

## World and National Engineering News in Brief

### Botched McAfee update sets corporate Windows XP machines in endless restart cycle

Though the error is fixed now, a flaw within the DAT update 5958 of Symantec's McAfee anti-virus has been sending Windows XP machines in office buildings across the country into an endless restart cycle.

McAfee soon removed the faulty update from their download servers, preventing any further system corruptions, but the anecdotal numbers of systems crashed are off the charts: 30,000 here, 60,000 there.

### Large Hadron Collider observes its first novel subatomic particle

The LHC experiment, designed to imitate and explore what happened moments after the big bang, has observed the first subatomic particle on Cern's "wishlist" of particles they'd like to see.

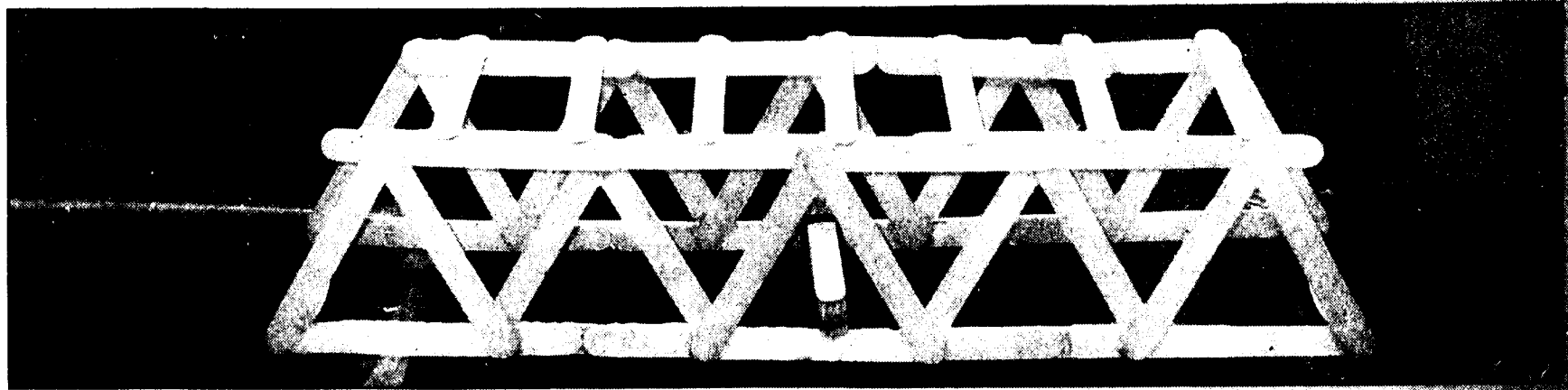
This observation of so-called beauty (or bottom) quarks, first "discovered" in 1977, is just the first step on the path to the discovery of new particles and particle interactions, as well as interactions between matter and anti-matter.

### Tech blog Gizmodo revealed early Monday to have an as-of-yet unannounced iPhone 4G

Gizmodo announced early Monday that they had purchased what they concluded to be a prototype of the next iPhone, the iPhone 4G. The device was reportedly found last month on the floor of a San Francisco Bay Area bar in Redwood City after an Apple employee got drunk and forgot it.

Confirming evidence came in the form of a letter on Monday from Apple's legal chief requesting that Gizmodo return the found smartphone.

## Building (and breaking) Bridges



Above, LoVerde's bridge before it was tested. Right, two students stand with a sturdier bridge. Right below, another bridge variation. Left, lecturer in electrical engineering Ralph Sprang.

### Students' experiments features bending, breaking, and hopefully balanced bridges.

CONNOR SATTELY  
editor-in-chief

For Lecturer Ralph Sprang's engineering class, making an indestructible bridge wasn't enough.

It had to be designed to fail.

A recent one-month project in Sprang's engineering design class had students paired up and told to create a bridge which would support 25 pounds, but fail before 50.

"The point of putting a limit on it was to prevent students to get a couple of two by twelves and call it a bridge," he said. "It's challenging to design a bridge, but it's even more challenging not to overdesign it."

That was a problem with some students. Sprang said one group's bridge withstood the 25-pound limit, then held up under the 50-pound limit. "Following proper safety procedures," Sprang said, a student stood on the bridge, then two, and then Sprang himself.

Didn't they test it at home?

"No," Sprang said, "probably not."

While several bridges fail between the

parameters of 25 and 50 pounds, others, like that of Garrett LoVerde and Joel King, experienced some early problems.

LoVerde and King's bridge made of Popsicle sticks didn't break, it bent. When the weight was applied, the bridge flipped to a 45-degree angle and bent downward until the weight touched the floor.

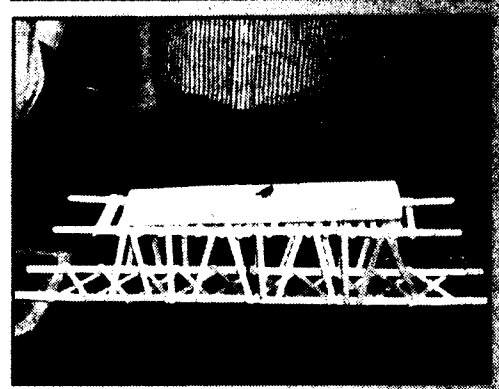
Their issue laid within time restraints.

"We were really enthusiastic with our original design," which included threading fishing wire through the sticks that would eventually snap under the right amount of weight, he said. "When we actually sat down to do it, we decided to just slap some hot glue on it."

The class is primarily electrical engineering technology students like LoVerde, but at times there will also be mechanical engineering technology students.

"This is part of the University-wide curricula changes," Sprang said. "They wanted to add some mechanical engineering aspects to it."

"Learning a little bit about other studies is all part of a well-rounded engineering education."



# The Importance of INTERNSHIPS

## Chances of a lifetime

BETH BIMBER  
engineering reporter

When everyone is seated around the table at Thanksgiving, your family might mention everything that they are thankful for.

My family always did that, and it was not until recently that I realized how thankful I should be for all of the opportunities that have been offered.

Internships usually go to juniors or sophomores, who are generally engrained in their majors.

But what happens if an internship is offered to a freshman?

That is what happened to me last year. I went in to interview at LORD Corporation for a scholarship this year. They asked me how I felt about an internship for the summer.

What could I say besides "yes, I'll take it?"

Who would pass up such an opportunity as this? If not for the internship, my summer would have consisted of household chores and Dunkin' Donuts (though the donuts would have made the summer decent). So I took the offering.

I worked in the vehicles and equipment department as a drafter, meaning that I took the drawings that needed changes and made the necessary drawing changes.

I used a computer aided design (CAD) program called Inventor to fix up the drawings and a different software program to make changes to the bill of materials and information sheets for the parts. I got to work with project engineers (their job is to take what the customer wants and create a feasible solution to the problem), quality engineers (making sure that the part is cost-efficient and that the calculations for stress and strain are correct), and manufacturing engineers (in the plants creating the objects).

Towards the end of my stint at LORD, I

was a member of a design team – the same design team that the freshman seminar is all about (so yes, the class was helpful in some ways). A project engineer provided me with the specifications that the part needed, and I created a computer model that could be tested through simulations.

The best part was that my name would be forever on that drawing since I was the first person to create the computer model of the part. Not many freshman, or even other interns, can say that their internship allowed them such an opportunity as this.

But wait. The story gets even better than this. Behrend allows for undergraduate students to conduct research alongside a professor. This does not happen as much at University Park because the research opportunities usually go towards graduate students.

This semester I am conducting research with Professor Lasher about sailboat rudders.

I am using two engineering computer programs to create a computer model of the rudder and then taking the code from this program and throwing it into the other program to run simulations.

It does take some time, but it has helped me to apply some of the knowledge from my engineering courses toward a real life exam-

I finally understand what they were talking about in Statics!

The best advice that I can offer is to try everything – internships, research, and career fairs to see what is available.

I applied online for a chance to do research at the University of Houston this summer that deals with nanotechnology. I figured that it was a long-shot, and I was hoping for another offer of an internship from a company at the engineering career fair.

But, I did get the research opportunity. I could not believe it – a chance to conduct research in nanotechnology at a university hours away from me.

So take the chance, apply, and see what you can do.

### Why Intern?

1. It helps students realize what they want to do and even what they don't want to do.
2. Internships allow you to apply skills you've learned.
3. Internships allow you to experience working in a professional setting, and they lets you know what type of professional setting you want to work in.
4. You use practical skills that will put you ahead when you are trying to get a real job or trying to go to grad school.
5. Internships allow you to get your foot in the door with employers.
6. Employers can determine if they will recruit you to work for them in full time positions after your internship is over.

Thanks to Carol Kapan, Academic and Career Planning Center

## A "3-timer"

RYAN FRANKOWSKI  
engineering reporter

Jacquie Marsh, a junior majoring in electrical engineering, has gone through three summer internships. Being only in her third year at Penn State Behrend, she believes in the importance of having a summer internship under your belt.

She started her freshman year working for Corry Forge, a company that forges steel in Corry, Pa.

"Interns are not expected to know a lot, and everyone is able and more than willing to help you complete tasks" Marsh said. "I mainly worked on preventative maintenance manuals for the machinery."

The second internship that summer was for Polaris Industries, located all the way out in Wyoming, Minn., where she devoted about 25 percent of her time in a cubical, then the rest of her time in the factory.

She worked on implementing a new suspension technology on Ranger Razor. In layman's terms, Polaris bought a suspension from another company and placed it on the existing model.

Once she finished it, Marsh was able to actually ride the product.

When Marsh was asked if her summer was enjoyable having two internships, she said, "I'm a work-a-holic and did not have to worry about completing homework and enjoyed having weekends and forth of July off."

Marsh's third internship took place last summer in Cranberry, Pa. at Westinghouse, a nuclear power plant.

She would work on manuals and the different processes guidelines, in order to educate interns.

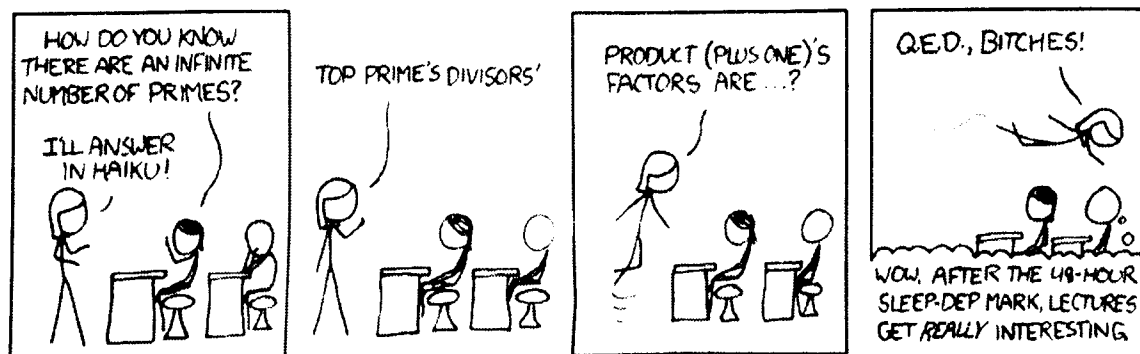
Even though the tasks can be very dry and boring, the summer internship is a good starting point in such a big company.

"It basically is a four month interview, and a very relaxed one, depending on your boss," Marsh said.

Marsh was asked back this summer to work as intern for turbine-balance of plant controls at Westinghouse.

xkcd

### A webcomic of romance, sarcasm, math, and language.



### Engineering Internship available:

Position: Mechanical Engineering Intern  
Employer: Eriez Technologies  
Job Function: Engineering  
Location: Northwest PA  
Deadline: May 31, 2010

Details: An Erie based engineering company is looking for engineering interns with an interest in mechanical engineering design and analysis. The internships can begin immediately and will accommodate class needs and schedules for approximately 15-20 hours per week with 4 hour minimum blocks. During the school break periods full 40 hours are available. The hourly rate will be in the \$15/hour range and based on individual qualifications.

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