



## Chair's Corner

Take a closer look at my picture. Did you notice the hat I am wearing? Well, apparently a number of you have, because some of you have asked where you could **buy your own IEEE Chicago Section hat**. In response, a limited number of hats have been purchased and are available to you for \$15. To purchase, send a check, made out to the "IEEE-Chicago Section" to 335 E. Geneva Road PMB # 389, Carol Stream, Illinois. Allow a few weeks for handling.

There has been a very good response to my **request for volunteers** to get involved with the local activities of the Chicago Section. **An orientation for interested members will be held at 7:00 pm, on Tuesday, January 9<sup>th</sup> at DeVry University-Addison**, located at 1221 N. Swift Rd in Addison Illinois. The purpose of this one hour meeting is to explain how the Section operates, provide a list of volunteer opportunities, and to help you find the best place to use your talents and interests. Any member interested in becoming more involved is welcome.

Regards,

John Zulaski

| Top |

## Upcoming Events:

[Click here for the calendar](#)



## Student Corner Pat Hutson

> Place your ad here! <

Contact Michele at

[michele@workinmotion.net](mailto:michele@workinmotion.net)

**January 2007  
Issue Number 4:**

[Chair's Corner](#)

[Events Calendar](#)

[Student Corner](#)

Looking For A Few Good Mentors

[NetSecure07](#)

Call For Participation And Speakers

[Communications Society Meeting](#)

More Power To More Researchers

[Power Engineering Society](#)

Meeting Building Sustainable Energy Today

[Future Engineers' Corner](#)

Celebrating Sustainable Engineering

[Contact Us](#)

Check The [Chicago Section Website](#) For The Latest Updates In Meetings And Other News

Support our advertisers!

Click on their logos to learn more about them.





## Looking For A Few Good Mentors

**Pat Hutson, IEEE Chicago-Section student coordinator**, is looking for a few good mentors . . . and a few good ideas. That's why she's organizing the **Chicago Section IEEE Student Activities Development Workshop on Monday, January 15, 2007**, which is Martin Luther King Day. Many businesses and schools have that day off but, in keeping with King's legacy, Americans are encouraged to "make it a day on, not a day off." Consider dedicating your day of service to IEEE and the future of engineering.

"I don't know how to do it," Pat admits, referring to the need to fortify the student chapters. "That's why I'm having this conference. The students are the future of the organization. We've got to do it." The purpose of the workshop, then, is to brainstorm strategies to ensure membership, retention, and communication among IEEE student groups at [DePaul University](#), [DeVry University in Addison](#), [Illinois Institute of Technology in Chicago](#), [ITT Technical Institute in Mount Prospect](#), and [University of Illinois at Chicago](#).

A professor at DeVry Addison, Pat's passionate about young people: "I just want to see the students succeed." Pat developed a **PowerPoint presentation on the advantages of IEEE membership for students** and presented it to fifteen freshman at the University of Illinois at Chicago in October. She is looking to spread the good IEEE word at other schools, too. Let her know if you know a college that would be interested in such a presentation, or if you'd like to make one.

Pat attended an IEEE student leadership conference for IEEE Region Four in Valparaiso on October 21, 2006 and learned that the differentiating factor between vibrant and struggling groups was a faculty member authorized to devote time to his or her school's IEEE Student Chapter. At the [University of Illinois at Urbana-Champaign](#) and at [Valparaiso University](#), a faculty member's workload includes staffing the IEEE student group, and those groups have impressive memberships: 60 students at UIUC and 30 at Valparaiso.

**The Chicago Section IEEE Student Activities Development Workshop will be from 9:00am to 2:00pm at the [Embassy Suites Hotel O'Hare](#), 5500 N. River Road in Rosemont on Monday, January 15.** There is no cost to participate. Continental breakfast will be served at 8:00am, and lunch will also be provided. For more information or to register, contact Pat Hutson at 630-953-1300 x8256 or [phutson@dpg.devry.edu](mailto:phutson@dpg.devry.edu)

| Top |

## NetSecure07

## Call For Participation And Speakers

The IEEE Communications Society, [IEEE Fox Valley Subsection](#), [Illinois Institute of Technology Center for Professional Development](#), and [UniForum Chicago](#) invite you and

your organization to participate as a **presenter, sponsor, exhibitor or attendee** at **NetSecure07: The 5th Annual Computer and Network Security Conference and Expo** at **Illinois Institute of Technology Rice Campus** in Wheaton, Illinois on **Wednesday, March 21, 2007**. They are currently accepting proposals for technical presentations and tutorials from speakers and subject matter experts. Topics should be related to **computer and network security, digital forensics and steganography, policy and compliance, or privacy** in some way. If you are interested in speaking, please fill out our [participation form](#) or contact Professor Bill Lidinsky at [lidinsky@iit.edu](mailto:lidinsky@iit.edu) or 630.682.6028 or Deborah Kimmach at [kimndeb@iit.edu](mailto:kimndeb@iit.edu) . Conference details can be found at <http://www.cpd.iit.edu/netsecure07>.

IEEE members with a valid membership number will be offered a **discount** when registering via the [IEEE Fox Valley website](#).

| Top |

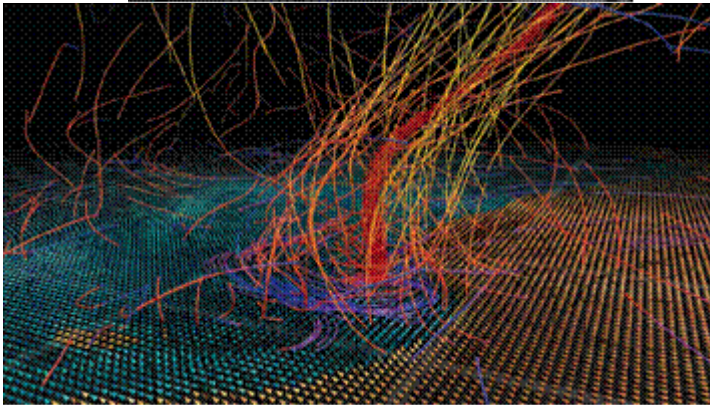
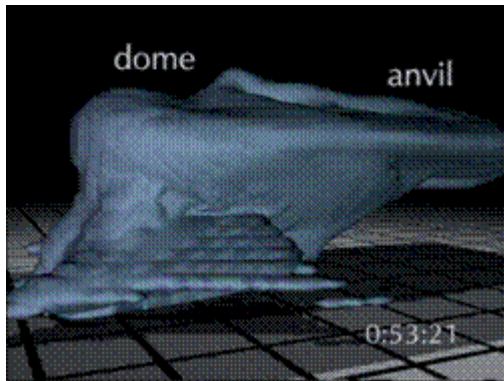
## Communications Society Meeting

### More Power To More Researchers

Fourteen people gathered at the **Illinois Institute of Technology Rice Campus** in Wheaton on December 12 to hear **Charlie Catlett, Director of the National Science Foundation's TeraGrid initiative** speak on "**How Chicago is leading a revolutionary path to national and international 'Cyberinfrastructure.'**"

TeraGrid is the world's largest, most comprehensive distributed cyberinfrastructure for open scientific research. Integrating 22 supercomputers at the University of Chicago/Argonne National Laboratory and eight other locations around the United States, it has 102 teraflops of computing capability and 15 petabytes (quadrillions of bytes) of online and archival data storage. Linked by a high speed network and synchronized with a specialized message-passing interface, the TeraGrid network has a 30 gigabit per second bandwidth: A full length movie can be loaded in one second. Through the TeraGrid, researchers can also access over 100 discipline-specific databases.

Representing a phenomenal growth in computing power due to increased memory and speed, the TeraGrid supports academic research for complex simulations. For example, simulation revealed that inoculating 80% of the United States population under the age of 18 against a disease has the same effect as inoculating 80% of the total population.



Charlie illustrated the impact of improved computing power with the increasing precision and detail of thunderstorm cloud simulations. The first picture shows a thunderstorm based on simulation calculations made in 1988 and the second in 2006. While the first only depicts the shape of the thunderstorm cloud, the second shows the detail inside the cloud, where the red object is a tornado.

In the field of nanotechnology, the TeraGrid has helped in the development of whole classes of new devices such as Respirocytes, which can duplicate the function of red blood cells, and an artificial lung that allows divers to stay underwater without breathing air for four hours.

The research the TeraGrid supports is far reaching. For more information, visit the [official TeraGrid website](#) or read the Spectrum article from July 2006, "[Old world, new grid.](#)"

| Top |

## Power Engineering Society Meeting

### Building Sustainable Energy Today



The wind turbine on top of the Near North SRO. Photo by Kurt Holtz.

At the [Power Engineering Society](#) luncheon on “**Green Building Technology: Renewable Energy Sources and Design/Specification Guidelines**” at the Chicago Bar Association on December 13, over 40 attendees learned that the wind and sun are starting to become economical power sources.

Bil Becker, CEO of [Aerotecture International](#), predicted the growth of coupled energy systems that combine wind and solar power generation. He described such a system at the [Near North Single Room Occupancy \(SRO\)](#), a 96 unit apartment building for the homeless now under construction at Clybourn and Division in Chicago. Taking into account how wind blows around buildings, renowned architect, Helmet Jahn, used the building’s architecture to accelerate Chicago’s Southwest winds and Northeast lake breezes, and then capture the wind on the roof.

Wind mills using propeller systems don’t perform well in cities because the wind is too variable. So Becker’s company designed a wind turbine that enjoys turbulence and can rotate on a horizontal rather than vertical axis. The one on the roof of the Near North SRO extends the entire length of the building, and in combination with solar panels will supply 15% of the residential building’s electricity. The building was financed through government grants and philanthropic support.

The Near North SRO coupled energy system does not feed into a battery storage system as most solar and wind systems do. Instead, ComEd installed a dual meter which measures electricity going into and out of its grid from the building. According to ComEd Rider 4, “Parallel Operation of Customer’s Generating Facilities,” payment for energy generated ranges from 4.55¢ for Kw-hrs during the summer energy peak to 2.67¢ for off-peak in other months. These low wholesale prices create an incentive for parallel systems to use as much of the power they generate as possible. In contrast, New Jersey is paying 20¢ and California 25¢ for power generated from sustainable systems. These rates are starting to make such systems economically feasible.

In the context of the [Illinois Institute of Technology Solar Hydrogen Project](#), Brian Kustwin of [Standby Power System Consultants, Inc.](#) described the ComEd interconnection guidelines for wind and photovoltaic (PV) generation systems which can not be larger than 40 kW. They can not adversely affect the power quality, reliability or safety of ComEd's system and need to meet or exceed the power quality requirements of IEEE 929.

Kurt Uhler, also of Standby Power System Consultants, described the National Electric Code (NEC) article 690 as the "bible" for installations of PV systems. For detail on the specification guidelines for electrical systems in green buildings, including inverter systems, battery systems, and utility protection/metering equipment that Kurt presented, view his [PowerPoint presentation](#).

| Top |

## Future Engineers' Corner:

### Celebrating Sustainable Engineering

Come to this free fun day of hands-on activities designed to introduce children to engineering: Cryogenics, Lego Robotics, Lasers, The Future of Water, Fiber Optics, Intelligent Prosthetics

Saturday, February 24 from 11:00am to 3:30pm at the Illinois Institute of Technology Rice Campus. Visit [www.rice.iit.edu/engineersweek](http://www.rice.iit.edu/engineersweek)

| Top |

## Contact Us:

### Send address corrections to:

#### IEEE Membership

440 Hoes Ln.  
Piscataway, NJ08854-1331  
or by phone (800) 678-4333  
or on the website: [www.ieee.org](http://www.ieee.org)

### Contact us at:

#### IEEE CHICAGO SECTION

Mail and Delivery: 335 E. Geneva Road PMB # 389  
Carol Stream, IL 60188  
Voicemail: 630.493.4333  
Website: [www.ieeechicago.org/](http://www.ieeechicago.org/)

E-scanfax writing and production by [Work In Motion](#)