



# Pre-Engineering Newsletter

October 2009

## In this e-mail:

- (1) Preparing People for Rapidly Changing Environments
- (2) Wentz Engineering Funds
- (3) Extra-curricular activities
- (4) All-school lecture on November 2nd from 7:00PM to 8:00PM
- (5) Kent School Robotics Team competes at Hofstra
- (6) Engineering Should Be Blended Into K-12 Curriculum, Panel Says
- (7) Tufts Receives Gift To Expand, Support Engineering Programs
- (8) Engineering Schools Produce High Starting and Mid-Career Salaries, Data Indicate
- (9) Project Lead The Way Plans Large-Scale Expansion
- (10) NSB Seeks Ways To Promote Student Innovation
- (11) Program Would Combine Engineering, Humanities And Arts

## Preparing People for Rapidly Changing Environments

The October 2006 issue of the Journal of Engineering Education describes a landmark set of activities called the National Engineering Education Research Colloquies (NEERC) that explored how rapid changes in the world require new ways to educate future generations of engineers.

The argument is not simply that we need more engineers than we have had in the past; instead we need a transformation in how we educate future engineers...

JOHN BRANSFORD  
University of Washington.

## Howard B. & Judith B. Wentz Engineering Fund

Kent School assists students in finding and applying to pre-engineering summer programs. Contact Dr. Nadire if interested.

## Extra-curricular Activities

- **Field Trips** (CT Science Center in Hartford, construction sites, factories, engineering firms, research labs, engineering departments)
- **Guest speakers**
- **Conferences**

Dear Kent School student,

The Kent School Pre-Engineering Program aims to expose students to various topics and practices in the engineering fields.

**There will be an all-school lecture on November 2nd from 7:00PM to 8:00PM given by Dr. H. Vincent Poor, Dean of the School of Engineering and Applied Science at Princeton University**

## Kent School Robotics Team Will Compete at Hofstra in Regional Competition

The Kent School Robotics team, led by Mr. Austin, will be going to compete in a regional competition, held at Hofstra during Spring Break. The team has grown to nearly 30 members, from nine last year. This year the team is starting off-season projects with the hope of a) students learning about how to design, build, and program robots and b) providing an opportunity for the School community to see what we can accomplish. Our Robotics Team is funded by continuing grants from NASA, United Technologies, a gift from Northeast Utilities, and parent and alumni donations.

Please contact Mr. Austin with any questions.

## Engineering Should Be Blended Into K-12 Curriculum, Panel Says

Engineering Should Be Blended Into K-12 Curriculum, Panel Says. Education Week (9/9, Cavanagh) reports, "Engineering studies, or lessons on how products are designed and built, have the potential to bolster student engagement and understanding in math and science, despite the topic's relatively modest and undefined presence in the nation's schools," according to a report from the National Academy of Engineering and the National Research Council. The report found that "currently, engineering study is a 'work in progress' in U.S. schools," with "no formal learning standards or assessments on par with those in" areas such as math and science and "few well-designed, meticulously executed studies on the topic." The report's authors "recommend that K-12 engineering lessons generally have a 'conceptual connection' to postsecondary study and real-world business practices," and "should also emphasize problem-solving, the ability to use equipment and technology, communication, and collaboration with others." Instead of "new, stand-alone engineering classes," the panel advocates blending "engineering concepts and exercises" with other STEM-related courses.

## Tufts Receives Gift To Expand, Support Engineering Programs

The AP (9/9, Salsberg) reports, "Tufts University's School of Engineering has received a \$40 million gift from Bernard Gordon, a prominent inventor and founder of Analogic Corp. The donation will be used to support and expand undergraduate programs geared toward leadership in the engineering field, including an expansion of project-based learning outside the classroom and the creation of an engineering leadership minor, focused on teaching students motivational and team-building skills."

## Engineering Schools Produce High Starting and Mid-Career Salaries, Data Indicate

The New York Times (7/20, Rampell) Economix blog reported on "an updated, gigantic data set on the salaries of graduates from hundreds of universities and colleges, as well as salaries and career choices broken down by department/major." Among the findings highlighted by the Times are that, "in general, engineering schools produced the best starting salaries, and represented eight out of the top 10 schools in starting salary," while "Ivy League Schools are the best bet for mid-career pay." In addition, "quantitative-oriented degrees -- like engineering, science, mathematics and economics -- filled most of the top 20 slots in both highest starting median salaries and highest mid-career median

salaries." The data, compiled by PayScale, "are not from a randomized scientific sample," the Times warns, and "only survey respondents whose highest academic degree is a bachelor's." Among other caveats, "there's a lot of variation within each school, which means the lowest-paid graduates of a very elite school may earn less than the highest-paid graduates of a much less elite school."

Two Surveys Find Pay Raises Are Smallest In Decades. The Wall Street Journal (7/21, Sanserino) reports, "Recession-starved employee salaries have scarcely grown this year, and early predictions for 2010 aren't looking much better." Two surveys to be released Tuesday "found employers have increased salaries this year by the smallest percentage in decades." Human-resource consultants Watson Wyatt Worldwide Inc. and Hay Group "estimate that median pay raises for 2009 ranged between 2% and 3%." For next year, the firms are "projecting slightly bigger raises of 3%." That's the "smallest forecast increase in the 29 years Hay Group has done its survey." A year ago, the consulting firms predicted "average workers would see pay increases of 3.5% to 4% this year." One analyst says "many employers will feel they must raise salaries despite the slack labor market in order to attract and retain key employees."

## **Project Lead The Way Plans Large-Scale Expansion**

The Milwaukee Journal Sentinel (9/24, Hetzner) reports, "Last year, researchers examining the impact of the project-based curriculum known as Project Lead the Way found that" seniors at Milwaukee's Riverside University High School who were "in the program attended school an average of eight more days during the school year than their peers." Better attendance, along with "other benefits, are enough for Milwaukee Public Schools to continue its rapid rollout of the pre-engineering program, with plans to add it to eight more schools over each of the next two years." The findings were "exactly what leaders at the...Kern Family Foundation want to hear." The partnership of the foundation and PLTW "has the ambitious aim to spread its curriculum to nearly three times as many schools nationwide. By 2015, the organization hopes to have courses in 10,000 middle and high schools, or about one-third of all secondary schools in the country, said John Lock, Project Lead the Way's new president."

PLTW Courses "Gaining Momentum" In Mineral County, West Virginia. The Mineral (WV) Daily News-Tribune (9/24) reports on the success of Project Lead the Way in Mineral County, where "the program is still in its infancy" but "is gaining momentum each year." All three of the participating schools "were certified in the second year," a process that "requires schools to demonstrate that they meet PLTW's quality standards in professional development of teachers and counselors; the implementation of curriculum using required equipment and software; the formation of a Partnership Team, and several others."

## **National Science Board Seeks Ways To Promote Student Innovation**

Education Week (9/2, 8, Cavanagh) reports that the National Science Board (NSB) has been considering how schools can "produce more mathematics and science students with a distinct and harder-to-define skill: the ability to innovate and become future innovators in American business, science, medicine, and other areas." The board "is seeking to produce a series of policy recommendations by next year for the [National Science Foundation], and possibly the federal government on the whole, on how schools can produce more elite innovators in science, technology, engineering, and mathematics." Among the areas likely to be addressed are determining "the cognitive and personal traits of an innovator," and "what separates innovative ability from other, related skills, such as creativity." A committee for the NSB met "last week to discuss the topic," and sought advice from scholars and "a panel of top-performing high school and college students."

## **Proposed Program Would Combine Engineering, Humanities And Arts**

Canada's Windsor Star (9/4, Poliakov) reports that Waguih ElMaraghy, "the department head of Industrial and Manufacturing Systems Engineering at the University of Windsor, is working along with his colleagues to pioneer a program that would combine engineering with the humanities and arts." The program is "tentatively called the bachelor of engineering arts-management engineering...and is coming at a good time," ElMaraghy said, since "the school of engineering will soon be receiving a new, state-of-the art facility that may accompany the program's creation." He said that "graduates from this program would be 'Renaissance engineers'...and would be better equipped at working in the theatrical arts, the health care system and the public service sector." The Windsor Star notes, "The program will be up for U of W senate approval this fall and could start as early as next September."

Thank you for your time and feel free to contact me if you need more information.

Sincerely,

Dr. Nadire  
Wentz Pre-Engineering Program Director  
Kent School