



# Danville Area Community College

# DACC Engineering Update

2008

Issue 10

## Alumni Updates

- Shawn Lantis and Kevin Smith have passed their PE.
- Josh Gabehart graduated from SIUC and works for Aqua Illinois in Danville.
- Sam Cole works for Danville's Engineering Department.
- John Ingram works for Crown Cork & Seal in Alsip, IL. Portions of his job allowed him to travel to the UK.
- William Ealy traveled to Washington to intern at Pend Orielle Mine to work in milling and floating devise designs.
- Alex Trimble, Jake Huffman, Jose Grajales, and Mark Cole joined the ranks of alumni.
- Alexis Minesinger graduated from Texas University with a BS in Mathematics.
- Nicole Ebert is employed full-time at KIK and has purchased her first home.
- Manasseh Obi is attending graduate school in Boise, Idaho and works as a Power Quality Engineering Intern for Idaho Power.

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## Into the Lights *by Elizabeth Cahill*

When asked why he chose to be an engineer, Ben Cahill responded, "Ever since I was little, I've always had an interest in how things happen the way they do, which is what engineering is all about." Ben chose engineering because of his interest in why things worked, but he chose to pursue engineering at DACC because he knew it would give him a solid background before transferring to the University of Illinois, where he graduated from in 2006. After transferring, Ben realized that "I was more knowledgeable on basic engineering principles than the majority of my new classmates. New concepts came to me much easier than it came to my classmates because of the education I received at DACC." Ben also noted that the attitude

at a large university is much different than that of a smaller school like DACC. At a university, the goal is to "weed out" students, which results in high dropout and failure rates for engineering students. At DACC however, the mentality is focused on teaching and helping the students learn, versus weeding them out. This results in a solid foundation that allows the students to succeed at the next level.



Ben Cahill  
DACC Alumnus

While at DACC, Ben had the opportunity to work two internships: one with the Illinois Department of Transportation and one with Time-O-Matic, his current employer. These internships allowed Ben to explore various

fields of engineering and helped him to decide what type of career he wanted. At a four year university, it is often much more difficult to find internships, especially as a freshman or sophomore.

At his current job at Time-O-Matic, a manufacturer and distributor of LED signs, Ben works as a field service engineer. His job includes traveling to customer job sites to install, repair, or service LED signs. Currently, he is working on color correcting the signs, which means that he calibrates the color in the signs so that every light exactly matches the others, making each sign look

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## Homecoming for Robert Myers

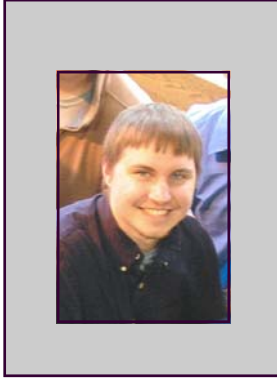
Robert Myers, a.k.a. Bobby, has finished his senior design project. The project's focus was to design a device for non-technical users that would indicate how well the solar charging system was working. Components used included voltage dividers for scaling voltages, IC chips for comparing value, and voltage regulator for stepdown power supply...guess you "gotta" know your circuits.

With this project completed

Bobby graduated on the dean's list with a BS in Electrical Engineering with Computer Specialization. While attending SIUC Bobby was an active member of Tau Beta Pi Engineering Honors Society, IEEE, and SIUC Health Club.

He currently works for Alstom in Danville as an industrial project engineer. Alstom is a global leader in equipment and services for power generation and rail transport. The plant in Danville produces intakes for

gas turbines for power generation with a minimum capacity of 50 Megawatts. For perspective the power plant in Newtown only produces about 30 Megawatts of power and the emergency system has about 12 gas turbines combined to try to achieve the 30 Megawatt capacity. Obviously our Danville facility is even larger. In fact, the exhaust for the turbines of Alstom is about 17 feet in diameter.



Alex Trimble 2008 graduate of DACC engineering.

### Trimble at Timeomatic *by Travis Wilson*

Second-year engineering student, Alex Trimble, was fortunate enough to be hired as an engineering intern for Time-O-Matic, a local business and leader in the LED sign industry. They offer hands-on experience with high-tech electronics, which is perfect, because Alex is currently working on his Electrical Engineering degree.

At Time-O-Matic, he troubleshoots and repairs various equipment like sign controllers, power supplies, and

LED boards ("digits"). He has learned technical skills like soldering as well as a lot about electricity and the function of different electrical components. Alex highly recommends getting an internship while attending DACC because it helps "get your foot in the door and get some experience with the field you're going into." Plus, most engineering internships are paid; and they look great on your application to a transfer school as well as a resume.

He transferred to the University of Illinois after he successfully finished DACC's Coordinated Engineering program. Alex chose the U of I because "it's one of the best engineering schools" and because it is close to home.

Currently, three other students from DACC intern with Timeomatic. Those students include Casey Povelones, Travis Wilson, and Elizabeth Cahill.

## I chose DACC!

### David Ruwe: A Voice for Internships

In high school, David Ruwe was elected to class president, captain of the football team, and vice president of Spanish Club. He was also involved in the National Honors Society and Sons of the American Revolutions. Through these activities, he learned that he likes leadership. At DACC, he has continued this tradition by getting involved in the student government and volunteering

for various DACC activities. "I wanted a career that would allow me to continue advancing in leadership," says David. Engineering was a fit in more ways than one, though. David has a life-long passion for learning how things work, so engineering was always an interest.

You might be wondering why David, obviously an academic and successful athlete, is here

at DACC. Well, David says it best, "I chose DACC! There are many reasons for my choice, but the main reason is the individualized environment. Due to class size, I have regular, personal contact with my instructors. Now that I have been attending DACC, I am glad I came, and am confident that I will be prepared for transfer to the University of Illinois."

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2008 Engineering Class, Zach is in the back, middle. David is on the front left.

### Zach Bowling: And, He is Off!

"BANG!" I took off strong and fast to get out ahead of all the elbows and to give myself some room to make any moves if I had to. The cool air blew right through my thin, sweat soaked jersey. My salt-stung eyes were focused on the course ahead as my feet glided over the ground step after step. I had a pace going, and I wanted to keep it going by driving myself forward with my

exhausted, heavy arms.

As I flung myself across the finish line, stumbling through the chute, a sense of pride and honor filled my wildly beating heart. I had won the race and achieved a new course record along with my own personal record. Second place had finished a good thirty seconds behind me. I bent over, gasping, admiring the good, honest mud of the battle and

the trickle of blood from a spike wound, splattered on my still quivering legs.

I have not stopped running yet. It has become part of my identity. I have paid for my success on the track with countless hours of exertion and exhaustions, sweat and occasionally blood, but running has made me a determined person. I have a lot of goals and you can bet with that

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## Project Lead the Way *by Casey Povelones*

Project Lead the Way (PLTW) has come to Danville Area Community College (DACC). PLTW is a non-profit organization that promotes pre-engineering courses for middle and high school students across the country. PLTW combines hands-on projects with classroom work to help students understand engineering concepts in everyday life. PLTW offers college credit for on-campus and high school courses.

The current Project Lead the Way foundation courses are Introduction to Engineering Design, Principles of Engineering,

and Digital Electronics. Specialization courses include Aerospace Engineering, Biotechnical Engineering, Civil Engineering and Architecture, and Computer Integrated Manufacturing. The courses are lecture and project-based.

I took the classes at Danville High School, while Travis Wilson, a Catlin student, took the same classes at DACC. We both took Principles of Engineering and Introduction to Engineering Design and feel that the courses prepared us for current engineering college courses at

DACC. Travis and I both concur that the projects were our favorite. Projects included building marble sorters, miniature bridges, and mousetrap cars. We also enjoyed using Inventor in Introduction to Engineering Design. Inventor is a 3D solid modeling program made by Autodesk. We still use inventor for some project designs.

I strongly urge all middle and high school students interested in engineering to join Project Lead the Way. The classes have given Wilson and me a running start for many of our current college classes.

## Alumni News Flash

**Shawn Lantis**, design engineer for CB&I, was assigned as the team leader for a company initiative to unify plate structures design standards, practices and procedures. Since CB&I has acquired several companies over the past decade, it is critical that all business units operate in a consistent and regulated fashion," says Lantis.

His team will collect documents related to design, detailing, standards, specifications, company policy and much more from the global business units. Then the daunting task of combining the documents into one central database begins. When done, an engineer working in Australia will have access to the same information as someone in Plainfield, Illinois.

Shawn comments, "It's challenging work, and I'm excited at the opportunity to have a direct and immediate input with regard to how CB&I engineers across the globe perform their job functions. Plus, I get to rub elbows with some of the top company executives which might be of a future benefit."

**Brian Rudin** graduated in December 2006 with his BS in mechanical engineering from the University of Illinois. He was immediately hired as a design engineer for Alamo Group, Inc in Gibson City, IL. The Gibson City branch designs and manufactures many different types of pull-type and 3-pt mowers/rotary cutters for a large range of uses. The rotary cutters are the meat of the company in

Gibson City; however, they also produce other types of equipment including box-blades, post-hole diggers, snow blowers, and more.

Brian, along with his new wife Bree, has moved to the area. This last year Brian has worked on the design for loaders and backhoes. Brian has completed much CAD work using Solidworks to design parts.

**Justin Brehens**. Several years ago, DACC visited the Caterpillar assembly plant. DACC alumnus Justin Behrens went BACK! He put his degree on pause this last year in order to intern with Caterpillar and is now slated to graduate from SIUC in the spring of 2009.

During his internship he lived on Central College campus and was able to work for Caterpillar full time in Global Engine Development. Justin was invited to join the piston ring and liner group, where he worked primarily

between the design and production stages. He helped to test engines for various glitches that appeared in the field, and he tested parts to validate the effectiveness of the design. During the last three months, he was the leaders for three separate test projects: On-Highway Truck application, an excavator, and a military vehicle. Justin reported, "I am finding it very interesting and something I might like to pursue for a career." In fact, he left with an offer on the table.

## Certifiable?

*By David Ruwe*

**What is the FE exam?** The FE exam is usually taken by engineering students during their senior year of college.

This eight hour test is divided into two four-hour portions. The first portion is an overview of fundamental concepts while the second tests a student's understanding of their specific field of engineering. It should be noted that only Casio fx-115, Hewlett Packard HP33s, and Texas Instruments TI-30x and 36x calculators are allowed on the exam, so do not become dependent on your calculator's programs.

There are some changes under consideration, including removing the use of a calculator and requiring a master's degree as a prerequisite to the exam. I talked to Josh Gabehart, DACC alumnus and engineer for Aqua, who suggested that if the master's degree requirement is instituted, to "get a four-year degree, and a job; if a company wants you to get your PE license, they will usually help you pay for it."

## What is the PE exam and when do I take it?

After passing the FE exam a student is designated as an Engineer in Training. They must then complete five years of work and fulfill the requirements of the state in which they wish to get their license. These requirements can be found online at NCEES.org. After fulfilling the specific requirements, an engineer can take the PE exam. Upon passing the exam, a person is considered a professional *Continued on page 4*



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## DACC Associate in Engineering Science Baccalaureate Transfer Program

The Associate Engineering Program provides basic training in the foundational building blocks for engineering: physics and mathematics. Studies are conducted in general areas and are a preparation for a number of fields of advanced specialized study. This program is designed as a transfer program and completion of the program provides flexibility to transfer to any desired university. For more information about the program visit <http://www.dacc.edu/catalog/aes.html>.

### Setting Records

by Zach Dieu

The Burj Dubai or The Dubai Tower is a skyscraper currently under construction in downtown Dubai in the United Arab Emirates. The tower is designed by Skidmore, Owings, and Merrill, the same architects who designed the Sears Tower in Chicago and the Freedom Tower in New York City.

The Dubai Tower holds the records for the world's tallest man-made structure, tallest freestanding structure, tallest structure, building with the most floors, as well as the most vertical concrete pumping. The only record left is to be the world's tallest structure of any kind. This record is currently held by the Warsaw radio mast in Konstantynow in Poland at 646.4m.

As of April 7, 2008, the Dubai Tower is 629m tall. Some have suggested that the final height is going to be 818m, but the construction manager on the project has said only that it would be greater than 700m when finished.

To accomplish this feat, the Dubai Tower is built on a triple lobed footprint foundation with setbacks, designed to minimize wind forces, strategically placed all the way up all three sides of the building.

There are several other projects that could surpass the Dubai tower in the future including the Murjan Tower in Bahrain (1,022m), the Burj Mubarak al-Kabir in Kuwait (1,001m), the Al Burj near Dubai Marina (700m-1,200m), and the Mile High Tower in Saudi Arabia (1,400m).

### David *Continued from page 2*

Attending DACC has also allowed David an opportunity few freshmen in college get. David has an internship. He works for Aqua Illinois, a subsidiary of Aqua America, Inc. Aqua America is the nation's largest publicly traded water company. The company has trained David in AutoCAD, software used to draw blueprints. "There are basically two kinds of engineers that I see at work. There are the ones that draw up plans on the computer, and there are ones that go out in the field and oversee job sites," says David. Blueprinting has been David's primary function through the winter months, but he hopes that the summer will get him outdoors.

Experience is not the only reason David appreciates his internship. He looks at this internship as an opportunity to network for the future. David's final word on the subject was, "I believe that if you are going to be an engineer, the best and easiest way to success is through an internship. You are a huge step ahead of everyone else, because if you show them good work ethic and a willingness to learn, you can get a lot out of your internship. Who knows, if they really like you, then they may even pay for a portion of your education."

### Ben Cahill *Continued from page 1*

uniform. His job utilizes engineering concepts like wave and light theories, electricity, electronics, and programming. He also uses basic mechanical skills to troubleshoot problems with the signs. When asked what he likes best about his job, he said, "I love that it's hands on. I like being able to work with the signs and finding what's wrong with them and then finding new or better ways to make the signs run and look better."

Ben also remarks that one reason he got his current job at Time-O-Matic was because he was an intern

there for two summers. He explains that internships are extremely helpful when you graduate and are looking for a job. Many times if you show the company good work ethic, they will want to hire you back when you graduate. Ben attributes DACC for allowing him the opportunity to get an internship, an opportunity a lot of four year universities do not give you, especially during your first two years. Ben concludes with stating that "DACC was a great place for me to start. It gave me the solid background I needed to succeed."

### Certifiable?

#### *Continued from Page 3.*

engineer, receiving their professional engineering stamp and title.

#### Why is it important to become a professional engineer?

With this title comes many perks. You are able to sign and stamp job plans, thus certifying them for use. Of course, there is usually a pay increase once an engineer has their PE license. For some engineers this license is really unimportant, however, in some cases, for example, civil engineers will usually want to get their PE license.

### Zach *Continued from page 2*

determination I will achieve them. Actually, running has brought me to Danville Area Community College. I was offered a cross country scholarship and I'm now studying engineering.

Although I have never bled in my engineering studies, that same determination, focus, and integrity are a part of who I am and how I get ahead academically. I have always strived to be the best on the track and in the classroom. Engineering has been just as much of a passion of mine as running. I know that one day, with this same ambition and perseverance, I will make a great engineer.