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FCHS Tech-Prep students are hoping to 'Lead the Way'

By Nathaniel Smith
Staff Writer

Frankfort Community High School tech-prep students, under the direction of educator Pat Sipes, have been the recipients of several new 'gadgets' this year, courtesy of a new program known as 'Project Lead The Way'.

The tech-prep program, implemented at FCHS in 1986, focuses on furthering students' understanding of engineering by concentrating on mathematics, electronics, physics and other such engineering-related fields.

According to Sipes, however, college administrators eventually realized that many students entering into college engineering programs were at a distinct disadvantage, particularly in terms of hands-on experience. Enter Project Lead The Way (PTLW), a non-profit organization sponsored by the private Kern Family Foundation, which focuses on preparing the future technical and engineering workforce in America.

Sipes, having successfully procured some $35,000 in grant money from Project Lead The Way, has put the funds to good use, purchasing items that would otherwise fall far outside of normal budget constraints. One such item is a Structural Stress Analyzer. Standing some three feet tall, the Structural Stress Analyzer is a glass encased box that contains a miniature replica of a bridge's truss system. The Stress Analyzer can then be manipulated, and the truss system within it re-arranged in order to replicate the effect that a vehicle would have while passing over a bridge comprised of the truss system in question.

Photo by Nathaniel Smith

TECH-PREP — Frankfort Community High School Tech-Prep students work on one of a number of catapults they've recently constructed. A catapult- launching contest is planned in conjunction with the March 14 Community Partnership Team open house.

The PTLW funds have also been used to purchase several sets of Fischer-Technick component parts, which Sipes describes as 'over-grown Legos'. Tech-prep students, with the aid of their new Fischer-Technick building blocks, have constructed a variety of high-tech machines, including one that sorts colored marbles, and an automatic drill-press. The marble-sorting device works by shining a light through the marble, and onto a photocell. The photocell then relays the color of the marble in question to a computer program, which in turn determines how it should be sorted.

"Constructing something like this is absolutely the kind of hands-on experience that students entering into college engineering programs in the past have lacked," said Sipes. "The students are involved in every aspect, from the construction itself, to making sure the electrical components are working properly... even designing the computer program that recognizes the different wavelengths captured by the photo-cell. It's a fantastic opportunity for hands-on learning, and exactly the type of things these students will be asked to do should they decide to further pursue engineering either at the college level, or as a vocation."

Students have also captured the marble-sorting machine in action, and produced a multimedia presentation detailing the way in which it operates. Complete with music and graphics chosen and generated by the students, the presentation is yet another hands-on learning experience that will aid them in their future endeavors.

Tech-Prep students continued on page 3

Tech-Prep students continued from page 1

As Sipes puts it, "In the future, virtually every project in virtually every subject will need to be molded into a multi-media presentation, and our hope is to keep these students ahead of the curve."

Another beneficial aspect of the tech-prep program's association with PTLW is the 'Community Partnership Team'. Through PTLW and the Community Partnership Team, both individuals and organizations have donated materials critical to the students' current and future success. "Man-Tra-Con has donated a plotter, which is a rather costly item used in computer aided drafting," said Sipes. "They've also been kind enough to donate a pentium four dual-core processor computer. The Regional Office of Education has also donated a computer, and a former tech-prep student, Shane James, has provided us with server space free–of -charge through his business, City Portal Groups."

Sipes plans to meet with members of Community Partnership Team Wednesday, March 14 at FCHS. Sipes and his students will demonstrate the new technology provided by the PLTW funds at that time, while arranging 'job-shadowing' and internship opportunities for students. "For instance," offered Sipes, "We'll send one student down to spend the day with Leonard Hopkins, who works for the Rural Electrical Authority. They'll spend the day with him and see exactly what his job entails, and get an up-close look at the inner workings of the power plant." Sipes encourages the public to attend the meeting and support tech-prep students through donations of tools and equipment, or by providing job-shadowing opportunities. "We're always looking for new members," said Sipes, "from engineers to stay-at-home parents. The main goal of our partnership with PLTW is to harness all the resources that we can and use them to get our math, physics and tech-prep students involved in more hands-on projects, preparing them for anything they might face as they pursue their higher education."