

Calendar of Events

Upcoming in February

Tues. Feb. 10, 7:00pm
[Executive Committee](#)
 IEEE-Chicago Section

Wed. Feb 11, 11:30am
[High Speed Fault Clearing](#)
 Power & Energy

Thurs. Feb 12, 7:00pm
[Unified Mobile Communications](#)
 Communications

Wed, Feb. 18, 6:30pm
[EMI-EMC Careers](#)
 Electromagnetic Compatibility

Thurs. Feb. 19, 6:30pm
[O'Hare Modernization](#)
 Engineers Week

Fri. Feb 20,
[Washington Award Banquet](#)
 Engineers Week

Sat. Feb. 21,
[Fire Alarm Systems](#)
 Industry Applications

Sat. Feb. 21, 11am-3:30pm
[DuPage Engineers Week Expo](#)
 Engineers Week

Wed. Feb 25, 6:00pm
[VoIP Security](#)
 Fox Valley Subsection

Fri, Feb. 27, 12:00pm
[Video Classification](#)
 Signal Processing

Email upcoming events to [Pat Hutson](#) for inclusion on the IEEE-Chicago [website](#) calendar.

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 70% technical/30% business curriculum | Saturday-only classes
 Info Sessions: 2/19 in Chicago | 2/21 in Evanston

This Month's Articles

Chair's Corner: Let's Celebrate Engineering In 2009

Engineers Week, a celebration of engineering as a profession, is a time to look back at our history but also to plan for the future. [\[more\]](#)

DuPage Engineers Week to Focus on Sustainability and Alternative Energy

This year's Speaker's Forum features the **O'Hare Modernization Program**, and the ever-popular **DuPage Area Engineers Week Expo** celebrates its 25th Anniversary. [\[more\]](#)

New Fellows To Be Honored at Dinner Dance on March 28

Hear from the new IEEE Fellows—**Nicholas Buris, Lih-Tyng Hwang, Ashfaq Khokhar, and Kenneth Zdunek**—at the Chicago Section's Annual Awards Dinner. [\[more\]](#)

Clyde Baker to Receive 2009 Washington Award

The **Chicagoland Engineering Awards Banquet** on **February 20th** will feature the presentation of the **96th Washington Award** to an expert in deep foundations for high-rise structures. [\[more\]](#)

Nominations for IEEE-Chicago Section Awards Due This Month

The **IEEE-Chicago Section Awards Committee** is soliciting nominations for the **Outstanding Member** and other awards. [\[more\]](#)

Papers Sought on Electrical and Computer Engineering

The **2009 Electro/Information Technology Conference (EIT 2009)** is soliciting technical papers. [\[more\]](#)

Tales of Katrina: The Worst Case Worst Case

Tommy Mayne described the realities of "Electrical System Restoration After Katrina and Her Cousins" at the **Chicago Chapter of the IEEE Power and Energy Society** meeting. [\[more\]](#)

IAS Chapter Learns About Climate Change from South Pole Researcher

Research Professor of Geology at **Northern Illinois University** **Ross Powell** spoke on "Global Climate Change: Drilling Back to the Future in Antarctica" at the January meeting. [\[more\]](#)

New Board for Consultants' Network

The **IEEE-Chicago/Rockford Consultants' Network** is going strong. It just increased its board from five to seven directors! [\[more\]](#)

Chair's Corner: Let's Celebrate Engineering In 2009



Engineers Week, a celebration of engineering as a profession, is a time to look back at our history but also to plan for the future. From automobiles to communication systems to medical technologies, every citizen of this country can identify ways that engineers' efforts have changed and improved their lives.

Automobiles today differ markedly from those available only a decade ago. The cars of today feature hybrid and electric motors, much improved safety features, global positioning systems, and satellite radio. And the changes continue as concerns about cost and availability of fossil fuels grow.

Communication technologies have also changed dramatically. When I started working in telecommunications, AT&T was a monopoly completing the development of ubiquitous wire line telephone service for the nation. Today, we see the emphasis on broadband wireless access and the convergence of services in a nation where 17% of households choose not to buy wireline service.

The diagnostic and surgical tools available to the medical profession have changed and

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improved medical care. It seems every time I have a medical exam, there are new tools, procedures, and options to choose from. Surgeries are much less invasive, and tests are more complete and precise.

Engineers can be proud to be part of a profession that has had such a positive impact on our daily lives. I, personally, am proud of my personal contributions to defense systems, communications systems, and medical research. And I believe that engineers will continue to play a critical role in meeting the needs of this nation.

I invite all engineers in the Chicago Section to celebrate our profession. Join us at one of the E-Week activities (highlighted in this e-Scanfax) to meet fellow engineers and to share your stories with the next generation of engineers. [Purchase](#) and wear an IEEE hat or shirt. Attend a local Chapter meeting. Encourage a youngster to consider engineering or science as a career. Or, encourage a fellow engineer to join the IEEE.



Merchandise available at www.ieee.org/merchandise

Bernard Sander, Jr.
Chair, IEEE-Chicago Section

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DuPage Engineers Week to Focus on Sustainability and Alternative Energy



Rosemarie Andolino

The 25th Annual **DuPage Area Engineers Week** will focus on **"Sustainability and Alternative Energy Resources."** With the demand for natural resources currently at unprecedented levels, engineers are at the forefront of applying new and sustainable ways in which the world can function. This year's Speaker's Forum features **Rosemarie Andolino**, Executive Director of the **O'Hare Modernization Program**, who will address the logistics, timeline, and the surprising "green" aspects of project. The 2009 Speaker's Forum will begin on Thursday, February 19th at 6:30 p.m. with a brief reception.

On **Saturday, February 21st from 11:00 a.m. to 3:30 p.m.**, future engineers and learners of all ages can participate in the highly interactive exhibits at the **25th Annual DuPage Area Engineers Week Expo**. Free and open to the public, the Expo features everything from model airplanes and a wind tunnel exhibit, to lasers, robots, bicycle power, and hands-on activities with ZOOM, Design Squad, SCARCE, SciTech, and the DuPage Children's Museum. **Illinois Institute of Technology** students will present and answer questions on their sustainability-related professional projects. New for 2009, the **"Buildings to Shake-Rattle and Roll!"** exhibit and presentation will allow participants to build and test their own building designs to destruction. The popular cryogenics display returns again to amaze onlookers with sub-zero science and surprises!



Future engineers at last year's Engineers Week Expo.

Both events are located at Illinois Institute of Technology's Rice Campus in Wheaton. For more information, check out the **DuPage Area Engineers Week [website](#)**.

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New Fellows To Be Honored at Dinner Dance on March 28

What if you want to find all the archival video footage available of Michael Jordan doing a slam-dunk in the NBA finals? Or, you want to find recordings of a song but can only hum the tune? Today, a text-based search of video and song titles could easily miss the gems you seek, but tomorrow, when **Ashfaq Khokhar's** research enters everyday usage, you'll be able to find what you're looking for in the nonverbal realm. Khokhar, recently elevated to IEEE Fellow for contributions to multimedia computing and database systems, will explain more at the IEEE-Chicago Section Dinner Dance on **Saturday, March 28th** at the **White Eagle Restaurant** in Niles, Illinois.



Ashfaq Ahmad Khokhar

That night, the IEEE-Chicago Section will be celebrating the elevation of four of our local members to the rank of IEEE Fellow, including, in addition to Khokhar:

Nicholas E. Buris for contributions to electromagnetic design automation and

multidisciplinary optimization of complex wireless communications problems;

Lih-Tyng Hwang for contributions to system-in-a-package technologies; and

Kenneth J. Zdunek for leadership in integrating voice and data communications in networks.

The grade of Fellow recognizes unusual distinction in the profession and is conferred by the IEEE Board of Directors upon a person with an extraordinary record of accomplishments. IEEE Fellows have contributed importantly to the advancement or application of engineering, science and technology, bringing significant value to society.

In addition to honoring the Fellows, the IEEE-Chicago Section will also confer its Annual Awards at the dinner dance. The festivities start at 6:30 pm with dinner served at 7:30 pm. Don't miss this unique opportunity to meet and congratulate the honorees and network with your peers!

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Clyde Baker to Receive 2009 Washington Award

At the **Chicagoland Engineering Awards Banquet on February 20th** at the **University Club of Chicago**, **Clyde N. Baker, Jr., PE, SE** will receive the **96th Washington Award**. With more than 50 years of engineering experience, Baker has earned an international reputation in the design, analysis and construction of deep foundations for high-rise structures. He has performed geotechnical engineering for seven of the 16 tallest buildings in the world and most of the high-rise buildings built in downtown Chicago over the past fifty years including nine with deep basements and slurry walls. To order tickets, visit the **Chicagoland Engineering Week [website](#)**.



Clyde N. Baker, Jr.

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Nominations for IEEE-Chicago Section Awards Due This Month

The **IEEE-Chicago Section Awards Committee** is soliciting nominations for the **Outstanding Member of the Chicago Section Award, Distinguished Service Awards, Distinguished Mentoring Awards**, and **Friends of the IEEE-Chicago Section**. If you know of an IEEE-Chicago Section member who deserves recognition for outstanding and noteworthy contributions to the Chicago Section, the community, fellow professionals, and the human race, please [email](#) IEEE-Chicago Section Awards Chair **Jianhui Wang** with your nominations by March 1, 2009.

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International EIT Conference Calls for Papers

The **2009 Electro/Information Technology Conference (EIT 2009)**, sponsored by **IEEE Region 4** (to which the Chicago Section belongs), is seeking papers on basic and applied research in electrical and computer engineering as related to information technology and its applications. Full papers are due **February 27, 2009**. The **University of Windsor** in Ontario, Canada will host the conference from **June 7 to 9, 2009**. Confirmed keynote speakers include **Lotfi Zadeh** of the University of California at Berkeley on soft computing and **Hojjat Adeli** of Ohio State University on neural networks. For more information, visit the conference [website](#).



Lotfi Zadeh

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Tales of Katrina: The Worst Case Worst Case

Over eighty hearty souls braved the cold on January 14th to be regaled with the warmth of Southern food and storytelling at the **Chicago Chapter of the IEEE Power and Energy Society (PES)** evening meeting at **Commonwealth Edison**. After a jambalaya dinner, Director of the North American IEEE PES T&D Conference and Exposition **Tommy Mayne** described the realities of "**Electrical System Restoration After Katrina and Her Cousins**." The presentation, which was originally scheduled for October, had been delayed because Mayne, like many retirees, had been tapped by his former employer, the utility **Entergy**, to handle the aftermath of Gustav just as he had been for Katrina.

Mayne walked the group through the hurricane preparations in New Orleans, beginning a week before the arrival of Katrina at what he called "Day Minus 7," when the assessment was, "There's a hurricane out there and it's going to hit Florida." Not until Day Minus 3 did it become obvious that "Katrina is coming our way and it's a category five." At that point, Entergy's goal changed from helping Florida to evacuating its trucks and crews before the

mass public exodus began. Mayne's advice: "If it's hurricane season, follow the utility trucks."

Primarily for safety, but also for system protection, in such a storm alert, utilities stop reclosing on transmission and distribution lines. They also reduce their trading of power with other utilities in order to minimize their exposure on the larger grid and avoid system swing issues.

Every storm is different. Katrina was, Mayne said "a worst case worst case scenario." The breaking of the levees put much of New Orleans, including substations and meters, under water for weeks. Over 2.1 millions customers lost power, 385 substations and 252 transmission lines went out and 42,000 distribution poles were destroyed.



No, it wasn't a brawl with the presenter. Tommy Mayne (left) asked Chicago PES Treasurer Dave Mertz to help him demonstrate the impossibility of standing up in 200 mile per hour winds.

In addition to decimating the electrical transmission and distribution, the storm also destroyed the city's basic infrastructure, which would normally support the restoration crews. Entergy found itself in competition with FEMA and the National Guard for basic logistical support services. As Mayne summarized, "All the good guys were going for the same stuff." Food, water, gas and diesel fuel, even restrooms and lodging were at a premium. Vacant apartments, tent cities, and other creative makeshift solutions prevailed. And, because of the standing water, the workforce needed to be inoculated for diphtheria and tetanus.

Once Entergy had gotten backbone and main feeder lines back in, it found that, in many areas, there weren't any customers that could use the power because structures had been damaged extensively and meters were under water. So, in many areas Entergy pulled back to normal operations and restored power only to those who were ready to receive it. During much of Katrina, "Normal," said Mayne, "was not a word we knew."

The damage to the entire Gulf Coast was extensive. New Orleans area received most of the publicity, but areas of the Mississippi Gulf Coast and other Northern Gulf communities were also devastated, making the demand for resources even higher.

"If you have an emergency plan in place that doesn't plan for the absolute worst case," said Mayne, "you need to update it now."

The evening ended with another "not everyday" occurrence: PES President **Wanda Reder** presented a check for \$15,000 to the PES Chicago Chapter for its help with Transmission and Distribution Show at McCormick Place last year.

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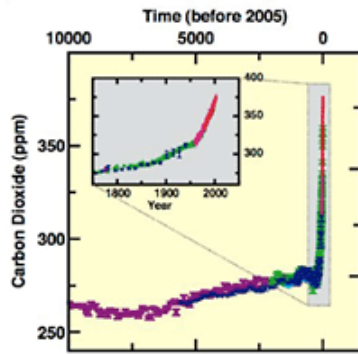
IAS Chapter Learns About Climate Change from South Pole Researcher

In his talk entitled "**Global Climate Change: Drilling Back to the Future in Antarctica**" at the January 21st meeting of the **Chicago Chapter of the Industry Applications Society**, **Ross Powell**, Research Professor of Geology at **Northern Illinois University** and a seasoned traveler to both the North and South poles, explained the impact of polar ice on global temperatures.



A frosty Ross Powell

Since the dawn of the industrial era, heat-trapping gases—carbon dioxide, methane, and nitrous oxide—have increased in the earth's atmosphere at a rate that is "unprecedented in more than 10,000 years." While fluctuations have occurred in the past, the rate and magnitude of increase in greenhouse gases during the industrial era has not occurred for at least 800,000 years.



Carbon dioxide levels are on the rise.

As a result, average global temperatures and sea levels have increased while snow cover has decreased. When snow and ice, which are highly reflective, melt, the areas they covered become exposed rock or open water, which reflect less of the sun's warming rays. In one of many positive feedback loops exacerbating climate change, the open water or land absorbs the sun's rays, warming the earth and further increasing the global temperature.

The surfaces of the large ice sheets, such as Greenland, are also melting. The resulting water flows through crevasses in the ice and, once making it to the bottom of the ice sheet, provides lubrication between the ice and the rock. The ice then flows quickly into the oceans at a faster and faster pace.

The freshwater outflow and the melting ice are making sea levels rise and the salinity of seawater decrease.

The Antarctic ice sheet, which holds 70% of the world's fresh water and covers an area one and a half times larger than the U.S., has existed for 34 million years. The Antarctic ice sheet's response to past climatic changes can provide clues into how current global warming will impact it.

ANDRILL, an international research project in Antarctica, is drilling into the sea floor at the margins of the ice sheet in search of evidence of previous cycles of melting and freezing. At this point, Powell, who is co-leading the project, can only measure the previous periods of ice sheet disintegration with an accuracy within one thousand years or so. But, with further analysis of the data, the research group is hoping to narrow those predictions.

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New Board for Consultants' Network

At the annual member meeting, held in November 2008, the **IEEE-Chicago/Rockford Consultants' Network** voted to increase its board from five to seven directors. At that meeting, incumbent **Joseph Auer**, **Gary Blank**, **William Boyle** and **Stafford Cuffe** were elected to three-year terms, joining incumbent directors **Harry Jones**, **Roy Leventhal** and **Benjamin Miller**. Then, at the December board of directors meeting, the Chair, Vice Chair, Treasurer and Secretary were elected for 2009 and appointed positions filled.



The newly elected board and appointed officers are pictured from left to right in the front row: Joseph Auer, Director and Chair; Stafford Cuffe, Director and Public Relations; **Andy Mehta**, Membership; and in the back row: Harry Jones, Director and Secretary; **Wesley Martin**, Venue; Benjamin Miller, Director and Treasurer; William Boyle, Vice Chair. Not pictured are Director and Program Chair Gary Blank, Director at Large Roy Leventhal, and Past Chair **Richard Gillette** who was elected Director Emeritus and appointed Webmaster.

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