

## Calendar of Events

### Upcoming in November

- Fri. Nov. 7, Noon  
[Analyzing Data "Boxes"](#)  
Signal Processing
- Sat. Nov. 8, 8:00am  
[Effective Business Writing](#)  
IEEE-Chicago PACE
- Tues. Nov. 11, 7:00pm  
Executive Committee  
IEEE-Chicago Section
- Tues. Nov. 11, 7:00pm  
[The Revolution at the Edge of the Network](#)  
Communications
- Wed. Nov. 12, 5:30pm  
[Synchro-Phasors](#)  
Power & Energy
- Mon. Nov. 17, 6:45pm  
[High Speed Data Transmission & Pine Wood Race Cars](#)  
Consultants' Network
- Wed. Nov. 19, 5:30pm  
[Wind Turbine Design](#)  
Industrial Applications
- Wed. Nov. 19, 6:30pm  
[ESD Testing Reproducibility](#)  
Electromagnetic Compatibility
- Fri. Nov. 21  
[Metamaterials](#)  
Antennas/Microwave

## This Month's Articles

### Chair's Column

Our Chair shares insights learned at the Sections Congress in Quebec that could benefit Chicago. [\[more\]](#)

### Upcoming events of special interest

IEEE-Chicago Offers Effective Business Writing on November 8 [\[more\]](#)

### Three Chicago Chapters To Host Distinguished Lecturers in November:

SPS hosts **Nikos Sidiropoulos** on **November 7**. His topic is "Analyzing Data 'Boxes': Multi-way Linear Algebra and its Applications in Signal Processing and Communications" [\[more\]](#)

Then on **November 19<sup>th</sup>**, **EMC Society** will hear **Stephan Frei** on "Improving Reproducibility in ESD Testing" [\[more\]](#)

Finally, **George Eleftheriades** will speak on "Metamaterials" to the **APS/MTTS** on **November 21**. [\[more\]](#)

### PACE Workshop Confirms the Realities of Project Management

Chicago section member **Jim Niemira** got confirmation that he's been thinking the right way: a project manager needs to be "hard-nosed." [\[more\]](#)

### Consultants Explore Wind Power From All Directions

**Kevin Borgia**, Executive Director of [Wind for Illinois](#), spoke to the **Chicago/Rockford Consultants' Network** on "Wind Industry Trends in Illinois." [\[more\]](#)

### New Soybean Oil Gaining Traction

**Patrick McShane** of **Cooper Power**, gave the Chicago Chapter of the **IEEE Dielectric and Insulation Society (DEIS)** a great talk on natural ester (soybean) based transformer oils. [\[more\]](#)

### Chair's Column: Quebec Sections Congress Provides Ideas For Chicago

In mid-September, IEEE-Chicago Section Vice Chair **Bill Nartker**, Education Committee Chair **Connie Kelly**, and I attended the **IEEE Sections Congress 2008** along with representatives from most of the 327 sections around the world. The **IEEE Member & Geographic Activities Board (MGA)** sponsored the Congress, which was held in **Quebec City**. Our French-speaking Canadian hosts were celebrating a 400-year anniversary and



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proudly showed off their history. The walled city, Old Quebec, and the language are very different than most North American cities, providing a great environment for learning and networking with other attendees.

I found that many large sections face the same issues of industry support and convenient meeting locations that we do here in the Chicago Section, and some are providing remote access to Executive Committee Meetings. Other sections are providing links on their section web pages to "Friends of the Section" employers. Many smaller sections are also quite innovative in their approaches to building strong sections, doing things like holding Section and Chapter meetings in a common place at consecutive times. The sessions on leadership development, building section/chapter/society relationships, and student branches will be the most helpful of the [Congress presentations](#) in planning for a successful Chicago Section.

Participating as a voting representative in generating the [MGA action recommendations](#) was challenging and enlightening. The priorities include improving the member experience by enhancing value to members through on-line training materials and tools to support member collaboration; providing additional flexibility and features in support of business and financial operations, specifically membership and payment for events; and improving IT operations, including teleconferencing tools and support for entity web pages. The inputs from these Congresses have led to many changes and improvements in our IEEE. Watch for progress on these items in Region Communications.

I felt privileged to represent the IEEE-Chicago Section at Sections Congress 2008. Perhaps you will have the opportunity to represent us at the next Congress in 2011 in San Francisco.

**Bernard Sander**  
Chair  
IEEE-Chicago Section

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### **IEEE-Chicago Offers Effective Business Writing**

Learn how you can write clear, concise copy that gets your point across and holds your reader's attention. Learn how to deliver your message more effectively—in fewer words and with less time and effort. The **IEEE-Chicago Section Professional Activities Committees for Engineers (PACE)** is offering an **Effective Business Writing** workshop on **Saturday, November 8, 2008** from 8:00 am until 12:00 noon at **Harper College** in Palatine. Presenter **Marianne Rowe-Dimas**, owner of **The Image Factor**, has more than 20 years of management experience in marketing, sales and customer service. To register call 847-925-6300 and refer to Course Number: LIC2001. Fee is \$79 for IEEE members and \$39 for IEEE student members.

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### **Three Chicago Chapters To Host Distinguished Lecturers in November**

November will be a distinguished month for the IEEE-Chicago Section as the local chapters of three different societies bring the expertise of three international IEEE Distinguished Lecturers to Chicago.

**The Chicago Chapter of the IEEE Signal Processing Society (SPS)** hosts **SPS Distinguished Lecturer Nikos Sidiropoulos** at the **University of Illinois at Chicago** on **Friday, November 7 at 12:00 p.m.** Nikos, who is a Professor at the **Technical University of Crete** in Greece, will speak on **"Analyzing Data 'Boxes': Multi-way Linear Algebra and its Applications in Signal Processing and Communications."**



Matrix algebra plays an important role in modern signal processing. His talk will be a guided tour of theory and algorithms for analyzing data boxes, with emphasis on communications and array processing applications. Sidiropoulos served as Associate Editor for **IEEE Transactions on Signal Processing** and **IEEE Signal Processing Letters** and he received the **IEEE Signal Processing Society Best Paper Award** in 2001 and in 2007. Complete

information is at the Chicago SPS [website](#).



**Stephan Frei**

On the evening of **Wednesday, November 19**, **IEEE Electromagnetic Compatibility (EMC) Society Distinguished Lecturer Stephan Frei** will present “**Improving Reproducibility in Electrostatic Discharge (ESD) Testing**” to the **Chicago EMC Chapter** at **DLS Electronic Systems** in Wheeling. EMC engineers and circuit designers will appreciate Frei’s insights on the vexing problem of ESD reproducibility. A Professor of Electrical Engineering at the **Technische Universitat Dortmund** in Germany, Frei leads a research group dealing with on-board automotive systems. His work involves model-generation and simulation of cable harnesses, automotive bus systems, automotive electronics, and the effects of ESD on these. For more information, visit the Chicago EMC [website](#).

Finally, on **Friday, November 21** at the **Motorola Schaumburg** campus, the **joint Chicago Chapter of the Antennas & Propagation Society (APS) and the Microwave Theory & Techniques Society (MTTS)** will host **APS Distinguished Lecturer George Eleftheriades**, who will speak on “**Metamaterials.**” A Professor in the Department of Electrical and Computer Engineering at the **University of Toronto**, Eleftheriades was elected an **IEEE Fellow** in 2006 “for contributions to conception, analysis and fabrication of electromagnetic materials and their applications.” He is also the recipient of the **2008 IEEE Kiyo Tomiyasu Technical Field**



**George Eleftheriades**

**Award** “for pioneering contributions to the science and technological applications of negative-refraction electromagnetic materials,” and is currently researching electromagnetic negative-refraction metamaterials, IC antennas and components for broadband wireless communications, novel antenna beam-steering techniques, low-loss Silicon micromachined components, sub-mm-wave radiometric receivers, and electromagnetic design for high-speed digital circuits. For more information, email [Chunguang Jing](#).

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## **PACE Workshop Confirms the Realities of Project Management**



**Presenter Tarek Lahdhiri is Project Manager and Team Leader for the Advanced Development and Validation Group, Global Systems Engineering Department, at General Motors Corporation in Detroit, Michigan.**

At the IEEE-Chicago Section workshop, “**Project Management Fundamentals,**” **Tarek Lahdhiri, Ph.D., P.E.,** presented project management as common sense put into process. Using real life examples and an interactive presentation format, Tarek guided the 35 attendees through the four key phases of project management: concept and planning, development, testing and approval, and, finally, close out.

For **Jim Niemira** of **S&C Electric Company**, the workshop was “a great experience. For only \$99, it was a bargain all the way around – a lot more than I expected: a dynamic and engaging speaker, and donuts and sandwiches for lunch.” Coming to the workshop with no formal training in project management, Niemira said, “I got confirmation that I’m thinking the right way about managing projects.” And, basically, that

translates into “being hard-nosed about it.” Now, Niemira will continue to insist on getting project goals and requirements upfront by asking the simple, tough questions: “What do you want to accomplish?” and “When do you want it done?”

**Naveen Rajanikantha of Freescale Semiconductor** is not a project manager but he works with project managers and so felt the “need to understand their language.” Rajanikantha wanted to “understand their perspective and what information they are looking for instead of wasting their time and my time.” What struck him in the presentation was the need for alternative plans for various possible contingencies. Rajanikantha concluded that the workshop “rounded the rough edges of the information I had and put how to use it in the right perspective.” And that’s a good thing because, from his perspective, everything in industry today operates as a project, so growing up in the corporate world means being successfully in projects.

A certified Project Management Professional, **Ralph Walter G. Gomez of Powell Electrical Systems, Inc.** took the workshop as a refresher. He appreciated the project management template, an excel spreadsheet with several tabs, which can be tailored to specific projects by filling in participants, action items, milestones, activities, and other relevant data.

Evaluations of the October 4th workshop sponsored by the **IEEE-Chicago Section Professional Activities Committee for Engineers (PACE)** at **Harper College** were consistently high positives. A key to successful project management is clear communication, which points to the value of the **November 8th PACE** presentation on “**Effective Business Writing.**” [Sign up for it today.](#)

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## Consultants Explore Wind Power From All Directions



There are five large-scale wind farms in Illinois.

On September 29, **Kevin Borgia**, Executive Director of [Wind for Illinois](#), spoke to the **Chicago/Rockford Consultants’ Network** on “**Wind Industry Trends in Illinois.**” A lobbyist for wind power, Borgia explained the political and legal aspects of the industry to the engineering consultants in

attendance, and, in return, the engineers gave him technical insights.

The give and take discussion sorted through common wind energy questions such as why windmills have three blades and why they always turn at the same slow pace. The answers involve good engineering. The turbulence of the preceding blade affects the efficiency of the next blade coming around, so more than three blades would be inefficient. And, like the blades of a helicopter, the blades of a windmill “feather” or change angles to catch more or less wind to obtain optimal rotation. And, again, moving too fast creates turbulence, which is counterproductive.

One of the problems with wind power is the constant “swish, swish, swish” sound for those who live nearby. Consultants’ Network’s Chair **Richard F. Gillette** suggested that a noise cancellation system might reduce that irritation.

Borgia’s presentation put wind power in Illinois in national perspective. Within the United States, Iowa is the per capita leader in wind power generation and Texas and California have the greatest number of turbines. Most of the ideal wind sites in the U.S. are far away from population centers, requiring the construction of massive transmission lines and fortification of the electrical grid. Fortunately, Illinois not only has a strong wind resource, it is also one of the best wired states; its electrical infrastructure provides direct transmission to the Chicago load center. Wind farms create local jobs, too. Because of their enormous size, wind turbines need to be manufactured close to where they’re going to be used. And the job surge during construction is followed by ongoing maintenance jobs. Farmers receive \$12,000 per year for leasing ¼ acre, substantially more than they could make from harvesting that same land. Conveniently, as Borgia extolled the benefits of wind power, **Illinois State Senator Matthew Murphy** from Palatine stopped in on the meeting. To grow, the industry needs the support of federal and state legislation.

For a copy of Borgia's presentation and information on this month's program, "**High Speed Data Transmission and the Art of Pine Wood Race Car Design**" by Professor of Electrical Engineering at **Northern Illinois University, Vince McGinn**, visit the Chicago/Rockford Consultants' [website](#).

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### **New Soybean Oil Gaining Traction**

**Patrick McShane**, Global Technology Manager of Dielectric Fluids at **Cooper Power**, gave the Chicago Chapter of the **IEEE Dielectric and Insulation Society (DEIS)** a great talk on natural ester (soybean) based transformer oils. Titled "**Insulating Oils, and the New Natural Ester Oils,**" his presentation took place on September 17 at the **Illinois Institute of Technology** Wheaton Campus.



**IEEE members Hank Pahl and Carl Schuetz listen to Pat MacShane after his presentation.**

Natural ester based fluids have recently leaped from the specialized fire safety market to the more mainstream market. They take heat much better than conventional transformer oils, and are sustainable, nontoxic and biodegradable. And with rising oil prices, the cost difference between the natural esters and conventional oils has narrowed considerably. The presentation included performance, fire safety, environmental safety, sustainability, and carbon footprint advantages and disadvantages of these alternative dielectric coolants. Attendees asked many questions on using this oil for other applications, such as capacitors and replacement for silicone oils.

Chicago DEIS wishes to thank Pat for his excellent presentation! And, yes, cookies and drinks were provided for the attendees.

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