

## **Greetings from STEM @ SVSU**

It may be a winter wonderland outside, but STEM@SVSU is already looking ahead to the warm summer months! We have many exciting events to share with you, including an update from our MiSTEM Network Director, the FIRST Robotics State Competition, and the many summer STEM opportunities for you and your students.

The Great Lakes Bay Region is a true leader in STEM education, thanks to the incredible work of so many educators and others in our region. Enjoy reading about a very busy fall semester of STEM and discovering the many opportunities ahead in 2019!



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## **SVSU Mathematics and Science Center receives MiSTEM Advisory Council Grant for Engineering is Elementary Professional Development**

The SVSU Mathematics and Science Center was recently awarded a MiSTEM Advisory Council grant to provide Engineering is Elementary (EiE) professional development to grades 1-5 teachers throughout the East Central MiSTEM region. EiE is an award-winning program of the Museum of Science, Boston, designed to inspire problem solving and critical thinking for all students (<https://www.eie.org>). There are two phases to the SVSU project: an Engineering is Elementary Teacher Educator Institute and EiE Teacher Professional Development Workshops.

The first phase, a three-day Teacher Educator Institute (TEI), will be held March 5-7, 2019 at SVSU. This workshop will be facilitated by Museum of Science, Boston professional development trainers. Participants in the TEI may be consultants, coaches, and/or teacher leaders who will then be certified to conduct EiE Teacher Professional Development (TPD) Workshops during the second phase of the project. Phase two will be a series of TPD sessions throughout the East Central MiSTEM region, which includes Bay, Clare, Gladwin, Gratiot, Isabella, Midland, and Saginaw counties.

For more information, please visit [www.svsu.edu/stem/k-12teachers/](http://www.svsu.edu/stem/k-12teachers/) or contact Dr. Tamara Barrientos, Project Director at [tarizola@svsu.edu](mailto:tarizola@svsu.edu)



## East Central Michigan Region

### **MiSTEM Network Update**

The following excerpt is taken from a blog originally posted by Megan Schrauben, Executive Director, MiSTEM Network

*In 2015 the legislature established the Governor's Michigan Science, Technology, Engineering, and Mathematics (MiSTEM) Advisory Council with annual duties such as creating and recommending changes to a statewide STEM strategy and granting out state school aid dollars in support of STEM education efforts. Why might you care about MiSTEM? In 2017 the legislature set dollars aside to create a MiSTEM Network plan that transformed our state into 16 regional networks made up of business, higher education, K-12 education, and philanthropic leaders guided by the recommendations of the Council members.*

*MiSTEM brings together interested partners to impact four pillars which make up the foundation of the statewide STEM strategy:*

- 1. Create a culture of STEM,*
- 2. Empower STEM teachers,*
- 3. Integrate business & education, and*
- 4. Ensure high-quality STEM experiences.*

*These four pillars do not work in isolation from each other, but instead operate as an integrated vision of STEM. In fact, all components of the MiSTEM Network plan work together to build a robust STEM culture in our state that is focused on providing STEM learning experiences that not only move forward workforce talent development, but also significantly contribute to the vibrancy and vitality of our communities. Enacting the four pillars will require many people in many different parts of the system to redefine and transform their beliefs about teaching and learning, as well as their professional*

*roles, relationships, and collaborative practices. We believe that these four pillars working together will help to reinvigorate our education system by identifying and building onto community assets that provide authentic contexts for learning, but also rich career awareness, exploration, and preparation experiences at the same time.*

For more information on MiSTEM, please contact:

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MiSTEM Network Director

East Central MI Region

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Saginaw Valley State University

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### **FIRST Robotics State Championship returns to SVSU for a 3rd year!**

The state competition for FIRST in Michigan will once again be held at the SVSU Ryder Center. The event will take place from April 11 – 13, 2019. SVSU is proud to host the competition and welcomes team members and their families to campus. Come and feel the excitement!

## Another successful Hour of Code Event!



Over 100 fourth grade students participated in the 4th annual Hour of Code day on Friday, November 30th. Teachers Sara Engelhardt and Melissa Ramirez, from Lincoln Elementary in Bangor Township, Julie Dillon from Auburn Elementary in Bay City, and Melissa Hebl from Arrowwood Elementary in Saginaw Township were selected for this experience. Coding activities were led by Dr. George Corser, Professor of Computer Science & Information Systems, as well as SVSU students from the Association of Computing Machinery organization. Elementary students also toured the Marshall M. Fredericks Sculpture Museum and used binary code to make beaded necklaces. We look forward to hosting more Hour of Code days in the future!

## Updates from the Mobile Lab:



The SVSU Mobile Research Lab was engaged with numerous schools this fall throughout the Great Lakes Bay region. Our focus was on understanding how pollution in the water can affect living species. We used microscopes and other lab equipment to differentiate between species as well as our own body pH to sustain life. We served approximately 1,500 students ages K-12th grade. In addition, we made trips to the Bay City State Park to engage students in water analysis research. We look forward to a busy spring 2019! Visit our website [www.svsu.edu/stem](http://www.svsu.edu/stem) for more information and to schedule a mobile lab visit for your class.



## Winter: A Great Time of Year for Coding!

SVSU is excited to host **Girls Who Code** on Thursdays from 6:00-7:30 pm. The first meeting will be held on February 14, 2019. The free club is open to 20 middle school girls in grades 5-8. Be sure to watch our website ([www.svsu.edu/stem](http://www.svsu.edu/stem)) for information regarding future **Girls Who Code** sessions.

**We Code Camps** will once again be offered in March and April. Students in 5th-12th grades can learn about programming using spheros. Camps take place one Saturday per month, dates to be determined. Please watch our website for more details coming soon!

## A Busy Fall for the Chief Science Officers



Chief Science Officers (CSOs) and advisors from throughout the Great Lakes Bay Region met for their first cabinet meeting of the year at the Michigan Department of Transportation (MDOT). CSOs enjoyed speaking with a variety of STEM professionals, including civil engineers, bridge inspectors, soil scientists, road design group, and surveyors. CSOs also had the opportunity to tour the INSIDE of the Zilwaukee Bridge – what a STEMazing experience! Looking forward to two more fantastic trips this year with Covenant Hospital and Hemlock Semi-Conductor.

A team of GLBR Chief Science Officers also attended the CSO International Summit, held in Washington, D.C. in October. The CSOs attended communications training, communicated the importance of STEM in meetings with the Office of Science and Technology Policy, and met with national STEM leaders, such as Dr. France Cordova, Director of the National Science Foundation, and Megan Smith, the 3rd U.S. Chief Technology Officer. John Glenn High School CSOs Anthony and Mackenzie, along with their advisor Mr. Jurek, and Carrollton High School CSOs Emily and Hudson, along with their advisor Mr. Coopersmith, did a wonderful job representing our region at this conference!



CSOs have also been busy in their schools and communities, including:

- Assembling Math in the Mail kits with the Saginaw ISD
- Leading activities at the Dow Great Lakes Bay STEM Festival
- Presenting at the GLBR Alliance Board of Directors Meeting
- Planning Teen Science Café events
- Organizing STEM community nights

If your school is in Bay, Midland or Saginaw counties and is interested in joining the Chief Science Officers program in 2019-2020, contact Adrienne Cole at [acole@svsu.edu](mailto:acole@svsu.edu) by April 1.

To find out more information about the International Chief Science Officers program, visit <https://chiefscienceofficers.org/>



## **Summer STEM Programs for K-12 Students:**

- **Camp Infinity.** Introduces girls to computer and internet technologies through hands-on activities. Registration information available on our website in March. Camp dates are June 17-21 (5th-8th grade) and July 29-August 2 (9th-12th grade).
- **AT&T GLBR STEM Innovation & Entrepreneurship High School Camp.** Exposes students to robotics, 3D printing, STEM careers, technology innovations, and entrepreneurship. Camp dates are June 24-28, with applications available in February.
- **Dow Science and Sustainability Education Center Summer Research Experience.** 20 high school students will be hired to work with SVSU faculty and undergraduate students on Saginaw Bay watershed research. Program dates are July 1-August 8. Applications are available now on our website [www.svsu.edu/stem](http://www.svsu.edu/stem). Contact Adrienne Cole for more information.
- **STEM Scholars Network High School Summer Camps.** Free one-week camps incorporating hands-on, problem-based learning. For more information on this year's topics and how to apply for these camps, check out our website [www.svsu.edu/stem](http://www.svsu.edu/stem).
- **Summer STEM Opportunities Camp.** Open to 30 middle school students in Saginaw Public and Bay City Public Schools. A fun way to reinforce fundamental math concepts! Applications will be available to partner schools in April 2018; Camp dates are July 8-August 2.
- **SMEK Jr. and Sr. Camps.** Have fun at the Science and Math Extravaganza for Kids camps July 9-11 (2nd-4th grade) and July 16-18 (5th-8th grade). Contact Kathy Anderson ([kkanders@svsu.edu](mailto:kkanders@svsu.edu)) for more information.

## **Summer STEM Opportunities for Teachers:**

- **Dow Corning Foundation / SVSU STEM Community Partnership** – open to 20 teachers. Learn more about changing attitudes in STEM, and develop programs to take back to your schools! Dates are: June 26-28, July 1-2, and July 22-26. Application information is now available at [www.svsu.edu/stem/k-12teachers](http://www.svsu.edu/stem/k-12teachers).
- **Dow Science and Sustainability Education Center Summer Research Internship** – open to 10 teachers. Get paid to do research on the Saginaw Bay Watershed, and work alongside SVSU faculty and undergraduate students, as well as local high school students. Applications are now available on our website [www.svsu.edu/stem/k-12teachers](http://www.svsu.edu/stem/k-12teachers). Program dates are July 1-August 8.

### **Grant available for K-12 Educators**

The Michigan Space Grant Consortium (MSGC) is a NASA-supported program that fosters awareness of, education in, and research on space-related science and technology in Michigan. The K-12 Educator Incentive Program through the MSGC offers (1) up to \$400 to support K-12 teachers to attend STEM conferences and workshops; and (2) up to \$200 to purchase materials and supplies for innovative instructional initiatives. For more details, visit the K-12 Educator Incentive Program tab on their website <https://mi.spacegrant.org/>. Applications are accepted throughout the year until annual funding is depleted.

## Spotlight on Staff: Dr. Betsy Diegel



Betsy Diegel is the Mobile Lab Support Specialist at Saginaw Valley State University. She has 15 years of teaching experience in higher education in both traditional and online settings. Betsy also has 11 years administrative experience in higher education and has

developed and facilitated numerous workshops on instructional strategies. Diegel earned her B.S. in Biology from Saginaw Valley State University, completed her M.S. in Biological Sciences at Wayne State University, and received her Ed.D. from Central Michigan University. In addition to her academic interests, Betsy is also committed to impacting her community by volunteering at foodbank food dispersal events, serving on United Way panels in Midland County, and coaching her daughter's youth basketball and soccer teams.

### What are your interests in STEM fields?

I have always had a passion for science and how the human body works. I originally wanted to enter the medical field until I found my true passion in life is teaching. I am drawn to creating dynamic and interactive ways to get students excited about learning. I believe attitude is everything and if you can lead by example through your energy, organizational skills, and collaborative leadership style, student potential is limitless.

### What are the highlights of your STEM projects?

I am very proud of the ~6,400 students and community members we have taught on our SVSU Mobile Research Laboratory this past year. We are actively engaged in K-12 schools in the Great Lakes Bay Region, as well as creating partnerships with schools to host Family STEM nights so everyone can be exposed to STEM learning. In addition, I serve as the director for Camp Infinity, a technology camp for middle and high school aged girls. It is because of our strong partnership with The Dow Chemical Company that we can make this happen again this year. We are hoping to have at least 100 campers this year.

### What should local educators share with their students about opportunities in STEM studies at SVSU?

Our programs are the best around! They offer hands-on, innovative, meaningful learning opportunities for all populations of K-12 learners. Have students get involved early and often. If you haven't already done so, request our SVSU Mobile Research Laboratory to visit your school or be a part of an upcoming event.

### Any final thoughts?

Being mindful, both personally and professionally, is something I am committed to. My husband Chad, son Wynn, and daughter Waverly are my entire world. I believe in and practice work/life integration and strive to be balanced in all the "hats" that I wear daily as a mom, scientist, and educator.

## SVSU STEM Calendar of Events:

- **Michigan Regional Science Bowl**  
Saturday, February 16, 2019. Contact Andrew Chubb (achubb@svsu.edu)
- **STEM Teacher Dinner**  
Tuesday, February 19, 2019.
- **Math Counts Competition**  
Saturday, February 23, 2019. Contact Brian Vokal (bjvokal@midcogen.com)
- **You Be The Chemist Regional Competition –**  
Wednesday, February 27, 2019. Contact Adrienne Cole (acole@svsu.edu)
- **Math Olympics**  
Friday, March 15, 2019. Registration deadline is at noon on March 8, 2019. More details can be found at [www.svsu.edu/matholympics](http://www.svsu.edu/matholympics)
- **A.H. Nickless Innovation Award Competition**  
Saturday, April 6, 2019. This is the final round of the competition and the top 20 teams will be competing at SVSU in the Alan W. Ott Auditorium. This event is open to the public. Contact Kathy Anderson (kkanders@svsu.edu)
- **FIRST Robotics State Competition**  
April 11-13, 2019. Check out [www.svsu.edu/firstatsvsu](http://www.svsu.edu/firstatsvsu) for more information
- **Dow Corning – SVSU STEM Community Partnership 2019 Symposium**  
Wednesday, May 29, 2019. Contact Dr. Stephanie Brouet (sbrouet@svsu.edu) for more information.