

## Calendar of Events

### Upcoming in April

**Wed. April 8, 11:30am**  
[Hybrid Electric Vehicles](#)  
 Power & Energy

**Fri. April 10, 12:00pm**  
[Anonymous Networking](#)  
 Signal Processing

**Tues. April 14, 8:00am**  
[Fundamentals of EMC/EMI](#)  
 Electromagnetic Compatibility

**Tues. April 14, 7:00pm**  
[Executive Committee](#)  
 IEEE-Chicago Section

**Tues. April 14, 7:00pm**  
[Titan Against Titan](#)  
 Communications

**April 15&16**  
[Magnetics Conference](#)  
 Electromagnetic Compatibility

**Wed., April 15, 5:30pm**  
[Fire Pumps in Chicago](#)  
 Industry Applications

**Wed. April 22, 6:00pm**  
[Regulatory Requirements](#)  
 Electromagnetic Compatibility

**Wed., April 22, 6:30pm**  
[Litigation Risks](#)  
 Technology Management

### Upcoming in May

**Tues. May 12**  
[Mini-Symposium](#)  
 Electromagnetic Compatibility

Email upcoming events to [Pat Hutson](#) for inclusion on the IEEE-Chicago [website](#) calendar and to [Michele Beaulieux](#) for inclusion in the e-Scanfax calendar.



**Managing Product Design and Development**  
 McCormick / Kellogg  
 Executive Certificate Program

April 19-22, 2009  
 Northwestern University  
 Chicago, IL

**Register Now!**

## This Month's Articles

### Chair's Corner: Chair's Corner: IEEE: 125 Years Old And Still Changing The World

Events are planned around the world to mark the IEEE anniversary year with the theme, "Celebrating 125 Years of Engineering the Future." [\[more\]](#)

### It's Official! IEEE-Chicago Section Fund Becomes a Reality

The IEEE Executive Committee approved the new fund, and it is already financing two projects documenting the rich history of technological innovation in the greater Chicago area. [\[more\]](#)

### Chicago EMC Society Presents at Magnetics 2009 Conference

Long-time Chicago Chapter members—Tom Braxton, Bob Hofmann, and Roger Swanberg—will serve as the experts in an "ask the experts" panel. [\[more\]](#)

### Here's Your Chance To Run For Office!

The IEEE-Chicago Section Nominating Committee is seeking nominations for the IEEE-Chicago Section Executive Committee. [\[more\]](#)

### IEEE-Chicago Member Recognized for Contributions to U.S. Energy Policy

Long-time IEEE-Chicago Executive Committee Member Jim Fancher was honored at the IEEE-USA Awards and Recognition Program in Salt Lake City, Utah. [\[more\]](#)

### Alternatives to Using 1000 Words to Describe a Picture

As images and video proliferate on the internet, IEEE Fellow Shih-Fu Chang presented models for classifying them for easy search. [\[more\]](#)

### IEEE Teaches EE With Remote-Controlled Airplanes and Forklifts

The IEEE-Chicago Section and IEEE Women In Engineering had crowd-gathering booths at the 25th Annual DuPage Engineers Week Expo at IIT. [\[more\]](#)

### Queen Of Peace High School Recognizes IEEE Contribution

Chicago Section Chair Bernie Sander and Education Activities Chair Connie Kelly accepted the Infinity and Beyond Award recognizing IEEE contributions to the school's science curriculum. [\[more\]](#)

### Chair's Corner: IEEE: 125 Years Old And Still Changing The World



The IEEE traces its roots to the founding of the American Institute of Electrical Engineers by early industry giants, including Thomas Alva Edison and Alexander Graham Bell. This year on May 13, the IEEE officially marks its 125<sup>th</sup> anniversary with the theme, "Celebrating 125 Years of Engineering the

Future." For information on the events that are scheduled in major cities around the world, visit the new [anniversary website](#).

Today, the IEEE has more than 375,000 members in 160 countries – a truly global professional organization. Today's IEEE is recognized around the globe as a leading authority on a wide variety of technical areas ranging from biomedical engineering, telecommunications, computing, and robotics to power, software, and consumer electronics. It is also recognized as a leading advocate for the advancement and use of technology for the good of humanity. The IEEE publishes 30 percent of the world's literature in the electrical engineering and computer science fields, leads the

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development of international standards for 1300 standards, and sponsors more than 850 conferences annually worldwide. With the support of local chapters, subsections, and affinity groups, your IEEE-Chicago Section sponsors over 75 technical meetings each year. These meetings, in support of the [mission](#) of IEEE, provide opportunity for learning but also for networking with peers and industry experts.

This is our year as engineers to celebrate our profession – not only for its rich history but also to look at how we are engineering the future. Help celebrate this milestone anniversary by attending local meetings, becoming a more active volunteer in your Chapter, Affinity Group, or Section, or contributing to the newly established [IEEE-Chicago Section Fund](#). I look forward to celebrating with you at a future IEEE event.

**Bernie Sander, Chair**  
IEEE-Chicago Section

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### It's Official! IEEE-Chicago Section Fund Becomes a Reality

The **IEEE-Chicago Section Fund** was officially approved by the **IEEE Executive Committee** at its February meeting. Now, we can begin working on programs to support educational and historical activities of the Chicago Section.

Two projects will be pursued immediately under the direction of the **Chicago Section Life Member Committee**. The first will identify momentous technological events in Chicago history and provide permanent memorial plaques at or near the sites. The second will consist of conducting oral history interviews to preserve the memories of some of Chicago's most important technological innovators. We'll keep you posted on progress in future articles.

Response to previous requests for donations has provided enough money to get started with the projects mentioned above, but more money is needed to support educational and other historical projects. You can donate by mailing a check made out to the **IEEE-Chicago Section Fund** to:

IEEE Development Office  
445 Hoes Lane  
Piscataway, New Jersey 08854

If you have questions on how to donate or wish to propose projects for funding, call John Zulaski at  847-259-8135 or [email him](#) for details.

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### Chicago EMC Society Presents at Magnetics 2009 Conference



**Bob Hofmann**

On **April 14<sup>th</sup>**, The **Chicago Chapter of the IEEE Electromagnetic Compatibility (EMC) Society** is presenting a half-day pre-conference [Fundamentals of Electromagnetic Interference \(EMI\)/EMC workshop](#), at no extra charge, to fully registered attendees of the **Magnetics 2009** conference. Long-time Chicago Chapter members—**Tom Braxton**, **Bob Hofmann**, and **Roger Swanberg**—will be the presenters and close the workshop with an "ask the experts" panel to address any and all open questions from attendees. Updates and expansions to this EMC Workshop will be integrated into the Chicago Chapter's 11th annual [MiniSymposium](#) on Tuesday, May 12. The **Magnetics Conference**, the premiere forum on magnetic applications, technologies and materials, at the **Marriot O'Hare** on **Wednesday and Thursday, April 15 and 16, 2009**, is also offering discounted registration of \$795 to IEEE members who use their [ieee.org](#) email address and the source code "MAG\_SO" at the conference [website](#).

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### Here's Your Chance To Run For Office!

Would you like to learn new skills, increase your visibility in the engineering community, and meet other talented IEEE members? Serving on the **IEEE-Chicago Section Executive Committee** is your chance to do just that. Each year, the Chicago Section holds elections for the following positions:

### Section Officers

Chair (Runs the show)  
Vice Chair (Chair in waiting)  
Treasurer (Handles the money)  
Secretary (Records what's going on)

### Standing Committee Chairs

Awards (Gives out the "Way to Go's")  
Conferences (Works with IEEE societies that are holding conferences locally and organizes Section-sponsored conferences)  
Membership Development (Tracks and promotes membership)  
Professional Activities (Develops non-technical programs and makes them happen)  
Programs (Monitors and coordinates Section programs and seeks to improve them)  
Publications (Responsible for e-Scanfax and Year in Review)  
Special Events (Organizes fun outings)  
Student Activities (Mentors local Student Branches)

Candidates must be IEEE members willing to attend Section meetings held the second Tuesday of each month at **DeVry University Addison Campus** and to devote a few hours a month between meetings to their primary duties. If this sounds interesting to you, please email [John A Zulaski](#), Chair of the **IEEE-Chicago Section Nominating Committee**, for a list of the duties of each elective office and details of the application process. Applications for the 2009/2010 candidates must be submitted to the Nominating Committee by April 15<sup>th</sup>, 2009.

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### IEEE-Chicago Member Recognized for Contributions to U.S. Energy Policy



IEEE-USA 2009 President Gordon Day presents Jim Fancher with his award.

At the **IEEE-USA Awards and Recognition Program** on February 28<sup>th</sup>, 2009 in Salt Lake City, Utah, long-time **IEEE-Chicago Section Executive Committee member Jim Fancher** was recognized "For long-term service, and his active role in formulating the **IEEE-USA Energy Policy Committee** position on electrical power reliability." As an active and consistent member of IEEE-USA's Energy Policy Committee since 1983, Fancher personally drafted or participated in the drafting of dozens of official IEEE-USA National Energy Policy Recommendations, including all [seven current policies](#). IEEE-USA used the position statement, **Principles for a Restructured Electric Industry**, to which Fancher was a key contributor, to advocate successfully for including electric power reliability language in the **2005**

### Energy Policy Act.

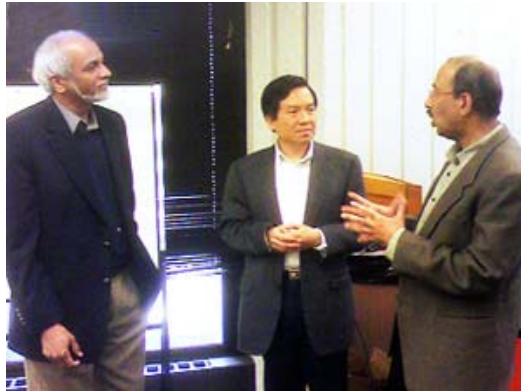
Fancher describes his work on the committee as "immensely satisfying." In fact, it's so satisfying that, while Fancher started on the committee when he was working and his company paid for his travel to meetings, he has continued participating on his own in retirement. "I'm keeping my tools sharp, so to speak," says Fancher. "I can fill some holes and supply information that other people on the committee don't have. I feel useful when I can do that."

Created in 1973 to support the career and public policy interests of IEEE's U.S. members, IEEE-USA is an organizational unit of the Institute of Electrical and Electronics Engineers, Inc. The Awards Program was part of the IEEE-USA 2009 Annual Meeting, "**Engineering the Alternative Energy Debate.**"

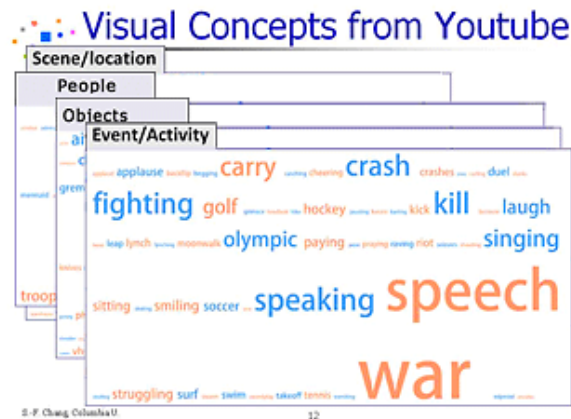
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### Alternatives to using 1000 Words to Describe a Picture

**Shih-Fu Chang, IEEE Fellow and Chair of the Department of Electrical Engineering at Columbia University**, began his February 27 presentation on **Large-Scale Image/Video Classification and Interactive Search** by pointing to the explosive growth of image and video data on broadcast news, user-generated content (UGC) portals, and video blogs. Currently, broadcast news adds 70,000 terabytes of video and image content each year for a total of 100 million hours of video currently online. And, 80% of internet traffic is for video streaming. But, Chang told the members of the **Chicago Chapter of the IEEE Signal Processing Society** assembled at the **University of Illinois at Chicago** that the growth is so fast, "every time you put a number down, it's out of date."



After his presentation, Prof. Chang (center) spoke with University of Illinois Professors Rashid Ansari (left) and Ashfaq Khokhar (right).



The frequency of visual concepts on YouTube are depicted by their size.

words are you going to use?" A manual review of the 20,000 most frequent tags on YouTube yielded only 290 concepts or 1.45% directly related to visual concepts. "Telling your personal story," Chang pointed out, "is different from telling what's in the picture."

The [Digital Video Multimedia Laboratory \(DVMMlab\)](#) at Columbia University worked with librarians, researchers, and analysts to create the **Large Scale Concept Ontology for Multimedia (LSCOM)** for broadcast news videos. They defined 834 concepts that were useful (e.g. for intelligence analysts), observable in the visual content, and detectable by automatic classification. They then classified over 60,000 video shots with over 30 million labels.

Over 400 researchers have downloaded the LSCOM to use to test their own visual classification models. Chang walked the group through several different automatic concept classifiers, showing how the models can be trained with positive and negative examples. Today, 374 detection models are available for download and testing against new models. For more information on the models, see Chang's [presentation](#).

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### IEEE Teaches EE With Remote-Controlled Airplanes and Forklifts

The **IEEE-Chicago Section** and **IEEE Women In Engineering** had crowd-gathering booths at the **25<sup>th</sup> Annual DuPage Engineers Week Expo** at IIT.

The grade school students visiting the IEEE booths at the **25<sup>th</sup> Annual DuPage Engineers Week Expo** at the **Illinois Institute of Technology (IIT) Rice Campus** on Saturday, February 21, did a good job of following Albert Einstein's advice: "Don't ever stop asking questions." And, IEEE member **Aslam (Sam) Shahid** reported that the young people's questions about the remote-controlled airplane models and computer simulation software at the IEEE booth were "valid questions."



IEEE-Chicago member **Aslam (Sam) Shahid** (in the blue shirt) instructs an interested crowd on the flight simulator software.

"I was very happy to answer their questions and to help them out," said Shahid, who pointed out that math, science, engineering, and technology are all involved in flying radio-controlled airplanes. Math is involved in calculating the wingspan, the dimensions of the airplane, how much fuel is needed as well as different sizes of fuel tanks. Science is involved in the aerodynamics: anticipating how the air will flow around the frame and how much stress will be on it. Engineering is involved with the radio transmitters, both the older analog 72MHz technology and the newer two-way digital 2.4GHz spectrum technology. Finally, technology is involved with the kinds of materials used—from balsa wood to fiberglass to foam—to build the model planes. The computer flight simulation software demonstrated at the booth allows users to change these variables in order to test planes in different scenery, wind, and turbulence.

IEEE **Women In Engineering (WIE)** booth also focused on remote-control, but of toy land vehicles. IEEE senior member **Sharon Phillips** used a radio frequency signal analyzer, which measures all the important characteristics of the radio signals from a hand-held radio transmitter to a receiving radio-controlled vehicle, to demonstrate how engineers cut problems apart to separate causes from effects. For example, the analyzer allows engineers to determine whether a malfunction is due to a poor signal being transmitted or a broken receiver.



IEEE-Chicago member **Sharon Phillips** shows a young woman the radio waves driving a remote-controlled forklift.

**Chicago Electromagnetic Compatibility (EMC) Society** Secretary **Jerry Meyerhoff** demonstrated the basic EMC concept of "shielding effectiveness" with a remote-controlled car inside a soup kettle. Reflecting on the experience, Meyerhoff said, "It's always great to be with the kids because they always ask great questions. What about this or what about that? What if the soup kettle was plastic? If a young person is asking really good questions, then you know you have them: they might make a really good engineer."

Shahid is on the faculty at Governors State and Lewis Universities but had never taught youngsters before. He reports, "I had fun actually." And, he would like to do it again for other schools. IEEE-Chicago sends a special thank you to **Michael Sula**, owner of the **Gentle Jungle & Hobby Shop** in Alsip, Illinois, who donated two remote-controlled helicopters and one remote-controlled plane for the Section to raffle off.

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**Queen Of Peace High School Recognizes IEEE Contribution**

This year on Saturday, March 14 (or 3/14), the **Queen of Peace High School Women in Science & Engineering Alum Association (WiSE Women of Peace)**, held its second annual networking event on **Pi (3.14159) day**, a number that engineers and scientists know around the world. Special invited guests were **Chicago Section Chair Bernie Sander** and **Education Activities Chair Connie Kelly Infinity and Beyond Award** recognizing IEEE



**Bernie Sander reviews the students' work before the award presentation.**

contributions to the science curriculum of the high school, which is located in Burbank, Illinois. The IEEE Foundation (which is separate from the recently established IEEE-Chicago Fund) donated \$3,200 to the funding of the Infinity Project, a pre-engineering program at the high school. The Infinity Project has generated much interest in science and engineering among the students, and this year the school fielded a **For Inspiration and Recognition of Science and Technology (FIRST)** robotics team that the students called "RoboPride." Senior **Tara Becker** summed up her experience, "I learned that there is a lot more to engineering. I have become more confident with working with tools. Also, I learned various ways to problem solve and enhanced my ability to think of various ideas to fix a problem.

"At first, I felt that I would have absolutely no interest in engineering, but that was only because I didn't know a lot about it. I feel like robotics has been able to open a door for opportunities. I feel that I would want to continue robotics in some way whether it be through some college organization or coming back to [Queen of] Peace [High School] to mentor but to also learn more."

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