**Flagstaff STEM Connections Executive Summary**

**January – December 2014**

Business-School Connections

Over 100 Connections were made during the 2014 calendar year. These Connections included 60 businesses, government agencies or organizations. Thirty-seven teachers and approximately 2,500 students were affected through long-term class mentorships, one-day class programming, or STEM club activities and fieldtrips. Approximately one-third of the Connections are monthly business mentors in 6th, 7th, and 8th grade science classes at Sinagua Middle School (SMS) through the “Scientists in the Classroom” program developed by Jillian Worssam. Ms. Worssam is an 8th grade science teacher at SMS who was also Flagstaff’s first STEM teacher of the year in 2012. Mentorships were established by Ms. Worssam, Mindy Bell (STEM City Center), or April Gavin (Greater Flagstaff Chamber of Commerce) with the “Skills for Workplace Success” program. Most of the teachers and students in this program completed both pre- and post surveys established by Science Foundation Arizona.

NAU- School Connections

Many NAU students were engaged in partnerships with teachers. A Global Engineering Outreach group is working on a long-term (two-years to date) project at Killip Elementary School, and several others are assisting for the second year with the “Future City” program at Sinagua Middle School. Many NAU professors and graduate students have done shorter-term programs in the schools. And many NAU undergraduates assist with the FIRST Robotics tournaments in Flagstaff. See below for the work of the SFAz GRF student, Sarah Burcher, who has been collaborating with STEM City for the past two years.

Curricular Projects

**BioSEEK**

With funding from APS and the Flagstaff Community Foundation, STEM City partnered with TGen North and the Center for Science Teaching and Learning to offer BioScience Education Enhancement Kits (BioSEEK). We provided professional development opportunities on the final three kits during this calendar year, and now all five kits are available for checkout by educators through the STEM City Center office. A website is available at: http://bioseek.weebly.com

**FlagstaffSCIES**

The Flagstaff STEM City Initiative for Environmental Science was established by Sarah Burcher, a NAU Graduate student with a SFAz GRF scholarship. Sarah created a website, built soil and water kits, and assisted a teacher in using the kits with her students. The kits are available for checkout by educators through the STEM City Center office. A website (developed and maintained by Sarah) is available at: www.flagstaffscies.org

**NAHEC In A Box Kits**

In collaboration with the Northern Arizona Health Education Center, we have six human body kits available for 4th through 8th grade teachers. The kits are the Eye, Ear, Mouth, Guts, Brain, and Bones and Muscles In A Box Kits. We have also developed an online survey for educators to evaluate the effectiveness of the kits use after they have used them in their classrooms.

**Engineering is Elementary Out-of-School Time Program**

STEM City Center’s Americorps Member Melissa Fisher has downloaded the freely available curriculum for the award-winning Engineering is Elementary (EiE) Out of School Time kits. Dependent on funding, Melissa will build the kits to accompany the curriculum so we can also make this available to upper elementary and middle school classes and STEM Clubs.

Community Engagement and Collaborations

STEM City Center met and collaborated with many people and organizations involved in STEM-related programming and/or increasing educational excellence.

* Arboretum at Flagstaff – evaluated a new educational exhibit at the Arboretum, assisted with a teacher proposal that works with the Arboretum
* Arizona Project WET Water Festival – serve on the steering committee for this annual event for all 4th grade students in Flagstaff
* Coconino Association for Vocations, Industry, and Technology – served on the board selection committee for this JTED
* Coconino County Career Center – assisted with LEGO robotics distribution
* Coconino County Education Services Agency – preparing for the annual Teacher Education Week Award ceremony that included the STEM Teacher of the Year, the Coconino County Teacher of the Year, the Rodel --- and the SEDI Teacher Awards for Sustainability Curriculum (TASC).
* Flagstaff Commission on Excellence in Education – serve on this committee working to improve specific areas of need in the educational system
* Flagstaff Arts Council – collaborated on the first “Art of STEM” high school student art contest with awards given at the 3rd Annual Flagstaff STEM Awards night
* Flagstaff Makers Movement – serve on the committee to bring a Mini Maker’s Faire to Flagstaff
* Flagstaff Public Libraries – promote STEM-related events at both the Flagstaff Public Libraries
* Flagstaff Unified School District – helped organize the Flagstaff Community STEM Celebration, the first-ever, all-schools, all-community celebration held for April 2, 2014. I am presently working on the 2nd Annual Celebration at this time. It will be held on April 1st, 2015 at the NAU Dome.
* Girl Scout’s Cactus-Pine Council – increasing publicity to Girl Scout efforts to promote STEM education in Flagstaff
* Grand Canyon Trust – serve on the Youth Engagement Committee to increase student citizen science opportunities for Flagstaff youth
* Greater Flagstaff Chamber of Commerce – serve on the Education and Workforce Committee
* Killip Elementary School – assist Killip in a variety of ways as they build their integrated STEM program
* NAU’s Center for Science Teaching and Learning – collaborate on the iCREATE grant for NSF funding for adding technology component to bioscience education in Flagstaff
* NAU’s Climate Science and Solutions – collaborate to develop a program between CSS and the FUSD AP Environmental Science classes to conduct a Greenhouse Gas Emissions Inventory at both Coconino and Flagstaff High Schools.
* Rodel Foundation – assisted in planning for their Flagstaff STEM Event
* Sustainable Economic Development Institute – presently chair the Education Committee for SEDI, working toward increasing the number of teachers applying for the TASC awards as well as building new initiatives for sustainability education
* United States Geologica Survey – assisted in getting USGS maps and materials out to Flagstaff classrooms
* Women in Science and Engineering – organized Flagstaff’s first “Toy-Fixing Event” with local businesses, NAU engineering students, and the community