

Greetings from STEM @ SVSU

Warm winter greetings from STEM @ SVSU. We have had a busy fall, with many Mobile Lab visits, Chief Science Officer activities, and Hour of Code events.

As we gear up for another exciting spring and summer of STEM, we have many exciting events to share with you, including the much-anticipated STEM Teacher Dinner, the FIRST Robotics State Competition and summer STEM opportunities for you and your students.

The new year brings new changes to the STEM Center at SVSU. Thank you to Carolyn Wierda for all of her work as the Executive Director of STEM @ SVSU! Carolyn has transitioned to an interim, part-time role as the special assistant to the president for STEM initiatives. Adrienne Cole will assume all day-to-day STEM responsibilities, with support from the SVSU campus community.



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Collaboration across the Region

In a new opportunity provided by the state, SVSU will serve as the fiscal agent for the MISTEM Network Region on behalf of the East Central Michigan Prosperity Region that includes collaborative partners in Arenac, Bay, Clare, Gladwin, Gratiot, Isabella, Midland and Saginaw Counties.

Funds will support a strategic planning process with education, business and governmental partners to measure progress on four STEM pillars set by the state, to identify gaps and opportunities to further strengthen the STEM talent pipeline.

The four pillars are:

1. Create a STEM Culture
2. Empower STEM Teachers
3. Integrate Business and Education
4. Ensure High Quality STEM Experiences

Funding from the state will be available to hire an Executive Director in the Region and it is anticipated the individual will be on board by April 1, 2018. Additionally, required matching funds of \$17,000 are in the budget with \$7,500 from the Great Lakes Bay Regional Alliance, \$7,500 from the consortium of Bay-Arenac Intermediate School District (ISD), Clare-Gladwin Regional Education Service District (RESA), Gratiot-Isabella Regional Education Service District (RESA), Midland County Educational Service Agency (ESA) and the Saginaw Intermediate School District (ISD) and \$1,000 each from Central Michigan University (CMU) and Saginaw Valley State University (SVSU).

STEM Teacher Dinner Announced!



The 4th annual SVSU STEM Teacher Dinner will be held on Wednesday, February 21 at 4:30 p.m. in Curtiss Hall Banquet Rooms A and B. Please join us for an excellent keynote address by Matthew Felan, President and CEO of the Great Lakes Bay Regional Alliance, delicious dinner, STEM door prizes, and to learn details of upcoming STEM opportunities for you and your students! This free event is open to all K-12 STEM teachers, but seating is limited. RSVP at www.svsu.edu/stem.

Celebrating Computer Science with Hour of Code



100 fourth grade students participated in the 3rd annual Hour of Code day on Friday, December 1. Teachers Amy Maier and Ryan Agnew, from Big Rock Elementary in Chesaning, and Veronica Schlosser and Kate Weaver, from Martin G. Atkins Elementary in Bridgeport-Spaulding, 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:



2017 was an extremely robust year for the SVSU STEM Mobile Research Lab. Visits began in late March and ended in early December. We served over 5,500 students totaling 56 visits and 22 community events. Visits included the Great Lakes Bay Region as well as the rural thumb of Michigan and northern Michigan locations. Due to the increased interest of Mobile Lab requests, we are now forging relationships with the College of Education to involve future K-12 teachers to work on the Mobile Lab and interact with students. Requests are quickly coming in and currently being scheduled for 2018 – visit our website www.svsu.edu/stem for more information.

Girls Who Code Club Announced

SVSU is excited to host a Girls Who Code Club on Wednesdays from 6-7 p.m. The first meeting will be held on February 21, 2018. The club is open to middle and high school girls in grades 6-12. Registration information can be found at www.svsu.edu/stem – please register by February 16.

Chief Science Officers take a Sweet Trip



Chief Science Officers (CSOs) and advisors from throughout the Great Lakes Bay Region met for their first quarterly meeting at a pretty “sweet” spot – the Michigan Sugar Company. CSOs enjoyed a field harvest tour, sugar processing tour, and a packaging tour. In addition to checking out what it really takes to produce 1 billion pounds of sugar in a single year, CSOs also discovered a wide variety of STEM jobs available at the company and learned more about genetically modified organisms (GMOs). Looking forward to two more fantastic trips this year – Nexteer Automotive and The Dow Chemical Company.

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

- Presenting at the Regional STEM Summit
- Creating STEM Websites
- Making Botany Barrels
- Hosting Teen STEM Nights
- Participating in the Great Lakes Bay STEM Steering Team at the Great Lakes Bay Regional Alliance
- Renovating School Greenhouses
- Assembling Math in the Mail kits with the Saginaw ISD

Find out more information about the National Chief Science Officers program at <https://chiefscienceofficers.org/>

FIRST Robotics State Championship returns to SVSU



The state competition for FIRST in Michigan will once again be held at the SVSU Ryder Center. The event will take place from April 11-14, 2018. SVSU is proud to host the competition and welcomes team members and their families to campus. Come and feel the excitement!

Coral Reef Ecology Research to be presented at SVSU

Dr. Joanie Kleypas from the National Center for Atmospheric Research will be presenting her research on Coral Reef Ecology on Thursday, April 26 at 7 p.m. in the Rhea Miller Recital Hall. This free event is open to the public – please join us for a fantastic evening!

Summer STEM Programs for K-12 Students:

- **STEM Scholars Network High School Summer Camps.** The Health and Human Services STEM HS Camp will take place June 18-22. The Growing into the Future with Plant Science HS STEM Camp will take place June 25-29. The Coding and Networking Boot Camp for HS students will take place July 23-27. For more information on how to apply for any of these free camps, contact Dr. Tamara Barrientos (tarizola@svsu.edu).
- **Summer STEM Opportunities Camp.** Open to 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 9-August 3. Contact Adrienne Cole (acole@svsu.edu) for more information.

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- **Dow Science and Sustainability Education Center Summer Research Experience.** Program dates are July 9-August 16. Applications are available now on our website www.svsu.edu/stem. 20 high school students will be hired to work with SVSU faculty and undergraduate students on Saginaw Bay watershed research. Contact Adrienne Cole (acole@svsu.edu) for more information.
- **SMEK Jr. and Sr. Camps.** Have fun at the Science and Mathematics Extravaganza for Kids camps July 10-12 (grades 2-4) and July 17-19 (grades 5-8). Contact Kathy Anderson (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 21-22, June 25-27, and July 23-27. Contact Dr. Stephanie Brouet (sbrouet@svsu.edu) for more information.
- **Teacher Professional Development: There is Engineering in My Science Standards. Now What?** June 28, 2018 from 9 a.m.-3 p.m. in Gilbertson Hall at SVSU. The goal of this workshop is to introduce elementary classroom teachers to the engineering design process and to explore resources available to teachers to enhance their teaching of the engineering standards. Teachers will be able to reflect on their practices, discuss and troubleshoot challenges, complete hands-on challenges, share success and get deeper into elementary engineering pedagogy. Contact Kathy Anderson (kkanders@svsu.edu) for more information.

- **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. Program dates are July 9-August 16. Contact Adrienne Cole (acole@svsu.edu) for more information.
- **Teacher Professional Development: NGSx Workshop.** July 10, 11, and July 18, 19 from 8:30 a.m.-3 p.m. in Gilbertson Hall at SVSU. Experience “learning by doing” and deeply examine the scientific practices of modeling, argumentation from evidence, and constructing explanations. Develop and utilize tools to improve classroom practices towards achieving the vision of the Framework for K-12 Scientific Education. Contact Kathy Anderson (kkanders@svsu.edu) for more information.
- **Teacher Professional Development: Orchestrating Productive Talk in the Math and Science Classrooms.** August 8, 2018 from 9 a.m.-3 p.m. in Gilbertson Hall at SVSU. To process, make sense of and learn from their ideas, observations, and experiences, students must talk about them. Productive talk forces students to think about and articulate their ideas. Playing “guide on the side” can be uncomfortable at the start, as can engaging students in productive talk (which is not a Q & A session). Come explore resources that can help you take on these roles and understand their benefits in the context of student discourse. Contact Kathy Anderson (kkanders@svsu.edu) for more information.



Faculty Focus: Dr. Rachel Darr



Dr. Rachel Darr is an Assistant Professor of Kinesiology at Saginaw Valley State University. She is also a Sports Dietitian on the Sports Medicine Staff at SVSU. Darr earned her B.S. in Dietetics from Michigan State University and completed her M.S. in Exercise Science, as well as her PhD at the University at Buffalo.

What are your interests in STEM fields?

Currently, my service work includes working with athletes, applying nutritional research and clinical tools to what athletes consume at the dinner table in order to optimize performance. Additionally, I continue to “feed people”, which I have determined is my lot in life, by working in the Midland Community – teaching children sustainability in gardening, nutrition, and health.

What are the highlights of your STEM projects?

Working in the Midland Community on our Plot to Plate Initiative, we have been able to secure 3 separate grants that aide in applying sustainability research to community garden work, while teaching children about health, nutrition, and how to maintain gardening plots. This research will also help educate the parents and allows us to learn further information on what community children know and don't know about health and how it impacts their everyday life. This will allow us to share our findings with community officials in hopes of producing more programs to provide solutions to current statistical needs within a particular community.

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

There are a multitude of entirely hands on experiences that really broaden the horizons of students not just into the STEM fields, such as Kinesiology, Health Science, Nursing, and Occupational Therapy, but how these relate to their own communities.

What advice do you have for teachers or students who are interested in learning more about your field?

Research! Ask questions! We are always happy to share what we do!

Grant available for Professional Learning Opportunity in AP Computer Science

The Michigan Mathematics and Science Center Network (MMSCN), through a grant from the MISTEM Advisory Council and Code.org, is pleased to announce a professional learning opportunity to support AP Computer Science Principles and Computer Science Discoveries. The grant will provide local schools with resources for teaching AP CSP or CS Discoveries in the Fall of 2018, a sample course audit, one week of professional learning (July 8-13) in Grand Rapids at no cost, and a complete curriculum from Code.org for one of the AP courses.

Schools wanting more information on how to take advantage of this opportunity can visit www.micoding.weebly.com. Teachers who plan to apply should sign up to receive an application. When they apply, they will be asked for evidence that their district is planning to offer an AP CSP course or a CS Discoveries course in the fall.

SVSU STEM Calendar of Events:

Michigan Regional Science Bowl

Saturday, February 17, 2018

Contact Andrew Chubb (achubb@svsu.edu)

STEM Teacher Dinner

Wednesday, February 21, 2018.

RSVP by February 13 at www.svsu.edu/stem

Math Counts Competition

Saturday, February 24, 2018.

Contact Brian Vokal (bjvokal@midcogen.com)

You Be The Chemist Regional Competition

Wednesday, March 7, 2018

Contact Adrienne Cole (acole@svsu.edu)

Math Olympics

Friday, March 16, 2018

Contact Jan Hlavacek (jhlavace@svsu.edu)

FIRST Robotics State Competition

April 11-14, 2018

Check out www.svsu.edu/firstatsvsu for more information

A.H. Nickless Innovation Award Competition

Saturday, April 21, 2018

This is the final round of the competition and the top 20 teams will be competing at SVSU Gilbertson Hall. This event is open to the public. Contact Kathy Anderson (kkanders@svsu.edu)

Coral Reef Ecology Presentation

Thursday, April 26, 2018 at 7 p.m. in Rhea Miller Recital Hall (Curtiss Hall).

Rising Stars of STEM Event

Friday, April 27, 2018

Scholarship opportunity for incoming Freshman in the College of Science, Engineering, and Technology. Contact Dr. Frank Hall (setdean@svsu.edu) for more information.

Dow Corning-SVSU STEM Community Partnership 2018 Symposium

Wednesday, May 30, 2018 in Curtiss Hall Banquet Rooms. Contact Dr. Stephanie Brouet (sbrouet@svsu.edu) for more information.

