Teams Construct Electric Vehicles

Nine schools are participating in Greenpower, a USU STARS! GEAR UP collaboration project to help students design, build, and race a single seat electric car. The program provides students with a unique hands-on opportunity to engage in modern, industry-relevant engineering and technology through project-based-learning. Students will be able to learn at their own pace and develop skills in 3-D imagery, animation and computer-aided design.

A training will be provided by Greenpower representatives in early July for teachers leading the GEAR UP student teams. In the fall, each school team will bring their electric vehicle to the Utah State University Innovation Campus and race them on the new Electric Vehicle Roadway (EVR). The EVR is designed to charge vehicles while in motion, through inductive power transfer pads embedded in the track. While the Greenpower vehicles will not use this feature, GEAR UP students will lead the nation in developing the next generation of electric vehicles to reduce air pollution and emissions.
Students Collaborate on Plant Growth Experiment with Russian Peers

In February, one hundred and twenty-four GEAR UP students participated in a unique science project designed to examine plants grown from seeds in microgravity compared to plants grown from seeds that were ground-based. The FOTON plant growth experiment is managed through the USU Space Dynamics Laboratory, a partner with the USU STARS! GEAR UP project that also provided the materials for this scientific discovery. Participants grew marigold plants from seeds that remained on Earth, and from seeds

Top: Spencer Winn, a Mount Logan Middle School student, discusses the FOTON project with his Russian peers. Participants had the opportunity to ask questions of the other groups. Above: Students in Russia greet their peers over video conference.
that flew on the FOTON M-4 spacecraft. The students collected and compared the data to determine the effect of space radiation on the plants.

On April 8, 2015, students had the opportunity to videoconference with their peers in Russia, who participated in the same plant growth experiment. Twenty-one students from Dual Immersion Academy and Mount Logan Middle School participated in the digital discussion with Russian peers. Students from both countries were able to compare plant growth observations over time, present their findings, and ask questions. Language was not a barrier because many of the Russian students were able to convey their ideas in English, and both groups of students had the aid of interpreters.

Last year, USU STARS! GEAR UP participated in a similar program called BION M-1, in which they grew radishes. These plant experiments are finding ways to feed those in space, and motivating GEAR UP students to pursue careers that look to the future. We are excited to be invited to participate in the plant growth experiment with students from Russia again next year. We would like to thank Gayle Bowen and the Space Dynamics Laboratory for this great educational opportunity.

Top: Students at Dual Immersion Academy work with their teacher, Mr. Edgar Cortes, to set up the video conference. Above: Mount Logan Middle School participants wait to begin the digital discussion.
Thirty-one science teachers from the USU STARS! GEAR UP schools participated in the Utah Science Teachers Association Conference on February 6th and 7th. The USTA Conference was held at the Provo Conference Center where the teachers attended sessions designed to provide resources and expertise in their classrooms. The GEAR UP science teachers participated in science workshops and presentations that will impact successful implementation of quality teaching into our schools.

The following day, the teachers participated in a specialized GEAR UP workshop where they were provided the opportunity to fabricate solar ovens, hot air balloons, rocket launchers and poly bead density bottles to enhance concepts that are STEM related and hands-on. The GEAR UP science teachers were given a special opportunity to hear from the keynote speaker, Robert Krampf, the Happy Scientist, on ways to bring more science into their classroom using new technologies. The Happy Scientist provided free access to his website which contains amazing resources for teaching science.

We would like to thank the team of Duane Merrill, BYU Professor; John Vanderford, Utah Space Grant Consortium; Josh Stowers, Lakeridge Jr. High School; Doug Panee, Oak Canyon Jr. High School; Darren Hodges, Oak Canyon Jr. High School; and Adam Bennion, Westlake High School, for developing and presenting science activities to the GEAR UP schools and teachers.

Logan Superintendent Retires

After eight years serving in Logan School District, Superintendent Marshal Garrett has announced his retirement. Superintendent Garrett was named the 2015 Superintendent of the Year by the Utah School Superintendent Association. We at USU STARS! GEAR UP wish to thank him for his great service to his community and students. Superintendent Garrett served as the Chair of the GEAR UP Management Team and we will miss his leadership and guidance.

Frank Schofield will succeed Superintendent Garrett as Superintendent of Logan School District, and we look forward to collaborating with him on the GEAR UP project.
CoolSpeak Motivates Students

In March, Carlos Ojeda Jr., CEO and founder of CoolSpeak, gave four presentations at GEAR UP schools in two days. CoolSpeak is a platform of motivational speakers striving to empower students to take charge of their own learning in order to achieve their fullest potential. Mr. Ojeda spoke to over five hundred GEAR UP scholars. His program was a rousing success at each school; Site Coordinators received very positive and enthusiastic feedback from students.

To maximize the effect of the presentation, a pre-visit video was shown to the students. Then, free copies of Mr. Ojeda’s book, The Power of Youth, were provided to all GEAR UP students who attended the presentation. CoolSpeak will also host follow-up sessions by videoconference later this spring.

CoolSpeak has also offered USU STARS! GEAR UP the opportunity to pilot their new technology-based program, featuring high quality video streaming of live presentations. The goal of this endeavor is to expand the reach of the CoolSpeak mission for less expense, allowing more schools to participate, even with tight budgets. The pilot program is slated to begin this fall.

University Life for a Day

Annually, Mount Logan Middle School holds a One Day University program on the Utah State University campus. In December, over one hundred students participated. The day began with a motivational speech from Principal Mike Monson. He explained to the students that they had scored well on several different assessments, and he knew their potential and expected them to work hard.

Participants then practiced college life by attending their choice of two different workshop sessions: Google Earth, Emerging Technology, DNA lab, or Anthropology. Activities included simulating potential flood levels, extracting DNA from strawberries, and a cultural scavenger hunt.

Following the workshops, students had lunch at The Junction, one of USU’s buffet cafeterias. Before they went home, the Society of Physics Students gave a demonstration of several popular experiments. The day-long experience gave many students a renewed push to achieve better grades, and exposed them to some previously unconsidered career opportunities.
This past February, twenty-six representatives from USU STARS! GEAR UP traveled to Philadelphia, Pennsylvania, to attend the annual NCCEP Capacity Building Workshop. The workshop provided opportunities for in-depth professional development, collaboration, and networking. Daily learning tracks supplied practical tips and tools to incorporate in projects, and round-table discussions allowed GEAR UP professionals to connect and share ideas.

The goal in sending counselors was to help spread the vision of GEAR UP within the schools. Ann-Marie Davis, Site Coordinator, called the Capacity Building Workshop "a great experience for myself and my counselor." She elaborated by saying, "It can be difficult to explain the ins and outs of GEAR UP to someone, especially when they are crazy busy, as our counselor is. Having Andy there allowed him to see for himself what the potential is with this grant, and being able to share ideas away from the craziness of the school day was invaluable for both of us. We have been able to put plans together for the next year to really boost our mentoring of students, and we found great resources in those from other grants who were so willing to share. The best part is that I now have an ally in promoting GEAR UP throughout the Gunnison Valley."

Site Coordinator Sharalee Willardson also saw many benefits from attending the workshop. She said it "was a wonderful time for my counselor Kris and I to build a strong working relationship that we could carry back to Manti High School, to initiate common goals and share valuable resources. Because of this opportunity I now have a strong advocate of GEAR UP in the school beside myself, and she has resources from GEAR UP that she has not had before. I am most appreciative that neither of us has to reinvent the wheel...I feel more accepted and prepared than ever before and our GEAR UP students are in for an awesome year in 2015-2016."

The USU STARS! GEAR UP team held a meeting to discuss program implementation and year four strategic planning, during which they had an opportunity to hear from NCCEP President Nathan Monell. He explained the importance of focusing on the sustainability of program initiatives.

South Sanpete School District sent six representatives to Philadelphia. Their Superintendent, Kent Larsen, served as our USU GEAR UP representative for the Superintendent’s Leadership Institute. Arlene Anderson, District Programs Director, also attended, along with the district GEAR UP Site Coordinators and School Counselors.

"I now have an ally in promoting GEAR UP"

USU STARS! GEAR UP
Administrative Team

Program Director - Eric Packenham
Co-Principal Investigator - Jim Dorward
Program Coordinator - Melia Balls
Business Officer - Brent Baum
Staff Assistant - Heather Ericson
Office Assistant - Megan Yost
Research Assistant - Doug Reiter
Research Assistant - Kaustubh Vaidya