Issue 4

Fall Semester 2002

Danville Area Community College

COORDINATED ENGINEERING PROGRAM

Engineering Update

DACC Alumnus Works in Japan

After graduating from Berkeley, I worked at Nissan Motor Company's Vehicle and Transportation Research Laboratory in Yokosuka, Japan (~40 miles south of Tokyo) for one semester. I lived on the south edge of Tokyo. At Nissan, I developed and tested automated steering algorithms for passenger cars using GPS as the reference. Quite simply put, we could drive a path around a test course, record and store our GPS trajectory, and automatically drive around the course (without driver interaction) to within approximately a hand's width of our previous path. This affect also worked if a preceding car communicated its GPS position to a following car. In this case, we could follow any car that communicated its position from any distance (kinda eerie when the first driver wiggles the steering wheel in his car, and our steering wheel wiggles a few seconds).

Socially in Japan, my first few weeks were pretty rough. I had no Japanese skills, and there were no translators (or English speakers) around to help. I quickly learned the Kanji symbols for the major towns and cities on the main island of Honshu, so I could navigate by train independently. I also wasn't too afraid of getting lost, so I would hop on a train for an hour, get off, and find my way home. My first weekend in Japan, I visited a small, historic town about 50 miles south of Tokyo by myself using the trains...guys at work seemed impressed. Near the end of my time there, I took the bullet train ("shinkansen", in Japanese) to the historic old capitals of Kyoto and Nara for a three-day weekend. These cities are near the western coast of Honshu, and are considered the most historic and beautiful cities in Japan. The experience in this area was great, and the train ride was awesome. The food was also phenomenal (expensive, but very good). The Japanese have a wide variety of foods (more than just raw fish), and the quality of the food is very good. Living in the Bay Area for two years introduced me to the basic Japanese foods, so it wasn't too much of a shock eating in Japan except portions were smaller and more expensive. The strangest things I ate were....crickets/grasshoppers, whole fish lightly browned on a stick (head, tail, bones, organs, and all), live shrimp sushi, and unagi (eel) dinners. Although unagi (river eel) and anago (sea eel) are commonly served in the US, you don't get to see the live eel before it is prepared like you can in Japan.....very interesting?

By Ryan White, DACC Alumnus **Ryan White returned from Japan and is currently working for Lockheed Martin Missiles and Space Operations. He was hired to develop and test control systems for government space systems.**

Students on Internships

DACC Students Selected by IDOT

This last year, Brock Dahlin from the Illinois Department of Transportation once again visited Danville Area Community College to recruit engineering students for CO-OP and summer employment. Last spring two DACC students boldly applied and were selected to work with IDOT. Ben Cahill worked with the department within their summer work program and Brian Duez was selected for a 1-year CO-OP experience. Both students gained actual engineering experience in areas of surveying and site management.

Student Selected by Patrick Engineering

David Freeman was selected by a Springfield engineering company to conduct permutability testing at the local landfill prior to alternation to the fill. David's test aided in the selection of construction materials.

Inside this issue:

Alumni News:

- *John Ingram has completed the Associate Degree in Engineering Science and has transferred to U of I*
- *Dave Freeman has completed the Associate Degree in Engineering Science and is currently studying at U of I.*
- *Former DACC alumni Kevin Smith is finishing up his last year at U of I as a Civil Engineer.*

Darrin Shrout: From Mustangs to Engineering?

Darrin Shrout is currently a Danville Area Community college student in his second semester of the Coordinated Engineering Program.

In the distant past, I often thought that having a "job" and making a living would be enough. But in the last few years, my job taught me the importance of useful and interesting work. I was employed at Krupp Gerlach Machining as a machine operator. I learned to operate a wide variety of machines and also learned a great deal about the manufacturing process. In the fall of 1999, I was selected for a newly created position: Tooling Technician. During the next two years, I became exposed to many of the duties that an engineer would perform. In acting as a link connecting the engineering staff with the operators on the floor, I ordered tooling and materials, conducted tests, did some minor design work with CAD, created a tooling database/catalog, and met with vendor representatives (often receiving a free lunch, my favorite part!). I really liked my job and the freedom to institute changes that I believed would make a difference. I had a feeling for how things might work but, I didn't have the educational background to really understand or be able to explain precisely what was going on.

I have always had an interest in things scientific or mechanical. I liked to read and let my imagination run wild about the possibilities of science and technology. Although I loved science, I never was actively involved with it. Then, one day I bought my first car,

a 1970 Mach I Mustang. Little did I know how much influence, though subtle, that event would have on my life in the coming years. The project began small. I was just going to make some relatively minor engine repairs. I started gathering information from magazines and books about repair procedures, parts, and professional opinions. I used this information to select various components as to how they were compatible with each other and how they would enhance the performance of my vehicle. The whirlwind of possibilities caught me up, and off I flew into an extensive project. After completing the assembly and producing a road-worthy car, the next step was to test the performance: Off to the drag strip! In the following years, I tried more modifications and did more testing, all improving the car's performance. I was conducting scientific research, and I didn't even recognize it. My job propelled me to learn more and my car illustrated my talents at scientific work.

"Then, one day I bought my first car, a 1970 Mach I Mustang. Little did I know how much influence, though subtle, that event would have on my life in the coming years."

My choices were to stay in a safe position and remain relatively ignorant, or to pursue a higher education and satisfy my growing curiosity. I chose the latter.

Something that I find interesting is that when I talk to people about my choice of pursuing an Engineering Degree, they most often point out the monetary benefits of that type of education. The interesting part is that I do not really think about the money. I find that when I imagine the benefits of a degree, the thing that I think about most often is being able to do good work, to be a part of something worthwhile. I want to work on important projects, big or small, that have an impact on the world. I want to have the chance to experiment, to learn something new every day. Most of all, I just want to understand.

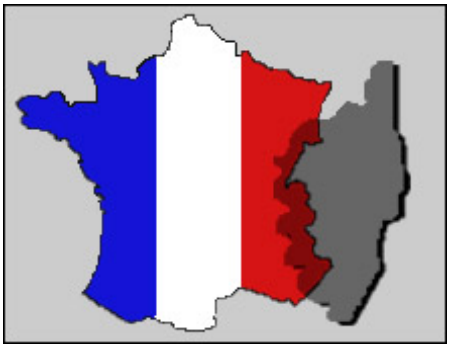
The bottom line is that I came to DACC because I wanted to learn. DACC has a good atmosphere, great teachers and is really economical. It is nice not to be just another anonymous face to the faculty. The Engineering Program is helping me to gain knowledge, but DACC has helped me personally as well. Through the rigorous course work, my participation in Phi Theta Kappa, and the Tae Kwon Do club I have gained much confidence.

By Darrin Shrout, DACC Student.

Ying Thao: Studies at DACC Instead of France?

Ying Thao, a French citizen, has joined Danville Area Community College's Coordinated Engineering Program. As a foreign student, she appreciates the services and flexibility of American colleges as French universities do not offer flexibility in course choices and scheduling, nor do they allow students to change majors after beginning an area of study. Ying has enjoyed her attendance here at DACC and says, "Looking back on the two years I have been in the United States and at DACC, I have had a good experience. The community college is a positive place for me compared to the university, because the classes are small and the teachers are available. The most difficult adjustment has been home-sickness."

Welcome to DACC Ying!



Brian Duez: A CO-OP Success

By Brian Duez, DACC Student

As of May 2002, I joined the Illinois Department of Transportation (I.D.O.T.) as a Civil Engineering Technician within their CO-OP division. I began the experience this past summer and have enjoyed it immensely. A CO-OP experience is a fifteen month work program which can be divided amongst your semesters of college. It is a wonderful way of gaining working experience in engineering while attending school.

As a Civil Engineering Technician, I often solved practical problems by applying principles and theories of mathematics and science to the job. I also managed the preliminary construction staking as guidelines for the contactors. The contractors have specifications and tolerances that they must work within, and the majority of my time was spent supervising and inspecting the contractors' work.

I would recommend the CO-OP experience for many reasons: I was offered a good starting salary (approximately $1800 per month), insurance, fringe benefits, paid vacation, and a challenging experience. Now remember, I'm only an engineering student, and yet, I worked an engineering-related job with full-time benefits. In addition to the benefits, the experience convinced me of the difference a degree will make in my overall job satisfaction. My experience with I.D.O.T. has intensified my desire to earn my degree, and has given me a foundation to more clearly understand the concepts taught in my courses. In addition, this CO-OP experience will help me later when seeking a certified engineering position. I have discovered that an internship is something to consider no matter what your major. It has given me a path to accelerate my career, and it created a break from all of the necessary schooling.

Shawn Lantis: In The Thick of It

Shawn, DACC engineering alumnus, recently graduated from U of I with a BS in mechanical engineering.

Life is good. Things are busy here and I'm right in the thick of it, but really enjoying it. I've settled in now and am learning more and more each day (which is what I had hoped for).

Right now I am working on a jet engine testing project. We are re-designing air supply ducting that provides clean, temperature and humidity controlled air to test cells at speeds up to Mach V. It's pretty interesting stuff! The ductwork is all stainless steel and weighs up to 5000 lb/ft. Along with the duct, we are also responsible for the foundations, structural supports, electrical, valves, actuators, etc. So the job will probably run well into next year. I am also working on a large vessel that takes impurities from a by-product gas of manufacturing and filters them with sprays of water and solvent to remove harmful materials. It's kind of an anti-pollution stack. The by-product of the system is sulfuric acid, which can be used in other applications. Basically, it's a means to reduce the amount of acid rain that is such a problem in some areas.

> *"Life is good. Things are busy here and I'm right in the thick of it, but really enjoying it."*

Shawn currently works for Chicago Bridge & Iron

John Ingram: This Place Is HUGE!

John Ingram received his Associates Degree this last spring. He transferred to the Mechanical Engineering Department at University of Illinois-Champaign.

I just started classes today, and some of them sound pretty frightening.

Left to Right: John, Dave, Scott.

I am taking Advanced Calculus, Intro to Solid Mechanics, Thermodynamics, and Intro to Electric and Electronic Circuits. In my calculus class and my solid mechanics class, I am not allowed to use a calculator on my exams. SCARY!! All my homework is being done over the internet in my electronics class. I'm not used to that, but I'm managing well enough. All of my instructors seem like they will be pretty good. I'm not taking any kind of labs either so I don't expect to be writing too many reports this semester. WHAT A RELIEF!! The only other thing I have to say about the U of I is: "This place is HUGE!!"

Danville Area Community College

COORDINATED ENGINEERING PROGRAM

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Highways could not exist without civil engineers.

The space-age could not exist without electrical engineers.

Automobiles could not exist without mechanical engineers.

Industries could not exist without mining engineers.

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The Coordinated 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.

Within engineering there are basic classifications for jobs that are common across the various engineering disciplines. Research Engineers explore fundamental principles of Chemistry, Physics, Biology and Mathematics. Development Engineers use the knowledge acquired by researchers and apply it to a specific product. Testing engineers are responsible for designing and implementing tests to verify the integrity of a product. Designing engineers are responsible for providing the detailed specifications of the product. Manufacturing engineers develop the processes for turning new material into a finished product. Other types of employment for engineers include maintenance, technical support, sales, consulting and management.

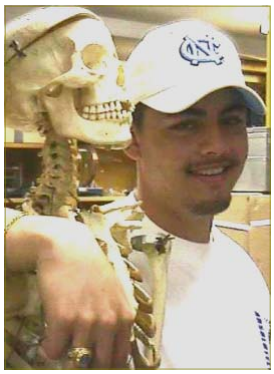
Expected Salary Range? The recent average starting salary for engineers with a BS was recorded at $40,000. One of the biggest factors driving the job market is the shortage of engineering graduates to fill the expanding pool of new job openings. Because of the drop in the birth rate years ago, this trend is expected to continue for the next year or two.

If after reading this publication, you would like to visit with our faculty, tour the facilities or simply obtain more information about our program, please feel free to give us a call. We welcome any opportunity to interact with our prospective students and would be delighted to arrange a visit.

Rigoberto Torres: Born To Be An Engineer

My name is Rigoberto Torres and I am an engineering student at Danville Area Community College (DACC). I have lived in Danville almost my entire life and am here at DACC for my second year; however, this is my first year in the engineering program. I chose this program due largely to my love for mathematics and the encouragement of a DACC Instructor. No doubt, my favorite subject is math. While attending college algebra, my instructor informed me that she thought I was, "born to be an engineer." Is it true? I do not know, but I took it as a compliment and decided to give it a try because I had not yet declared a major. So far, it has been very interesting.

DACC has a fabulous program that prepares a person for a four year university. The most obvious advantage of coming to DACC is the money. This college is definitely less expensive than that of any university, and yet, it is very possible to learn your first two years of engineering right here in Danville. Since this year is my first year in DACC's engineering program I have only taken Calculus I and Physics 106. Both of these classes have fantastic professors, respectively; Mr. York, (who likes to use a happy face as a variable), and Mrs. Sturgeon, (who has problems drawing a happy face! She adds humor to the class, but apparently her art classes did not pay off!) From my teasing pranks, you can see that faculty here at DACC have personalities. I have immensely enjoyed their wonderful teaching skills, and have had a great time!



Physics 106: General Physics is your first engineering course in the program. Although, there are a few unreal problems in Physics 106 (bunnies that climb trees and cows that fly), I can see the challenges we face in Physics 106 are real life instances that engineers may face everyday in their jobs. I realize that the problems are just going to continually get harder, but strangely I am somehow looking forward to continuing my journey through the engineering program here at DACC and hopefully finishing someday. No matter where it leads me, it has been a great experience so far!