

## Greetings from STEM@SVSU

Summer is over for STEM@SVSU and WOW, WOW, WOW ... so many exciting STEM learning events took place on campus.

Student learning happened in SMEK Camps through the Regional Mathematics and Science Center, the STEM Scholars Network for high school students sponsored by the Herbert H. and Grace A. Dow Foundation along with the STEM Opportunity Camp related to math for middle schoolers. Additionally, students were engaged in the Dow Science and Sustainability Education Center Summer Research Project (SSEC). New this summer for students was the AT&T GLBR (Great Lakes Bay Region) STEM High School Residential Camp and also Camp Infinity for middle school girls sponsored by The Dow Chemical Company.

Many teachers also were involved on campus-doing research with the Dow SSEC and the Dow Corning Foundation/SVSU STEM Community Partnership. Additionally, 16 teachers representing 13 different school districts began a two-year program to develop math specialists, a grant funded project from the Middle School Math Initiative through the Great Lakes Bay Regional Alliance STEM Initiative.

Details with names of those enrolled and districts represented follow in stories in this newsletter.

Looking ahead to STEM activities this Fall, there are many! Check out the Dow Great Lakes Bay STEM Festival at Delta College the first weekend in October and a STEM Summit to be held for educators, business and community members on Friday, October 20 at Delta College. This Summit is a follow up to the first Regional STEM Summit held in November 2014 at Central Michigan-thanks to many who have implemented tremendous opportunities, much has happened since that time!

STEM@SVSU is always changing to meet the needs of our students and staff at SVSU as well as to host and support initiatives for K-12 partners.

We wish you the best as the 2017-18 school year begins and hope you will call on us for STEM support-we welcome your ideas and want to meet your needs.



Carolyn Wierda  
Executive Director  
of STEM@SVSU



Adrienne Cole  
STEM Program Manager

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- Reserve your STEM Mobile Lab visit
- Summer STEM updates
- Faculty Focus: George Corser
- Upcoming Events!



## Student Voice Joins STEM Work In The Great Lakes Bay Region

Fifty-three middle and high school students representing 21 schools and 12 districts met at SVSU on August 22 and 23 as the Chief Science Officers (CSO) project was launched. The new initiative in the region is connected to the national model started in Arizona. Adrienne Cole, STEM Program Manager at SVSU, is leading the year long STEM leadership development program sponsored by The Dow Chemical Company.

Quarterly meetings will be held in regional STEM businesses and an opportunity for the students to write STEM grants for their school is available.

### Participating school districts:

Bangor Township School District, Bay City Public Schools, Bridgeport-Spaulling Community Schools, Carrollton Public Schools, Freeland Community Schools, Midland Public Schools, Valley Lutheran, Saginaw Township Community Schools, Swan Valley School District, St. John's Lutheran, Saginaw City School District, and Great Lakes Bay Early College.



### **SVSU Mobile Research Lab ready to roll!!!**

Again during this school year, the SVSU Mobile Research Lab is ready to roll and visit your school. The emphasis is middle and high school visits connected with classroom study. Additionally, the Mobile Lab can visit elementary schools and community events. The Water Quality Research done on the Mobile Lab contributes data to the SBESI database.

The visits do not have any cost and to request the Mobile Lab, complete the form on the website: [svsu.edu/stem](http://svsu.edu/stem)

### **SUMMER STEM Programming has Teaching IMPACT**

### **Dow Science and Sustainability Education Center Summer Research Experience**



### **5 Research Studies:**

“Nutrient Uptake in Phragmites”, “Soil Conservation Practices”, “Removing Phosphates with Cellulose”, “Nutrient Transport and Bacterial Source Tracking” and “Measuring Fecal Indicator Bacteria”.

### **10 K-12 Teachers:**

Danielle Niergarth, Bay City Public Schools; Jesse Place, Melanie Galonska, Emily Morse, Saginaw Township Community Schools; Craig Coopersmith, Carrollton Public Schools; Thomas Pashak, Coleman Community Schools; Jean Marie Learman, Andrew Kolwalski, Saginaw City School District; Ryan Stokoszynski, Standish-Sterling Community Schools; and Ted Tomczyk, Lapeer Community Schools.

### **20 High School Students:**

Aaron Dennis, Reese Public Schools; Sarah Holman, Owen Van Driessche, Anthony Chippi, Hannah Hurst, Bay City Public Schools; Blake Rieron, Allison Southgate, Unionville Sebewaing Area Schools; Emily Stewart, Saginaw Township Community Schools; Kendal Nelson, Standish-Sterling Community Schools; Megan Brooks, Swan Valley School District; Darla Martinez, Sarah Syeda, Saginaw City School District; Claudia Rios, Carrollton Public Schools; Kaylee Taylor, Aledandra Searfoss, Bullock Creek School District; Cole Windiate, Bangor Township School District; Julia Sanderson, Jonathon Harkness, Midland Public Schools; Sydney Prining, Valley Lutheran High School; and Emerson Ross, Freeland Community School District.

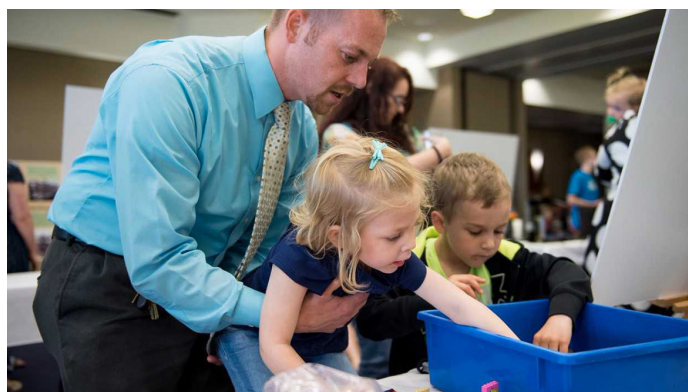
### **5 SVSU Faculty:**

Dr. David Karpovich, Chemistry; Dr. Martin Arford, Geography; Dr. Kyle Cissell, Chemistry; Dr. Jennifer Chaytor, Chemistry; Dr. Tami Sivy, Chemistry; and Dr. Dennis Gray, Biology.

### **10 SVSU Undergraduate Students:**

Dustin Pumford, Katie Kwiatkowski, Benjamin Muron, Jacob Zona, Mackenzie Bethune, Kimberly Dengler, Justin Herby, Nathaniel Irvine, Samantha Turner, and Angel Agyemang Prempeh

### **Dow Corning Foundation/SVSU STEM Community Partnership for K-12 Teachers**



### **20 K-12 Teachers:**

Samantha Aguirre, Melissa Trato, Millington Community Schools; Cindy Altes, Rebecca Field, Robert Pawlak, Shelley Rieger, Bay City Public Schools; Mathew Ferguson, Melinda Freeland, Kingston Community Schools; Sara Forbing, Ashley Nichol, Amy Kuntz, Caro Community Schools; Nancy Francis, Shari Fresorger, Carrollton Public



Schools; Melinda Haworth, Saginaw City School District; Judith Jean, Bay City Public Schools; Julie Leach, Tosha Miller, Frankenmuth School District; Jesse Place, Saginaw Township Community Schools; Becky Trudgeon, Merrill Community Schools; and Kelli Waun, Midland Public Schools.

#### **16 SVSU Faculty Mentors:**

Michael Coote, J. Blake Johnson, Dr. Jennifer Chaytor, Dr. M.P. Cavanaugh, Dr. Tami Sivy, Dr. David Karpovich, Dr. Kyle Cissell, Dr. Garry Johns, Dr. Anne Tapp, Dr. George Corser, Dr. Adam Warhausen, Edward Meisel III, Dr. Rajani Muraleedharan, Dr. Robert Tuttle, Amanda Ross, and Dr. Christopher Nakamura

#### **Great Lakes Bay Region Middle School Mathematics Specialist Certificate Program**



#### **16 K-12 Teachers:**

Cynthia Briggs, Trinity Lutheran Reese; Carrie DeShone, Freeland Community Schools; Beverly George, Marlette Community Schools; Kathleen Janke, Vassar Public Schools; Chelsea Johnson, Merrill Community Schools; Ann Keipert, Birch Run Area Schools; Amy Kolb, Frankenmuth School District; Charlie Lalonde, Danille Richard, Jeanna Wozniak, Bay City Public Schools; Peri Raushi, Pinconning Area Schools; Paula Smeltzer, Saginaw Township Community Schools; Katherine Spalding, Bernadette Wood, Midland Public Schools; Shelley Wiederhold, Caro Community Schools; and Amy Wilkins, Carrollton Public Schools.

#### **Director:**

Dr. Tamara Barrientos, SVSU Regional Mathematics and Science Center

## **Summer Programming has Student IMPACT**

### **AT&T Great Lakes Bay Region STEM High School Residential Camp**



#### **High School Student Participants:**

Pasia Tardiff, Romeló Ellis, Saginaw Township Community Schools; Gabrielle Adams, Bullock Creek School District; Nicole Brydon, Marlette Community Schools; Tejaswini Srinivas Reddy, Midland Public Schools; Sara Young, Freeland Community School District; Holm Hudson, Emily Jarembo, Chaztity Muniz, Carrollton Public Schools; Sterling Force, Pierce Force and Brad Gipson, Valley Lutheran High School.

#### **SVSU Faculty:**

Dr. Christopher Nakamura, Dr. Poonam Dharam, Dr. Jason A. Scott, Dr. Rachel Darr, Dr. Aneesha Gogineni, and Dr. Rajani Muraleedharan

#### **SVSU Student Mentors:**

Victoira Anglin, Mersaidies N. Jones, Tenesha S. Blair and Joshua A. Lord



## Herbert H. and Grace A. Dow Foundation STEM Scholars Network



### **Computer Science Explore Camp**

#### **SVSU Faculty:**

Dr. George Corser and Dr. Poonam Dharam

#### **Students:**

Wesley Beck, Frankenmuth School District; Ethan Davis, Great Lakes Bay Early College; Jonathon Harris, Sarah Kleinfeld and William Pan, Saginaw City School District; Zyk Hlavacek, Ian Nyutu, Saginaw Township Community Schools; Varunika Savla, Saxena Ashwin, and Vaddamani Vikram, Midland Public Schools.

### **Health Science and Kinesiology STEM Camp**

#### **SVSU Faculty:**

Dr. Rachel Darr, Dr. Christine Noller and Shannon Smith

#### **Students:**

Michiela Boone, Jaliyah Brown, Saginaw City School District; Adrianna Ellis, Brook Schultz, Midland Public Schools; Khoudia Fall, Bridgeport-Spaulding Community Schools; Aubrey Schultz and Kelsey Schultz, Saginaw Township Community Schools.

### **Technology of Film Making Camp**

#### **SVSU Faculty:**

Dr. Shaun Bangert and Dr. Robert Drew

#### **Students:**

Nico Barkoski, Warren Consolidated Schools; Ben Brenner, Saginaw Township Community Schools; Benicia Garcia, Great Lakes Bay Early College - Bridgeport-Spaulding Community Schools; Haley Green, Michigan Virtual Charter Academy; AJ Lauderbach, Vedika Savla, Andrew Sharpe, Midland Public Schools; and Angela Trusock, Bad Axe Public Schools.

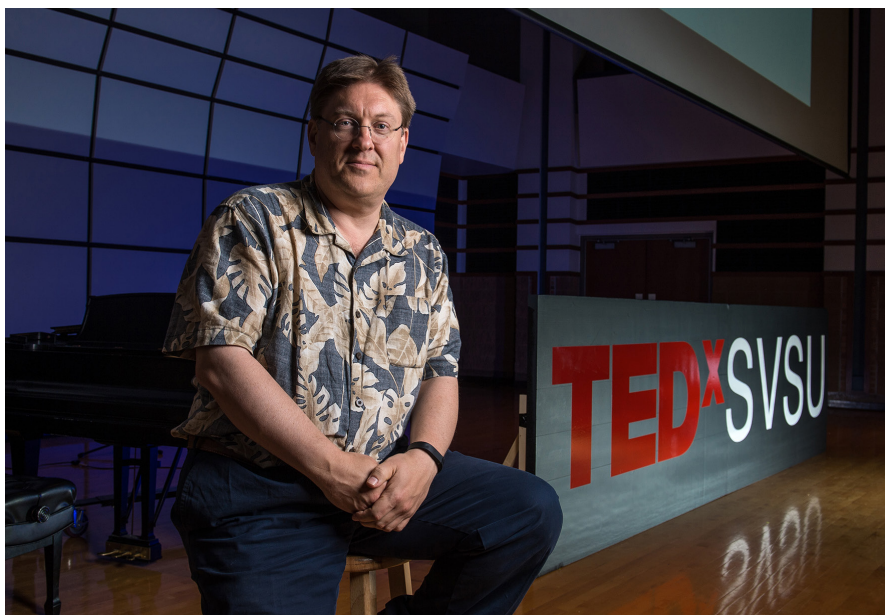


### **Dow Chemical Sponsors Camp Infinity for Middle School Girls**

Almost fifty girls participated in a computer science camp for girls in late July on campus. The camp, developed by the Michigan Council for Women in Technology, involved leaders from the Dow Chemical Company including Melanie Kalmar, Vice-President and Chief Information Officer.







### ***Faculty Focus:*** **Dr. George Corser**

George Corser is Assistant Professor of Computer Science and Information Systems at Saginaw Valley State University (SVSU). He teaches web and mobile app development. He publishes research on privacy and security in Internet-of-Things (IoT) and vehicular ad hoc networks.

Corser serves technical societies, including IEEE, ACM, SAE and Michigan Infragard, a public-private partnership with the FBI dedicated to protect national critical infrastructures. He leads community education, enrichment and outreach activities as Organizer of TEDxSVSU, faculty advisor of SVSU's Google IgniteCS, and volunteer for Hour of Code.

Corser holds a PhD in Computer Science and Informatics from Oakland University, an MS in Computer Science and Information Systems from the University of Michigan-Flint, and a BSE in Civil Engineering from Princeton University.

#### **Dr. Corser's interests are:**

I'm a security/privacy researcher in STEM, specifically in the fields of Internet of Things (IoT), connected cars and autonomous vehicles. But I've been interested in STEM since before I can remember, probably because my father was an engineering professor. At an early age, I considered

engineering no different from history or English just another subject to learn. I know that STEM fields offer at least as much mystery and amazement as non-STEM fields. Physics is every bit as profound as philosophy. Neither field can prove we even exist! I discovered my interest in teaching computer science while I was pursuing my doctorate. To make some side money I taught at a local trade school. One semester I taught three 4-credit courses in a single day, 8 a.m.-12 p.m., 1 p.m.-5 p.m., and 6 p.m.-10 p.m. At the end of the day I was not tired. I was energized. That's when I figured I'd go into teaching as a career. Sharing STEM knowledge is even more fun than learning it!

STEM@SVSU is my favorite group on campus because it considers education at all levels, from grade school to grad school. I participate in Hour of Code activities because I am fascinated to see people of all ages learning to communicate with and control computer software systems. Plus, it's just fun. I serve as faculty mentor for K12 teachers not because I'm teaching them anything but because I learn so much from them that I can use in my college classroom, especially ideas for student engagement and classroom management. For example, I'm helping Matt Ferguson 3d-print new parts for his InMoov robot. His class has tripled in size because students are so excited about it. I want to accomplish something similar with my app development courses. I serve as faculty adviser to Google IgniteCS for similar reasons.

I have been working for years unsuccessfully to establish some sort of K12/college community to provide non-CS teachers with the tools they need to teach CS material. Thanks to an introduction through Mike Colucci and STEM@SVSU, recently Aaron Schippert has stepped up to lead this effort. I now have high hopes that we can build something that will make computer science a lot more accessible.

#### **Dr. Corser's advice to get involved in computer education:**

Don't go it alone. Find kindred spirits. Join the teacher group being formed by Aaron and me. One teacher

cannot do everything but a bunch of us together can do boatloads. I personally would be delighted to meet with any K12 or college teacher to help them kick off a CS club or class.

Prioritize CS learning for yourself and your students. Computer science is the most important STEM topic to teach because over 70% of future STEM jobs will be in computer science according to the Bureau of Labor Statistics (BLS). Even if students do not become programmers, coding skills will be valuable in almost every field, STEM or non-STEM. Today's techies are tomorrow's normal everyday people. Years ago, if you used a computer you were a "guru"... today, who doesn't use a computer? Teachers are in a unique position to open the world of computing to students, and that means all kinds of students, not just students whose dads are engineering professors.

Finally, have faith. Better yet, have 100% confidence! I promise you there is nothing stopping anyone with a logical mind from mastering programming. Don't let greasy-haired know-it-alls prevent you from enjoying an enriching field of study. With fun and diligent practice, you and your students can and will be good at computers and you will not only use computers but also create and build new applications. Who knows? Maybe one of your students will be the CEO of the next Facebook!



### STEM Events/ Dates to Note..

**Manufacturing Day** - October 6, 2017 at SVSU with scholarships available for bus transportation targeting students in grades 6 to 12. Contact Tanya Blehm by email or phone - [tblehm@svsu.edu](mailto:tblehm@svsu.edu) or 989-964-2881

**Great Lakes Bay Regional Alliance STEM Summit** - Friday, October 20

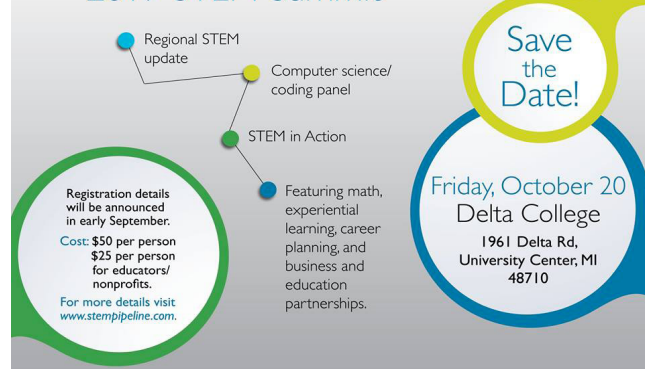
**Hour of Code for Fourth Grade Classrooms** - December 1, 2017. Details for application for this event are on website [svsu.edu/stem](http://svsu.edu/stem). Deadline is October 13, 2017.

**SVSU STEM Teacher Dinner** - 2018 date to be announced in next newsletter-be sure to note!

**FIRST Robotics State Competition** returns to SVSU on April 12-14, 2018

## STEM Impact Initiative Summit

Great Lakes Bay Regional Alliance  
2017 STEM Summit



**STEM@SVSU**  
SCIENCE • TECHNOLOGY • ENGINEERING • MATHEMATICS  
[svsu.edu/stem](http://svsu.edu/stem)