

**Delta College
Board of Trustees
Dinner Meeting
December 11, 2018
Delta College Main Campus Room N7**

Board Present: M. Benecke, A. Buckley, R. Emrich, K. Lawrence-Webster, D. Middleton, M. Morrissey, M. Rowley

Board Absent: M. Nash, K. Peatross

Others Present: R. Battinkoff, V. Bledsoe, N. Bovid, L. Brown, T. Brown, P. Clark, M. Crawmer, R. Curley, R. Curry, S. DuFresne, N. Elder, J. Goodnow, L. Govitz, L. Kloc, C. Kramer, M. Mosqueda, T. Nadolski, G. Przygocki, D. Roebuck, R. Schlaack, K. Schuler, S. Schultz, A. Sovis, A. Ursuy

Press Present: None

Board Chair, R. Emrich called the meeting to order at 6:00 pm. He then turned the meeting over to Reva Curry, Vice President of Instruction and Learning Services. R. Curry then introduced the two presenters Nathan Elder, Stem Explorer Coordinator and Scott Schultz, Professor of Physics.

S. Schultz noted that STEM Explorer represents not only the vehicle but the outreach in taking STEM (Science, Technology, Engineering, and Mathematics) out in the community. The three main goals of the STEM Explorer Program include:

1. To broaden the understanding of STEM in the Great Lakes Bay Region.
2. To provide hands-on activities to local middle school students.
3. To provide hands on projects to local high school students.

They provided a brief history of the STEM Explorer:

- 2014 – Herbert H. and Grace A. Dow Foundation grant proposal and acceptance
- Focus groups met to determine the region’s greatest educational needs
- 2014 – Farber Specialty Vehicles was selected for vehicle production
- July 2015 – hiring of full-time program coordinator, Nathan Elder
- 2015 – vehicle production, deep dive and surface exploration development
- January 2016 – delivery of vehicle
- January – April 2016 – continued development of projects and activities; STEM Explorer makes its debut visit to E. F. Rittmueller Middle School in Frankenmuth
- Summer 2016 – first community event – Saginaw African Cultural Festival
- Summer 2016 – professional development and EDU 220 and EDU 225 courses
- Fall 2016 – official start to K-12 program

As of November 2018 they have worked with over 20,000 students, teachers, and community members. For Fall of 2018 they have worked with 3,000 and are on pace to work with another 10,000 by June of 2019. They have also logged over 13,000 miles on the road while visiting schools in 11 counties in and around the Great Lakes Bay Region. Those include Bay, Saginaw, Midland, Tuscola, Sanilac, Huron, Clare, Isabella, Gratiot, Iosco and Genesee. They have worked with students from traditional public

schools, public charters and parochial schools. Approximately 110 middle and high school teachers have participated in our program.

They have attended community events within the Great Lakes Bay Region including the DOW Great Lakes Bay STEM Festival; Race to College; Family STEM (or STEAM) nights (Bay City Saginaw Township and Cass City); Saginaw African Cultural Festivals; GLBR Kids Festivals; Planetarium Anniversary Celebration; 2017 STEM Summit and GLBRA STEM Conference; as well as numerous other events including Delta Summer Camps and the Possible Dream Program.

Approximately 60 teachers have participated in the professional development courses or sessions. This includes EDU 220 – STEM Explorer’s Middle School Project; EDU 225 STEM Explorer’s High School Project; Michigan Science Standards workshop and STEM PD Day at Caro.

The STEM Explorer was featured in a Fall 2018 League for Innovation publication, “*The STEM Explorer: A Mobile Outreach Approach*” by Nathan Elder and Scott Schultz.

The STEM Explorer has an online booking website for area teachers to schedule visits.

The middle school surface explorations started in 2016 included: Delta Crime Busters; Virtual Welding; STEM Super Bikes; Augmented Reality – Chemistry and BIO; Human-Human Neuroscience; Thermal Imagery, Parachute Design and 3D Printing. That list has almost tripled for 2018.

N. Elder and S. Schultz shared survey results from the middle school students. The students rated their experiences; helpfulness, friendliness and knowledge of the STEM Explorer staff; and how the experiences influenced their thoughts on STEM. The students were overwhelmingly delighted and happy with their experiences.

The high school students participated in deep dive projects. Those included the following:

1. Physics Crumple Zone – students design crumple zones to minimize the force of impact during a collision.
2. Geo-Science – students come up with a way to use their cell phones as Brunton pocket transits, important geological survey tools that have been around for 200 years.
3. Biology – students design a tool that helps them attach their cell phones to a microscope for recording images and video.
4. Chemistry – students design a completely functional cell phone case that is also water resistant and buoyant.

These students were also surveyed and had very similar results as the middle school students. One interesting fact is that over 50% of high school deep dive participants say that they are more interested in Delta College being a part of their career pathway because of the involvement in this project.

Next steps moving forward include a new deep dive project for 2019 – a carnival game. Students will design, build, test and revise a carnival game. They will use statistical analysis to determine if it will be financially profitable to the carnival. N. Elder and S. Schultz ended their presentation with a slide show of pictures from various events and activities.

There being no further business, the dinner meeting was adjourned at 6:45 pm.

Talisa Brown, Assistant Board Secretary

Andrea Ursuy, Board Secretary