



Advancing Technology for Humanity

New York Monitor

A PUBLICATION OF THE IEEE NEW YORK SECTION

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Our future engineers

Page 6



IEEE

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Advancing Technology for Humanity

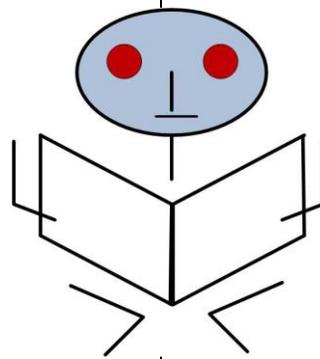


The autumn is upon us. The foliage has changed (or is about to change) its colors. Many trees are about to go into hibernation until the spring arrives again. Ah, that will be 2015! As a human being, I love the autumn. The temperature outside, though pleasant, is not particularly inviting for many outdoor activities. Schools and colleges are running at full-steam. Our focus intuitively turns to indoor enterprises. Besides taking care of your job or business that you must do to earn your livelihood, it is perhaps a good time to involve ourselves with our old-fashioned desk-bound pursuits such as reading, writing and introspecting. While pondering about them you might come across interesting ideas for turning the IEEE and our Section more attractive to the young



minds. The IEEE is committed to nurture our future engineers and help them advance in their careers. Brilliant ideas serendipitously come when you least expect them. When you get these bursts of unexpected brain waves, we hope you will jot them down and throw at the Monitor. We need to publish these ideas to make the Monitor a *must* for reading! That will do a world of good to the NY Section. They will also encourage your peers to voice their opinions. In the meantime, I hope you will enjoy the few pages we can offer you in this edition of the NY Monitor.

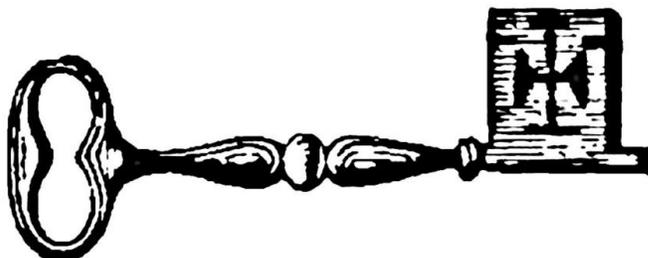
Amitava Dutta-Roy, PhD, LF
Editor





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FIFTH ANNUAL MAKER FAIRE IN NEW YORK (20-21 SEPTEMBER 2014)

Part One

New York Hall of Science, Flushing Corona Park was the venue this year for the fifth Annual Maker Faire in New York city. Happily, the dates (almost) coincided with the 1939 and 1964 New York World's Fairs at the same park. (I attended the second Fair fifty years ago on my first visit to this country.) This year's Maker Faire was also my first visit to the show and initially I was apprehensive that it would be something amateurish. Wasn't I wrong in my assumption?

The Maker Faire is the brain child of Dale Dougherty, the founder and CEO of *Make*, a magazine for do-it-yourself (DIY) enthusiasts, an ad hoc assembly of teenagers and adults hobbyists, tinkerers, engineers, scientists and artists (dubbed "makers") from all over the world.

For the hardcore DIY enthusiasts and writers the Faire started with a private event on 19 September at 6pm sponsored by Atmel that makes Arduino open-source microcontrollers. Under a blue sky we were well fed with sumptuous helpings of *paella*. Though none except the DIYers was allowed it gave me an idea how big the Faire would be during that weekend. I would estimate that some 2,000 enthusiasts were there at the *paella* dinner rubbing shoulders with each other in a festive mood. My wife and I sat on a bench to eat our *paellas* and were soon joined by some enthusiasts from other countries. There was an engineer from Toronto and a lady from the Toronto Section of the IEEE. We also had the company of a septuagenarian lady, a LED-studded jewelry maker from England. They all paid their own travel

costs; they love the idea behind the hobby and educational aspects of the DIY of encouraging and training the young persons (as young as six year-olds). It really opened my mind to the infinite possibilities of sharing our knowledge and experience with the younger generations. Most of the exhibitors were not even interested in selling their artifacts. They were there just to show that they were makers. How wonderful in this dog-eats-dog world.

On the following day, we returned to the Fair as early as we could make it. Our day started with a press conference offered by Mr. Dougherty, a plain-speaking person with big ideas (not for making tons of money, I assume!) for nourishing young minds. He spoke about the Maker Faire organization and how an individual, a community, a school, or a college could hold "mini" Faires. Obviously, there are some conformity issues such as the use of the Maker Faire logo. However, in exchange, a new organizer would get the support of Mr. Dougherty and his staff and can take advantage of the experience they have acquired since the first Maker Faire event in 2006 in San Mateo, Calif.

The following highlights from the press release on World Maker Faire in New York 2014 give an idea of how big and popular it was.

- Number of attendees: 85,000, an increase of 17 percent over 2013
- The attendees came from 45 states of the USA and 36 other countries
- The show could boast of 830 maker projects including presenters, performers and attractions

- More than 20 percent of the makers were first-time exhibitors
- Over 32 percent of the attendees were first-time visitors to the Faire
- Mr Bill Blasio, the mayor of New York City proclaimed 15-23, September the third annual “Maker Week”
- Recycling and sustainability continued to be a huge focus for the Faire that resulted in 65 percent of waste diversion rate this year
- 11,000 pounds of food waste composted
- 500 pounds of food donations
- 1,450 pounds of reusable materials donated to local organizations and makerspaces
- Over 51,000 pounds waste diverted from landfills

“World Maker Faire once again has proved that the New York Hall of Science (NYSCI) is the focal point for ‘making’ in New York areas,” said Margaret Honey, president and CEO of NYSCI. “Not only has the Faire become the ultimate maker experience, but NYSCI is also a home to a

full year’s worth of maker programs, workshops and special events that help the maker community grow and prosper. The maker movement has a home at the New York Hall of Science and we are already looking forward to World Maker Faire of 2015.”

World Maker Faire will return to the New York Hall of Science in Queens on Saturday and Sunday, 26 and 27 September, 2015 respectively. Mark your calendar.

Note: We took many pictures at the Maker Faire and are still in the process of compiling them so that the readers can view them in a slide show. We intend to publish those pictures in *Part Two* of this review in the next issue of the Monitor. In the meantime, you can read an excellent review of the Faire in the IEEE Today’s Engineer by Mr Donald Christiansen, LF, the former editor, and publisher of the IEEE Spectrum at

<http://www.todaysengineer.org/2014/Oct/backscatter.asp>



Paella dinner, Courtesy: Atemel and Arduino



Paella dinner and visitors from Toronto Section of the IEEE



Dale Dougherty, the founder of the Maker Faire movement at a press briefing



RoboGiraffe and its antics



Robo-Giraffe and its antics



The creator (left) of the Robo-Giraffe



IEEE SPECTRUM COMPLETES 50 YEARS

On Tuesday, 7 September last the IEEE Foundation offered a luncheon party at the Union League Club in Manhattan to commemorate 50 years of the existence of the IEEE Spectrum magazine.

The invitation is self explanatory:

“We don’t know precisely what the next 50 years will bring; but we have an excellent idea of what will be possible, and we know what we hope will happen. To celebrate the 50th anniversary of IEEE Spectrum, we wanted an inspiring and compelling view of the world of tech 25 to 50 years from now, beyond the window of straightforward prediction. We liked the idea of making inferences, at least, about a future as distant from today as we are now from the year of the magazine’s founding. In celebration, we released a special report, which discusses the future we deserve. It contains scenarios for eight of the most promising of today’s technologies. If they develop along the lines we describe, we’ll get the future we deserve.

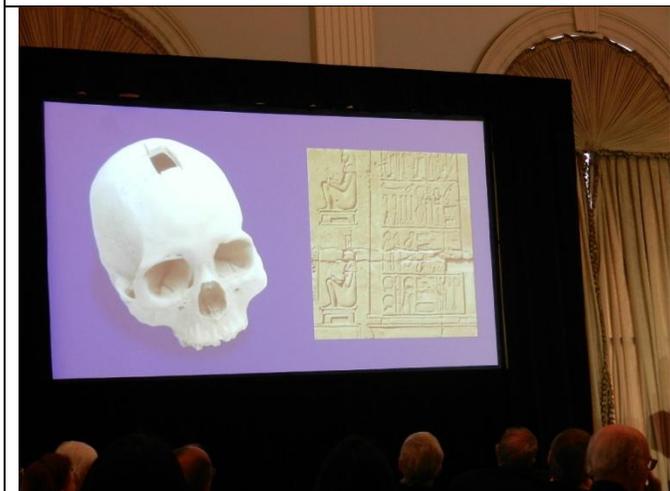
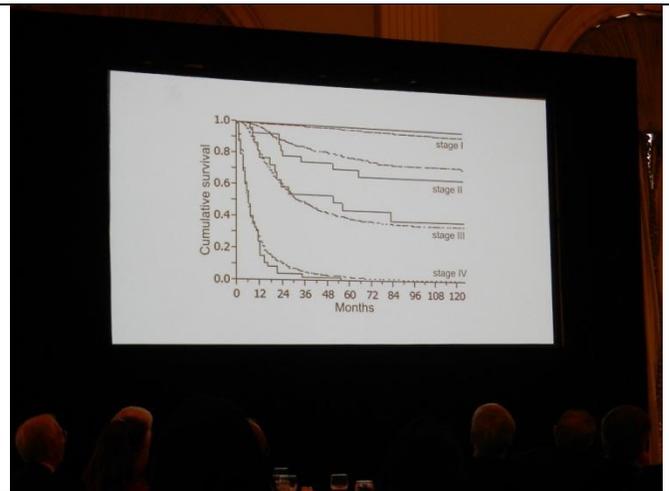
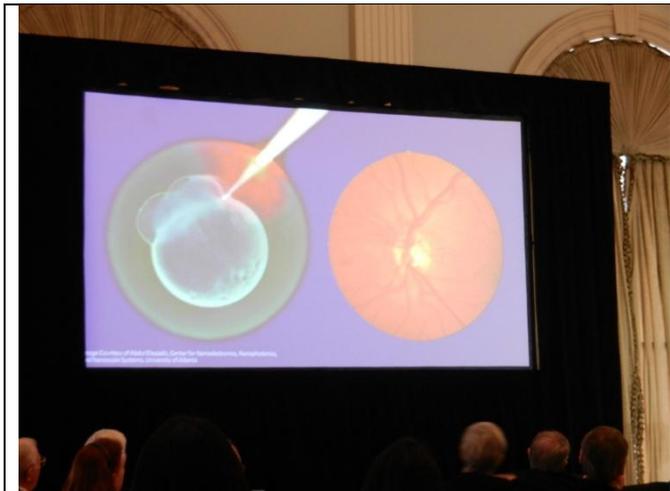
To continue the celebration, we are bringing in a top researcher in the medical technology space for an enlightened discussion on a desired future of the end of healthcare. Today as a society we tend to obsess about healthcare, both in the acrimony of the political arena and in the quiet, private decisions we make every day about our own exercise and nutrition. Looking forward, as technologies are developed that are better at diagnosis, treatment and prevention, we will likely find ourselves moving into a post healthcare world, in which disease and disability simply fades from our collective experience. A desired future may inevitably be an unlikely one. But it is enlightening, maybe



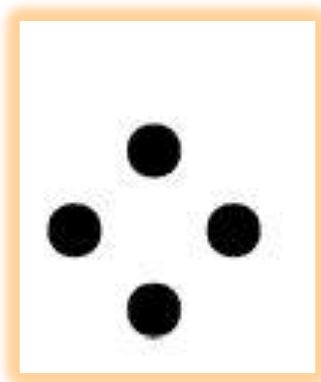
even beneficial, to think about it now, and to identify the kinds of things that would have to happen for that future to come to pass.”

The event started with networking among the IEEE veterans. I imagine that most the guests belonged to the NY Section. I could recognize some familiar faces: Bob Pellegrino (PACE chair, chair of the Tappan Zee Subsection and Region 1 Southern Area chair) and his wife Maria, Peter Mauzey (Member-at-large) and Lewis Terman (past president of the IEEE) I met some of the old hands at the Spectrum, Glenn Zorpette (Executive Editor), Susan Hassler (Editor-in-Chief) and Jean Kumagai, Senior Editor. Bob introduced me to Dr Frederick Mintzer, a 2016 presidential candidate. It was a most pleasant atmosphere.

Dr Catherine Mohr, a pioneer and innovator in medical technology was the keynote speaker. Mohr is a mechanical engineer (BS and MS from MIT) and a medical doctor (Stanford University). Thus, she has deep knowledge of both medicine and engineering. She has also been an entrepreneur. Dr Mohr has spoken at South by Southwest and TED (Technology, Engineering, and Design). At the Spectrum luncheon she spoke of technology and robotics in aid of healthcare and cited many instances where technology played important roles. Throughout her presentation, I could hear the tone “technology.” It is a pity that we do not have any active Engineering in Medicine and Biology Society (EMBS) chapter in our Section. If you know of any medical researcher who is also a member of the IEEE (actually there are several in New York City) please inform the ExComm members. We may be able to lure somebody to reactivate the EMBS chapter. ♦



Some slides from Dr. Catherine Mohr's presentation and attendees (L)





IN the following pages, we list the science and technology-related events announced to take place in New York City and vicinity thought to be of general interest to IEEE members. Not-for-profit associations (including the IEEE) are sponsors of most of the events listed here and usually there is no fee to attend. Some may charge nominal amounts for refreshments provided at the events. Networking among members is encouraged. Some events listed in these current and future pages could even be organized by commercial enterprises and may charge

registration fees. However, since the reach of the science and technology now goes beyond the hitherto closed groups and national borders, we feel that they could bring some value to our members. If you come across announcements of any such event please send an e-mail to the editor and we will consider its inclusion. Thank you.

Disclaimer: None of the events listed here are paid insertions. The Monitor does not accept any paid advertisements for the calendar of events.



**Mon, Tue & Wed, 27, 28 and
29 October 2014**

Clarion Hotel & Convention
Center, Ronkonkoma
NY 11779
More information at
NEWNEB@org

NEWNEB, THE DC UTILITY POWER CONFERENCE

Devoted to the topics important to the utility DC power industry.

Products and developments featured include but are not limited to batteries, battery chargers, control systems, diagnostics and testing, communications capabilities, and much more!

- Designed for electric utility users
- NO commercial or vendor influence
- Expert moderated Users' Forum
- 2014 conference focuses on system reliability and the influence of NERC requirements in shaping the DC utility systems
- Participation of industry leaders, regulators, rule makers, utilities, manufacturers, educational institutions and consultants
- IEEE/NEMA PE 5 working group session added for Wednesday, 29 October to update the NEMA PE 5 that has not been reviewed since 2005

Remember to renew your IEEE membership

27 Oct 2014

6:00pm-8:00pm

Columbia University
Davis Auditorium,
Schapiro Bldg.,
116 Street (x Broadway)
Entrance through Campus
proceeding and then
north.

New York, NY

Subway No. 1 train to

116th Street

Organization: Profs
Charles Zukowski and
Ioannis Kymissis (both at
Columbia U), Robert Pel-
legrino (PACE, NY IEEE)
and Dr Amitava Dutta-Roy
(Historian at IEEE NY Sec-
tion)

Co-Sponsors: The Historian, the Professional Activities Commit-
tee for Engineers (PACE), Systems, Man and Cybernetics Society
(SMCs), and EDS/SSCS chapters of IEEE New York Section jointly
with the Fu Foundation School of Engineering and Applied Science
of Columbia University, Columbia University's EE Dept., Columbia
University Amateur Radio Club, Armstrong Memorial Research
Foundation and the IEEE History Center

**Commemoration of 100th anniversary of
Edwin Armstrong's patent for his regenerative circuit**

"Edwin Armstrong and the Dawn of the Electronic Age"

♣ **Speaker:** Al Klase, Alan R. Klase, Technical coordinator of the
New Jersey Antique Radio Club's Radio Technology Museum at
Infoage

**"Major Armstrong and the Yankee Network: a 1941 re-
cording of FM pioneers' broadcasts between Alpine NJ,
Paxton MA and Mount Washington NH"**

♣ **Speaker:** Gilmore Cooke, Gilmore Cooke, SM of the IEEE and he
is a member of the Boston Section executive committee and chair of
Boston's History and Milestones Committee. He is a graduate of
McGill University and a registered professional in Massachusetts
and California. He served on the IEEE History Committee and has
been an active volunteer of PES and IAS. Since retiring, his histori-
cal interests include New England's electrical engineering history,
Boston Edison L- Street Power Generating Station, and Fred Stark
Pearson.

♣ **Added attraction:** during the celebration, Ms Jennifer S. Comins
from Columbia University's Rare Book and Manuscript Library will
display selected original materials from the library's Edwin H. Arm-
strong Papers.

This year also coincides with the 150th anniversary of the founding
of Columbia's School of Engineering, Armstrong's academic home.
Let us join together to celebrate Armstrong's Alma Mater as we pay
our homage to one of its best known students and faculty members.
(Read all about the School at <http://seas150.columbia.edu/>)

All are welcome. No prior RSVP required. However, the seating is
limited; please come early, get a seat and be comfortable. Contact
Prof Charles Zukowski caz@columbia.edu only if you have any spe-
cial question or request about this august celebration. ♦

Tues, 28 Oct 2014

Refreshments and Net-
working: 5pm
Program: 5:30pm
ConEdison Building
Edison Room, 19th Floor
4 Irving Place (x 14th St.
E)
New York, NY 10003
One block east of Union
Sq.

Organizers: Arnold Wong,
Michael Miller and
Sukumar Alampur
Please RSVP to
wongar@coned.com. Sor-
ry, for reasons of security
no entry without advance
RSVP.

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Thu, 30 Oct 2014

5:30pm-7:30pm
CUNY, Steinmann Hall Au-
ditorium
160 Convent Avenue
New York, NY 10031
Organizer: Simon Odie

**Sponsors: IEEE Power & Energy Society and Industrial Applica-
tions Societies' NY Chapter and Life Members' Affinity Group,
NY**

Transformer Design and Design Parameters

Abstract: The presentation will focus on the basics of transformer design. The presentation will explain how a transformer designer interprets parameters such as MVA, lightning impulse, switching impulse, percentage impedance supplied by a customer. It will touch on power rating [MVA], core, rated voltages, insulation coordination, short-circuit impedance, short-circuit forces, loss evaluation, temperature limits, cooling, and sound level etc. It will also explain overload and life expectancy of a transformer as well as when Delta winding is needed in wye-wye connection. The presentation will answer why in North America we like to regulate from low voltage side whereas in Europe the industries regulate from high voltage side.

Speaker: Ronnie Minhaz, PE holds a B.Sc. degree in electrical engineering from University of Manitoba, Canada. Prior to founding his own company "Transformer Consulting Services Inc. (www.tc-servicesinc.com)", Ronnie worked as a transformer designer at Pauwels Canada (manufacturer), as an equipment engineer at SNC Lava Lin (EPCM) and Enmax Power (utility), and as a substation lead engineer at McGregor Construction (substation constructor). Ronnie is a professional engineer registered in the province of Alberta, Canada and an IEEE member. Ronnie has held leadership positions at IEEE Section level. He is a member of IEEE PES Society. ♦

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**2014 IEEE NY Section S-PAC/i-STEP Student
Conference**

S-PAC, the Student Professional Awareness Conference, provides students, industry professionals, and IEEE leaders the opportunity to share career experiences at one venue. Learn how IEEE can shape your future, and provide career development tools to help you succeed, at the CCNY S-PAC student-conference listed below. Attend the IEEE Region 1 and NY Section sponsored S-PAC event

and glean wisdom from local industry and IEEE leaders from presentations and a panel session where they can help you navigate through the professional world to realize your aspirations. For more information on S-PAC please visit:

http://www.ieeeusa.org/volunteers/committees/spac/general_whattispac.html#whatisSPAC

AGENDA:

- 1- 5:30 PM - Welcome, refreshments and networking
- 2- 6:00 PM - Introduction - Robert Pellegrino & Prof. Ed Baurin
- 3- 6:10 PM - "IEEE One Voice" Video
- 4- 6:15 PM - Keynote: "Your Career – Don't Let it Manage You"
-Bala Prasanna, IBM Program Manager
- 5- 6:45 PM - Introduction of IEEE Organization, Membership Benefits, GOLD Program and Volunteering Opportunity
-Robert Pellegrino
- 6- 7:15 PM - Panel Session "Mentoring for Professional Development"
- 7- 7:30 PM - Concluding Remarks -Robert Pellegrino

Wed, 5 Nov 2014

German House 871 United Nations Plaza

(First Avenue/49th Street)
New York, NY

RSVP by Nov 3

<http://form.jotformpro.com/form/42585615038963>

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Sponsor: German Center for Research and Innovation

Focus on Smart Grid 2014

Lectures and panel discussion

Speakers:

Prof Dr Ingo Stadler, Professor of Renewable Energies and Energy Economics, Cologne University of Applied Sciences, Germany

and

Margarett Jolly, Director, research and Development, Consolidated Edison, New York, USA

Moderator:

Jeremiah Miller, Senior Analyst, Smarter Grid Analytics

Energize your Section

Attend and contribute to the IEEE meetings

Calendar of Events continues on the next page

Fri, 7 Nov 2014
6:30pm-8:pm
Long Island University

Directions;

<http://www.liu.edu/Brooklyn/About/Visit/Directions.aspx> (nearest to De Kalb Avenue station of NYC subway) Organizer: prof Ping-Tsai Chung
All are welcome

Wed Nov 12 2014

6:30pm: Wedge, soft drinks & networking
7:00pm-8pm: Presentation

Tech South Building
Board of Cooperative Educational Services
200 BOCES Drive
Yorktown Heights, NY
10598-4399

Registration via RSVP is required to John Stein,
jstein36@optonline.net

Sponsor: Systems, Cybernetics and Man Society (NY Chapter)

The Big Data Challenge: From Machine Learning and Pattern Recognition Perspective (one of the IEEE SMC Distinguished Lecture Series)

Abstract This talk will first examine the basic characteristics of the problems created by the **big data** scenario. A question naturally arises: are the machines learning and pattern recognition technique capable of handling big data? Examples of large-scale image retrieval to discuss the possible solutions of this problem and to explore potential research issues related to big data.

Speaker: Prof Daniel S. Yeung, Life Fellow of the IEEE, visiting professor, School of Engineering and Computer Science, South China University of Technology, Guangzhou, China. Dr Yeung obtained his PhD degree in Applied Mathematics from Case Western

University. He then worked at Rochester Institute of Technology, TRW, and Hong Kong Polytechnic Institute. He served as the general co-chair, technical programs for 2006

International Conference on Pattern Recognition and 2012 & 2013 International Conferences on Systems, Man and Cybernetics. Dr. Yeung is the founding chair of the IEEE SMC Hong Kong chapter and is the general chair of the 2015 International Conference on SMC that will be held in Hong Kong.

IEEE Tappan Zee (NY) Subsection and ASME Westchester County Section

New Visions Engineering Class

More on the topic: Consisting of 18 component school districts, Putnam Northern Westchester Board of Cooperative Educational Services (BOCES) is a collaborative that provides educational opportunities and supportive services that individual districts are unable to provide as effectively and economically on their own. PNW BOCES Career and Technical Education Center offers a wide range of opportunities to 11th and 12th grade high school students who are considering either college or a career. Career Academies, which integrate academics with technical training, include everything from Advertising Art and Digital Design, New Visions Engineering, The Architecture and Design Lab, Fashion Design and

Computer Graphics to Pastry Arts and Auto Mechanics and much more. The New Vision Engineering class is an academically rigorous one year program for college bound high school seniors who plan to major in an engineering discipline.

PNW BOCES cordially invite members of the SME, ASME, & IEEE to tour the New Visions Engineering class. Listen and observe as students explain their curricula and demonstrate the technologies they use such as 3d Printing, Laser Scanning, Robotics, CNC Machining, Wind Tunnel and Flight simulators, and CADD drawing software.

Speakers:

Gerald Markel has been a licensed Architect in NY State since 1983. He is also a LEED BD&C. Gerry teaches The Architecture and Design Lab and co-teaches the New Visions Engineering class at Putnam Northern Westchester BOCES.

and

Carlo Vidrini, was born and raised in Trieste, Italy. Carlo worked for 25 years in the field of Satellite and Electronics installation/repair in Italy, where he owned CDV Electronics Co. After moving to the United States, in 1999, Carlo began working for PNW BOCES. In 2000 he was appointed as a Telecommunication Instructor. Carlo is a NYS Certified Teacher as well as a C-TECH Certified Instructor for: Intro to Telecom, Copper Based, ISVM (Integrated Systems Voice and Messaging) Fiber, and Smart Home Technologies programs. Since 2009, Carlo has been a Coach/Mentor for the FTC 4244 Robotics Team. ♦

Calendar of Events continues on next page

Wed, 12 Nov 2014

Whole day
IEEE Operations Center,
Piscataway, New Jersey
08854
Organizer: Dr Amruthur
Narasimhan

Sponsor: IEEE NJ Coast Section

Conference on Information Security/Cyber Security and Privacy

♣ Since the turn of the century, information security, cyber security, and privacy have become more critical in our business, government, travel, healthcare, and everyday lives. With society's exploding dependence on online, digital, and wireless technologies, effective government-compliant security solutions have become increasingly important. Whether you are a security expert or a novice, practical solutions are crucial in your industry as well as personal life. Join us at this upcoming conference to hear more about these important topics from business, academia, and research. Take some time to catch up on the latest trends, review the issues, and take away practical ideas to enhance security of your world.

♣ The day will begin with a social breakfast. The morning keynote, **'Wanted: A Revolution in Security Research'** will be delivered by Dr. Gus de los Reyes, AT&T Chief Security Officer, R&D, and the afternoon keynote, **'Mobile Management and Security'** will be delivered by Mr. Caleb Barlow, IBM Director, applications, data and mobile security. Both talks promise to be up to the minute, exciting, informative, and thought provoking.

♣ Talk with the many industry representatives participating in the event to learn about the latest commercial solutions. Lively discussions with the keynote speakers, invited speakers, peers, and student poster judging will continue over breakfast, lunch and afternoon snack breaks – which are included in the modest attendance fee. Concluding remarks, prizes and awards will end the day.

♣ This conference is geared to IEEE members, non-members, students, and guests who would like to review the state of the art in security, cyber security, and privacy and become aware of issues and directions of research, academic, and practical solutions. ♣ If you have considered learning more about security, this is an ideal event to attend. Awareness of security, cyber security, and privacy improves your job, consulting, and life skills. You will get Professional Development Units (PDU) Continuing Education Units (CEU).

♣ The venue for this conference, IEEE Operations Center (OC) in Piscataway New Jersey, is a premier location to attend an event. The IEEE OC is steeped in history; this location holds artifacts and multimedia installations recounting the achievements of IEEE engineers and marks the significant engineering innovations from various disciplines worldwide. Bring a friend, colleague or student. For More Information please visit the IEEE New Jersey Coast Section website: <http://sites.ieee.org/njcoast/> ♦ .

End of Calendar of events

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ADVERTISING IN THE NY MONITOR

The IEEE NY Monitor is published online monthly excepting in July and August. The target readers are IEEE members (4,000) who reside in New York City and vicinity. It is also downloaded by many of the 30,000+ members of the IEEE Region 1 that covers 22 Sections of the IEEE in the entire north-eastern United States.

Advertisement rates per insertion

Quarter page	\$150
Half page	\$200
Full page	\$250

END