STEM NETW⚙RK SCHOOLS

STEM School Showcase
Spring Mills High School
499 Campus Drive, Martinsburg, WV 25404
September 20, 2017

Agenda

Time	Session		Location
8:00 am	Registration Opens and STEM Sandbox Setup		
8:30 am	Welcome, Introductions and Agenda Overview *Superintendent Manny Arvon, Berkeley County Schools* *Dr. Amelia Courts, President/CEO, The Education Alliance*	🟦🟩🟨	LGI Room 309
9:00 am	STEM Program at Spring Mills High School *Carrie Marcum and Pamela Stegall, Spring Mills High School* ● Overview of STEM Network School Program ● Student Led School Tour ● Leadership Team Panel	🟦🟩🟨	LGI Room 309
10:00 am	Advancing Workshop *Ian Zang, Carnegie Science Center*	🟦🟩🟨	Media Center 301
12:15 pm	Lunch and Sponsor Recognition	🟨	Media Center 301
1:00 pm	WVDE STEM Update *Monica DellaMea and Kathy Gillman, West Virginia Department of Education*	🟩	LGI Room 309
1:30 pm	Data Debrief and Year 3 Planning *Emily Pratt, The Education Alliance* ● School Team Meetings ● Administrators, Teachers, VISTAs	🟦🟩🟨	Media Center 301
2:30 pm	STEM Sandbox	🟦	Media Center 301
3:30 pm	Next Steps and Adjournment		Media Center 301

Learning Objectives: 🟦 = student engagement; 🟩 = school-wide STEM instruction; 🟨 = meaningful partnerships

STEM Network Schools is a program of The Education Alliance made possible by major funding from:

The Education alliance — Business and Community for Public Schools · BelleJAR Foundation · Chevron · CLAUDE WORTHINGTON BENEDUM FOUNDATION · Corporation for NATIONAL & COMMUNITY SERVICE · The ROSS Foundation · SWN Southwestern Energy

Logistics

The fall STEM Network Schools Training will take place on Wednesday, September 20, 2017 from 8:30 am to 3:30 pm at Spring Mills High School (499 Campus Drive, Martinsburg, WV 25401). Registration will open at 8:00 am. The Education Alliance will provide lunch during the training. Schools are responsible for any additional costs including mileage reimbursement, lodging costs for more than 3 rooms and other meal costs.

Lodging

Hampton Inn Martinsburg
975 Foxcroft Ave, Martinsburg, WV 25401
P: (304) 267-2900

The Education Alliance will pay for lodging on Tuesday night for up to 3 rooms (single or double) per school at Hampton Inn Martinsburg. The Hampton Inn provides free parking on the premises, Wi-Fi and a commentary hot continental breakfast from 6:00 am to 10:00 am. You may check-into your room at 3:00 pm and must check-out by 12:00 pm. Your hotel reservation has been placed under your name (lodging list below) within the EAG group (Confirmation #: 53773474).

School	Person 1	Person 2
Edison Middle	Jean Mewshaw	
Edison Middle	Marjorie Politz	
Edison Middle	Sheacon Linko	
George Washington	George Aulenbacher	
George Washington	Kelly Massinople	
George Washington	Ping-Heng Lee	
Greenbrier East	Anbu Vengan	Joey Hodge
Greenbrier East	Ben Routson	
Greenbrier East	Gwen Baskcomb	Kallie Cochran, Lynne Bowman
Sherrard Middle	Bricie Brannan	Lisa Summers
Sherrard Middle	Gary Fordyce	
Sherrard Middle	Jason Marling	
Tucker County	Jerod Caligiuri	
Warwood	Jody Wagner	
Warwood	Monica Supanik	
Warwood	Robb Bauer	
Wheeling Park	Kelly Stevens	
Wheeling Park	Ken Sexton	
Wheeling Park	Linda Boyd	

Directions

To Hampton Inn Martinsburg 975 Foxcroft Ave, Martinsburg, WV 25401 – Lodging location

From Points North and South:
- Take I-81 to exit 5 in West Virginia
- The hotel is just East of Interstate exit 5

From Points East and West:
- Take Rt 51 to Inwood, West Virginia
- The hotel is just East of the intersection of I-81 and Route 51

To the Spring Mills High School 499 Campus Drive, Martinsburg, WV 2540 - Meeting location

From Points North and West:
- Take I-81 to Exit 20
- At the end of the exit ramp, turn left
- Proceed straight through the stop lights onto Campus Drive
- As you go down the hill you will pass the middle school and then the primary schools before reaching Spring Mills High School at the end of the road
- Park in the front parking lot and enter through the front door of the building

From Points South and East:
- Take I-81 to Exit 20
- At the end of the exit ramp, turn right
- Proceed straight through the stop lights onto Campus Drive
- As you go down the hill you will pass the middle school and then the primary schools before reaching Spring Mills High School at the end of the road
- Park in the front parking lot and enter through the front door of the building

From Hampton Inn Martinsburg:
- Head south on Foxcroft Avenue
- Turn right onto Apple Harvest Drive
- Use the right lane to merge onto I-81 North via the ramp to Hagerstown
- Take exit 20 for WV-901 toward Spring Mills
- Turn right onto WV-901 E
- Proceed straight through the stop lights onto Campus Drive
- As you go down the hill you will pass the middle school and then the primary schools before reaching Spring Mills High School at the end of the road
- Park in the front parking lot and enter through the front door of the building

Session Description

STEM Program at Spring Mills High School – Carrie Marcum and Pamela Stegall, Spring Mills High School
9:00 am, LGI - Large Group Instruction – Room 309

Spring Mills High School will share how they launched a STEAM academy that is designed to advance academic and scholarly skills necessary for college and beyond. The academy includes two cohorts of student who are currently in 10th- and 11th-grades. Students are selected through an application process to participate in the three year academy. Each cohort of the academy is led by a team of four teachers who offer a collaborative, engaging, and transformative learning experience. Not only do students learn essential curricula and acquire the knowledge necessary to thrive in core subjects, their rigorous, hands-on, problem-based design will cultivate rich, innovative, and meaningful learning. The goal of the academy is to apply design thinking models and implement hands-on problem-based learning that will cultivate rich, innovative, meaningful learning. Participants will have the opportunity to attend a student-led tour that features the schools STEAM spaces which include the 10th- and 11th- grade STEAM Academy areas, collaboration area/Maker Space, and STEAM Academy Garden.

Spring Mills High School's STEM leadership team will provide a guided panel discussion led by Dr. Carrie Marcum where the teachers will share about their experience implementing the STEAM academy and provide participants with an opportunity to ask specific questions. This presentation will share how the STEAM Academy was designed and implemented at the high school level including scheduling, weekly challenges, and teacher planning. The workshop will also feature the school's STEAM campus connections, campus-wide Makerspace and future plans for the STEAM academy.

Leadership Team Panelists:
- Ashley Barker
- Aaron Clark
- Beth Cody
- Kelsey Corder
- Karla Hilliard
- Kimberly Lanager
- Carrie Marcum
- Nathan Sparks
- Pamela Stegall

Keynote: The Advancing Workshop – Ian Zang, Carnegie Science Center
10:00 am, Library/Media Center – Room 301

The Advancing Workshop is intended for Pathway Partners who are completing the Pathway process. Participants reflect on the implementation of their Action Plans and their school/district's connection to the four pillars of STEM education. Goals of this workshop:
1. Reflect upon your connection to the four pillars of STEM education
2. Share experiences of Action Plan implementation
3. Make a plan to continue the Pathway

WVDE STEM Update – Monica DellaMea and Kathy Gillman, West Virginia Department of Education
1:00 pm, LGI - Large Group Instruction – Room 309

The West Virginia Department of Education (WVDE) will share the mission, vision and goals of the WVDE Education STEM initiative. This workshop will share the WVDE's plan to adopt the Carnegie Science Center's STEM Pathway to Excellence Rubric for secondary schools to align with the work of The Education Alliance. The workshop will also share the opportunity to develop and then pilot an early learning-focused STEM excellence pathway to assist those serving in Pre-K through Grade Five with the integration of STEM concepts into their classrooms. This effort is a collaboration between the WVDE and Carnegie Science Center which will be funded through a grant from the Benedum Foundation. If the project is funded, the initiative will be piloted in three counties and then the tool would become accessible to all stakeholders after any needed tweaks are made following the pilot.

Data Debrief and Year 3 Planning – Emily Pratt, The Education Alliance
1:30 pm, Library/Media Center – Room 301

During the data debrief and year 3 planning workshop, participants will have the opportunity to meet with their school's team and debrief the information they learned during the training with their peer group (administrators, teacher, VISTAs). Each school will receive their schools results from the student, teacher and business partner evaluation surveys. School leadership teams will be tasked with reviewing the data results and improving their STEM plan based on their evaluation results. During this workshop, school leadership teams will start discussing long-term program sustainability past the three-year grant period. At the end of the workshop participants will have an opportunity to network with peer group to discuss network-wide program trends and sustainability opportunities.

STEM Sandbox
2:30 pm, Library/Media Center – Room 301

Each STEM Network School will host a station in the STEM Sandbox activity. Each station will share <u>one effective STEM activity</u> that has been successfully used by the school and <u>one STEM initiative</u> that the school is excited about for the coming year. Participants will rotate through the stations independently selecting one or more activities they are interested in. They can choose to spend the entire amount of time at one station or a few minutes at each station.
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To allow all participants to visit the activities, the showcase will be conducted in two rounds. During the first round, half of the members of each team will start by presenting at the booth and the other half will visit the other booths. During the second round, members of each team will switch roles.

What is the purpose of your station?
- Network with other STEM Network Schools
- Share an effective STEM student engagement activity that has been <u>used successfully at your school</u> (not something that was made up just for the workshop)
- Share at least <u>one school STEM initiative</u> that your school is excited about this year
- Opportunity to replicate other school's effective strategies

What to bring/prepare for your station?
- Interactive STEM activity for participants to complete (e.g. Catapult Basketball Challenge, Drones, Egg Drop Challenge, Lego activities, Robotic Art, Snap Circuits, Sphero Maze)
- Handout(s) with information regarding your STEM Sandbox activity
- *Optional - Pictures, student art work, newspaper articles, or other visuals that highlight your school's STEM success
- Signage indicating who you are (sign, poster, display board, table cover or paper banner)

STEM Sandbox stations include:
- Edison Middle School: Tennis Ball Can Car
- George Washington High School: Scale modeling with paper and Legos
- Greenbrier East High School: What Makes a Pen Click?
- Sherrard Middle School: Puzzle Cubes
- Spring Mills High School: Catapult Challenge
- Tucker County High School: Rocket Challenge
- Warwood Middle School: Tin Boats on a Budget
- Wheeling Park High School: 6-Word Memoir

Biographies

Dr. Carrie Marcum is the assistant principal in charge of curriculum and instruction at Spring Mills High School. Before stepping into an administrative role, she taught 11 combined years of math and science at the secondary level. She frequently attends and presents at workshops and conferences to share the great things that are happening at Spring Mills High. Dr. Marcum is committed to doing whatever is necessary to build a program of academic excellence at SMHS.

Pamela Stegall serves in the role of Technology Integration Specialist for Spring Mills High School. She works with teachers across the curriculum in implementing the use of technology within the classroom, writing grants to secure funding for technology related projects, and supports technology maintenance in the building. She works closely with Dr. Marcum, the STEAM Academy teachers, and students to ensure the sustainability of the academy, and implementation of the coming Maker space.

Ashley Barker teaches Honors U.S. History in the STEAM Academy. She holds a B.S. History and Political Science from Glenville State College and an M.A. in Social Studies Education through Western Governors University. Ashley is an avid traveler and believes seeing the world is one of the best ways to learn about it.

Aaron Clark teaches Honors Biology 10 in the STEAM Academy. He is currently a graduate student at Frostburg State University studying Educational Leadership. Aaron enjoys watching the Wizards, woodworking, and other competitive endeavors.

Beth Cody is a Shepherd graduate with a bachelor's degree in environmental science with a historic preservation concentration. Formerly a US Department of Agriculture and National Park Service employee, she currently is serving in the role of an AmeriCorps VISTA at Spring Mills High School. Beth's favorite part about being a VISTA at Spring Mills is seeing the ingenuity of both students and staff.

Kelsey Corder teaches Math II, Math II Honors, and Math III LA in the STEAM Academy. She is a graduate of Shepherd University with a B.A. in Education. She is passionate about curriculum design, providing students with real life skills, and helping students unlock their potentials.

Karla Hilliard teaches Honors English 10 in the STEAM Academy. She is the Executive Vice President of the West Virginia Council of Teachers of English (WVCTE), a professional learning community of English Language Arts teachers in West Virginia. She actively writes for the WVCTE Best Practices Blog and she is a contributing writer on the educational blog Moving Writers, a site dedicated to guiding and inspiring teachers in their writing instruction. Mrs. Hilliard is also a teacher fellow with Educators for High Standards.

Kimberly Lanager a Special Education teacher at Spring Mills, has a diverse group of students with varying abilities and learning styles. She love STEAM activities and teaching her students how to use technology. STEAM allows those students to become problem-solvers, to think outside of the box, and to express their creativity.

Nathan Sparks is a STEAM academy student that is in his final year of high school and enjoys the fine arts, from making and listening to music, to drawing and viewing beautiful works. He plans on making a career in the Forensic Science field as a Criminal Investigator in the near future.

Ian Zang is the Assistant Manager of Science and Education at Carnegie Science Center. Ian taught biology, chemistry, anatomy, and middle school science after earning his Master's degree in Education at Michigan State University. Ian also works professionally in game design and development, creating professional development games for international companies and working with hobby game publishers to improve their offerings.

Monica DellaMea is Executive Director of the West Virginia Department of Education Office of Early Learning, and has over 17 years of experience in the field of early learning education and administration. Her primary role at the WVDE focuses on supporting a comprehensive approach to early learning for all students in grades Pre-K through Five in West Virginia.

Kathy Gillman is the Coordinator of Engineering and Technical / Arts and Humanities for the West Virginia Department of Education's Office of Secondary Learning.

Building Layout