STEM @SVSU We discover.

NEWSLETTER • FALL 2020

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Greetings from STEM@SVSU

The pandemic has forced us all to view our lives through different lenses. School closures, remote learning, and social distancing are concepts that were once reserved for science fiction or, at best, natural disasters. While it is easy to focus on what has been lost as a result of this pandemic, one thing that has inspired us at STEM@SVSU is the resiliency of our K-12 colleagues and the real-life examples of STEM industries working together. Seeing how medical, research, engineering, and data analysis industries have come together to fight this virus stands as examples of what we can do when we harness the power of learning and social engagement.

As with many programs, STEM@SVSU has had to re-evaluate and redesign ways to reach our students and connect schools with quality STEM opportunities. Using Facebook as our primary channel of communication, we have been able to connect over 67,000 individuals to STEM resources since April. We were able to host the annual CSO Celebration, our first ever STEM Video Contest, and STEM@Home videos; all of which have kept our STEM pipeline active.

Since making the switch to virtual education, programs such as the Dow Corning Fellowship and the CSO Leadership Training Institute have temporarily converted to online platforms, enabling our participants the opportunity to connect and grow, even from a distance. Our CSO program is fully engaged in creating STEM Kits, participating in Cabinet Meetings, and brainstorming new approaches to spread STEM awareness in a safe manner.

Watch our website svsu.edu/stem, Facebook, and Instagram pages for the most updated information and opportunities throughout the year as well. While it is uncertain what will happen next week, next month, or next year, please know we are here to support you as we continue to explore STEM outreach opportunities in the Great Lakes Bay Region.

Adrianne Cole
Director of STEM@SVSU

Keep in touch with STEM@SVSU on social media . . .

@STEMatSVSU @STEMatSVSU

Updates from the MiSTEM Network

MiSTEM Network
East Central Michigan Region

Great news! The East Central Michigan MiSTEM Region will again be awarded approximately $173,000 in Advisory Council Grants. Last year, grants were focused on four STEMworks Programs: Math Recovery, CODE.ORG, Mi-STAR and Modeling. Currently, a group of stakeholders are in the process of reviewing regional needs, along with workforce and student achievement data, to decide how to best distribute grant funds for the 2020-2021 grants. To learn more about the current grant programs, click on the links below:
Math Recovery, CODE.ORG, Mi-STAR, Modeling.

Also, in October the State MiSTEM Advisory Council released their updated priorities for 2020-2021. These priorities include strengthening the MiSTEM Network by inspiring learning through community partnerships and continuing the development of problem-, place-, and project-based learning; contributing to the COVID-19 response by providing tools for STEM educators and districts, as well as supporting diverse student learning environments; and elevating computer science by awarding grant funds to support computer science and increasing access to real-world computer science experiences.

For more information on these and other MiSTEM initiatives, please contact:

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Recognizing our Region's STEM Stars!

STEM@SVSU and MiSTEM East Central Michigan Region have partnered to create the STEM Star Award, which honors individuals who exceed expectations in the promotion of STEM programs. These individuals have truly gone above and beyond what is expected to incorporate STEM in their classrooms and school districts. We appreciate all of their efforts that contribute to our regional STEM pipeline, by enhancing STEM education and awareness among our local students. Be sure to follow our Facebook page for additional recognition of each STEM Star!

- **Jessie Bassett,** Teacher, Frankenmuth School District
- **Duncan Gervin,** Teacher, Farwell Area Schools
- **Amy Hindbaugh-Marr,** Teacher, Ithaca Public Schools
- **Jennifer Lenon,** Learning Coach, Midland Public Schools
- **Thomas Lockwood,** Technology Director, Hemlock Public School District
- **Mark Lyons,** Technology Integration Specialist, Bay-Arenac Intermediate School District
- **Shawn McFarland,** Teacher, Saginaw City School District
- **Terrie Robbie,** Teacher, Saginaw Township Community Schools
- **Ethan Shannon,** Teacher and FIRST Robotics Coach, Essexville-Hampton Public Schools
- **Kevin Smalley,** Technology Coordinator, Harrison Community Schools

VIRTUAL SUMMER OF STEM!

Online STEM Resources Available

Since the spring, STEM@SVSU has been dedicated to making the virtual learning transition a bit smoother for parents, students and educators. Our website now includes educational links for K-12 online STEM learning and also displays our own STEM@Home videos showing experiments, math lessons, and coding tips for K-12 students. Content is categorized by both grade level and STEM subject area to make it easy to access the materials that interest you. We offer links for grade-appropriate biology simulations, lab lessons, robotic challenges, NASA engagements, math lessons and games, and so much more! The page also provides links to virtual field trips with the Smithsonian National Air & Space Museum, Exploring the World with Google Earth, and the Surface of Mars. Check it out at svsu.edu/stem under the K-12 Student and Teacher dropdown menus.

STEMazing Summer Video Contest

This year we had the opportunity to host our very first Summer STEM Video Contest! Last spring, our STEM team created our own STEM@Home video series showing experiments, lessons, and tutorials. Partnering with the MiSTEM East Central Michigan Region, we extended the excitement to all K-12 students and STEM content area teachers in the Great Lakes Bay Region. Participants were invited to submit their own STEM@Home videos for a chance to be highlighted on our Facebook page and win a STEM kit, delivered directly to their house! The contest ran throughout July and engaged our local GLBR students and teachers in some summer STEM fun!

Contest winners included:

- **Brooklyn B.,** E.F. Rittmueller Middle School (Frankenmuth), utilized the engineering design process to construct a device that protects an egg as it moves down a ramp in "Crash Car Challenge."
- **Brycen B.,** List Elementary (Frankenmuth), showcased his video "Muth Science Boy & Hot Wheels & Motion" demonstrating force and motion by running a Hot Wheels car down a ramp onto different types of ground surfaces.
- **Carly K.,** Freeland Elementary, used the engineering design process to make a "Dog Food Run" in her video.
- **Charlotte S.,** Freeland Elementary, created a "Soda Geyser" showing the classic chemical reaction between Mentos candy and Diet Coke.

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- **Ila M.,** Freeland Elementary, demonstrated the effect of soap on the surface tension of milk in her "Food Coloring Tie Dye Swirl" video.
- **Jessie Bassett,** teacher at Frankenmuth High School, her video "Muth Science Girl & STEAM Robots" focused on the topics of energy, motion, and balance.
- **Norah J., Everett J., and Harrison J.,** Havens and Shields Elementary Schools (Swan Valley) examined the influence of increasing pressure on an object in their video, "The Exploding Watermelon!"
- **Sierra S.,** Freeland Elementary, missed the STEM room at her school so much that she recreated it with Legos in her video "The Tower Contest."

Dow Corning Foundation-SVSU-Community STEM Partnership

The Dow Corning Foundation-SVSU-Community STEM Partnership takes STEM teachers and students out of a textbook approach to learning and into a world of hands-on discovery and exploration. The program seeks to change attitudes about STEM throughout the classroom and in the community with the participating Fellows schools and local district. This past summer, the program was offered as a virtual professional development course for Fellows, led by Dr. Stephanie Brouet.

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14 K-12 Teachers:

- **David Barr,** Ashley Middle School
- **Elizabeth Bluemer,** Bullock Creek Schools
- **Jennifer Brooks,** Cramer Junior High School
- **Amalia Cirilo,** Kempton & Stone Elementary Schools
- **Ben Cooper,** Valley Lutheran High School
- **Rebecca Field,** Kolb Elementary School
- **Jennifer Jungnitsch,** Kolb Elementary School
- **Amy Klopf,** Coleman Elementary School
- **Jessica Koehler,** Freeland Learning Center & Elementary School
- **Laurie Newkirk,** Cramer Junior High School
- **Elizabeth Pufahl,** Robert B. Havens Elementary School
- **Nicole Rahn,** Kolb Elementary School
- **Sandra Stevens,** Kolb Elementary School
- **Judy Thomas,** Cramer Junior High School

8 SVSU Mentors:

Dr. Jennifer Chaytor, Dr. Michael Coote, Edward Meisel, Dr. Tami Sivy, Chemistry; **Dr. Garry Johns,** Mathematics; **Dr. Robert Tuttle,** Mechanical Engineering; **Dr. Christopher Nakamura,** Physics; **Adrianne Cole,** STEM@SVSU

Chief Science Officers make an impact in the virtual world!

Chief Science Officers (CSOs) are middle and high school students that act as STEM leaders in their schools and communities. Our local cabinet of CSOs, sponsored by Dow, has nearly 70 CSOs this year! These CSOs represent over 14,000 of their peers from twenty-six schools and fourteen districts throughout Bay, Midland, and Saginaw counties. CSOs and their advisors attended a virtual Leadership Training Institute in August and were able to develop their STEM action plans, share their elevator pitches, network and brainstorm for the upcoming year with other CSOs, and hear from CSO Alumni! The LTI was facilitated by the GLBR CSO Leadership Council; these students are also developing a mentorship model for new CSO students and teams and are improving the GLBR CSO social media presence.

CSOs recently participated in a virtual Fall Cabinet Meeting; students and advisors "Explored COVID-19" through interactions with a wide variety of STEM professionals, including an Infection Prevention Nurse from Mid-Michigan Health, an SVSU Chemistry research student, and officials from the Bay County Health Department. In addition, CSOs are hard at work on their STEM action plans, creating STEM websites for their peers, distributing STEM@ Home kits to local elementary and middle school students, and developing STEM newsletters. In addition to their regional work, our GLBR CSOs are collaborating with other students and professionals around the world through International CSO Town Hall Meetings, additional leadership training opportunities, and virtual mathematics festivals.

Follow us on Facebook @GLBRCSOs and Instagram @glbr_cso

Participating School Districts:
Bangor Township Schools, Bay City Public Schools, Bridgeport-Spaulding Community School District, Carrollton Public Schools, Diocese of Saginaw, Essexville-Hampton Public Schools, Frankenmuth School District, Freeland Community School District, Hemlock Public School District, Midland Public Schools, Parochial (Valley Lutheran High School and St. John's Lutheran School), Saginaw City School District, Saginaw Township Community Schools, and Swan Valley School District.

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STEM@Home Kits

The SVSU College Day program, funded through the Michigan Department of Labor and Economic Opportunity, is partnering with Bridgeport-Spaulding Middle School and Thompson Middle School to bring STEM home to students who are learning virtually. Students receive all materials needed to participate in our STEM challenges. The first challenge is Mission Space Lander which asks students to design and create a space lander that will be able to successfully land and keep the passengers (glow in the dark aliens) safe at three different locations in outer space. Participating students will be able to interact with one another and project staff via Zoom meetings as they work on their space lander.