

Calendar of Events

In December

Tues. Dec. 8, 6:30pm
[Executive Committee](#)
 Chicago Section

Tues. Dec. 8
[Holiday Party](#)
 Electromagnetic

Wed, Dec. 9, 11:30am
[Distribution Transformers](#)
 Power & Energy

In January 2010

Wed, Jan. 13, 5:30pm
[CO2 Cap and Trade](#)
 Power & Energy

Wed, Jan. 20, 5:30pm
[Building Automation Systems](#)
 Industry Applications

In Spring 2010

Sun.-Tues, April 11-13
[Networking, Sensing and Control](#)

Mon.-Fri, May 17-21
[Collaborative Technologies](#)

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.

This Month's Articles

Chair's Column: Holiday Reflections: Giving Thanks, Making Changes

IEEE Chicago Section Chair **Bill Nartker** thanks the Section volunteers and offers opportunities to volunteer and to give for those wanting to make changes. [\[more\]](#)

Chicago Section Seeks to Recruit New IEEE Members

New Membership Drive focuses on the **IEEE Member-Get-A-Member Program** Reminder and a new **IEEE-Chicago Company Outreach Program**. [\[more\]](#)

Smart Grid a Customer Relations Game Changer

Mike Born outlined **ComEd's** commitment to developing a **Smart Grid**, including Smart Meters, at the November Chicago **Power and Energy Society Meeting**. [\[more\]](#)

EMCS/WIE Meeting Highlights Engineering As A Helping Profession

Chicago Chapter Electromagnetic Compatibility Society (EMCS) secretary **Jerry Meyerhoff** reports on **IEEE Women in Engineering (IEEE-WIE)** representative **Sharon Phillips'** presentation on **How EMC Benefits Society**. [\[more\]](#)

Help Spread Some Good Engineering Cheer This Holiday Season

As you review your year-end giving options, please consider the **IEEE-Chicago Section Fund**. You can donate [on-line](#) (After filling in the initial form, click continue. Then designate the IEEE-Chicago Section Fund.) The Fund provides much needed resources for local educational programs as well as for the preservation, research, and promotion of the history of the profession and IEEE-associated technologies. For more information, click on the Chicago Fund tab at the top of this page.

Let IEEE-Chicago Supply Your Stocking Stuffers This Year

You can do your holiday shopping and support the Chicago Section at the same time by giving an IEEE Chicago Section hat or license plate holder. Hats are \$15 and license plate holders are \$5. Shipping is \$5 per order. Contact [Bernie Sander](#).



Chair's Column: Holiday Reflections: Giving Thanks, Making Changes



I would like to wish everyone a happy holiday season!

It's that time of year when we look back over the past 12 months and reflect on how fortunate we are. We can be thankful for what we have: family, friends, health. In that spirit, I want to thank all the IEEE-Chicago Section volunteers. Without the help of our volunteers, our IEEE Section would not be as successful and professional as it is today.

At this time, we also evaluate where we have been, reflecting on changes we could make or opportunities we could pursue. We all have the ability to pursue our passions personally and professionally, and it is worth the effort. If you have wanted to become more involved in the Section, consider how your time and talents could benefit our success. Please do not hesitate to reach out to one of the board members to find a role that calls out to you and your skills. When you find an opportunity that you enjoy, volunteering can be a personally rewarding experience.

I would like to invite everyone to the **Holiday Meeting on Tuesday, December 8th** at DeVry University in Addison. **Dinner** begins at 6:30 PM. Please email [Connie Kelly](#) if you are planning to attend.

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Best wishes for a happy, healthy, and prosperous New Year,

[William \(Bill\) Nartker](#)
IEEE-Chicago Section Chair

| [top](#) |

Chicago Section Seeks to Recruit New IEEE Members

Currently, the Chicago Section has over 5000 members, yet this is a fraction of the electrical engineers and computer and information technology professionals in the greater Chicago area who qualify for membership. So, we would like to remind our members to spread the good word to their computer technology and engineering friends and coworkers. We need to keep our section strong by getting the message out regarding why IEEE membership is important. Recruiting tips and information on **Member-Get-A-Member** recruiting rewards, including membership discounts, are listed on the [IEEE membership page](#).

One initiative that the Chicago Section is introducing in 2010 is membership drives at targeted local companies. The **IEEE-Chicago Company Outreach Program** can be a one-hour to full-day visit involving a scheduled onsite IEEE benefits presentation or a membership information booth in the company lobby or cafeteria. It requires a sponsor such as an engineering functional manager at that company to work out the details of a visit as well as volunteers not necessarily from the company to make the presentation or staff the booth. This is a great volunteer opportunity for job searchers. Potential company hosts and volunteers interested in being part of a membership company outreach should send an email to [Richard Fedrigon](#).

Finally, one important item to remember regarding your recruiting is that IEEE membership and society memberships are [half-price](#) for engineers in transition.

| [top](#) |

Smart Grid a Customer Relations Game Changer

Over 50 people came to hear to hear **Mike Born**, IEEE senior member and Principal Engineer in the **ComEd** Distribution Capacity Planning Department, speak on the **Smart Grid** at the November 11th meeting of the **Chicago Chapter of the Power and Energy Society (PES)** at the **ComEd** Commercial Center in Oak Brook.

“Smart grid is not just distribution.” Born said, “It extends from generation to transmission all the way to the customers.” And, indeed, it is the interface with customers that captures the public’s imagination and became the focus of what turned out to be a very interactive presentation.



Mike Born (right) speaks to attendees after his presentation on the Smart Grid.

Calling the smart grid a “game changer” in customer relations, Born explained that the Automatic Meter Infrastructure (AMI) is the “on ramp” to the smart grid because it unlocks new opportunities for the customer. Smart meters empower customers by providing real time information on electrical usage and pricing so they can make choices about how they use energy. Smart Meters do more than measure kilowatt hours: they measure reactive power, interruptions of voltage, quality of service, and other diagnostics.

Seventy percent of proposals funded in the \$3.4 billion allotted for Smart Grid Investment Grants in the American Recovery and Reinvestment Act of 2009 (ARRA) or Stimulus Bill contained AMI projects, including 18 million smart meters. While ComEd’s ARRA proposal to invest \$350 million in smart grid technologies was not funded, the utility is continuing to evaluate deployment options..

The ComEd smart meters, which can store a month worth of data, are a plug in

replacement so require no new wiring. The meters take readings every half hour, which are downloaded daily and sent back to ComEd on a wireless communications network. Since a wireless network means that every customer becomes a potential access point to the network, ComEd carefully reviewed the potential cyber-terrorism security threats. By going through a third party and encrypting messages, ComEd was able to isolate the meter reading network from the rest of the company.

An audience member with a smart meter lamented, "My wife resists me calling her in the middle of the day to tell her the price is high." Another countered that he would resist calling his wife because she's so environmentally conscious she would stop the laundry in mid-cycle. While variable pricing is common in commercial and industrial rate structures, the verdict is out on how residential customers will respond.

Observing that we could never have predicted how the Internet has transformed our world, Born said that he can not anticipate the ultimate impact of the Smart Grid: "Twenty years from now someone will be standing up here telling a different story about what Smart Grid enabled."

[| top |](#)

EMCS/WIE Meeting Highlights Engineering As A Helping Profession

Jerry Meyerhoff, Secretary of the Chicago Chapter of the Electromagnetic Compatibility Society, submitted this report of the November 19 meeting on **How EMC Benefits Society**.

The joint meeting of the Chicago Chapters of the **Electromagnetic Compatibility Society (EMCS)** and **Women In Engineering (WIE)** at **ITT Technical Institute** in Mount Prospect drew 25 members and seven guests. The traditional cookies and soda was provided for the networking half hour. In the EMCS business meeting, the slate of incumbent officers, with the addition of UIC graduate student **Louann Devine** as Publicity Chair, was handily approved.

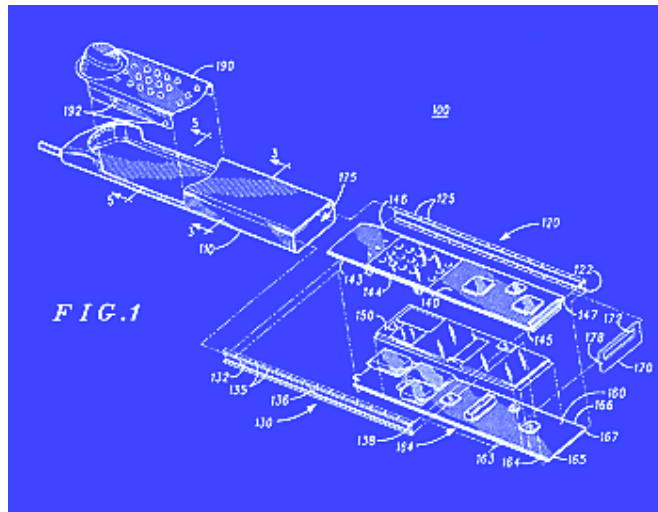
The featured speaker, **Sharon Phillips** of WIE and EMCS, is Secretary of the IEEE Chicago Section Executive Committee and a former **Motorola** Corporate Research Engineer, with eight patents, one of which was named to the Essential GSM Patent Portfolio. In 1985, she was the first woman at Motorola to receive a patent.



Sharon began her topic, **How EMC Benefits Society**, with some statistics illustrating the small numbers of women in electrical engineering. Sharon noted that that approximate 10% has not grown appreciably during her long career. Sharon discussed the stereotypical solitary social behaviors of engineers versus the "helping people" careers where women have much larger representation.

Sharon Phillips receives recognition plaque from Tom Braxton, EMCS Chicago Programs Chair.

Then, Sharon showed that great engineering and helping people can converge under the right circumstances by using a personal example of a new product development process for a prototype phone from her days at Motorola. The prototype had both complex EMC needs and aggressive program development cycle time reduction goals, and Sharon's small team was able to reduce the typical 10 to 20 printed circuit board (PCB) design iterations or "spins" down to an unheard of two! The multi-disciplinary team accomplished this efficiency by making painstaking multiple reviews of the paper design before any physical samples were made. Even though the team members, who ranged from people with all the key technical skills to decision makers, did not always agree on a design approach at the onset, skillful leadership and constructive team dynamics moved them to the best decisions for the greater good of the design. They selected the best EMC and antenna design practices at the beginning of the design process.



The U.S. patent application drawing shows an exploded view of the phone that Sharon's team worked on.

Sharon's research group captured the best practices and lessons learned and then institutionalized them into the traditional product design organization at Motorola, benefiting future product and PCB design processes. When the finished product was reviewed by a focus group, the group was pleasantly surprised to have a truly fully working sample that met many of their previously unsatisfied needs. At the end of the day, engineers worked well together in a very short design time, and women made significant contributions to a unique product with difficult EMC and antenna integration aspects. While the prototype never went to mass production, it made subsequent engineering projects on cell phones and subsequent cell phones much more efficient to the benefit of all people working on and using them.

Sharon then fielded many questions from the audience, who were eager to share their own product development experiences as well.

[| top |](#)

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