The Pulse of Long Island

IEEE LI Section's 50th Year!

March 1, 2003 - Vol. 53 No. 3

The monthly newsletter of the Long Island Section of the Institute of Electrical and Electronics Engineers, Inc.

Chairman's Message

By Dave Mesecher
d.mesecher@ieee.org

It's been a busy month for the Long Island Section. Your volunteers have been hard at work for you!

Let me update you on the plans for this year's Awards and Recognition Banquet. First notice that I didn't call it the Awards Banquet, as in past years, because it is no longer just an awards banquet. Starting this year, a small part of the event will be dedicated to recognizing your volunteers. All of the *pro bono* hard work that they do will be acknowledged by asking them to come forward and accept a certificate of recognition. (We won't let them speak, though!)

The primary purpose of the Banquet, of course, remains the presentation of well-deserved local and regional awards to IEEE Long Island Section members who have been nominated by you because they have shown themselves to be outstanding representatives of the engineering profession on Long Island. Each year Jesse Taub heads up the effort to sift through the many well-deserving nominations that are presented to the Award Committee. This year, as always, Jesse and the rest of the Awards Committee have done a careful job in determining this year's Long Island Section Award recipients. The Long Island Section traditionally presents four awards that honor our local engineering profession. Two of the awards are named in honor of persons who were instrumental in forming the Long Island Section 50 years ago: The Charles Hirsh Award for Outstanding Technical Contribution, which will be presented to a good friend of the Long Island Section, Bruce Willins of Symbol Technologies, for his work on the development of the Internet; and The Harrold Wheeler Award for Outstanding Technical Management, which will be presented to Stan Oken of Telephonics for managing the development of airborne military intercom systems. A third award honors Alex Gruenwald, a former IEEE regional director who was highly active in our Section, and recognizes activities that have enhanced the engineering profession. The Alex Gruenwald Award will be presented to your previous Chairman, Bill Rooney, of Northrop Grumman Corporation, for his dedicated leadership in promoting activities of out Section. The fourth award is our Outstanding Young Engineer Award, and will be presented to Michael Sussich of Telephonics for his multidisciplinary approach to engineering programs.

We are proud also to announce that five members of our Section will be receiving Region 1 Awards this year at the Awards and Recognition Banquet. These are Richard Augeri of RCA Consultants for his work in uncooled infra-red detection, Karl Sygall of Edo Corporation for his technical leadership in developing military and space electronics, John Peterson of BAE Systems for his technical and managerial leadership in developing antenna systems, Dr.Yuanyuan Yang of SUNY Stony Brook for his work in developing multicast switching networks, and Andrew McNerney of Brookhaven National Laboratory for managing world-class particle accelerator projects.

We are honored as well to have a member of our Section elevated to the ranks of IEEE Fellow. For this achievement, which was based on his contributions to the theory and development of particle and photon detectors, Dr. Pavel Rehak of Brookhaven National Laboratory will be recognized at the Banquet.

Congratulations to our Long Island Section and Regional Award recipients. (Continued on Page 6)

The PULSE is now available on-line!

To get the on-line PULSE and get up-to-date information about the Section, visit our web site at: **www.IEEE.LI**

You can register for IEEE LI Sections events on-line at this web site!!

IMPORTANT NOTICE ON 2003 AWARDS BANQUET

Congressman Steve Israel is one of our keynote speakers at the Awards and Recognition Banquet.

Please register for this event soon using the form below!

HELP NEEDED!!!

Please help us celebrate OUR 50TH YEAR by sharing with your fellow members any interesting material you might have related to the engineering profession circa 1953, such as stories of developing technologies or businesses, or early photos of employees, buildings, radio towers, power plants, radar ranges, airstrips, ceremonies, electronics, or whatever else you might think of. They will be used in a story our historian Rod Lowman is working on, and for our web site. If you have anything you think might be of interest, please send it to our 50th Anniversary Coordinator Chris DiFranco at c.difranco@ieee.org.

Registration Form

2003 Awards Banquet

Make checks (for $15) payable to "IEEE Long Island Section".
Send form to Daniel Rogers, IEEE Awards Banquet, 60 Ocean Avenue, Blue Point, NY 11715

Name: _____

Guest Name: _____

Guest Name: _____

Guest Name: _____

Company: _____

Address: _____

City and Zip: _____

Hphone: _____Bphone: _____

Fax: _____

Email: _____

Address All Correspondence to:
PULSE EDITOR
Babak Beheshti
101 Caffrey Avenue
Bethpage, NY 11714-1435
Phone: 516-939-0249
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Send Address Changes to:
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PO BOX 1331
PISCATAWAY NJ 08855-1331

PULSE Deadlines

For Apr.. 2003: 3-5-03
For May. 2003: 4-5-03

IEEE Long Island Section Calendar

(No membership requirements, no registration, no fees at meeting unless otherwise noted.)
Please visit our web site at http://www.ieee.li **for up to date listings, changes and corrections.**

March 5, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For See Announcement on page 5.

March 17, and April 14, 2003 - "Fundamentals of WLANs" Workshop, See ad on page 4. For details and registration contact Babak Beheshti, b. beheshti@ieee.org or 516-686-7437.

March 24, 25, 2003 - "Fundamentals of Digital Signal Processing" Seminar, See ad on page 7. For details and registration contact Babak Beheshti, b. beheshti@ieee.org or 516-686-7437.

March 31, 2003 - EXCOM meeting at 6:00 PM, Telephonics Corp. on Route 110 in Farmingdale- This meeting is OPEN and FREE TO ALL IEEE members - Please contact Dave Mesecher for reserving a space in the meeting

April 2, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For See Announcement on page 5.

April 6, 2003 - IEEE LI Section Awards Banquet, Huntington Hilton. For registration and info contact Daniel Rogers at D.Rogers@ieee.org.

April 8, 2003 - "Harmonic Measurement Requirements and Methodology", Mr. Thomas C. Moyer of Amplifier Research, Location of talk: RFI Corp located on Pine Aire Drive, in Bay Shore, NY, RSVP is required by no later than 1 April. Please do this via the IEEE Long Island EMC Chapter Web Site http://www.ieee.li/emc.htm For those without internet access, a message may be left at (631)265-2282.

April 7, 2003 - "The Wireless Internet as defined by IEEE 802 Standards" , Dr. Roger B. Marks of NIST, at Telephonics Corporation, Route 110, Farmingdale, NY. , For info contact Daniel Rogers, Computer Society Chair of the IEEE Long Island Section, drogers@ieee.org.

April 28, 2003 - EXCOM meeting at 6:00 PM, Telephonics Corp. on Route 110 in Farmingdale- This meeting is OPEN and FREE TO ALL IEEE members- Please contact Dave Mesecher for reserving a space in the meeting

The IEEE Long Island Sectionis pleased to offer three individual presentations of

Fundamentals of Wireless Local Area NetworkingA WLAN Workshop

February 17, 2003 and March 17, 2003 and April 14, 2003

Overview

The Long Island Section of IEEE is presenting a series of three, repeated, three hour Workshops on the fundamentals of Wireless Local Area Networking (WLAN).

Who Should Attend

This course is intended for those interested in understanding the basic technology behind currently available wireless networks used to distribute cable or DSL internet signals in a home or small office environment [SOHO] and to sharing resources between computers as a local area network. It will be especially helpful for those considering upgrading existing wired local area networks to include wireless systems. It will include an overview of the Bluetooth and 802.11 technologies and devices.

Although intended for the engineering technologist, it will be presented in a way that non-technical attendees that are computer-literate will be able to absorb the materials and obtain the necessary background to create their own WLAN.

Key Benefits

- Obtain a working knowledge of the wireless technology used in a WLAN
- Be able to design and assemble the parts of a WLAN
- Each participant will receive a wireless adapter for their WLAN [Choice of either a PCI [for desktop computers], PCMCIA [for laptops], or USB [for any computer with a USB port].

Contents

What you will learn:

- Where wireless fits in the home and small office environment
- Networking Basics
- Infrared, Wireless, Bluetooth and 802.11 technology basics
- Basics of WLAN design
- Wireless Network hardware types
- Wireless Adapter installation basics
- Differences between 802.11a and 802.11b wireless networks

Seminar Instructor

- Charles P. Rubenstein, a professor at Pratt Institute in Brooklyn, was a Computer Society Chapter Tutorial Program presenter, is an Engineering Management Society Distinguished Lecturer, and is a speaker in the IEEE S-PAC and M-PAC programs. He has made nearly twenty presentations on HTML and Web Page Design and eCommerce in the US, Canada, Puerto Rico, India, and here in the Long Island Section. Dr. Rubenstein is the Region 1 Electronic Communications Coordinator and AREA B Chair. He holds IEEE leadership positions in the Engineering Management Society, IEEE-USA and other Boards.

Location and Times

This seminar will be repeated once per month in February, March and April on Monday evenings in Farmingdale, NY from 6:00pm – 9:00pm. Registrants will be advised of the exact location and receive an acknowledgment by mail shortly after registration. The seminar is wholly the responsibility of the IEEE Long Island section and the Instructor.

For further information contact the instructor via email at: c.rubenstein@ieee.org or the LI Section Seminar Coordinator, Babak Beheshti via email at b.beheshti@ieee.org or by phone at 516-686-7437.

Fees will be refunded in full if the seminar is canceled. The registrant will be offered priority for registration on another session or a refund if they cannot be accommodated due to capacity limitations. Other refunds will be considered.

Registration Fees

The registration fee includes your choice of a PCMCIA, PCI, or USB wireless adapter, selection to be made at time of registration.

If Paid Before the Wednesday two weeks prior to event 5 Feb, 5 March, 2 April:

Non-IEEE	IEEE	Student/Life
$225	$175	$150

If Paid Before the Wednesday one week prior to event 12 Feb, 12 March, 9 April:

$250	$200	$175

Due to location access restrictions and the need to purchase adapter cards prior to the seminar, there will be no on site registrations for this seminar.

(Registration Form On Page 5)

MEETING NOTICE

On the **First Wednesday of each month** at 7 PM, the IEEE Consultants Network of Long Island will Meet. The program will be held at Briarcliffe College, 1055 Stewart Avenue, Bethpage, NY. Admission is free (no charge).

No pre-registration is required.

Registration Form
WLAN. , Feb. 2003

Make checks payable to "IEEE Long Island Section". Send form to Babak Beheshti, 101 Caffrey Avenue, Bethpage, NY 11714-1435

Name: _____

Company: _____

Home Address: _____

City and Zip: _____

Hphone: _____, Bphone: _____

email: _____

Member #: _____ Grade: _____

Amount enclosed: _$_____

The Long Island Chapter of IEEE Electromagnetic Compatibility Society is presenting a lecture titled:

Harmonic Measurement Requirements and Methodology

Tuesday, April 8, 2003

WHO SHOULD ATTEND?
Individuals who design, manufacturer, sell and test electronic equipment sold both domestically and internationally, and individuals who are involved with the measurement aspects of engineering. These requirements not only affect the testing required to demonstrate compliance with the European requirements, but also call for specific monitoring requirements and techniques needed to ensure that data samples are not lost during the measurement period,. This seminar will review what harmonics testing is and the implications of recently added requirements to the EU EMC standards for harmonics testing.

SPEAKER: Mr. Thomas C. Moyer, Amplifier Research

Abstract:
After much debate and long delay, the EU required that harmonic and flicker testing be included in the suite of EMC requirements for all CE marked electronic products sold on, or after, January 1, 2001. Testing for harmonic content is specified in IEC61000-3-2, and testing for flicker is specified in IEC61000-3-3. Amendment A14 of IEC61000-3-2 was issued to simplify the harmonics testing, but it added some new requirements in the process. The end result has been an increase in testing criteria needed for CE marking.

Amendment A14 also added "interharmonic grouping tests," and these will be required beginning in August of 2005. This expansion means that the manufacturer, and EMC Engineer have to be aware of the effects that harmonics from other sources have on products being developed and sold.

Seminar Coordinators:

Bruce Willard, Electromagnetic Compatibility Chapter Chair of the IEEE Long Island Section.

Speaker Bio:
Thomas C. Moyer graduated from Drexel University in Philadelphia with a BSEE degree. He has worked for Ford Motor Company designing automotive electronics systems and for Ametek U. S. Gauge designing aircraft engine instruments. More recently, he has been a sales engineer and regional sales manager. He joined Amplifier Research in 1996 as a product line marketing specialist.

Location, Time, and Registration:

This lecture will be held at RFI Corp located on Pine Aire Drive, in Bay Shore, NY. The facility is located just East of the Sagtikos Parkway on Pine Aire Drive. The presentation will begin at 7:00 PM, but coffee and a snack will be served beginning at 6:30 PM. Seating is limited. If you wish to attend, an RSVP is required by no later than 1 April. Please do this via the IEEE Long Island EMC Chapter Web Site http://www.ieee.li/emc.htm For those without internet access, a message may be left at (631)265-2282.

(Chair's message - Continued from page 1)

We are delighted that our Congressman, Steve Israel, will be joining us at this year's Awards and Recognition Banquet, and has graciously accepted our invitation to be one of our keynote speakers. Many thanks to Dan Rogers, our Second Vice Chair, for arranging this (and for organizing the entire banquet!) We are honored to have Congressman Israel join us, and we are very much looking forward to his address.

As I mentioned last month, the Long Island Section celebrates it 50th year this year, and we will be making this a central theme of the Banquet. Please join us in celebrating our 50th year, honoring our award recipients, and thanking your volunteers. It promises to be a memorable event!

I would like to leave you with some information regarding two upcoming events that are designed to encourage technical learning at the high school level, and that are in need of volunteers to be judges for academic competitions. The Long Island Science and Engineering Fair will be held on March 19, and the National Engineering Design Challenge will be held on March 22. Your Section is a sponsor of both of these, and your individual contributions could make a substantial difference in technical learning locally. Visit www.lisef.org and www.cstl.org for details.

Best regards,
Dave Mesecher

IEEE Signal Processing Society . IEEE Communications Society and
IEEE Long Island Section
Present

Fundamentals of Digital Signal Processing

March 24, 25 - 2003
6:00 - 9:00 PM

Overview

The Long Island Section of IEEE and its Signal Processing Society are presenting two three hour sessions (3 hours per session) training course "*Fundamentals of Digital Signal Processing*".

Who Should Attend

This course is intended for managers involved in DSP applications, entry-level engineers intending to master basics of this field, and practicing engineers planning to utilize DSP in their designs. Individuals with a basic understanding of analog signals and systems can benefit from this seminar.

Key Benefits

- Learn the terminology and fundamental key concepts of DSP
- Understand sufficient amount of the technology to be able to do further study on your own
- Understand what software and hardware tools are the minimum requirements for a successful development

Content

What you will learn: Review of fundamentals, Applications of DSP, Benefits of digital processing, Discrete time systems and signals, Sampling theorem, Aliasing, Effects of quantization, Frequency domain representations of sampled signals and systems, Processing sampled signals, Design of Finite Impulse Response(FIR) digital filters, Program samples, Infinite Impulse Response (IIR) filters, stability considerations, Use of commercially available DSPs, development tools, do's and don'ts, future trends

Seminar Coordinator and Instructor

Babak D. Beheshti is the seminars coordinator and the chair of the Long Island Signal Processing Society.

Location and Times

The seminar will be given in Woodbury, 6:00 to 9:00 PM. Registrants will be advised of the exact location and receive an acknowledgment by mail shortly after registration. The seminar is wholly the responsibility of IEEE Long Island Section and the instructor.
For further information contact Babak Beheshti via email at b.beheshti@ieee.org or by phone at 516-686-7437.

Fees will be refunded in full if the seminar is canceled or the registrant cannot be accommodated due to capacity limitations. Other refunds will be considered.

Fees

If Payment Made by Date	**Public**	**IEEE**	**Student/Life Member**
March 20	$375	$325	$250
After March 20	$425	$400	$275

Registration Form

Fundamentals of DSP Oct. 02
Make checks payable to "IEEE Long Island Section".
Send form to Babak Beheshti, 101 Caffrey Avenue, Bethpage, NY 11714-1435

Name: _____

Company: _____

Home Address: _____

City and Zip: _____

Hphone: _____Bphone: _____

email: _____

Member #: _____ Grade: _____

Amount enclosed: _____

PACE REPORT

By: Irwin Weitman

I learned from my youngest son, who is a P.E. (Civil) in New York, Connecticut and Florida, that New York will probably require "Continuing Educational Units" (CEU) or "Professional Development Hours" (PDH) for "P.E. Registration" renewals beginning in 2004. Florida just started this year and so he had to take courses that gave him the required 8 PDH credits.

We have a large number of registered Professional Engineers in the Long Island Section. They should be aware, learn what is required and prepare for it. There is wealth of information about "Continuing Education" on the IEEE notional web site. See; http://www.ieee.org/organizations/eab/ceus/

I did a little research and received confirmation of the coming requirements from the New York Education Department today. The following is the body of an e-mail in response to my query.

To: <i.weitman@ieee.org>

Continuing Education is going to be mandatory on January 1, 2004. At this time there is no information available on continuing education. The Regulations haven't been written yet. You may want to periodically check our website at: www.op.nysed.gov for information. When the regs are in place all licensed professionals will be notified well before their credits are due.

NYS Board for Engineering & Land Surveying
enginbd@mail.nysed.gov
(518) 474-3817 ext 140
(518) 473-6282 (fax)

The perennial subject of the industrial exemption crops up every so often. For those readers not familiar with the "industrial exemption" I will try to succinctly explain. New York State, as do all other states, has a law that states that all Engineers that work on projects that affect the "Public Safety" are required to be licensed and registered in the state, to show that they qualified to do that work on such projects. For example: An engineer that design bridges, tunnels, public highways, and many other such projects is required to be licensed and registered. This sounds very reasonable to me!

There are many other projects and products that directly affect the public safety but are not required to be signed off by a registered engineer. For example, airplanes, trains and other public transportation modes do not require the oversight of a Professional Engineer. Bringing this closer to home the robotic controls of that airplane or train are covered by the industrial exemption and this brings to mind the "BART Case of San Francisco" of several decades ago. In many cases big business has lobbied to limit the protection sorely needed to protect the public from unsafe products. It appears that big business feels it is less costly for them to wait for an injury and then let the courts decide on their cost.

Employees are sometimes subjected to intimidation by industry to develop products that are not safe but are simply less costly to manufacture. Something to think about. Maybe lawyers and big business are a little to close to the money.

The day may come when many more licensed engineers will be required and all engineers should be aware of the benefits to themselves and especially to the population of the United States of America. You can find information about "Professional Registration" on the IEEE web site. www.ieee.org

You may contact me with questions or comments at i.weitman@ieee.org
or 1(631)266-2651.

Irwin

IEEE-USA Seeks to Substantiate Information in the H-1B Guest Worker Visa Policy Debate

WASHINGTON (30 January 2003) - IEEE-USA is concerned about the rash of recent misinformation helping to shape the H-1B guest worker visa policy debate. "The public-policy debate over the state of the U.S. technical workforce and the purported need to import foreign labor through the H-1B guest worker program is increasingly being shaped by substantially incorrect statements," IEEE-USA President Jim Leonard said. "This misinformation is offered by H-1B proponents and is widely propagated by the media without verification."

Two recent examples of how news releases and industry pronouncements are misleading the public and its elected representatives include the following: National Science Foundation Documents Drop in Science and Engineering Ph.D. Degrees In a 6 January release entitled, "National Survey Documents Drop in Doctoral Degrees in Science and Engineering," the National Science Foundation (NSF) reported a significant decline in science and engineering (S&E) doctorates and a rollback of total Ph.D.s to pre-1994 levels. The text of the release and the report on which it is based, however, tell a different story with respect to engineering. Total engineering Ph.D. degree awards increased from 5,320 in 2000 to 5,502 in 2001, more than the 5,438 Ph.D.s awarded in 1992. Moreover, the release and the report point out that graduate engineering enrollments have also been increasing in recent years, which means that even more Ph.D.s will be graduating in the future.

While the increases are not large, the trend is positive, not negative as the NSF and subsequent media reports suggest. Long-term trends demonstrate that the number of Ph.D.s granted rise and fall in response to changing labor market conditions, prompting IEEE-USA's Leonard to question whether government intervention is necessary to boost the supply of technical labor, if market forces can be counted upon to correct temporary imbalances. See NSF news release at http://www.nsf.gov/od/lpa/news/03/pr0304.htm. See NSF study at http://www.nsf.gov/sbe/srs/nsf03300/htmstart.htm

According to IEEE-USA's president, the media need not only to report the trends accurately, but also to question why the number of engineering Ph.D. graduates widely cited by H-1B proponents in support of higher H-1B visa quotas, is relevant given that the great majority of visas go to non-Ph.D. candidates. Industry Executive Contends that China Produces Six Times as Many Engineers as United States Last October, Cadence Design Systems CEO Ray Bingham announced at a major software conference that "China produces 600,000 engineers a year, and 200,000 are electrical engineers." Bingham's alarming statistics were immediately reported by Fortune Magazine (29 Oct., 2002), and have been subsequently cited in several national publications' op-ed pieces. The statement is significant because H-1B proponents use it to argue that American universities aren't graduating enough engineers to compete with countries like China, hence the need for more H-1B guest workers increases. IEEE-USA staff, however, can find no reliable support for the accuracy of Mr. Bingham's statement. According to information NSF collected from the China National Research Center for Science and Technology for Development, China graduated less than 200,000 engineers total in 1999 (195,354 bachelor's degrees and 3,269 doctorates). Furthermore, no engineering discipline breakdown is recorded. See the NSF's Science and Engineering Indicators 2002 at http://www.nsf.gov/sbe/srs/seind02/toc.htm. Tables 2-18 and 2-42 contain the specific information: http://www.nsf.gov/sbe/srs/seind02/append/c2/at02-18.pdf and http://www.nsf.gov/sbe/srs/seind02/append/c2/at02-42.pdf H-1B visas are issued to foreign nationals for temporary employment in certain specialty occupations.

The workers can stay for up to three years and then reapply for an additional three years. Applicants are supposed to have a bachelor's degree or higher and possess highly specialized knowledge. In October 2000, Congress raised the annual H-1B visa cap to 195,000. When this authorization expires on Sept. 30, 2003, the cap will revert to 65,00 unless Congress takes further action.

IEEE-USA is an organizational unit of The Institute of Electrical and Electronics Engineers created in 1973 to promote the careers and public-policy interests of the more than 235,000 electrical, electronics, computer and software engineers who are U.S. members of the IEEE. The IEEE is the world's largest technical professional society. For more information, go to http://www.ieeeusa.org.

30 YEARS AGO

Rod Lowman, Historian

After the big push in the 60's to put a man on the moon, NASA turned their attention to looking back at the earth and measuring the earth's resources. In building the equipment for this effort, AIL was quite successful in building electronic packages to perform many of these functions.

To bring knowledge of these pioneering efforts to our members, the section together with the PGM TT chapter enlisted Dallas Evans of NASA and Stanley Becker of AIL to describe the latest equipment being built at AIL for the Skylab satellite to analyze from orbit some of these resources.

Skylab set out to explore the widest possible portions of the electromagnetic spectrum for pattern recognition studies of geology, geography, hydrology, agriculture, forestry, oceanography and meteorology. The specific sensor described at the meeting was the L-band Radiometer being built at AIL. This radiometer with its unique antenna and electronics design features provided precise stable measurements of the surface temperature of the earth. With a 50 degree orbit inclination Skylab scanned the most important test areas of the U. S. and could plot the local temperatures providing useful information about many of the land use and potential features under study.

Dallas Evans had a decade of experience at the Manned Spacecraft Center in Houston, two years in undersea research and was now Program Scientist for the Earth Observation at NASA to do remote sensing of the earths environment.

Stan Becker had been doing microwave research and development at AIL since 1951 and was the Department Head of the Special Systems and Techniques Department which was responsible for the development of the L-band radiometer used on the Skylab. Stan had designed other radiometers for other satellite programs. In the 30 years since, Stan continued to pursue other radiometric and microwave research and development and then applying software into these systems to further enhance the system capability. He continued at AIL until he retired about 1991. For the last decade Stan and his wife have been enjoying the warm sun and relaxed living in Lake Worth, FL. I haven't been able to determine whether the Skylab scans of the earth showed that Lake Worth had the optimum temperature characteristics for a retirement home or whether Stan used some other selection criteria.

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