Welcome to the February 2014 issue of the Illinois PLTW Newsletter! Happy National Engineers Week!

Elizabeth Lee’s story - PLTW Student, New Trier Township High School, Winnetka
The following narrative was featured in the Spring 2013 edition of the Illinois Manufacturer along with an article about PLTW by Jim Nelson. The original publication can be found here.

I am currently in Principles of Engineering (POE), one of the classes offered as part of the Project Lead the Way (PLTW) pre-engineering program, and it is one of my favorite classes. I can’t recommend it or encourage it enough to my friends.

The odd thing about it is that it has a load of math and yet, I love it. I wouldn’t say it’s very math heavy but you have to know your way around numbers. I hate math but I love POE. Normally, in math, I have a hard time understanding why we use some of the formulas or why we need to learn them or how they have a real life application. During the trigonometry unit sophomore year, I couldn’t help but think that people don’t use trig to figure out how far away a third tower is . . . and I just didn’t understand why. But in POE, everything has an application. You don’t learn a variable because it’s there, you learn it because you need it. Continued at the bottom...

Grant Recipients

Congratulations to recent grant winners and thank you to the Bemis Company and the CME Group Foundation for their generous donations. This continued support makes it possible for PLTW to serve and support Illinois students in an environment that engages them in essential problem-solving and critical-thinking skills that will equip them with the knowledge to success in attaining their educational and career goals.

The following schools will receive grants from PLTW made possible by funding from the Bemis Company to support the implementation of PLTW Engineering:

- East HS (Rockford Public Schools)
- Glenbrook North HS (Northfield Township HSD 225)
- Guilford HS (Rockford Public Schools)
- Huntley HS (CSD 158)
- Jefferson HS (Rockford Public Schools)
- Lake Park HS - East and West Campuses (Lake Park HSD 108)
- Yorkville HS (Yorkville CSD 115)
The following schools will receive grants from PLTW made possible by funding from the CME Group Foundation:

- Illinois Tool Works (ITW) College Prep (Noble Network) - to support the implementation of PLTW Engineering
- Chicago Math & Science Academy - to enhance their PLTW Engineering program
- Maria, Circle Rock and Howland Schools (Catalyst Network) - to support the implementation of PLTW Launch

**Important 2014 Illinois PLTW Dates**

**New School Orientations for Administrators** will be held in Naperville on March 6th and Champaign on March 17. Topics will include national and state PLTW communication and program/membership requirement overview; technology and facilities planning; teacher summer core training institute registration and pre-planning; equipment, supplies, resource purchase; local school/community and regional cooperative support; ongoing program development; and more. Breakout sessions will focus on PLTW Engineering, PLTW Biomedical Science, PLTW Gateway, and PLTW Launch program interests. Registration can be found [here](#).

**PLTW Teacher Roundtables** will be scheduled around the state from 4 to 6pm on weekdays in March and April. Watch for email notifications over the next few weeks for dates and locations. We will also invite local non-PLTW administrators for PLTW informational sessions to be held beforehand.

**Tentative Summer Core Training** schedules are now available [here](#). Registration will open March 15th.

**Statewide Counselor and Administrator Conference and PLTW Teacher Conference Workshops** will be held on December 2nd - 3rd in Champaign.

Check the [Illinois PLTW website](#) for up-to-date information and registration for these events!

**Illinois Happenings**

**Students from Chicago Public Schools PLTW Pre-Engineering program attended a day of workshops on Careers in Electronics & Engineering at DeVry University** on Friday February 14, 2014 to kick-off Engineering Week. Schools represented were Austin Polytech, Harlan Community Academy, King College Prep, North Grand, Lindblom Math & Science Academy, Von Steuben and Kenwood Academy. DeVry University is a post-secondary partner supporting program initiatives within the Career & Technical Education (CTE) department of CPS. CTE Pre-Engineering Students viewed senior projects, participated in interactive activities and were treated to presentations from Dan Green of US FIRST Robotics and several DeVry University professors and senior students on the many career opportunities in Electronics and Engineering. Pre-Engineering teachers participated in their first teacher meeting and Professional Development session with an informative presentation from Dean James Karagiannes on the programs offered in DeVry University's College of Engineering & Information Services. Kye-Anne Wilborn, CTE Program Manager serves as the District Administrator for Chicago Public Schools for the PLTW Pathway To Engineering program. Check out the photos from this informative event [here](#)!
Barrington HS submitted an entry, "The School of Tomorrow, Today" to the White House Student Film Festival. The assignment was to highlight the power of technology in schools so Barrington HS showcased their PLTW Pathway program along with a couple of other great programs. See their entry here!

Geneseo School District's Leafprints Magazine featured Southwest Elementary's pilot of PLTW Launch and PLTW Lead Teacher Callie West. Read the whole article here!

Indian Prairie School District 204 featured their PLTW Pathway programs in their PLTW Student Testimonials video produced by 204tv.org. Check out their video here!

What is going on in your school?
We would love to feature your PLTW news, events or information in future issues so please share them with us! Are you hosting special events? What did you do to celebrate National Engineers Week? Do you have a unique (e.g., all girls?) PLTW class or implementation model that others can learn from?
Please submit to Sena Cooper at scooper@pltw.org.

Elizabeth Lee’s story continued...
We used trigonometry extensively during the Statics unit and I have to be honest, I struggled for a bit during the calculations. I couldn’t wrap my brain around the fact that the static members (which involves analyzing loads on physical systems in equilibrium) themselves don’t have to create right angles when you go to calculate the stresses on the members. It went against everything I learned in math. [I believed] you have to have a right angle to use trig, but it turns out you don’t. I had to do a sort of re-calibration from this mindset of, “since it’s a math problem: one solution – one way” to a more abstract way of seeing the formulas in use. It was still math, which I still hate, but it was applied. I understood why I was using it and why it worked much more readily, than I did during the actual unit in my Math class.

POE wasn’t just different from math, it was also very different from Physics. I currently take Physics along with AP Bio and although Biology doesn’t overlap too much with POE, Physics certainly does.

One of the hardest parts was getting over the difference between Physics vectors and Engineering vectors. Physics wants to see exactly what the forces are doing, so you would point the vectors in the direction the forces are going. But Engineering is different. It looks at how the members would react. I had to go in and talk to my teacher, Mr. Silvers, a few times to clarify this in my head. I would slip up and use the wrong vectors in the classes and when I tried to explain why I would switch my vectors, my Physics teacher didn’t understand. The lack of communication between the two disciplines led to that sort of confusion. It also led to where I really didn’t need to take notes during Physics because we already went over the formulas and events of such things like Torque, Work, Elastic Potential, and other things already in POE.

Communication is a huge thing in POE. Some of the labs are predetermined and we carry out the instructions, but there are some at the end of a unit where it is all on us. Mr. Silvers gives us the design brief and we create our own machine to fulfill the criteria. Recently, to round off the Statics unit, we had to create a bridge that spanned at least six feet and carry a minimum of fifty pounds. I’ve done builds before, but on a much smaller scale and I normally work alone. But working alone, as redundant as it sounds, is lonely. There’s no one to bounce ideas off of, no one to pipe up with a different perspective, no one to tell you to drop an idea that isn’t going to work, no matter how hard you try. You have to adapt and modify. If anything, I learned how close people can work to their breaking point. And I learned where mine was as well when we had to finagle two
members together from scraps. It all worked out great in the end but the experience was high-strung and enlightening. I learned very quickly not to take or make the project too personal. Because it’s not my project, it’s the group’s. And even if it feels as if I have more invested in it, I don’t. It is every much the slacker’s as it is the over-achiever’s.

**Marketing Materials**
PLTW bi-fold brochures are great for open houses or spring visits with incoming students – or parents who want to know more about PLTW programs. You can view them under Related Links on the bottom right of [this page](#). Please contact Sena Cooper if you would like to order any brochures.

**Illinois State Leadership Team**
The re-energized Illinois PLTW State Leadership Team, chaired by Marilyn Marshall, University of Illinois Assistant Vice President for Academic Affairs, met virtually on January 31st. The team identified successes, opportunities, and challenges as they relate to PLTW growth in the state of Illinois and will meet again in April.

**Illinois PLTW Team**

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<th>Illinois PLTW Website</th>
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