

# The *Pulse* of Long Island



IEEE LI Section's 50th Year!

April 1, 2003 - Vol. 53 No. 4

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*



### Resting on Our National Laurels

Be afraid. Be very afraid. For the quality of technology education in the US is in a dangerous state of decline.

If we examine how we became the most influential nation in the world, not to mention the one-and-only super power, we see that technical training and innovation were pivotal. Of course freedom – free speech, free trade, and freedom of religion – and a democratic process were essential, and unlimited natural resources were key. These ingredients set the stage for economic opportunity and an entrepreneurial environment that attracted the best, the brightest, and the most ambitious from overseas, giving rise to a surge of creative thinking and unimaginable advances in technology, ultimately leading to worldwide industrial and economic leadership and military superiority. This status was later sustained by top educational institutions, which furthered the supply of creative thinkers, in part by educating our own eager students, and in part by continuing to attract top students from outside our borders, who would typically stay on and make their own contributions to commerce, technology, and education.

As we matured as a nation, the cornerstones of freedom and democracy on which we built our success held steady. Good. Our unlimited resources, most critically energy resources, started to become not-so-unlimited. (As I write this column natural gas prices are reaching an all-time high.) Not so good, but we can fix that. The US has thus far managed to remain an economic force and to maintain its military advantage, but our abilities to attract the best and the brightest, and to claim educational and technical dominance, are showing serious signs of weakness. This is bad, and should concern us as citizens and as engineering professionals.

*Edge*, a group of leading scientist presided over by Manhattan literary agent and author John Bockman, is very concerned. The most common theme for requests for government-funded research from its members is improving the truly deplorable state of education, especially science education. One member, MIT psychology professor Steven Pinker, states, "Little in instructional practice has been evaluated" scientifically. He adds, "Instead, classroom practice is set by fads, romantic theories, slick packages, and political crusades. We need more scientific assessments, and faster implementation of what works." Another member, Artificial Intelligence pioneer Roger Schank of Northwestern University, feels that science education is especially abysmal, and if we don't whip it into shape fast, we're going to be in trouble. He says "science education is still about preparing for Harvard in 1892, and not for life in 2003." (Visit [www.edge.org](http://www.edge.org) for more information.)

(Continued on Page 11)

### 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](http://www.IEEE.LI)**

*You can also register for IEEE LI Section events online at this web site!*

## 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.

## MEETING NOTICE

Samir Das will present a lecture Tuesday, May 13 at Telephonics on "Wireless Sensor Networks" for the Computer Society.

The seminar will be presented from 6:00 to 8:30 PM Tuesday, May 13, 2003 located at Telephonics Corporation on Route 110 in Farmingdale, New York. Refreshments will be provided.

The seminar is free and open to all. If you wish to attend, please register via internet in the computer society section of [www.ieee.li](http://www.ieee.li).

You can contact the coordinator Daniel Rogers by email at [drogers@ieee.org](mailto:drogers@ieee.org).

### Long Island Section Officers

Chair. . . . . Dave Mesecher  
1st Vice Chair . . . . Christian DiFranco  
2nd Vice Chair. . . Daniel Rogers  
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The **PULSE of Long Island** is published monthly except July and August by the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 445 Hoes Lane, Piscataway, NJ 08855-1331. \$1.00 per member per year (included in annual dues) for each member of the Long Island Section. Periodical postage paid at New York, NY, and at additional mailing offices. Postmaster send address changes to IEEE PULSE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. (USPS 450-540). The opinions expressed in this newsletter are those of the authors, and no endorsement by the Institute, its officials, or its members is implied.

### Send Address Changes to:

The PULSE of Long Island  
phone: (800) 678-IEEE  
PO BOX 1331  
PISCATAWAY NJ 08855-1331

### PULSE Deadlines

For May, 2003: 4-5-03  
For June, 2003: 5-5-03

### Consultants

#### Network of LI

The Consultants Network of LI maintains a referral service of Engineering, Computer, Managerial and Technical Professionals. Call or write for more information. There is no charge to the client for this service.

Voice Mail 516-379-1678  
P.O. Box 931  
Patchogue, NY 11772-0931  
[www.consult-li.com](http://www.consult-li.com)

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other size ads.....Contact the editor

# IEEE Long Island Section Calendar

(No membership requirements, no registration, no fees at meeting unless otherwise noted.)

Please visit our website at [www.IEEE.LI](http://www.IEEE.LI) and click on the calendar for online registration (as available) and for listing updates

April 2, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For Details See Announcement on page 6.

April 6, 2003 - IEEE LI Section Awards Banquet, Huntington Hilton. Congressman Steve Israel is one of our keynote speakers. For registration and more info go to [www.ieee.li](http://www.ieee.li)

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. , Please register via internet in the computer society section of [www.ieee.li](http://www.ieee.li). Contact Daniel Rogers, Computer Society Chair of the IEEE Long Island Section for more info at [drogers@ieee.org](mailto:drogers@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 14, 2003 - "Fundamentals of WLANs" Workshop, See ad on page 4. For details and registration contact Babak Beheshti, b. [beheshti@ieee.org](mailto:beheshti@ieee.org) or 516-686-7437.

April 14, 2003 - "The Engineer's Role in Homeland Security", A dinner lecture by Harry Armen, Sc.D., P.E., Director, Technology Development, Northrop Grumman Corporation , The 56<sup>th</sup> Fighter Group; Route 110, Farmingdale; (631) 694-8280 Sign in and hors d' oeuvres at 6 PM. Dinner at 7 PM. Lecture at 8 PM.

April 28, 2003 - Long Island Section Executive Committee (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 ( [d.mesecher@ieee.org](mailto:d.mesecher@ieee.org) )

May 7, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For See Announcement on page 6.

May 13, 2003 - "Wireless Sensor Networks" , by Samir Das , 6:00 to 8:30 PM, Located at Telephonics Corporation on Route 110 in Farmingdale, New York. Please register via internet in the computer society section of [www.ieee.li](http://www.ieee.li). Contact Daniel Rogers, Computer Society Chair of the IEEE Long Island Section for more info at [drogers@ieee.org](mailto:drogers@ieee.org).

May 19, 2003 - Long Island Section Executive Committee (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 ( [d.mesecher@ieee.org](mailto:d.mesecher@ieee.org) )

EDA  
Ad Here

The IEEE Long Island Section is pleased to offer three individual presentations of  
**Fundamentals of Wireless Local Area Networking** **A WLAN Workshop**

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
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*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 6)**

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](mailto: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: \_\_\_\_\_

## 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.

For last minute announcements and updates visit:

[www.consult-li.com](http://www.consult-li.com)

### Advertisement Business Opportunity

Considering starting your own business, but don't have access to affordable facilities/services? Our new Tech Center in Ronkonkoma LI can help by providing a professional facility to set up your business, and services ranging from engineering to full mfg.

Call for details. Mr. A 631 471 6157

### Registration Form WLAN. , Apr. 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: \_\$ \_\_\_\_\_

RETLIF  
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Here!



## The Long Island Section of the IEEE Computer Society

presents a seminar titled:

### Wireless Sensor Networks

**Tuesday, May 13, 2003**



**WHO SHOULD ATTEND?** Persons who are interested in the upcoming wireless sensor networking technology. The seminar is free and open to all.

**WHAT ARE THE KEY BENEFITS?** Learn about how future computing technology will look like when compute devices can interact with the physical world directly, exist in enormous numbers and are networked together.

**HOW TO REGISTER:** . If you wish to attend, please register via internet in the computer society section of [www.ieee.li](http://www.ieee.li).

**SPEAKER:** Samir R. Das, SUNY at Stony Brook

#### Abstract:

The availability of cheap, low power, and miniature embedded processors, radios, sensors, and actuators, often integrated on a single chip, will soon be leading the use of wireless networking for interacting with the physical world. The applications are wide-ranging -- from security and surveillance, to monitoring of natural habitats and eco-systems; for designing smart homes to smart highways. The resulting systems, often called wireless sensor networks, differ considerably from current networked and embedded systems. Their design requires a proper understanding of the interplay between wireless network protocols, energy-aware design, signal-processing algorithms, and distributed computing.

This seminar will introduce wireless sensor networks with motivating applications, and describe the engineering design challenges. In the second part of the talk, we will address some specific issues related to such networks: such as design of routing, data dissemination and data gathering protocols, design of location service and issues related to power and topology management.

#### Seminar Coordinator:

Daniel Rogers, Computer Society Chair of the IEEE Long Island Section.

#### Speaker Bio:

Samir R. Das is currently an Associate Professor in the Computer Science Department at SUNY Stony Brook, Stony Brook NY. He received his Ph.D. degree in computer science from the Georgia Institute of Technology, Atlanta, in 1994. His research interests include mobile/wireless networking, performance evaluation and parallel discrete event simulation. Samir Das received the NSF Faculty Early CAREER award in 1998. He is a speaker in the Distinguished Visitor program of the IEEE Computer Society. He co-chaired the Technical Program Committee for the 2001 ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoC), and currently on the editorial board of the *Ad Hoc Networks* Journal. He also served on the program or organizing committees of several prominent workshops and conferences related to networking, distributed computing, simulation and performance evaluation, including PADS, MASCOTS, IC3N, ICDCS, MobiHoC and MobiCom. More information about him and his research can be found at <http://www.cs.sunysb.edu/~samir/>.

#### Location and Time:

The seminar will be presented from 6:00 to 8:30 PM Tuesday, May 13, 2003 located at Telephonics Corporation on Route 110 in Farmingdale, New York. Refreshments will be provided. The seminar is free and open to all. If you wish to attend, please register via internet in the computer society section of [www.ieee.li](http://www.ieee.li). You can contact the coordinator Daniel Rogers by email at [drogers@ieee.org](mailto:drogers@ieee.org). A confirmation email will be sent by May 1. The seminar is wholly the responsibility of IEEE Long Island Section and the speaker.

**The Long Island Section of the IEEE Communications Society**  
in conjunction with  
**The Long Island Sections of the ASME, the AIAA, and the ISA**  
presents:

*The Engineer's Role in Homeland Security*  
*April 14, 2003*



A dinner lecture by

**Harry Armen, Sc.D., P.E.**

**Director, Technology Development, Northrop Grumman Corporation**

Sign in and hors d'oeuvres at 6 PM. Dinner at 7 PM. Lecture at 8 PM.

This presentation begins with an outline the potential effects of threats posed by acts of terrorism to our society and our national infrastructure, currently vulnerable to weapons of mass destruction. Following this, a brief description will be provided of some of the programs in which engineers and scientists are engaged on a national basis that are designed to defeat or mitigate those threats. Finally, the presentation will discuss the changing role of the Engineer in this new environment and some proposals for the

future engagement of the Long Island technical community.

Harry Armen, Director of Technology Development within the Integrated Systems Sector of the Northrop Grumman Corporation, has a bachelor's degree in Civil Engineering from The Cooper Union. He also has a master's degree in Civil Engineering and a doctorate in Engineering Sciences from New York University. Upon completion of his doctoral studies, he joined Northrop Grumman Corporation and has held both supervisory and staff positions at that company for the past thirty-eight years

Early in his career, he was appointed Head of the Applied Mechanics Laboratory of Northrop Grumman's Research and Development Center. From 1980 to 1988, he served as Head of Structural Mechanics in the Engineering Department, with the responsibility of directing the technical activities of engineering staff members. In 1988, he joined the Corporate Technology Department as Director of Engineering Sciences. Currently, as Director of Technology Development, he is responsible for the planning and execution of research programs that support strategic corporate goals.

He is the author/coauthor of more than 40 archival papers and technical reports on the following topics: computational mechanics, fatigue and fracture mechanics, crashworthiness evaluation, and the analysis and design of composite structures. In addition, he holds two U.S. patents in automotive engineering.

Dr. Armen is a Fellow of the American Society of Mechanical Engineers (ASME). In 1991, he was selected by ASME to participate in their Congressional Fellows Program. In that capacity, he served as a legislative staff member in the Office of Senator Jeff Bingaman (D, NM) from January 1991 to May 1992. He participated in formulating and implementing legislative initiatives for improving U.S. economic competitiveness through the development of a national technology strategy. He has served as ASME Vice-president and Chairman of its Board on Government Relations, and as Senior Vice-president of the ASME's Council on Public Affairs. He currently serves as a member of ASME's Board of Governors.

He has held the position of Adjunct Professor of Civil Engineering and Applied Mechanics at The Cooper Union and as Lecturer in Engineering Mechanics at Hofstra University. He has served as member and Chair of the Advisory Committee for the Engineering Directorate of the National Science Foundation. He is a licensed Professional Engineer in the State of New York.

***Advanced payment registration is required.*** The lecture is open to the public, but seating is limited. To register, complete the form below and submit it with your check by April 10. For questions, contact Dave Mesecher at [d.mesecher@ieee.org](mailto:d.mesecher@ieee.org).

-----**Detach and submit with check**-----  
Name \_\_\_\_\_ Phone \_\_\_\_\_ e-mail \_\_\_\_\_

Payment amount \$ \_\_\_\_\_ (\$20 IEEE, ASME, AIAA, ISA members; \$25 non-members; \$15 student members)

Make check payable to "IEEE Long Island Section", and submit to: IEEE LIS, 9 Beverly Road, Huntington Station, NY, 11746.

***Payment must be received no later than April 10<sup>th</sup>. Members please present membership ID at the lecture.***



The IEEE Computer Society of the IEEE Long Island Section is presenting a seminar titled:



## “The Wireless Internet as defined by IEEE 802 Standards”

**WHO SHOULD ATTEND?** Persons who are interested in the wireless IEEE 802 Standards and related technology. The seminar is free and open to all.

**WHAT ARE THE KEY BENEFITS?** Learning about the wireless IEEE 802 standards and the standardization process.

**Speaker:**

Dr. Roger B. Marks, National Institute of Standards and Technology  
Chair, IEEE 802.16 Working Group on Broadband Wireless Access

**Abstract:**

Within the Institute of Electrical and Electronics Engineers, Inc.(IEEE), the IEEE 802 LAN MAN Standards Committee is developing air interface standards for wireless local area network (LAN), wireless metropolitan area network (MAN), and wireless personal area network (PAN) technology. These standards are enabling the development of an infrastructure for the Wireless Internet. The talk overviews the key technologies and their interrelationships. It also overviews the process of standardization in IEEE 802 and the IEEE Standards Association.

**Seminar Coordinator:**

Daniel Rogers, Computer Society Chair of the IEEE Long Island Section, drogers@ieee.org

**Speaker Bio:**

In 1998, Roger B. Marks initiated an effort to standardize fixed broadband wireless access within the IEEE 802 LAN/MAN Standards Committee. This effort led to creation, in March 1999, of the IEEE 802.16 Working Group on Broadband Wireless Access <<http://WirelessMAN.org>>, which Marks has chaired since inception. He served as technical editor for IEEE Standards 802.16 and 802.16.2. Marks received his A.B. in Physics in 1980 from Princeton University and his Ph.D. in Applied Physics in 1988 from Yale University. A Fellow of the IEEE and the author of over 75 journal and conference publications, Marks has received many awards, including the 2003 Individual Governmental Vision Award from the Wireless Communications Association and an IEEE Technical Field Award (the 1995 Morris E. Leeds Award). He participates in many professional activities; for example, developed the IEEE Radio and Wireless Conference (RAWCON) and chaired it from 1996 through 1999.

**Location and Time:**

The seminar will be presented from 6:00 to 8:30 PM Monday, April 7, 2003 located at **Telephonics Corporation, Route 110, Farmingdale, NY**. Refreshments will be provided. The seminar is free and open to all. If you wish to attend, please register using the web site: <http://www.ieee.li/calendar.htm>. A confirmation email will be sent. The seminar is wholly the responsibility of IEEE Long Island Section and the speaker. You must identify your country of origin if a foreign national. Please do not bring recording equipment or cameras.

**Directions:** Leave Long Island Expressway (Route 495) at Exit 49 – South (Route 110). Proceed 3 miles going under Long Island Railroad tracks; turn left just after airport ( before route 109). Proceed to Visitor's Parking Lot on your right.

# PACE REPORT

By: Irwin Weitman

## IEEE EMAIL ALIAS SERVICE BLOCKS MORE THAN 332,000 VIRUSES

The IEEE Email Alias Service protected IEEE members from approximately 332,000 viruses in 2002. Last year, 16,219 new IEEE email aliases were created, bringing the total to 88,858. IEEE members can sign up for this free service at <http://eleccomm.ieee.org/>.

## "WHAT'S NEW @ IEEE" SUBSCRIPTIONS GROW 21 PERCENT

Subscriptions of the eleven "What's New @ IEEE" email newsletters increased 21 percent in 2002, totaling 158,267.

The three largest newsletters for the year were "What's New @ IEEE in Communications" (22,777 readers), "in Computing" (20,801 readers) and "in Wireless" (19,081 readers).

In September, "IEEE Career Alert" -- a new weekly newsletter from the editors of "IEEE Spectrum" -- joined the "What's New" program, replacing "What's New @ IEEE for GOLD." "IEEE Career Alert" absorbed the GOLD subscription list and ended the year with 9,616 readers.

Sign up for a free subscription to any "What's New @ IEEE" newsletter at <http://whatsnew.ieee.org>. Past issues are archived at <http://www.ieee.org/products/whats-new/index.html>. To submit stories for consideration in future issues, contact John Platt, IEEE Sales & Marketing, at <mailto:j.platt@ieee.org>.

"When so many American workers are unemployed, I believe it's time for Congress to lower the H-1B visa quota back to 65,000 from its current level of 195,000. This will happen automatically if no new legislation is approved," IEEE-USA President Jim Leonard said. "The large pool of guest workers makes it much more difficult for skilled U.S. workers to find jobs."

The Bureau of Labor Statistics reported that 26,000 electrical and electronics engineers (EEs) were unemployed in the fourth quarter, as were 94,000 computer scientists, which includes systems analysts. The unemployment rate for EEs dipped slightly from the third quarter, 3.9 percent vs. 4.0 percent, but rose for computer scientists, from 4.6 percent to 5.1 percent.

For 2002, the quarterly average of 29,000 unemployed EEs and 89,000 out-of-work computer scientists was the highest figure ever for the individual groups. Unemployment among EEs more than doubled from 2.0 percent in 2001 to 4.2 percent in 2002. For computer scientists the rate jumped from 3.4 percent to 5.0 percent. The EE unemployment rate has more than tripled since 2000, when it stood at 1.3 percent; and more than doubled among computer scientists (2.0 percent).

Despite a grim job outlook for the U.S. high-tech workforce, industry has petitioned, and government has granted 799,700 new or renewal H-1B visas in the past two years. This includes 163,600 new visas in 2001 and 342,000 in exempt categories. And when FY '02 ended, another 18,000 new H-1B applications were pending.

Knowing this grim data should make many of us be concerned.

For Employees Only:

(If you want to consider Consulting, check out the Consultants Network.):

Employers are not too interested in where you have worked before. Perhaps after they have already expressed an interest in you.

During the last several years, the thought process of the companies has gravitated toward what they have looked for in a consultant. That is: "WHAT YOU CAN DO FOR THEM".

Write a one page description of your major skills and specialties. The employment Assistance/ (Development) Committee, (EAD/ EDC) will post this document on its web site, at no cost to you.

To get this program on the road we need at least 4 members to volunteer to work on a committee that will review the member submissions, organize them so they fit on a single WEB page, maintain the security of the member identity if the member wants his/her identity kept secret. The identity of the committee members will be public so that the users of the service feel comfortable identifying themselves to the committee. If a company is interested, an e-mail to the committee will start a process where the prospect employee is notified and can then contact the company. If the prospect is willing to be identified on his/her page then the company can contact the prospect directly. This process will be reviewed by the committee and modified for the benefit of the users as this service evolves and develops. As soon as this committee is formed I will post the details in the Pulse and on the Long Island Section Website [www.consult-li.com](http://www.consult-li.com) You may contact me with questions, suggestions or comments at [i.weitman@ieee.org](mailto:i.weitman@ieee.org) or 1(631)266-2651.

(Continued from page 1)

At the same time, students from developing countries are greatly improving their technical skills, and in some cases even becoming better at English than US students. According to our own Charlie Richardson, the Long Island Section's Educational Activities Chairman and a long-time Long Island educator, the number of students scoring above 750 in the math section of the SAT has dropped in recent decades. But worse, the number of verbal high scores has crashed – from 2800 in 1972 to 1200 in 1993! Charlie has even met some Wall Street executives who prefer to hire foreign nationals to US-taught professionals for jobs in which communications skills are critical because of their better command of the English language. Charlie opines that for an engineer, whose stock-in-trade is information that must be transmitted by language, US students are at a disadvantage. Moreover, instead of coming to the US for higher education, more and more foreign students, as well as foreign engineers and science professionals, are staying put, anchored by improved living conditions, respectable universities, and more job opportunities in their homelands.

Many of those job opportunities are being created at the expense of opportunities here at home, as US commercial technology companies continue to look overseas to find high-quality, very competitively priced, technical professionals. According to an article published in the *Wall Street Journal* this past December, Asia could account for nearly half of Agilent Technologies Inc.'s revenue in five years, and the region will do an increasing share of the company's R&D work. While the company is in the process of cutting an additional 2,500 jobs worldwide on top of 8000 over the last year, it expects the number of employees in India, where the company has a software-development center, to increase by 500 over the next two years from about 250 at the present. According to Agilent's Chairman and President Ned Barnholt, research spending in Asia is "definitely on the upswing." Right here on Long Island a least two technology-development companies that I am aware of have opened R&D operations outside the US.

To be sure, certain Long Island companies are resisting this disturbing trend. Symbol Technologies R&D VP Bruce Willins (one of this year's Long Island Section Award recipients!) was quoted by *Newsday* this past August as saying that Symbol maintains its highest levels of development and production at home. Nowhere, of course, is this tide being stemmed as much as in the defense business, which, in addition to developing weapons, has served historically as an incubator for advances in technology. It is also an exclusive club to which only US technical professionals are allowed. Again, right here on Long Island, as is true nationwide, the number of opportunities for engineers is growing in the defense sector. The same August *Newsday* article indicated that Northrop Grumman expects to hire 200 engineers on Long Island this year, and 500 over the next two-to-three years.

But it takes ready and qualified technical talent to meet the demand generated from these opportunities, and the availability of qualified talent will not be sustained if the erosion of technical literacy continues. This erosion has already led to challenges to our positions as the world's technology leader and as its economic standard. And, if left unchecked, could bring about a much scarier challenge – to the military superiority we derive from our technically advanced weapons and defense systems.

Be afraid. Be very afraid.

Best regards,  
Dave Mesecher

*As a reminder, our Annual Awards Banquet is coming up on April 6<sup>th</sup>. Our keynote address will be delivered by Long Island Congressman Steve Israel, who, as a staunch supporter of technology development and national defense, no doubt understands the importance of technical education on the future of Long Island and America. I hope you can join us. Tickets will be available at the door. See [www.ieee.li](http://www.ieee.li) for details.*

## 30 YEARS AGO

Rod Lowman, Historian

At the section's dinner meeting at the Kings Grant Hotel a packed house of well filled section members and their spouses were enlightened on "*Engineering Contribution to Improved Health Care*" by Dr. Peter Peacock of the American Health Foundation. By periodic testing and computer comparison Dr. Peacock thought that Americans could be alerted to major chronic illnesses in time that they could change their lifestyle and avoid catastrophic effects later. He contended that because of our inactivity and by what we eat, drink and smoke we invite major chronic illnesses of heart disease, cancer and stroke that cause great suffering and great economic costs. His analysis placed the economic burden alone of these chronic diseases at a staggering \$63 billion every year. He felt that we as engineers could contribute greatly to decreasing this huge burden through judicious use of computers to provide annual data comparison of each individual patient's tests.

Being very pragmatic, Dr. Peacock recommended a major test to see if the benefits accrue as anticipated. He said that there are often unexpected results of programs which seem obviously beneficial. Borne in Kenya and trained in Britain, Dr. Peacock did graduate work and then taught in South Africa. As an illustration of unexpected results he said that after the war DDT was introduced in the local tribal areas to suppress the mosquito population that spread malaria. For a number of years Dr. Peacock took his graduate students to visit one remote tribal area. At first the tribal chief was most enthusiastic about the reduced death rate from malaria. But as the years went on, he became concerned with overpopulation and with it increased crime rate and more tribal unrest. He began to question whether DDT had improved tribal life or degraded it.

In the 30 years since Dr. Peacock's recommendations, I think that annual testing has become more popular. I sometimes question whether year to year analysis for changes that would predict future trouble (whether computer or manual) is really being utilized. I believe that it is now recognized that greater use of computers by doctors would be beneficial not only for the analysis for future problems but for preparations of prescriptions which would prevent the thousands of deaths because pharmacists can't read the doctor's handwriting and supply the wrong medicine. In any case, it was a most provocative presentation and one that was of interest to both members and spouses.



VOL. 53, No. 4

(USPS 450-540)

For  
Apr.  
2003:

PERIODICAL MAIL  
POSTAGE PAID AT N.Y., N.Y.



INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

IEEE *Pulse*  
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Piscataway, NJ 08855-1331