to education language differences ● Lack of access to the internet in some areas ● Lack of funding for some districts	● Exclusion of liberal studies if we focus only on STEM areas

Key Accomplishments of the First Year Plan
Quarter 1: ● Creation of state website with links to regional websites (1a) ● Develop communication plan, budget, and implementation timeline (1b)
Quarter 2: ● Baseline data collection from environmental scan for STEM related businesses in Region 8 (2a)
Quarter 3: ● Baseline data for STEM events, programs, and resources (2b) ● Create website dashboard to promote STEM programs/events, talent needs, internship, apprenticeships, and career fairs (1a, 2d)
Quarter 4: ● Final working definition of STEM (2c)

Key Objective #2 – Empower all STEM teachers **Note: Teachers should be thought of more broadly as Educators.*	
Goal 1:	Define and identify high-quality STEM professional learning experiences for educators at all levels across our region.
Baseline:	● STEM instruction exists in small pockets but is segmented and isn't consistent among grade levels. ● Educators lack high-quality STEM curricular materials and professional development to support connected/multidisciplinary instruction. Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and STEM Education Coordinator (Ginger Rohwer)
Grant Criteria:	99(s)7(a)iii 99(s)7(d) 99(s)7(e)
Strategies to Reach the Goal:	
a) Develop a definition or baseline understanding of high-quality STEM professional learning experiences	
b) Build a list of STEM professional development opportunities in the region and begin assessing their quality	
c) Identify gaps in STEM professional development by working with district and ISD level curriculum specialists and informal organizations (JA, 4H, Boys & Girls Club, Boy Scouts, Girl Scouts, etc.)	
d) Evaluate what support structures are needed to fill gaps identified in 1(c)	
Description, including stakeholder involvement and applicable funding sources: N/A	
Goal 2:	Promote STEM professional learning experiences through creation of a searchable, online dashboard of high-quality professional development providers in our region.
Baseline:	Currently no organization collects and maintains PD opportunities across our entire region.
Goal Lead:	Regional Director (Kris Pachla) and STEM Education Coordinator (Ginger Rohwer)
Grant Criteria:	99(s)7(a)iii 99(s)7(d) 99(s)7(e)
Strategies to Reach the Goal:	
a) Develop the platform and structure of the dashboard and populate the corresponding database	
b) Where appropriate, promote the use of and connection to STEMworks programs	
c) Advertise the database to educators through local schools districts, ISDs, and other community organizations involved in STEM education	
d) Identify metrics to measure promotion of STEM professional learning experiences	
Description, including stakeholder involvement and applicable funding sources: N/A	

Considerations for Action Planning		
What <u>assets</u> can be leveraged to help your state team get this work done? ● Existing PD offerings through local districts, ISDs, and colleges/universities ● Business/industry in-kind donations ● STEMworks database and evaluation rubrics	*What <u>barriers</u> should you anticipate as you implement these strategies?* ● Shortage of substitute teachers ● Lack of incentives for PD beyond districts ● Time and cost of PD	*What unintended consequences or trade-offs should be considered?* ● Teacher burnout ● Lost instructional time ● Long term sustainability

Key Accomplishments of the First Year Plan
Quarter 1: ● Develop a definition or baseline understanding of high-quality STEM professional learning experiences (1a)
Quarter 2: ● Build a list of STEM professional development opportunities in the region and begin assessing their quality and identify gaps that exist (1b,c)
Quarter 3: ● Develop the platform and structure of a dashboard that allows for easy interaction with the database (2a) ● Evaluate what support structures are needed to fill gaps (1d)
Quarter 4: ● Advertise and promote the database (2b,c) ● Identify metrics to measure promotion of STEM professional learning experiences (2d)

Key Objective #3 – Integrate business and education	
Goal 1:	Draft a playbook/handbook for schools and businesses on ways and means for creating education and business partnerships.
Baseline:	● Employers prefer students with soft skills and want soft skills training/education before they are hired ● Some coordinated efforts exist to connect students with employers but information is not all in one place; there is a need to work with agencies to find models that already exist (Michigan Works!) ● Our region has some opportunities for internships, externships, job shadowing, mentoring, and training but not all employers know how to support STEM educational efforts and do not have a formal connection with educators ● Limited understanding of what career readiness means ● Lack of communication and common language between educators and businesses Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and Business, Community, and Education Liaison (Diane Miller)
Grant Criteria:	99(s)7(a)i 99(s)7(a)ii 99(s)7(f)
Strategies to Reach the Goal:	
a) Identify current Greater West Michigan employer needs for STEM	
b) Identify current models for educational partners to build external relationships with local businesses	
c) Outline best practices for school/business relationship roles and responsibilities, level of engagement, assessment, and reflection	
d) Identify current internships, apprenticeships, job shadowing, and mentoring programs to support STEM career pathways	
e) Collaborate with local Career Tech Centers, Michigan Works!, and other agencies to adopt a working definition of career readiness	
Description, including stakeholder involvement and applicable funding sources: N/A	
Goal 2:	Support opportunities for mutual understanding and formal connection between business and education and connect students and teachers to industry-based experiential learning opportunities.
Baseline:	● Lack of communication and common language between educators and businesses ● Limited opportunities for business and education to collaborate and share information (happening in pockets) Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and Business, Community, and Education Liaison (Diane Miller)
Grant Criteria:	99(s)7(a)i 99(s)7(a)ii 99(s)7(f)
Strategies to Reach the Goal:	
a) Environmental scan on current business/education collaborations in the area (such as local chambers of commerce, economic development agencies, CTE organizations, non-profits, and college/universities)	
b) Attend training for Talent Pipeline Management Academy to promote the value of talent supply chain solutions	
c) Pilot employer and education collaborations to identify and share employer needs, build on networking opportunities, and share best practices for filling talent pipelines	
d) Increase opportunities for industry-based experiential learning for teachers such as externships	
Description, including stakeholder involvement and applicable funding sources: N/A	

Considerations for Action Planning		
What <u>assets</u> can be leveraged to help your state team get this work done? ● Talent Pipeline Management ● Business/industry partners ● Michigan Works! and economic development organizations partners ● CTE instructors and placement specialists ● Consumers Energy - training specialist ● ISD Corporate training consultants ● Muskegon Area First Business Development Specialist ● GVSU Career Center specialist ● Higher education alumni	*What <u>barriers</u> should you anticipate as you implement these strategies?* ● Not all districts have access to high school career pathways programs such as Mi Bright Future or Career Cruising as a platform, therefore all student do not connect with mentors or careers of choice ● Time constraints from educators and business partners ● Larger companies might have resources to dedicate a person or two for outreach but smaller companies do not, so they are limited on how much they can do ● Different counties have different barriers and needs such as access to broadband ● Companies might not be able to align their expertise/efforts/engagement to different grade levels ● Businesses and schools operate in silos and goals don't align	*What unintended consequences or trade-offs should be considered?* ● Training students for a specific job could eliminate training in soft skills areas ● Focusing too heavily on current day needs may affect opportunity for future flexibility

Key Accomplishments of the First Year Plan
Quarter 1: ● Draft best practice guide for building school/business relationships that include roles and responsibilities, level of engagement, and assessment and reflection (1c) ● Participate in Talent Pipeline Academy training (2b)
Quarter 2: ● Identify current best practices and opportunities for internships, apprenticeships, job shadowing, and mentoring (1d)
Quarter 3: ● Identify current teacher externships opportunities (2d)
Quarter 4: ● Host a pilot Talent Pipeline Management event with employers and educators (2c)

Key Objective #4 – Ensure high-quality STEM experiences	
Goal 1:	Define and identify high-quality STEM experiences for students in our region.
Baseline:	● Several districts are using off-the-shelf programs that may not have consistent implementation or use ● Unclear or inconsistent understanding across our region of what constitutes a high-quality STEM experience Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and STEM Education Coordinator (Ginger Rohwer)
Grant Criteria:	99(s)7(b) 99(s)7(e)
Strategies to Reach the Goal:	
a) Develop a definition or baseline understanding of high-quality STEM experiences (starting with the STEMworks rubric and CREATE for STEM)	
b) Build a list of STEM experiences in our region and begin assessing their quality and alignment with Michigan standards	
c) Where applicable, identify additional opportunities to bring high-quality, experiential STEM learning into the classroom	
Description, including stakeholder involvement and applicable funding sources: N/A	
Goal 2:	Promote high-quality STEM experiences across our region through creation of a searchable, online dashboard.
Baseline:	● Some local ISDs track STEM activities ● Not all students have access to out of school programming due to transportation and cost barriers ● The quality of STEM experiences depends on the provider - there is no certification or vetting process Primary source for baseline information: virtual meetings with stakeholder groups (educators, ISD staff including Math & Science consultants, and employers throughout the Greater West Michigan Region)
Goal Lead:	Regional Director (Kris Pachla) and STEM Education Coordinator (Ginger Rohwer)
Grant Criteria:	99(s)7(b) 99(s)7(e)
Strategies to Reach the Goal:	
a) Develop the platform and structure of the dashboard and populate the corresponding database	
b) Work with stakeholders in the region (colleges and universities, community organizations, and businesses) to identify and capture success stories such as college students pursuing a STEM careers and professionals working in STEM fields	
c) Develop and implement a communication strategy to inform parents, students, educators, etc. of the dashboard	
Description, including stakeholder involvement and applicable funding sources: N/A	

Considerations for Action Planning		
What assets can be leveraged to help your state team get this work done?	*What barriers should you anticipate as you implement these strategies?*	*What unintended consequences or trade-offs should be considered?*
● ISDs tracking STEM activities ● Out of school programs (Boy Scouts/Girl Scouts, ELO Network, Boys and Girls Clubs, etc.) ● Business/industry in-kind donations	● Accessibility ● Lack of access to broadband internet in some areas ● Cost, transportation barriers	● Some experiences may be missed based on methods of identification

Key Accomplishments of the First Year Plan
Quarter 1: ● Develop a definition or baseline understanding of high-quality STEM experiences (1a)
Quarter 2: ● Build a list of STEM experiences in our region and begin assessing their quality and alignment with Michigan standards (1b)
Quarter 3: ● Identify additional opportunities to bring high-quality, experiential STEM learning into the classroom (1c) ● Develop the platform and structure of the dashboard and populate the corresponding database (2a)

Quarter 4:

- Work with stakeholders in the region to identify and capture success stories such as college students pursuing a STEM careers and professionals working in STEM fields (2b)
- Develop and implement a communication strategy to inform parents, students, educators, etc. of the dashboard (2c)