

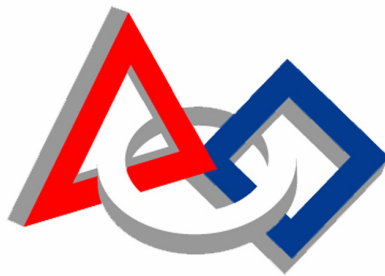


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Calendar of Events

Wednesday, February 15 (Page 7 top)

6:00 pm -8:00 pm : Dr. Evriclea Voudouri-Maniati

Women In Engineering and The Communications Society: Radar and Sonar Systems: Robust Signal Processing Techniques

Tuesday, February 21 (Page 7 bottom)

5:30 pm -8:00 pm : Tom Mitoraj

WiMAX and Motorola's Wi4 located in Manhattan; to be announced. Please check the COMSOC NYC Chapter website at: <http://www.comsoc.org/~nyc> for the latest updates.

Thursday, February 23 (Page 6 bottom)

7:00 pm -9:00 pm : Engineers Week Celebration

Sponsored by The Metropolitan Engineering Societies Council. Topic is "Long Island RR East Side Access Project". One PDH.

Thursday, March 16

6:00 pm -8:00 pm : Signals Mixer

Graduates of the Last Decade and Women In Engineering are hosting another trademark "Signals Mixer" tentatively at "Proof" NYC, 239 Third Ave.

INNOVATION

by Ken Vought,
IEEE NY Section Chairman

Say “innovation” and you might think of robotic rovers on Mars, communications based train control, or satellite radio broadcasting. While those technical advances are remarkable, modest innovations get introduced every day. Whether simple or complex, several rules of thumb apply to all innovations.

The key to innovation is being ‘better.’ A new product, service or method that is better than previous alternatives is an innovation. That being said, not everything new is an innovation. “New” implies that something is different and unique; it does not necessarily imply that it’s “better.” A true innovation is not only new, it’s also better.

Innovation is in the eye of the beholder. Determining whether or not something is new can typically be a simple, objective process. Competitive products and substitutes usually can be uncovered quickly through an Internet search, or by examining trade journals and literature. However, determining whether something is “better” requires more rigorous and subjective consideration. Ultimately, it is the customer that decides what is and isn’t better. If something new is better, they buy it. If it’s not better, they will not buy it.

Inventions aren’t necessarily innovations. Inventions are novel, useful and unobvious. The U.S. Patent and Trademark Office can even certify inventions as such, and issue them patents. But “better” is not a patent requirement. In fact, many patented inventions are not better than other alternatives. In fact, fewer than two percent of patented inventions actually succeed commercially.

Innovation is rooted in value. “The key to success,” said Intel’s Andy Grove, “is continually delivering a better value.” Products, services and methods that deliver improved benefits at a lower price are a better value. For example, new personal computers operate faster, have more features and are less expensive — they represent a better value than preceding models.

Innovation has a revolutionary reputation and an evolutionary reality. Most innovations are incremental refinements of the features, functions, fit or form of things that already exist. For example, the 1909 Model T Ford had four wheels, an engine, a roof, doors, brakes and a transmission. But the hundreds of incremental innovations applied to models since then have made modern automobiles much safer, more efficient and more comfortable.

Innovation is competitive creativity. While it takes creativity to conceive something new and better, innovating is more than just a creative process. Innovation requires a good understanding of the alternatives and substitutes already available, as well as what will contribute most to improving value.

Change triggers innovation. Wherever a new problem needs solving, a new need has to be satisfied, a new want must be fulfilled, or someone desires something newer and better, an opportunity for innovation emerges. The Internet was revolutionary because it fostered so many additional innovations, including e-mail, the World Wide Web, software downloads, e-commerce, search engines, the TCP/IP protocol and customizable entertainment, to name just a few.

Innovation grows through imagination. Imagination has no boundaries, and the wildest imagination can serve as a source of practical inspiration for solving almost any problem. Someone first imagined that a computer could be built that would fit in a small room, then on an instrument rack, then on a desktop, then in the palm of your hand, and now under your skin! “If you can imagine it,” said Walt Disney, “you can do it!”

Innovations don’t last forever. We will always need innovators and innovation. What is newer and better today will be old and inferior tomorrow. While Alexander Graham Bell’s 1876 invention was certainly monumental and wired telephones became common, innovative wireless technologies have made cell phones more ubiquitous, today.

Innovation is not a destination. Innovation is our primary engineering career challenge and our essential, endless journey.

It is privilege to have this opportunity to share others’ ideas with peer IEEE Members, guest readers, and prospective members. You are welcome to join us and invite peer Electrical and Electronics Systems Engineers to attend NY Section and our Society Chapter sponsored technology sharing forums.



Professional Activities Committee for Engineers (P.A.C.E.)

Professional Activities for 2006:

Thu, Feb 23 – Eweek @ Poly
 Wed, Mar 22 – Career Fair @ Poly
 Thu, Mar 23 to 25 – NYC First Robotics
 Thu, Mar 16 – ‘Signals’ Event
 Sun, Apr 2 – Eng. EXPO in Rockland
 Tue, Apr 11 – SPAC @ Columbia
 Sat, Apr 29 – Tri-County Tech. Fair
 Thu, May 18 – ‘Signals’ Event

*See updated PACE website for more info:
<http://www.ieee.org/NYS-PACE>

Volunteers are needed for NYC First Robotics Competitions. Many high schools don't have enough volunteer support as mentors, judges, and team organizers.

If you are interested in getting IEEE-NY support for a local National Engineers Week event that we have not mentioned please contact us with the event info. You may consider representing the IEEE-NY at local universities and events.

BETA Testers needed for launch of new IEEE-NY Online Community. This community may be the future center of operations for the New York Section! We need members to test, post, discuss, and troubleshoot various aspects of this permissions based e-group. We have the ability to connect all members within the section as well as allow for volunteers to work remotely – which most savvy members know will allow for increased flexibility and communications.

Are there other events going on that we haven't mentioned, that would be appropriate Professional Activities?

Please let us know if there are existing events in NYC, or if you would like to recommend something specific of interest.

For information on government policies effecting engineers, login to the IEEE-USA Legislative Action Center (IEEE web account required):

<https://www.capitolconnect.com/ieee>

If you or someone you know is interested in becoming a NY Section Volunteer or supporter, please let us know by submitting a resume and a cover letter indicating areas of interest and a brief bio.

Warm Regards,

Matthew B. Nissen, PACE Chairman
Matt.Nissen@ieee.org

Eyal Novotny, PACE Vice-Chairman
Eyal.Novotny@ieee.org

Some Useful websites:

<http://ieeeusa.org/>

<http://careers.ieee.org/>

<http://www.spectrum.ieee.org/careers/>

<http://www.ieee.org/NYS-PACE>

<http://www.nyc.gov/html/sbs/wf1>

<http://www.op.nysed.gov/>

<http://www.ncees.org/>

<http://www.careerbuilder.com/>

IEEE-NY Online Community BETA Launch!!

(IEEE web account required)

<https://www.ieeecommunities.org>

Evolution of Television and the Convergence of Technology

By Heba Elsayed

WIE and BTS held a joint meeting on Tuesday, December 6, 2005. Despite the plummeting temperatures, attendees gleaned inspiration, knowledge, and a few laughs from guest speaker Eileen Pedersen, System Design Engineer of ABC TV. The topic, Evolution of Television and the Convergence of Technology.

Eileen's Career

Eileen gave the audience a brief overview of her career and skillfully interlaced that with the remarkable changes in broadcasting technology. Eileen Pedersen, ABC joined ABC in the early 80's. When Eileen first started out in 1981, she was one of only 2 women engineers working in a group of 1500. More proof of the power of networking: she serendipitously shared a cab with CEO of a company that she later got to work for. She then went on to become the first Chief Engineer of 1125 Productions — one of the first Hi-Definition facilities.

Later on Ms. Pedersen became the Director of Engineering and Maintenance for USA and Sci-Fi Networks. At USA, she was part of a team that built one of the first State of the Art Digital Facilities. She went on to work as a consultant on a number of High Definition builds including

CNN and ESPN and currently, works as a System Design Engineer for ABC.

TV: Past

In the late 40s, TV and radio united families. The start of the Vietnam War in the 60s let viewers see pictures they have never seen before, which would have a major impact on their lives. Walter Cronkite.

Television broadcasts were stored on 2-inch wide magnetic tapes on reels that were both massive in size and weight and would contain only 60 minutes programming. Spooling problems were frequent

TV: Present/Future

Television Equipment today consists of vast hardware and software systems used along with networked computer servers and off the-shelf-equipment. Storage has

become increasingly cost-effective. Compression Algorithms allow us to store multiple reels on 1 hard drive.

SNMP (Simple Network Management Protocol) allows computers to monitor themselves. This means computers can remotely monitor in-house systems and send auto-emails if there is a problem.

Eileen discussed the importance of network security and advances in transmission technology (fiber optics versus old coax cable systems). With fiberglass, a multiplexed signal can ride on a single piece of glass. Fiber optics is a promising technology giving broadcasting companies new opportunities to earn revenue.

Television technologies being explored today include Satellite TV, Interactive Video, Webcasting and Voice Over IP.

Did you know?

Widescreen picture draws you in from peripheral vision.

Your distance from the TV set must be three times the height of the raster to get optimal detail; otherwise, the detail gets lost.



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Please join **WIE (Women in Engineering)** as we present

Cosema E. Crawford, P.E.
Senior Vice President and Chief Engineer
Department of Capital Program Management
MTA New York City Transit

With the **WIE Engineer of the Year Award 2005**
at the New York Section Awards Dinner Dance,
February 11th, 2006.
(Ticket order form in back cover of the Monitor).

"For leadership across various fields of
engineering and for contribution in promoting the
recognition of women in engineering."

Connie Crawford joined MTA New York City
Transit in May 2001. She is responsible for
approximately 1,600 engineers, architects and
other professionals that design and manage
construction of NYC Transit's \$2 billion annual
capital program for subway and bus infrastructure.



ENGINEERS WEEK CELEBRATION

Sponsored by
THE METROPOLITAN ENGINEERING SOCIETIES COUNCIL
Thursday, February 23, 2006

Reservations Required
Registration: 5:30 PM , Light Buffet: 6:00 PM
Program: 7:00 to 9:00 PM

Polytechnic University
Dibner Library
Brooklyn, NY 11201

Keynote Speaker:
DilipKumar I. Patel, P.E.
Program Manager
MTA Capital Construction Co.

Topic: "Long Island RR East Side Access Project"

The Mayor's Proclamation on Engineers Week will
be presented.

\$50.00 – mailed reservations and check required
by February 17, 2006

No "At Door" payment
You will get 1 PDH for this Meeting.

Please mail your check made payable to MESC
and mail with the tear-off below to:

MESC, PO Box 1981, Church Street Station, New

February 23, 2006 ENGINEERS WEEK CELEBRATION

Fee Enclosed: _____ Phone #: _____

First Name: _____ Last Name: _____

Company: _____ Society: _____

Address: _____ E-Mail _____

City: _____ State: _____ Zip: _____

FOR ADDITIONAL INFORMATION, CONTACT WASYL KINACH,

Women in Engineering (WIE) and The Communications Society
Radar and Sonar Systems: Robust Signal Processing Techniques

By Dr. Evriclea Voudouri-Maniati
Wednesday, February 15th, 2006



Target detection and classification in nearby the sea surface radar and underwater sonar applications is facing a plethora of challenges because the signal is

subjected to scattering, multi-path propagation, Doppler shift and non-Gaussian ambient noise. Optimum parametric detectors can be designed for a particular environment but fail to perform if the distributions change. As an alternative, robust and powerful techniques will be presented that exhibit near optimum performance in varying signal propagation and noise conditions.

Dr. Evriclea Voudouri-Maniati is an Associate Professor with the Electrical and Computer Engineering Department at Manhattan College. Her research interests include Robust and Nonparametric procedures in Signal Detection with applications in Wireless Communications (CDMA and FH Spread Spectrum), Target

Detection and classification in Sonar and Radar Systems, and Pattern Recognition.

6:00PM-8:00PM
 Refreshments will be provided.

Advanced Registration is required send e-mail by **Monday February 13th, 2006** to:
 Darlene E. Rivera, WIE Chair at drivera938@ieee.org

Please provide Name and Company affiliation.
 Valid Photo ID is required.
 No Walk-ins Allowed for Security Reasons

Location:
 MTA
 2 Broadway
 New York, New York 10004

Nearest Subway: Bowling Green Station (4, 5)
 Whitehall St (R, W)

IEEE Communications Society NY Chapter Presentation
WiMAX and Motorola's Wi4
Tuesday, February 21, 2006

This presentation will answer the following questions regarding WiMAX:

- What is WiMAX and why the telecom industry is taking notice
- What are the standards, interoperability and market critical mass
- How does WiMAX differ from 3G and 2G
- What services will WiMAX provide
- What is Motorola's strategy and what will be required to make WiMAX a success
- What Impact WiMAX will have on the service provider landscape
- How is WiMAX related to seamless mobility

SPEAKER

Tom Mitoraj

Director, WiMAX Business Development, Motorola Networks

Mr. Mitoraj is responsible for driving global business development strategy for Motorola's 802.16 portfolio of solutions, known as the Wi4 product family. With over 15 years of product and business development experience, Mr. Mitoraj has

a successful track record of driving business development for emerging technologies. While leading Motorola's Networks R&D organization, he played a significant role in Motorola's successful development of CDMA system solutions, as well as the rollout of system upgrades for advanced services.

Mr. Mitoraj holds a BSME from the University of Illinois Chicago and a Masters of Management from Northwestern University.

TIME

Refreshments at 5:30, Presentation 6:00 - 7:30 with Q&A. **RSVP by Thursday 2/16/06**

LOCATION

In Manhattan (to be announced). For latest updates and email registration link, please check the COMSOS website at <http://www.comsoc.org/~nyc>.

For more information contact Henry Bertoni <hbertoni@poly.edu> or Warner Sharkey <warnersharkey@earthlink.net>.

THE NEW YORK SECTION'S 2006 AWARDS DINNER DANCE

The 2006 NY Section Awards Dinner Dance honoring the Section's Awardees will be held on
Saturday evening, February 11, 2006.

This year, our dinner dance (black tie optional) will be held in the beautiful Mercury 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 Mercury Rotunda. 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 filet mignon or a delicious fresh salmon 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 New Horizon 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, 2006. Corporate sponsors: Table of 10 at \$1700.00

A special non-transferrable rate of \$90 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 Sponsors or non-IEEE members
may obtain additional information and cost by contacting:**

Ralph Tapino (718) 761-5104

William Perlman (973) 763-9392

MEMBER RATE RESERVATION FORM

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

Please indicate meal selections:

Meat _____

Fish _____

Name: _____

Company: _____

Address: _____

City: _____

State: _____

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IEEE Member # _____

No. Of Tickets @ \$90.00 _____

NON-IEEE Member

No. Of Tables @ \$1700.00 _____

No. Of Tickets @ \$170.00 _____

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