The IEEE Monitor

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The IEEE MONITOR is the official news publication of the New York Section of the IEEE. Reaching over 5,500 Electrical Engineers and Computer Engineers across New York City (Brooklyn, Bronx, Manhattan, Queens and Staten Island), Rockland and Westchester Counties. The publication reports on events and activities of interest to the general membership and carries the monthly IEEE society calendar of events as a service to its readers.

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On the cover: Submitted by Joseph Cunningham: “Meeting of the minds... the engineering historians in earnest discussions at the IEEE Milestone dedication at the New Yorker Hotel. Left to Right are Joseph Cunningham, Carl Sulzberger and Tom Blaylock ...Well over a century of expertise in the field of power systems and historic milestones.” (more on page 12)

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The NY Monitor needs reporters and contributors. You will get a chance to attend and report on meetings of IEEE Societies and interview masters in your field of study. Submit to nymonitor@ieee.org

Events submission checklist
- Contact person name, e-mail address & phone number
- Name of society or group(s) that sponsor the event
- Name of event
- Date of event (indicate tentative or firm)
- Time of event
- Location (FULL address)
- Location directions (subway, etc.)
- CEU/PDH credits & cost information (if applicable)
- Cost to attendees (if any)
- Registration/RSVP requirement and instructions
- Presenter details (if applicable)
- Event abstract (if applicable)
- CEU/PDH credits & cost information (if applicable)
- Refreshments
- Society/group website location for further information
- E-mail information to: nymonitor@ieee.org

Submission deadlines
Issue: December, January, February
Deadline: was October 8, 2008, November 12, 2008, December 10, 2008
Note: Announcements that are submitted too late for the print version, and last minute changes to events (please get them to us as soon as possible), will be included in the e-mail notice that is posted at the start of the month of publication.
Notes from the Editor

Hopefully this issue of the NY Monitor will reach you in time, so that it is not too late to sign up for some of the early November events.

I thank Peter Mauzey, member-at-large for tracking the 2008 web design contest for us. We are posting two additional IEEE-related contests in this issue. If you are in the teaching field consider incorporating some of these competitions in your curriculum. It is a good way of introducing students to professional societies, they will thank you for it. Let us know about your endeavors in this regard.

Life Member Chair Amitava Dutta-Roy has provided a great topic for public debate with his submission for the Staff Bookmarks section. As an editor, I myself have trepidations about unedited material going out over already overloaded bandwidth, but please judge for yourself. I would like to hear your opinion on the matter.

The PACE corner has two articles this month, first a report on the 2008 IEEE USA Annual Meeting by co-chair Leon Nock, followed by practical suggestions for preparing and conducting a presentation by chair Marty Izaak.

In addition to her always impeccable work as a copy editor, Camille Alma submitted a timely article on Arc Fault Circuit Interrupters.

I attended the Milestone Dedication at the New Yorker Hotel on September 25, and took the tour of the power plant, which was pretty impressive. I was particularly impressed with the ironing room, which still uses equipment that was installed in the 1930s. I thank Joseph Cunningham for sharing his pictures and thoughts. The August 2006 issue of the NY Monitor carried an article by Tom Blaylock, “Powering the New Yorker Hotel”, one of the historians on the front cover. If any of you have memories about the New Yorker Hotel, this would be a good time to share them with others in the New York Section. I hope to hear from you. Expect to see more about the Milestone Dedication in the December issue.

We are going to work on the last issue of the year, please submit your events as soon as possible so that our readers can plan their calendar for the month of December. As always, I thank everybody for their submissions, and especially Jean Redmond and Camille Alma for their consistent support. We invite and look forward to your comments.

Marlen Waaijer (marlen.k.waaijer@ieee.org)
August and September have been an exciting time to be the New York Section Chair. While many of you have been on vacation or continuing your day jobs, I’ve been privileged to attend the Region 1 Meeting in Albany, the PES fall outing, the Sections Congress in Quebec, and the dedication of an Engineering Milestone at the New Yorker Hotel. In the process I’ve met thousands of engineers, some of them like Gordon Moore founder of Intel, luminaries; over a dozen other presidents of the IEEE, as well as IEEE staff. In the process, I’ve been thinking about what a wonderfully creative and innovative profession we share. A profession with demonstrable benefits to humanity across the world in many areas, including sanitation, sustainability, defense, health, power and energy, conservation, communications, and information technology, to name a few.

Let’s start with the Region 1 Meeting, attended by about 200 Section and Region officers. To help us focus on member benefits, which is the reason why we’re all here after all, the Region had workshops in strategic planning and programming. Sections and their Chapters should have three- to five-year goals and should strengthen their planning process in each coming year. Arthur Winston, a former president of the IEEE, spoke at several sessions to help us Plan, Innovate, Execute, and Communicate. Joe Lillie, VP of Member Geographic Activities, urged building a bond with members to gain their – your – commitment. In fact, the NY Section has excellent social and professional networking programs. Our groups have nearly 300 meetings a year.

Region 1 is looking for Big Audacious Goals. Perhaps you have some – send them to me and I’ll pass them along. My BAGs relate to ways to promote engineering as a creative, innovative profession - a profession that can authoritatively review and comment on the technological landscape, a profession that contributes as much or more to the betterment of mankind as others, a profession that emphasizes ethical precepts, and a profession that recognizes how much we rely on our predecessors.

We were treated to a presentation by Russell Harrison of the IEEE-USA. If we have something to offer as a profession, how can we present it effectively? Russ discussed ‘citizen participation.’ Perhaps our PACE or Consultant’s Network would be interested in following this up with presentations in New York. An area of particular interest to Harrison—and to the country as a whole—is energy policy. Engineers do after all know quite a bit about it and what can be done to improve its conservation, recycling, production, and distribution.

Bala Prasanna gave a talk on ways to meet and guide student leaders in planning S-PAC workshops. The NY Section is very supportive of this: we provide both financial assistance and management assistance to students. It’s a great way for them to meet practicing engineers and develop project management skills. We also provide speakers. I’d like to mention here the wonderful new website the IEEE has created: TryEngineering.org. Go take a look!

(Continued on page 6)
CALENDAR OF EVENTS
(Mark your calendar)

Wednesday, November 5, 2008 4:00 pm (voting will take place promptly at 4:15 pm)
Election meeting of the PES - IAS NY & LI Chapter of the IEEE New York and Long Island Sections.
Location: Consolidated Edison Company of New York, 4 Irving Place, Room 1549-S, New York, NY 10003

Thursday, November 6, 2008 6:00—7:00 pm
Comsoc presentation: Communications Convergence Part 2—Digital Television in the USA, a presentation by Kai Chen (Chair)
Location: Two Broadway (at Bowling Green) (no walk-ins for security reasons)
RSVP required: No later than November 5, contact Kai Chen by email: kaitchen@gmail.com, phone: 1.646.252.3311

Thursday, November 6, 2008 6:00 pm *
A New York City Transit Museum Event: WALL STREET REVISITED: SUBWAY STATION REHABILITATION. Select stations in lower Manhattan provide extraordinary and striking examples of how the first subway architects succeeded in balancing form with function. The century-old Wall Street stop on the 4, 5 lines is one such station. Restoration to its original grandeur was completed in February of this year after a two-year renovation and rehabilitation project. Noted for its distinctive cast-iron entry structures, colorful mosaics, and wooden token booth, the station features replicas of historic glass tiles, mosaic faience, marble wainscot, and architectural woodwork. Meet architects from New York City Transit who were instrumental in achieving this milestone

Friday, November 7, 2008 at 2:00 pm (poster on page 8)
EE Armstrong Memorial Lecture/SSCS Distinguished Lecture by Thomas H. Lee from Stanford University
Location: Davis Auditorium, Columbia University, Schapiro Building, 4th floor, 520W 120th Street, New York 10027
Information and travel directions edsscs.googlepages.com

Wednesday, November 12, 2008 3:00 — 5:00 pm
Section Executive Committee (ExCom) Meeting, followed by the Election of the Executive Committee Chairs and Officers for 2009
Location: Con Edison, 4 Irving Place New York, NY 10003 (no walk-ins for security reasons)
RSVP required: Paul Sartori sartorip@coned.com

Thursday, November 13, 2008 7:00 pm
Location: IBM T.J. Watson Research Center, 19 Skyline Drive, Hawthorne, NY 10532
This lecture has been approved for 0.1 Continuing Education Units (CEU). For directions and detail information, please visit the event web page at IEEE Tappan Zee Subsection website, www.ewh.ieee.org/r1/new_york/tz

Thursday, November 20, 2008 5:00 pm — 7:00 pm
Location: Con Edison, 4 Irving Place New York, NY 10003 (no walk-ins for security reasons)
RSVP required: email preferred, Arnold Wong wongar@coned.com or (212) 460-4189 (all are welcome)

November 25, 2008 – January 4, 2009 *
7th ANNUAL HOLIDAY TRAIN SHOW New York Transit Museum Gallery Annex and Store at Grand Central Terminal This year’s annual Holiday Train Show will feature a working “O–gauge” train layout with Lionel trains running on eight separate loops of track through a 34-foot long miniature New York City scene. Vintage trains from the Museum’s collection, made by Lionel, American Flyer and Louis Marx & Company, will also be on display.

Friday, December 5—Saturday, December 13, 2008 *
CISSE—2008 Conference on Computer, Information and Systems Sciences, and Engineering
CISSE 2008 is the fourth conference of the CISSE series of e-conferences.
http://www.cisse2008online.org

Thursday, December 11, 2008 7:00 pm
Tappan Zee Subsection presents Dr. Lurng-Kuo Liu, Research Staff Member, IBM with a lecture on Multicore Computing: From Game Console to HPC Server
Location: IBM T.J. Watson Research Center, 19 Skyline Drive, Hawthorne, NY 10532
This lecture has been approved for 0.1 Continuing Education Units (CEU). For directions and detail information, please visit the event web page at IEEE Tappan Zee Subsection website, www.ewh.ieee.org/r1/new_york/tz

* A non IEEE event of interest to our readers

For updates on the calendar of events view the NY Monitor online

— www.ieee.org/nymonitor/ —

Online community at www.ieeecommunities.org/ieee.ny
NY Section website at ewh.ieee.org/r1/new_york/

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At its heart, the IEEE is a professional organization that enhances its members and the community at large. In the case of the IEEE, the community at large is indeed very large: The IEEE is at work in over 150 countries! This gives it a particular strength in addressing this core mission. The IEEE is the world leader in Standards, technical publications, and continuing educational programs. It publishes 30% of the world’s EE literature. As many of you know, our PES/IAS chapter offers PE Review courses and many of our chapters now certify their programs with CEUs and PDHs. The region has recently established an Industrial Liaison group to emphasize the importance of this function to interested employers. Shu-Ping Chang is our representative to this council.

The Region 1 meeting also was the occasion for several meetings with our new Southern Area Chair, Durga Misra. As a result, three initiatives are already planned: a joint PES/IAS meeting, a Section Chairs meeting in October, and an Industrial Liaison–sponsored workshop in November.

If you haven’t gone to a PES Outing before, let me tell you that it’s quite an experience – even in pouring rain. This is an annual social outing with friends and colleagues, games to play, food to eat, and prizes to win. Our guys have been doing this for decades. Check it out next time, I know I’ll be back.

Next up was the Sections Congress (SC08), a triennial meeting of Sections from around the world. Thousands of engineers came to Quebec and the program was all in English! My family and I have been to Canada many times. We’ve been to Newfoundland, Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Ontario, Alberta, and British Columbia. The hospitality and friendliness we were shown was exceptional and the beauty and cleanliness of this city is extraordinary.

One theme of the Congress was the creativity and innovation of engineers. This was highlighted in the Awards ceremony and several workshops. However it is essential that our Society find ways to adapt to changing technologies and changing economic conditions. Some companies that used to be staunch supporters no longer are and some new technologies don’t quite fit in our society’s slots. At a Keynote Address, Ibrahim Gedeon, Senior Vice President of communications giant Telus, noted that he offered 800 of his employees free membership in the IEEE. He had only four takers. We need to do a better job of positioning ourselves in the forefront of developing technologies.

Next year, 2009, is the 125th Anniversary of the IEEE if you count its forebears AIEE and IRE. Plans to build on this were rolled out at SC08. I am interested in exploring ways to demonstrate and promote engineering as an exciting, creative, rewarding career. One way is through the Engineering Milestone program. In addition to calling attention to facilities and discoveries of the giants who came before us, it can portray engineering as a deeply satisfying, often ingenious, way to help solve the world’s problems. The IEEE has developed a special 125th anniversary logo that we can use for publicizing events, contests, programs, and publications, please use it in your posters.

In March 2009 the IEEE plans a special media event. Stay tuned for details. As the world’s largest society of technical professionals and a trusted source for information we need to better communicate the business value of IEEE membership to students, educators, the public, and businesses. The 125th Anniver-

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Globalization is a force that is creating demands for engineering solutions. Businesses need to monitor and control ever increasing, ever diversifying groups of people and apparatus. The systems that we put in place to do so need to have standards so they can communicate, share information, or interoperate. Two of the awards given at the Sections Congress went to pioneers in information technology - Gordon Moore, a founder of Intel and Tim Berners-Lee, an inventor of the internet. On another front, while some are trying to do 'without borders,' engineers are developing techniques for remote diagnosis of medical conditions and delivery of cures and palliatives.

Lastly, I was privileged to attend the Engineering Milestone celebrating the dc power plant at the New Yorker Hotel. The New Yorker Hotel Milestone documented a great leap forward in providing electricity in 1929. In attendance were members of the press, New Yorker executives, John Vig, the IEEE 2009 President-Elect, Region 1 Director Howard Michel, and other officials from Region 1, the NY Section, and IEEE Headquarters. It was quite a day.

Energy is one of our greatest challenges. The imbalance in supply and demand, the inefficiency and pollution, and the cost are real opportunities for our profession. Engineers should find ways to increase production, deliver cleaner energy, conserve more, build ‘greener,’ and improve the grid to make it more flexible and reliable. Hopefully there are more Milestones in the future that illustrate the ingenuity of our fellow practitioners. Perhaps in decades to come they will say that they are standing on the shoulders of giants – ours.

David Weiss (daweiss@ieee.org)

CALL FOR ABSTRACTS
FIFTH INTERNATIONAL CONFERENCE ON ETHICAL ISSUES IN BIOMEDICAL ENGINEERING

APRIL 3 – 5, 2009
www.downstate.edu/grad/bioethics2009.html
www.poly.edu/graduate/bioethics2009/
CONFERENCE SITE - Polytechnic Institute of NYU FIVE METROTECH CENTER, BROOKLYN, NY 11201
Abstract: History might be monotonous, but it's certainly not monotonic, common textbook presentations notwithstanding. The history of radio is no exception to this rule. Soon after the laying of the first transatlantic telegraph cable after the American Civil War, a collection of visionaries and those of dubious mental stability proposed various schemes for wireless communications. In 1872, William Henry Ward and Mahlon Loomis independently patented proposals to use the atmosphere as a conductor. A few years later, David Edward Hughes demonstrated the first portable wireless apparatus before singularly unimpressed members of the Royal Society. The patenting of wireless TDMA by Tufts University professor Amos Dolbear soon after that was greeted with a similar indifference. It took the experiments of Hertz in 1887 to stimulate wider, serious consideration of wireless communications. In short order, Bose, Popov and Lodge demonstrated necessary elements of wireless technology, and fortuitous developments by Calzecchi-Onesti, Ducretet, and Branly enabled receivers with adequate sensitivity. Marconi's upscaling of these foundational technologies transformed wireless from a science project into a global business.

This talk will trace those developments, as well as the transition from Marconi's station-to-station spark-based wireless telegraphy to technologies based on the continuous wave, enabling station-to-people broadcasting, and setting the stage for Armstrong's many inventions. We'll meet Braun, de Forest, Fessenden, Alexanderson, as well as less well-known contributors such as Poulsen, Elwell, and Fuller. Their contributions — spanning rotating machines, naturally-occurring semiconductors, vacuum tubes, and glowing arcs — highlight the nonlinearity and non-monotonicity of the flow of history.

Speaker's Bio: Tom Lee has been teaching radio frequency (RF) and analog circuit design at Stanford University since 1994. His passion for all things RF was undampened by the prevailing belief at MIT that "RF was a solved problem." His doctoral thesis, believed to describe the first CMOS wireless receiver (an FM radio, in 2μm technology), impressed absolutely no one, and likely would have set back the cause of RF CMOS by several years had any journal published his papers. He is the author of several textbooks, including "The Design of CMOS RF Integrated Circuits" (Cambridge Press; 2nd ed.). He's twice won the "Best Paper" award at ISSCC, and was honored with a Packard Foundation Fellowship in 1997. He has contributed to the development of Phase Locked Loops for several generations of AMD microprocessors, as well as for the StrongArm and Alpha CPUs. He co-founded Matrix Semiconductor in 1998 (acquired by Sandisk in 2006) to commercialize 3D memories, and founded ZeroG Wireless in 2006. In his spare time, he builds discrete circuits, RF and otherwise, using anything from oxidized pocket change to ICs. In his other spare time, he enjoys playing chamber music and singing.
2008 IEEE★USA Annual Meeting
Report by Leon Nock – PACE Co-Chair

This year’s IEEE★USA Annual Meeting (April 25-27, 2008), held in Indianapolis, Indiana had as its theme “Green Engineering - A Push Towards Sustainability”. As such, the Keynote Address was delivered by Jill Buck, founder of the “Go Green Initiative”. She stressed that “Green Business was Good Business” and although we’re in the business of making money, this goal is not divergent from the goal of sound environmental practices. The Conference ran three tracks - Leadership Training and Issues, Local Programs and Resources, and IEEE★USA Activities. The meeting included a number of presentations by speakers, panel discussions and breakout presentations, and working sessions. Al Reinhart, Region 1 PACE Coordinator, led a breakout session during which he provided a Regional PACE update, including a discussion of funding and goals as well as opportunities and challenges.

During the Saturday Luncheon, the candidates for IEEE★USA President-Elect (Ron Jensen and Evelyn Hirt) and the candidates for Member at Large-Elect (Jean Eason and Emily Sopensky) debated their positions and views. The Annual Meeting, as its highlight, included the Awards Reception and Dinner and recognized approximately 20 individuals for their contributions to the IEEE and its membership.

The Annual IEEE★USA Meeting was attended by approximately 200 IEEE members and staffers, the largest number attending since inception. Region 1, encompassing New England, New York, Long Island and New Jersey contributed approximately 15 participants. Jignasa Ray, Gold Chair, and I represented the New York Section. We attended sessions relating to the following topics:

- Change in Model Engineering Licensure Law
- Energy Debate: How Can You Impact Change
- Overview: Professional Development Seminars
- Congressional Visits
- Politics and Green Engineering
- Sections Going Green

Of most interest to me was the presentation relating to the work being done by the IEEE’s Energy Policy Committee. I am very interested in this topic and will endeavor to become involved. I hope to be able to provide input involving my expertise involving the setting of America’s energy policy as it may relate to both plug-in and hybrid electric vehicles and green power sources such as hydro and wind. I was also very interested in the work being done by the IEEE Committee involved with accrediting both individual engineering courses and engineering programs or courses of study offered by America’s colleges and universities.

The Annual Meeting provided an opportunity for IEEE members and staffers to network and discuss matters and issues of mutual concern. The 2009 Annual Meeting will take place in February or March in Salt Lake City.

NOTE: You can find out more about the presentations on the IEEE★USA website
www.ieeeusa.org/calendar/conferences/2008annualmeeting/program/
PREPARE & CONDUCT A PRESENTATION
By Marty Izaak (PACE Chair)

Engineers at some point in their career will have to make a presentation using PowerPoint. I recommend the following in conjunction with practicing public speaking:

Know your audience: People who come to presentations want to know what value this talk will provide for them. Understanding your group and targeting the subject matter to them will help accomplish this task. Provide examples or cases relevant to the audience to make the topics easier for your listeners to grasp.

Visit the room before the event: Knowing the environment builds confidence. A visit to the room beforehand to familiarize yourself with the size, seating arrangement, lighting, and lighting controls will help prevent problems related to technology malfunctions.

Provide an agenda: Engineers like to get an overview before getting into the details. Providing a printed agenda accomplishes this. It is like serving an appetizer before the main course.

Position yourself front and center: You should position yourself front and center; be sure that the position of the laptop and screen allows you to take audience focus throughout the presentation.

Use graphics to enhance your slides: Pictures, slides, and charts are an effective tool in getting your points across. Make sure you cite the sources properly.

Maintain audience focus: Plan how you will maintain audience focus on yourself while the slides are being changed gracefully.

Use humor to enhance the presentations. Making people laugh eases anxiety for speakers and listeners. Video and music are effective tools that can be used to engage your group and asking questions promotes discussion and dialog among the attendees.

PES ELECTION FOR YEAR 2009
Officers of the Executive Committee of the PES Chapter for January 1, 2009 — December 31, 2009

Wednesday, November 5, 2008, at 4:00 PM
All Members in good standings - except Student or Affiliated Members - of the New York Section are eligible to vote. The election meeting will take place at Consolidated Edison Company of New York, 4 Irving Place, Room 1549-S, New York, NY 10003. Voting will take place promptly at 4:15 PM.

Chairman – Ajoy Das
Vice Chairman – Neil Weisenfeld
Treasurer - Bill Montgomery
Secretary - Mohammad Hossain
Senior Member-at-Large - Paul Sartori
Junior Member-at-Large – Michael A. Miller

For information contact Ralph Mazzatto—Chair 2008 Nominating Committee PES - IAS NY & LI Chapter

NOMINATIONS FOR LIFE MEMBERS BOARD
The nomination committee selected the following officers for 2009 board members of the Life Members Chapter.

Amitava Dutta-Roy - Chair
Roland Plottel - Vice-Chair
Eli Elvove, PE - Treasurer
Michael A. Miller - Secretary
Lewis Terman - Program Chair

If any member wishes to make additional nominations, please submit them as soon as possible to Michael A. Miller at michaelamiller@optonline.net.

Elections will be held at the IEEE NY Section Election meeting scheduled for November 2008

Speak slowly and clearly: Practice in front of a mirror and tape record yourself to visualize and hear how you’re presenting and coming across. Have others critique you in a dress rehearsal presentation to improve the presentation. Listen to your peers and include their recommendations to improve the presentation when it’s time for you to conduct it live.

Keep to your allotted time: It is rude to go over or under your scheduled time. If you’re supposed to present for 90 minutes, keep it to 90 minutes.

Use humor to enhance the presentations. Making people laugh eases anxiety for speakers and listeners. Video and music are effective tools that can be used to engage your group and asking questions promotes discussion and dialog among the attendees.
Arc Fault Circuit Interrupters – A Brief Overview
By Camille Alma

It is likely that most of us are reasonably familiar with the various electrical protective devices in our homes such as circuit breakers and fuses, ground-fault circuit-interrupters (GFCIs), and surge suppressors, even if we pay little attention to them until they unexpectedly trip while we are in the middle of composing an email or heating up that cold cup of coffee in the microwave. A somewhat lesser-known and comparatively newer device is the arc fault circuit interrupter, or AFCI. This device is another in the overall series of products available to further protect residences against the risk of fire due to an undesirable electrical condition.

Specifically, an AFCI protects against the effects of arc faults by recognizing characteristics unique to arcing and then functioning to de-energize the circuit when an arc fault is detected. Arcing can occur at power levels lower than would otherwise trip a circuit breaker, and as such, has the potential to continue undetected for a longer period of time, increasing the risk of fire. In the home, such arcing is most often produced by frayed or damaged wiring caused by any number of circumstances including normal deterioration, excess pressure from furniture or appliances, staples, nails, etc. AFCIs are intended to recognize these arcing levels and trip to interrupt power to the circuit. While some degree of arcing occurs during the normal use of household items such as lighting or certain types of appliances, AFCIs are designed to discriminate between this “normal” arcing and unwanted arcing. (As with any protective device, repeated tripping warrants further investigation by a qualified professional.)

There are several types of AFCIs, categorized primarily by where they are located and what they protect, as follows:

Branch/Feeder AFCIs are installed at the origin of the branch circuit/feeder and are intended to protect downstream branch circuit/feeder wiring. They also provide limited protection of branch circuit extension wiring. They are provided in their own enclosure for installation at or near the panelboard, or are of the circuit-breaker type. Circuit-breaker type AFCIs may also include GFCI protection. Such devices protect against short circuits, arc faults, and ground faults in a single unit.

Outlet Circuit AFCIs are devices with or without receptacle outlets installed in an outlet box. Those with receptacles outlets are intended to protect connected cord sets or power-supply cords. Outlet circuit AFCIs may also protect cord sets and power-supply cords connected to downstream wiring.

Combination AFCIs are a combination of branch/feeder and outlet circuit AFCIs. They are intended to protect both downstream branch circuit wiring and downstream-connected cord sets and power-supply cords.

Cord AFCIs are plug-in devices and protect only the power-supply cord to which they are connected. Portable AFCIs are devices intended for direct connection to an outlet and provided with one or more integral outlets for the protection of cord sets and power-supply cords connected to the AFCI.

AFCIs were first introduced in the 1999 Edition of the National Electrical Code (NEC) ANSI/NFPA-70, for the protection of residential bedroom branch circuits. Since then their scope of coverage has steadily expanded. The 2008 Edition of the NEC now requires AFCI protection of all 120-V, 15- and 20-A branch circuits supplying outlets installed in bedrooms, living rooms, dining rooms, family and recreation rooms, dens, hallways, and similar rooms, specifically by a combination AFCI. Integral, factory-installed AFCIs are also one of the types of protective devices required by the NEC on all single-phase, cord-and-plug-connected room air conditioners.

At present, the most widely available AFCIs types are the branch/feeder, combination, and cord types, likely due in large part to the specifications put forth by the NEC.

Camille Alma is a Standards Engineer and Project Manager with Underwriters Laboratories, Inc. She has worked on the development of a wide variety of electrical standards and was part of the team that developed the First Edition of the Standard for Arc Fault Circuit Interrupters, UL 1699.
CONTESTS & COMPETITIONS
The NY Section congratulates the winners of the IEEE 2008 Web Site Contest as announced by Pablo Herrero, the IEEE Region 8 (R8) Student Representative to the MGA Students Committee:

First Place: (US$ 1,000)
**NEAR EAST UNIVERSITY R8**
www.ieee.neu.edu.tr/

Second Place: (US$ 750)
**THE UNIVERSITY OF WESTERN AUSTRALIA R10**
www.uwaieee.org

Third Place: (US$ 500)
**UNIVERSITY OF SOUTHAMPTON R8**
www.ieee.ecs.soton.ac.uk/

Runner Ups: (US$ 250)
**UNIVERSITY OF ONTARIO R7**
www.uoitieee.com

**UNIVERSITY OF ZAGREB R8**
www.fer.hr/ieee

**VIRGINIA TECH R3**
www.ieee.vt.edu/

**CHRISTIAN BROTHERS UNIVERSITY R3**
stu.cbu.edu/Clubs/ieee/

**VIRGINIA COMMONWEALTH UNIVERSITY R3**
www.vcuieee.org/

**INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY, BANGALORE, INDIA R10**
www.ieee.org/iiitb

**UNIVERSIDAD NACIONAL DE COLOMBIA R9**
www.ieee.unal.edu.co/bogota

ELECTION
OFFICERS & ELECTED COMMITTEE CHAIRS
IEEE NY SECTION EXECUTIVE COMMITTEE 2009
All Members in good standing - except Student or Affiliated Members - of the New York Section are eligible to vote. The election meeting is scheduled for Wednesday, November 12, 2008 beginning at 5:00 pm in the Edison Room at Con Edison, 4 Irving Place, New York NY 10003.

**OFFICERS**
Chair Warner W. Johnston
Vice Chair Operations David Horn
Vice Chair Activities Darlene Rivera
Treasurer Balvinder Blah
Secretary Matt Nissen

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Chapter Organization Stanley Karoly
Managing Editor-Monitor Marlen K. Waaijer
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Long Range Planning William Perlman
Publications Ben Schall
Special Events Ralph Tapino
Web Master Harold Ruchelman

IMPRESSIONS FROM THE NEW YORKER
“IEEE MILESTONE” EVENT
By Joseph Cunningham

Joe Kenny set out some interesting documents and artifacts covering the early years of the New Yorker Hotel. I have been a “Ham” radio Operator for over thirty-five years and it was extremely interesting that many of the booklets on display covered Amateur Radio.

It was nice to thumb through the old pages, especially the “Hudson Division’s” 1935 Convention and Hamfest Guide. The Hudson Division is still an active part of the American Radio Relay League, (ARRL) promoting the art of amateur communications, emergency communications as well as national and community service.

I threw the picture of the Sangamo meter into the fray because we still have some in use today in the NYC Transit Power System.
You are invited to a joint meeting of the PES, IAS and LM IEEE NY Chapters on:

**The Dialogs of Global Financial Markets where Laws of Physics Reign**

Thursday, November 20, 2008

5:00PM to 7:00PM

The financial markets are something we traditionally rely on and hear talked about incessantly in the media with this year’s hot topics “financial meltdown”, “sub-prime” and “government bailout.” But how do the financial markets operate, communicate between each other and what technologies do they use? This presentation offers a glimpse into several parts of the financial markets and looks at what goes on, and how things typically work technically. We’ll discuss trading systems, real-time information distribution, and the role of news in driving trading activity. This presentation, instead of dealing with specific products, will focus on what banks, hedge-funds, and brokerages do - what sort of technology and technology challenges they face on a daily basis and why things are getting faster and faster and more and more volatile.

The presenter: Nic Fulton is the Chief Scientist of Thomson Reuters Markets with a responsibility for designing and architecting multi-media products and investigating how the company can take advantage of new and emerging technologies in its product line. He heads Reuters Labs, a public showcase of early product features and concepts. His recent projects have included examining the role of mobile phones in journalism, the interplay of bloggers and Reuters news; users’ social networks in an information rich environment; cross-medium news consumption and personalization; and the use of music as a medium to deliver news to gen-Y. His team developed Reuters interactive TV. Nic has been a member Reuters core Research and Standards group. In Nic’s spare time he plays electronic keyboards and writes music (very poorly), designs t-shirts, paints and tries to keep fit cycling and running. However, his family’s real passion is sailing, and he spends as much time in the summer as possible out sailing on the Long-Island sound in a 30’ Catalina. Nic is a volunteer teacher at a Harlem middle school where he teaches 12-14 year olds about the financial facts of life and why it is really important to get a good education. Nic has a PhD in Quantum Physics from the University of London. He lives and works in New York with his astrophysicist wife and children.

All are welcome, no walk-ins for security reasons
RSVP required: email preferred
Arnold Wong wongar@coned.com or (212) 460-4189

**Vol. 56  No. 8 — November 2008**

**NY IEEE Monitor**
The events on this page have been approved for 0.1 Continuing Education Units (CEU) through the IEEE. The processing fee for recording the CEU is $20 payable by check made out to IEEE NY Section at the time of the event. Signing up for CEU credits prior to the lecture is encouraged, but not required. To sign up or for further information, contact Henry Bertoni at hbertoni@poly.edu. You will also receive a CEU Program Evaluation form to fill out during the event. Note that both application fee and evaluation form need to be completed and handed in at the end of the event. Otherwise, we cannot process your CEU application.

For directions and detailed information for either of these events, please visit the event web page at IEEE Tappan Zee Subsection website, www.ewh.ieee.org/r1/new_york/tz/

A Presentation by R. F. Windas, PE, CMfgE

Batteries have been used as assorted portable power sources for devices for more than a century. The applications have enabled many astounding and marvelous creations — from satellites to space probes to pace-makers and beyond. Electric current from a battery is the result of the chemical reactions between component materials within the cells of the battery. It is the chemistry that enables the free electrons to move from the battery to energize devices so they can perform their tasks, only to return to the battery to complete the reaction’s balance. The purpose of this presentation is to review the elementary aspects of this natural phenomenon. Batteries are going to change dramatically in the future and will serve a bigger role in the transportation arena and the electrical service of homes. Batteries can provide a steady state balance that will help offset peak load conditions and normalize what now is a demand-based utility service.

Windas will show the audience the various phases that occur in a typical battery and highlight the reasons why these events yield the resulting current. The reversibility of the chemical reactions provides the rechargeable battery with remarkable features. With the use of new materials, the weight, size, and charging cycle-time of batteries will be reduced while capacity and service-time between recharging will be increased.

CEU for P.E. The events on this page have been approved for 0.1 Continuing Education Units (CEU) through the IEEE. The processing fee for recording the CEU is $20 payable by check made out to IEEE NY Section at the time of the event. Signing up for CEU credits prior to the lecture is encouraged, but not required. To sign up or for further information, contact Henry Bertoni at hbertoni@poly.edu. You will also receive a CEU Program Evaluation form to fill out during the event. Note that both application fee and evaluation form need to be completed and handed in at the end of the event. Otherwise, we cannot process your CEU application. For directions and detailed information for either of these events, please visit the event web page at IEEE Tappan Zee Subsection website, www.ewh.ieee.org/r1/new_york/tz/

A Presentation by Dr. Lurng-Kuo Liu
Research Staff Member, IBM

Traditionally, increasing clock frequency is the main dimension for conventional processors to achieve higher performance gains. This technique has reached a point of diminishing returns. Multi-core processors, also known as Chip multiprocessors (CMPs), promise a dramatic increase in performance and become more prevalent in vendors’ solutions. The trend of multi-core processors development also brings a shift of paradigm in applications development. The application development process needs to be changed in order to fully explore the potential of multi-core processors.

In this talk, Dr. Liu will discuss multi-core computing based on the Cell Broadband Engine™ (Cell/B.E.) processor. The Cell/B.E., which served as the core of Sony PS3, is a state-of-the-art multi-core processor. It incorporates a PowerPC core for executing general purpose codes along with eight simple yet powerful cores, called Synergistic Processor Elements, for high performance computing. The Cell/B.E. is also available in high-end blade server form factor for high performance computing workloads in a variety of industries. An overview of the Cell/B.E processor including the development history of the Cell/B.E., the hardware architecture, and its programming models for applications development will be presented during this lecture.

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**REVIEW COURSE FOR THE FE EXAMINATION**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Electrical Circuits</th>
<th>3 Classes</th>
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<tbody>
<tr>
<td>Statics</td>
<td>Thermodynamics</td>
<td>2 Classes</td>
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<tr>
<td>Mechanics of Materials</td>
<td>Chemistry</td>
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<tr>
<td>Fluid Mechanics</td>
<td>Economics</td>
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<tr>
<td>Dynamics</td>
<td>Material Science</td>
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<tr>
<td>Mathematics</td>
<td>Probability &amp; Statistics</td>
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<tr>
<th>Classes Begin</th>
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<tbody>
<tr>
<td>In Westchester 33 West Main St Emsford, NY 10523 Room 305</td>
<td>1/22/2009 4/7/2009 Tues, Thurs.</td>
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</tbody>
</table>

*Due to security requirements at the Con Edison Building, registration must be completed by 1/23/09

Strategy Classes are from 6:00-7:45pm, All others are from 6:00-9:00pm

The Fundamentals Course is for the General exam and uses the 8th Edition of the NCEES Reference Handbook. To get the handbook please go to www.ncees.org prior to the first class.

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**REVIEW COURSE FOR THE PE EXAM-CIVIL ENGINEERING**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Waste Water</th>
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<tr>
<td>Soils</td>
<td>Water Treatment</td>
<td>1 Class</td>
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<tr>
<td>Concrete</td>
<td>Transportation</td>
<td>3 Classes</td>
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<td>Surveying</td>
<td>Structures</td>
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<td>Construction</td>
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<tr>
<td>In Westchester 33 West Main St Emsford, NY 10523 Room 305</td>
<td>1/12/2009 4/15/2009 5 Mon's &amp; 14 Wed's</td>
</tr>
<tr>
<td>In New York City Con Ed Building 4 Irving Place (Union Square Subway)</td>
<td>1/6/2009 4/14/2009 Tues</td>
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</tbody>
</table>

*Due to security requirements at the Con Edison Building, registration must be completed by 12/30/08

Strategy Classes are from 6:00-7:30pm, All others are from 6:00-9:00pm

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**REVIEW COURSE FOR THE PE EXAM-MECHANICAL ENGINEERING**

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<tr>
<th>Strategy</th>
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<td>HVAC</td>
<td>Machine Design</td>
<td>1 Class</td>
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<tr>
<td>Heat Transfer</td>
<td>Vibrations</td>
<td>1 Class</td>
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<tr>
<td>Gas Dynamics</td>
<td>Kinematics</td>
<td>1 Class</td>
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<tr>
<td>Fluid Mechanics</td>
<td>TBA</td>
<td>2 Classes</td>
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<tr>
<td>Economics</td>
<td>TBA</td>
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<tr>
<td>In New York City Con Ed Building 4 Irving Place (Union Square Subway)</td>
<td>1/14/2009 4/15/2009 Wed &amp; 1 Mon</td>
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*Due to security requirements at the Con Edison Building, registration must be completed by 1/5/09

Strategy Classes are from 6:00-7:30pm, all others are from 6:00-9:00pm

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**REVIEW COURSE FOR THE PE EXAM-ELECTRICAL ENGINEERING**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Electricity</th>
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<tr>
<td>HVAC</td>
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<tr>
<td>In New York City Con Ed Building 4 Irving Place (Union Square Subway)</td>
<td>1/8/2009 4/16/2009 Thurs &amp; 3 Tuesdays</td>
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</table>

*Due to security requirements at the Con Edison Building, registration must be completed by 12/30/08

Strategy Classes are from 6:00-7:30pm, all others are from 6:00-9:00pm

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**Course Location:** (Please circle)  
Long Island  
NYC  
Westchester

Tuition (Includes non-refundable $30 registration fee)

<table>
<thead>
<tr>
<th>Fundamentals of Engineering Review</th>
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<tr>
<td>PE Review for Civil Engineering</td>
<td>$695</td>
</tr>
<tr>
<td>PE Review for Mechanical Engineering</td>
<td>$650</td>
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<tr>
<td>PE Review for Electrical Engineering</td>
<td>$695</td>
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Daytime Phone #:  
Daytime Email:  
Expiration Date:  
Signature:
2009 NY Section Awards Dinner Dance

THE 2009 NY SECTION AWARDS DINNER DANCE HONORING THE SECTION'S AWARDEES WILL BE HELD ON SATURDAY EVENING, FEBRUARY 21, 2009

This year, our dinner dance (black tie optional) will be held in the beautiful Trianon Ballroom, located on the third level (coat check is on the second) of the New York Hilton Hotel and Towers at Rockefeller Center, 1335 Avenue of the Americas (between 53rd and 54th Streets).

Festivities will begin at 6:30 P.M. with crudités and cocktails in the Petite Trianon. Here we will have a chance to relax, get acquainted and reacquainted.

You will have the opportunity to pamper your palate with a choice of either a succulent meat or a delicious fresh fish steak. Each gourmet entree will be accompanied by an appetizer, salad and dessert. There will be a brief awards ceremony after dinner and dancing to the sounds of the Dance Fever Orchestra.

For those wishing to spend the night, hotel reservations may be made on-line at various web service providers or directly with the hotel at 212-586-7000. There are no special arrangements made for parking.

Reservations for the affair may be made by completing the coupon below and forwarding it to William Perlman at the address indicated before February 1, 2009. Corporate supporters: Table of 10 at $1850.00

A special non-transferable rate of $100 for each ticket is available to IEEE members. Note that this rate is for the attending IEEE member and a guest only.

Organizations wishing to be Industry Supporters or non-IEEE members may obtain additional information and cost by contacting: Ralph Tapino (718) 761-5104 / raltap@aol.com or William Perlman (973) 763-9392 / w.perlman@ieee.org

MEMBER RATE RESERVATION FORM

Send to:
William Perlman
267 Richmond Avenue
South Orange, NJ 07079

Please indicate meal selections:

Name:________________________________________________
Company:_____________________________________________
Address:______________________________________________
City: __________________________ State: ______ Zip Code:___________
Telephone: __________________________
IEEE Member # _________ No. of tickets @ $100.00 ________
NON-IEEE Member No. of tables @ $1850.00___________
No. of tickets @ $185.00 ___________
Amount Enclosed $______________

MAKE CHECK PAYABLE TO: IEEE, NY Section