e-SCANFAX
IEEE CHICAGO SECTION NEWSLETTER
May 2010

Calendar of Events

In May

Sun.-Wed. May 9-12
EMC Field Computation
Antennas & Magnetics

Tues. May 11, 8:00am
Mini-Symposium
Electromagnetic

Tues. May 11, 7:00pm
Board Meeting
IEEE-Chicago Section

Thurs. May 13, 6:30pm
Reevaluating Amdahl's Law
Computer Society

Sat. May 15, 7:30am
Generator Design
Industry Applications

Mon.-Fri. May 17-21
Collaborative Technologies
Computer & Info

Fri.-Sat. May 20-22
Electro/Information Technology
IEEE Region 4

Mon. May 24, 6:45pm
Arc Flash Accidents
Consultants Network

Please email upcoming events to Work In Motion for inclusion in the calendar.

This Month's Articles

Chair's Corner: Jack Black Receives Distinguished Service Award

At the IEEE-Chicago Section Annual Dinner Dance, I had the honor of serving as Master of Ceremonies as the Section recognized some of its dedicated volunteers as well as the five newly elevated IEEE Fellows from the Chicago Section. [more]

May 11th Mini-Symposium to Feature Bruce Archambeault of IBM

The **Chicago Chapter of the Electromagnetic Compatibility Society (EMCS)** presents its **Twelfth Annual Chicago EMC Mini-Symposium** on **May 11th** at the **Itasca Country Club.** [more]

Xian-He Sun to Speak at Computer Society Meeting on May 13th

The Chairman of the Department of Computer Science at the **Illinois Institute of Technology** will speak at the inaugural meeting of the reconstituted **Chicago Chapter of the IEEE Computer Society**. [more]

Seminar on Generator Design and Installation on May 15th

IEEE members—**Andrew Best, Justin Facente, Steve Hermanowski,** and **Lee Smith**—will be presenting at the Saturday seminar of the **Chicago Chapter of the IEEE Industry Applications Society (IAS).** [more]

It's Time to Vote for IEEE-Chicago Section Leadership!

All IEEE-Chicago Section members are eligible to vote in the election of Section leadership. [more]

IEEE-Chicago Fellows Provide Words of Wisdom to New IEEE Members

At the **IEEE-Chicago Section Annual Dinner Dance** on Saturday evening, March 27, the five new IEEE Fellows from the Chicago Section were asked to give a few words of advice to new IEEE members. [more]

New IEEE Fellow Chang Lui Hopes to Contribute to Health Care Reform

Northwestern University Professor, **Chang Lui**, was elevated to IEEE Fellow "for contributions to bio-inspired and polymer micro electro-mechanical systems." [more]

Smart Grid Technology Faces Political Realities

Mohammad Shahidehpour addressed the political realities as well as the technical challenges inherent in his topic, **Smart Grid: A New Paradigm for Power Delivery** at the April **Chicago Chapter of the IEEE PES** meeting. [more]

Chair's Corner: Jack Black Receives Distinguished Service Award

On Saturday evening, March 27, at the **IEEE-Chicago Section Annual Dinner Dance**, I had the honor of serving as Master of Ceremonies as the Section recognized some of its dedicated volunteers as well as the five newly elevated IEEE Fellows from the Chicago Section. (Read the article in this issue about the Fellows' comments at the dinner, as well as a profile of one of them, **Chang Lui**.)

The most prestigious IEEE-Chicago Section award, the **Distinguished Service Award** went to **Jack Black**. The Distinguished Service Award, which recognizes members who have demonstrated a rare level of dedication and achievement through their long time service and noteworthy contributions to the Section, their communities, fellow professionals and fellow human beings, has only been bestowed on two other members, **George Thomas** and the late **Jack Sherman**. Jack Black has provided leadership in many roles, making the **Chicago Chapter of the Electromagnetic Compatibility Society (EMCS)** a vibrant supporter of networking and technical growth opportunities for IEEE members within the Chicago Section. Jack has also been supportive of Chicago Section activities such as officer training, chapter reports and the Awards Banquets.

From right to left, Treasurer of the Chicago Chapters of the Power & Energy Society and the Industry Applications Society, David Mertz, with his wife, Deena Sherman; Distinguished Service Awardee Jack Black with his wife, Karen; and IEEE Fellow Tom Cloonan and his wife, Ruth.

We gave **Al Varney** a **Certificate of Appreciation** for serving as webmaster of the **Fox Valley Subsection** website, taking care of the postings and updates with skill and timeliness for over a decade.

Kenji Suzuki received an **Outstanding Member Award** for his significant progress in promoting the elevation of members to senior member status. In 2009, the number of senior members in **Region 4** increased by a little over 2% while the increase for the Chicago Section was over 7%. This outstanding result was primarily due to Kenji's efforts.

From right to left, Chicago Section Executive Committee member, John Zulaski, with Kenji Suzuki and his wife, Harumi, who is wearing her grandmother's kimono!

Michele Beaulieux also received an **Outstanding Member Award** for her many years of dedication and commitment to the quality of this newsletter. In addition, the Section recognized the **Chicago Chapter of the Power and Energy Society (PES)** for outstanding performance and **Northwestern University** for support of the Section through its continued advertising.

I enjoyed honoring the people who have made the Chicago Section the vibrant association that it is, and it appeared everyone else in attendance did, too. It was a most enjoyable evening.

Sincerely,
William (Bill) Nartker
IEEE-Chicago Section Chair

| top |

Chicago EMC Mini-Symposium to Feature Bruce Archambeault of IBM

Bruce Archambeault

The **Chicago Chapter of the Electromagnetic Compatibility Society (EMCS)** presents its **Twelfth Annual Chicago EMC Mini-Symposium** on **Tuesday, May 11** from 8:00am to 5:00pm. **Bruce Archambeault,** IBM Distinguished Engineer at **IBM,** will present **EMC for Electrical Engineers Working in the Real World (Electromagnetic Compatibility is NOT Magic!).** The seminar will focus on the basic causes of EMC problems and how to overcome these problems using the latest research results for new design approaches. Understanding the causes of EMC problems will help engineers make difficult design trade-off decisions. In addition to this technical presentation, there will be over twenty vendor exhibits highlighting EMC related products, test equipment and services. Once again, the Mini-Symposium will be held at the Itasca Country Club in Itasca, Illinois. For more information and to register, visit the Chicago EMCS website.

| top |

Xian-He Sun to Speak at Computer Society Meeting on May 13th

Xian-He Sun

The Chairman of the Department of Computer Science at **Illinois Institute of Technology (IIT)** will speak at the inaugural meeting of the reconstituted **Chicago Chapter of the IEEE Computer Society. Xian-He Sun**, who is also a visiting scientist at the Computing Division at the **Fermi National Accelerator Laboratory** and a guest faculty in the Division of Mathematics and Computer Science at **Argonne National Laboratory**, will speak on **Reevaluating Amdahl's Law in the Multicore Era.** Sun will analyze multicore scalability under fixed-time and memory-bound conditions and from the data access (memory wall) perspective. The models show that there is no inherent, immovable upper bound on the scalability of multicore architectures. The presentation will take place at 6:30pm at the **IIT Chicago Campus**. For more information, visit the event listing in the Chicago Section calendar.

| top |

Seminar on Generator Design and Installation on May 15th

Paralleled Generator Application

Chicago Chapter of the IEEE Industry Applications Society (IAS) is presenting a Saturday seminar, **Generator Design and Installation Considerations**, on **May 15th from 7:30 am to 5:00 pm**. The packed agenda includes sessions on generator sizing, generator provisioning and installation, generator switching, paralleling concepts and implementation, the National Electric Code (NEC), generator Underwriters Laboratories' (UL) listing and National Fire Protection Association (NFPA) standards, generator reliability, and generator electrical safety and arc flash. IEEE members—**Andrew Best, Justin Facente, Steve Hermanowski,** and **Lee Smith**—will be presenting. They have over eighty years of combined experience in generator applications and services. The seminar will be at the Midwest Conference Center in **Northlake, Illinois**. Registration is required by May 7th. For more information, visit Chicago IAS website.

| top |

It's Time to Vote for IEEE-Chicago Section Leadership!

The polls are now open! Please take the time to support your IEEE-Chicago Section by voting. All IEEE-Chicago Section members are eligible to vote in the election of Section leadership at IEEE voting webpage. You may use your IEEE login and password to access the ballot and read more information about the candidates. Voting will be open from May 1 to May 17, 2010. If you have questions or need assistance, please contact Bernie Sander, Nominating Committee Chair.

2010-2011 Chicago Section Officer Candidates

Section Chair	Jim Phillips
Section Vice Chair	Robert Burke
Section Treasurer	Sharon Phillips
Section Secretary	Mike Reed
Standing Committee	Chair Candidates
Awards	Jianhui Wang
Advisory	Bill Nartker
Conference	Alireza Khaligh
Education	Connie Kelly

History	George Thomas
Membership	Richard Fedrigon
Professional Activities Committee for Engineers (PACE)	Edward Barrett
Program	David Kelly
Member Communications	John Zulaski
Special Events	David Richardson
Student Activities	John Sobtzak
Life Members	Jim Fancher

| top |

IEEE-Chicago Fellows Provide Words of Wisdom to New IEEE Members

The 2010 IEEE-Chicago Fellows from right to left: Chang Lui, Jafar Saniie, Kevin Lynch, Dan Schonfeld and Tom Cloonan.

At the **IEEE-Chicago Section Annual Dinner Dance** on Saturday evening, March 27, the five new IEEE Fellows from the Chicago Section were asked to give a few words of advice to new IEEE members.

Thomas Cloonan, who was elevated to Fellow for his "leadership in the development of cable modem termination systems," gave his advice in the spirit of David Letterman's Top Ten List, but, in the spirit of Spinal Tap, with 11 items:

11.
Don't let your career overshadow your friends and family.
10.
Give everything that you have, and you will do just fine.
9.
Be a team player and listen to your peers: they are your best teachers.
8.
Be a good teacher for others.
7.
You are never as good as you think you are in your best of times,
nor are you as bad as you think you are in your worst of times.
6.
Don't be afraid to take risks or follow your heart . . . even if it leads you to create a crazy Cable Modem Termination System (CMTS) start-up company during the 2001 Tech Stock Bubble Burst.
5.
If you fail – and you will from time to time – learn from your mistakes and don't give up.
4.
If you succeed, don't get arrogant; it took lot of help to get you there.
3.
It's okay to start over after you fail or after you succeed.
2.
Don't be afraid to ask dumb questions when you start over.
1.
Sometimes, the answers to your most-challenging questions are right in front of your nose.

And to prove his last point, Tom shared a short story. "So, there are two snowmen standing together in a field. One turns to the other one and says, 'Ya know, it's sort of

funny. I smell carrots, too.'"

Elevated to Fellow for his "contributions to bio-inspired and polymer micro electro-mechanical systems," **Chang Liu** said, "you have to be very careful when you pick what you do. But, once you do, don't waiver. Stick with it to the end."

Kevin Lynch, who was elevated to Fellow for his "contributions to robotic manipulation, motion planning, and control of mechanical systems," expressed his appreciation for being honored by the IEEE, which is the leading proponent of robotics internationally.

Elevated to Fellow for his "contributions to ultrasonic signal processing for detection, estimation and imaging," **Jafar Saniie** made a point of noting: "I share the award with my students and their creativity and dedication and hard work. I could not do it alone. The students motivate me."

Dan Schonfeld, who was elevated to Fellow for his "contributions to image and video analysis," thanked his mentors "for helping me for no reason other than just trying to do the right thing." Inspired by that example, Schonfeld is now trying to do the same thing with his students.

| top |

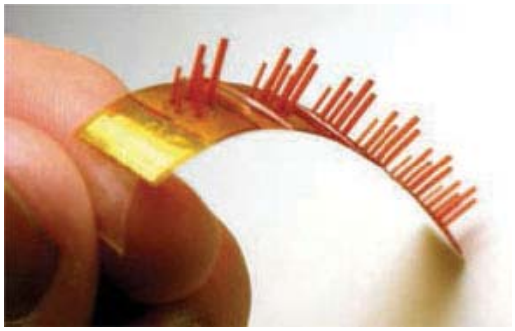
New IEEE Fellow Chang Lui Hopes to Contribute to Health Care Reform

Chang Lui

"I actually don't deserve it," says **Chang Lui** when asked about his elevation to IEEE Fellow "for contributions to bio-inspired and polymer micro electro-mechanical systems."

Liu, Professor of Mechanical Engineering and Electrical Engineering and Computer Science at **Northwestern University**, seeks to "have some meaning in our engineering research: not to be better, but to be the best." And, "the best," Lui says, "is found in nature. Our sense of hearing, for example, is better than anything that has been produced." Tiny hair cells in our inner ears amplify and convert sound waves into electrical signals that can alert us to the output of our iPods or the approach of a subway train. Lui tries to figure out the reasons nature is superior and then make better devices based on those reasons. Using the disciplines of design engineering, materials science and signal processing to mimic nature has led Lui and his team to quantum leap improvements in manmade devices.

Lui and his team developed the world's first functional artificial hair cell to mimic one of nature's most widespread and versatile data-collecting systems: the lateral lines of fish. These linear swatches of hair cells on fishes' sides help them coordinate group movements, avoid predators, and otherwise navigate.



The artificial hair cells are only 500 to 700 micrometers long and can be adapted to function as both vibration and tactile sensors.

Lui is now working on a single hair cell design that can sense the flow of fluids. Inspired by nature, these flow sensors can be used to monitor the flow of blood and other liquids in dialysis machines and medical instruments. These much less expensive sensors are leading to a new paradigm for designing such equipment. The equipment can be produced cheaper but also smaller and with equally good or better quality. In a potential contribution to health care reform, the new devices, which are not yet on the market, could dramatically change how medical practice is done, allowing patients to complete dialysis treatments in the privacy of their homes.

"I haven't changed the world yet," Lui says, "but that's the promise; that's what sustains our efforts: to bring some good stuff to the world that people really need."

*This story is part of a series profiling the 2010 IEEE Fellows from the Chicago Section. **Dan Schonfeld** was featured in the January e-ScanFax, **Tom Cloonan in** February, **Jafar Saniie** in March, and **Kevin Lynch** in April. To view the previous profiles, click on the newsletter archives tab above.*

| top |

Smart Grid Technology Faces Political Realities

Mohammad Shahidehpour

At the April downtown lunch meeting of the **Chicago Chapter of the IEEE Power & Energy Society (PES)**, the presenter, **Mohammad Shahidehpour**, proved himself to be an atypical academic. The Bodine Professor at **Illinois Institute of Technology (IIT)** did not just address the technical challenges inherent in his topic, **Smart Grid: A New Paradigm for Power Delivery.** He also acknowledged the political realities. The Smart Grid, Shahidehpour explained, is "a response to economic, security, and environmental mandates placed on energy supply and delivery."

Few electricity consumers today realize that the true price of electricity varies continuously in response to supply and demand. As a result, they use electricity at peak hours more than what they need to. The Smart Grid provides real-time pricing and usage information by using Internet protocol to facilitate two-way communication between utilities and customers. A Smart Grid requires smart meters, which identify usage and time of usage, giving real-time information for decision-making. That's why more than 50% of the Federal funds dedicated to the Smart Grid are going to smart meters.

Profile of typical customer response to market-based pricing.

The Smart Grid facilitates "peak shaving" – the reduction of consumption during high demand. In Chicago, our base power is supplied by nuclear power; coal plants are fired up to supply peak demand. Shahidehpour noted that, at first glance, reducing Chicago's reliance on coal would seem good, but the political realities are complicated by the fact that the Southern part of the state is a coal-producing region.

The flexibility and responsiveness of the Smart Grid also facilitates the use of renewable energy sources. But since wind and solar power aren't always available near population centers, more transmission will need to go through the Midwest to high demand areas on the coasts. Here again, the technically feasible solutions are facing political roadblocks as the Not in My Back Yard (NIMBY) syndrome takes hold.

| top |

Address corrections:
IEEE Membership
440 Hoes Ln.
Piscataway, NJ 08854-1331

IEEE Chicago Section
Mail and Delivery: 335 E. Geneva Road PMB # 389
Carol Stream, IL 60188
Voicemail: 630.493.4333
IEEE nondiscrimination policy

e-Scanfax content and production by Work In Motion