Marlborough High students solve problems of the future at STEM Expo

By Nance Ebert, Contributing Writer

Marlborough – The Marlborough High School’s 2015 Spring STEM (Science, Technology, Engineering and Math) Expo was held June 12 in the John C. Colleary Field House. The EXPO featured completed projects by the ninth- and tenth-grade students who worked tirelessly throughout the entire second half of the school year researching and implementing solutions to their assigned task.

The ninth-grade project was based on the theme “Going Green” while the tenth-grade project was to colonize Mars. Students had to work together building testable prototypes. Ninth-graders used solar, hydroelectric, and human energy in their projects.
For colonizing Mars, the tenth-graders also had to create a biosphere and an energy source, like a wind turbine.

“This project-based learning class resulted in some pretty impressive brainstorming and solutions,” said Lindsay Shomphe, tenth-grade English teacher and STEM mentor. “This class meets once every seven days. Sometimes the students worked on it during this class time.”

Hydro Solar Geothermal Wind (H.S.G.W.): Ninth-graders Jose Archila and Alex Santos.

All of the projects were judged before the exhibits were opened to guests. The judges would be awarding the project for the best colony, overall display, best transporter, best biosphere and best wind turbine.

“Today’s EXPO is a great demonstration of 21st-century education,” noted Dan Riley, director of the school’s STEM program. “You get to see a lot of rigor and relevance to the projects that the students are doing and projects that really matter. Clean, smart connected technology, colonizing Mars, these are concepts that might seem to be far into the future but the fact that we have our future leaders working on them now; problems that don’t yet exist. These are going to be the people that solve future problems. All of the hard work that the teachers and students put in together shows how much of a team they are. They are so supportive every step of the way.”

Ninth-grade students Jose Archila and Alex Santos created Hydro Solar Geothermal Wind. (H.S.G.W.)

“We identified a problem with the Field House in that it used too much power to run. We


decided to use an alternative energy source, being solar. This way, the scoreboard would now be operated using solar energy. This would save a lot of money,” said Santos.

Tenth-grade students Mike Alonzi, Christian McKinnon and Matt Saintus from M.C.M. (Mission to Colonize Mars) made a wind turbine. They built a colony to sustain up to 1,000 people.

“We would farm to grow our food and would work with the biosphere companies to get water and plants. We would also have schools and businesses,” said McKinnon.

Not all of the projects ran smoothly from the beginning. One challenge that the group Controlled Housing Association of Outer Space (C.H.A.O.S.) found themselves facing was that their transporter would not work. Brainstorming together, they ended up having to sand down the support to get more power to the motor.

“We have 59 judges in this arena. It’s amazing to have this kind of engagement. So many employers are here to see and
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