

## Meeting Announcements

TOPIC: *E-Commerce - New Business Models For Electronics Manufacturing & Supply Chain Management*

DATE: Mon. Sept. 18, 2000

TIME: 6:00 PM

PLACE: Melville, NY

SPEAKER: Mike Chester, BS, MS, MBA

RESERVATION: Babak Beheshti 516-686-7437 or [b.beheshti@ieee.org](mailto:b.beheshti@ieee.org)

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TOPIC: *EMC analysis of PCB's (includes demo of ARA's ETSi 4334 system) Tour of UL EMC facility - Corey Hyatt, UL Refreshments*

DATE: September 14, 2000

TIME: 6:00 - 9:00 PM

PLACE: Underwriters Laboratories  
1285 Walt Whitman Road  
Melville NY 11747  
(enter from rear of main building)

SPEAKER: Tim D'Arcangelis, EMC Manager,  
Antenna Research

(please contact us so we can make a head count)

Contact David Sterner  
ADEMCO, Syosset NY  
[david\\_sterner@ademco.com](mailto:david_sterner@ademco.com)  
516-921-6704 x6970

## IEEE News

### FREE NEWSWIRE SERVICE FROM IEEE COMMUNICATIONS SOCIETY

Communications professionals no longer need to waste time on hit-or-miss searches to keep up with the latest communications news. The IEEE Communications Society Web site makes it easier than ever to stay current with its IEEE ComSoc Information NewsCache service at <http://www.comsoc.org>. The service has 15-25

global news items culled from current worldwide communication technology information sources. Visit the IEEE Communications Society Web site at <http://www.comsoc.org/> every week for new listings or to subscribe to the e-mail news alert service.

### NEW TRAINING OPPORTUNITIES FOR SOFTWARE ENGINEERS

The IEEE Computer Society, through partnerships with five universities, is offering training for professionals looking to advance their software engineering skills. If successful, the standards-based training program—made available on a pilot basis this year—will lead to the development of similar IEEE Society-developed training opportunities around the world.

Offered as part of the institutions' continuing education programs, the training opportunities will range from single-day workshops to three-day seminars.

Some of the topics covered include software requirements, metrics and measurements, verification and validation, quality assurance, software process improvement, system engineering for software-intensive systems, and concepts of operations as well as management-related courses.

Throughout the pilot phase of the program, the IEEE Computer Society will work with its partner universities to update the curriculum based on new standards or developments from the Society's related programs.

For more information about the program, visit <http://www.computer.org/computer/connection/CSProjects.htm>.

## The IEEE-USA President's Column Age Discrimination



Merrill W.  
Buckley, Jr.  
2000 President,  
IEEE-USA

In this, I want to focus on age discrimination. Though it is not true in all countries (Japan is a notable case in point), age discrimination in the United States is illegal. One would think this would permit engineering professionals to experience a lifetime of challenging rewarding work without the fear of unemployment during the latter years of their careers. But in age discrimination, the devil can very easily be in the details.

(Continued on page 4)

# Chairman's Message

By Babak Beheshti  
[b.beheshti@ieee.org](mailto:b.beheshti@ieee.org)

In spite of widespread pension coverage provided by their employers, many engineers and scientists can incur substantial reductions in their pension benefits when they change jobs.

Mobile workers can lose income in retirement if they change jobs before earning a vested right to a pension benefit; if their benefits are based on salary and years of experience and cannot be transferred from one plan to another; and/or if they spend rather than save cashed-out pension benefits following a change in employment.

Key Democratic and Republican leaders in the House of Representatives and the Senate have introduced bills to expand pension coverage and significantly improve the portability of benefits from defined contribution plans.

Major bills include: the Retirement Account Portability Act; the SAFE Plan Act; the Comprehensive Retirement Security and Pension Reform Act; the Pension Coverage and Portability Act; the Employee Pension Portability and Accountability Act and the Clinton Administration's Retirement Security Act. Key portability improvement provisions have also been included in an omnibus tax relief/budget reconciliation bill (H.R. 2448) approved by the Congress in August.

How You Can Help? Concerned individuals can help mobilize Congressional support for coverage expansion and improvements in pension portability by writing to their own Senators and Representatives in Washington. Explain that such improvements are urgently needed to strengthen employer-sponsored plans and help make such plans more responsive to the changing needs of increasingly mobile American workers, including engineers and scientists.

Have a prosperous September!

Babak D. Beheshti, Chair

**Long Island Section Officers**  
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The PULSE of Long Island is published monthly except July 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).

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**PULSE Deadlines**  
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PULSE ADVERTISING RATES

# 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.ewh.ieee.org/long\\_island/](http://www.ewh.ieee.org/long_island/) for up to date listings, changes and corrections.

**September 6, 2000 - LI Consultant's Network at 7:00 PM at Polytechnic Auditorium on Route 110 in Farmingdale. No pre-registration is required. For further info call John Dunn at (631) 549-6555**

**September 18, 2000 - E-Commerce - New Business Models For Electronics Manufacturing & Supply Chain Management, SPEAKER: Mike Chester, BS, MS, MBA, 6:00 PM, Melville, NY, RESERVATION: Babak Beheshti 516-686-7437 or b.beheshti@ieee.org**

September 20, 2000 - E-Commerce - New Business Models For Electronics Manufacturing & Supply Chain Management, SPEAKER: Mike Chester, BS, MS, MBA, Refreshments - 5:15PM, Meeting - 5:45PM, Con Ed 19th floor (use Exec. Elev.) 4 Irving Place, NYC, FURTHER INFO: Alan Osborne 212-460-6690

**September 25, 2000 - EXCOM meeting at 6:00 PM, Call Bill Rooney, 631-231-3737 x 2174, ahead of time for access**

**October 4, 2000 - LI Consultant's Network at 7:00 PM. No pre-registration is required. For further info call John Dunn at (631) 549-6555**

**October 30, 2000 - EXCOM meeting at 6:00 PM, Call Bill Rooney, 631-231-3737 x 2174, ahead of time for access**

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## Introduction to Wireless and Cellular Systems Seminar Offered on Long Island

The IEEE Long Island Section and the IEEE Communications Society jointly sponsor a six hour seminar on Introduction to Wireless and Cellular Systems in October, 2000. This seminar is intended for engineers and manager with interest in this topic but who have not yet gained the introductory background in concepts and terminology. This seminar is expected to cover topics including:

- An understanding of the fundamental terms and principles of wireless and personal communications.
- Identify important characteristics of first and second-generation cellular systems: AMPS, GSM, IS-136, and IS-95.
- Identify the fundamental operation of the three major air-interface access technologies: Frequency, Time, and Code Division Multiple Access. (FDMA, TDMA, CDMA).
- Compare and distinguish FDMA, TDMA, and CDMA.
- Introduce the impact that a multipath fading communications environment has upon system operation and outline some techniques to minimize this impact.
- Describe the fundamental tradeoff between capacity and coverage in a cellular system and understand the role of frequency reuse, cell sectorization, and cell splitting.
- Introduce the importance of interworking in wireless systems (IS-41).
- Identify the goals of third generation mobile systems.

The seminar will be held in October 2000 from 6:00 - 9:00 p.m. in Melville. For further information, see the full-page announcement in next issue or contact Babak D. Beheshti (b.beheshti@ieee.org).

## Age Discrimination

(Continued from page 1)

The pressures of global competition, corporate acquisitions and mergers, restructurings and plant relocations, cost-reductions, executive bonuses based on the bottom-line, etc., does not bode well for older, higher salary engineers. IEEE-USA is well aware of this. Mark Twain said that when he was 15, he thought his father was the most ignorant man on the face of the earth. So he ran away from home to work on a Mississippi steamboat. He returned at 25, and was "amazed to find out how much the old man had learned in 10 years."

Too much of the discussion about age discrimination in our profession misses Twain's point. I hear it all the time -- older electrical engineers' skills are out of date, their salary demands are too high, IT workers as young as 35 want a life outside the job so they are not as "reliable" as younger workers.

As the U.S. career services and public policy arm of the IEEE, with 230,000 U.S. members to represent, we are working to counter these false impressions. Our ongoing efforts on behalf of older members include: [IEEE-USA's Older Workers Initiative](#), begun by 1999 President Paul Kostek; the [Age Discrimination](#) page on our Website, and the Older Workers Survey that is now in the field, with results due in June .

But why should younger IEEE members care about age discrimination?

Consider what those who deny the serious evidence of age discrimination, particularly in IT, are really saying. I don't believe that as a group, older engineers have failed to keep up their skills. We all know that, as Twain might have put it, book learning isn't the same as job experience. Our profession changes so fast that, because we are a profession, being an electrical engineer means that you have to stay current to survive. What those who claim that older workers must be out of touch are really saying, is that the IT industries are a short career. Get in at 25, get out by 40, and do something else for the rest of your life. If you can.

That is where the IEEE-USA, your advocate, comes in. We don't accept that our profession is a throw-away career. We believe continual improvement is vital. And we know that the value an engineer adds to our economy and our society grows with experience.

Those who have now turned 40, 50 or older have the immeasurable benefit of keeping their skills current through one of the most profound periods of accelerating technology in history. Those who are 29 today will be 39 and 49 a lot sooner than they might think. Programmers whose newly-minted skills are in Java and Linux might keep in mind that, 20 years ago, the newly-minted skills were C and C++. What happened to COBOL and Fortran will happen to Java, too, and the same arguments might be heard again.

"Y2K graduates with computer degrees are out of date," someone may claim in 2020. "Nobody does Java anymore, and Linux has moved parsecs since the invention of Digital Oxygen. We need younger workers who can do voice-response programming in Chinese..."

Twain was right, if these changes occur, some who deny the obvious evidence of age discrimination now will be amazed to discover how far ahead of its time IEEE-USA was. But we're not going to let that happen, because we're already fighting for older workers -- and younger ones -- right now.

## How IEEE-USA Benefits the U.S. Member

By George F. McClure, Editor, IEEE-USA  
Technology Policy Activities

Some members belong to IEEE primarily to receive publications from the world's largest producer of literature on electrotechnology and, perhaps, to attend technical meetings sponsored by their technical society or its local chapters. Some members belong to take advantage of the insurance program or other aspects of the Financial Advantage program. Some, as has been pointed out in earlier columns, find their chief attraction in the Engineering Management Society or the Professional Communication Society.

Perceptive members may realize the opportunities available to them to develop organizational skills through running local sections, tutorials, or working on technical conferences. A relatively small number belong to participate in standards development.

Many members may not realize the ways in which IEEE-USA advances the professional and career interests of the IEEE U.S. member. Following are just some of those ways:

The annual Professional Development Conference is an information-packed weekend with opportunities to improve "soft" communication and presentation skills, learn career-advancing tips, develop leadership skills, and to get exposure to pending legislation that may affect members.

Separate GOLD tracks are aimed specifically at young members. Technology policy can have a strong influence on future engineering careers. IEEE-USA has five such committees, respected in government offices, and sought out for their expertise: Aerospace Policy; Communications and Information Policy; Energy Policy; Medical Technology Policy; and Research and Development. Technical societies are encouraged to send a representative to technology policy committee meetings and participate on the development of policy positions for use in advocating to legislators.

Today, members often find that their career is not one continuous path, but a series of stepping stone positions that may include periods of self-employment. IEEE-USA's popular job listing service has grown into the new IEEE-USA Global Employment Services site

[www.ieeeusa.org/employment/global](http://www.ieeeusa.org/employment/global).

With members having to assume more responsibility today for their careers, committees with a focus on career activities assume more importance. IEEE-USA has five such committees: Career Maintenance and Development; Engineering Employment Benefits; Intellectual Property; Licensure and Registration; and Workforce. Among their many important activities, these committees work to aid in career vitality, promote continuing education, protect employee benefits, and to promote engineering registration and acquaint members with the steps involved.

IEEE-USA surveys engineering salaries and benefits every two years, publishing the Salary and Fringe Benefit Survey, the premier report in this field.

The IEEE-USA PACE Network, a grass-roots linkage to U.S. regions, areas/councils, sections and interested members, provides timely alerts on legislative issues, so that members can communicate their own views to congressional representatives.

Congressional Fellows and Executive Fellows, drawn from member volunteers, spend a year aiding congressional offices or executive departmental offices on technology issues under the IEEE-USA sponsorship of IEEE-USA.

IEEE-USA also sponsors the Washington Internships for Students of Engineering (WISE) program, which supports research on public policy issues; and underwrites a Mass Media Science and Engineering Fellow to report on sci-tech issues at a broadcast or publication news outlet.

Engineering students benefit from Student Professional Awareness Conferences (S-PACs) by organizing and bringing in qualified speakers on professional topics, with help from IEEE-USA.

Outreach to the public at large takes two paths: precollege education -- promoting technological literacy among the students; and through media communications -- familiarizing the public with engineers, their role and the benefits we all enjoy as a result of engineering. National Engineers' Week is one such observance.

Higher-grade U.S. members fund IEEE-USA and related activities through a \$27 assessment included on the dues bill: \$23.50, for direct support of IEEE-USA; \$2.50, for IEEE-USA collaboration on public policy and public awareness issues with the American Association of Engineering Societies (AAES); and \$1 for EAB support of the Accreditation Board for Engineering and Technology (ABET).

Clearly, not all U.S. members find all IEEE-USA projects of equal interest, but just as a rising tide lifts all boats, our careers and professional image all benefit from the work IEEE-USA does.

For more information on IEEE-USA activities, visit [www.ieeeusa.org](http://www.ieeeusa.org), or call 202 785-0017.

## EDUCATIONAL ENGINEERING

Charles M. Richardson, B.S., M.S., P.E.,

[cmr1234@aol.com](mailto:cmr1234@aol.com)

Educational activities during the past quarter consisted of the following:

1. Established a website: [www.literacy-engineering.com](http://www.literacy-engineering.com).
2. Assumed financial support of the ASTOR Literacy Program (Provides reading tutoring to youth on probation in Suffolk County) per agreement with the Red Cross, the partnering agency
3. To facilitate #2, submitted IRS application for 501(c)3 tax-exempt status for The Literacy Council, the non-profit organization officially tasked for the activity. Some testing and counselling activity is continuing on a volunteer basis
4. Continued leadership of the Literacy Council "Think-Tank" monthly meetings, which produced a study of Regents exam performance of all 98 Long Island school districts, which resulted in the report, "New Research Tool Reveals Teacher Ed Lowers Pupil Scores," now on above website. The report was sent to over 200 persons concerned with teacher education including the Regents, SUNY & CUNY Trustees, & legislative committees.
5. Participated in the startup meeting of the Suffolk Task Force on Youth Gangs, chaired by Dr. Paul Ciborowsky of the Brookhaven Youth Bureau.
6. Received a volunteer award from the Brookhaven Youth Board.
7. Gave a talk at the Education Policy Conference sponsored by The Constitutional Coalition, St. Louis, MO: "Reading, Violence, & Politics,"
8. Gave two 1-hour workshops at a NY City American Leadership Conference, sponsored by the Washington Times.

## Solar Sprint Competition

Once again, the Polytechnic Campus was aglow with sunshine on the date scheduled for the Solar Sprint. All who participated had a good time and winners shared \$300 in prizes from a grant provided by NESEA. At present, we expect that 5 or 6 cars will be in Turners Falls, MA for the Regional Event.

The committee extends its heartfelt thanks to you, Aaron Kahn, Lester Orlick, Rick Bahrenburg, and your maintenance people for all the voluntary efforts expended in making the event run so smoothly.

Just for the record, the best time of day was 6.2 seconds (same car posted 10.1 sec. during a less sunny moment).

We are taking steps to ensure a larger crowd next year by working more closely with all the TEA's in the Metropolitan New York Area and welcome any advice/assistance in getting the word out. As an aside, an event was held for the first time in Ithaca, NY and next year Ken Welton will hold a Solar Sprint in the Buffalo Area. Ken came down to LI to observe this year. So again - THANKS,

Morty Rochman - Engineers Joint Committee  
of Long Island

## Professional Activities Report

*By Irwin Weitman, PE*

For this, the first Pulse issue of the academic year I would like to reminisce a little about the days when the Section held technical meetings every two or three months. We had attendance of 50 or more people at many of these meetings. We had excellent presentations by Section members and brought in speakers from elsewhere. Those days are gone but not forgotten. I would like to see more members of the section avail themselves of similar presentations now. There is group of Section members that does present quality technical and other subject meetings every month. This meeting is available to all members at no cost.

The group is: *IEEE CONSULTANTS NETWORK OF LONG ISLAND*

The following list is of the PROGRAMS Held in 1999-2000.

Networking by the members of the Consultants Network is informally talking to each other about technical and business related matters. It often leads to collaboration between members who have different expertise providing services for a client of one or the other. When there is no scheduled speaker, Networking is listed. Networking usually takes place after the scheduled speaker finishes his or her presentation. See the Consultants Network WEB site several days before the meeting date, which is the first Wednesday of each month at Polytechnic University in Farmingdale.

- A. Field Programmable Analog Devices, By Alan Baxter - Networking
- B. "Winning SBIR Programs", Marketing Committee -Networking
- C. "Underwater Acoustics and Sonar", Arnold Novick - Networking
- D. Power MOSFET devices, Jon Schleisner. - Networking
- E. "Setting up and Promoting Your own WEB Site" Jerry Brown and Jim LaTourette. - Networking
- F. "Analog Circuitry" by Craig Trester of Burr Brown - Networking
- G. "Tools and Techniques for a Successful Consulting Practice", Chaired by John Dunn, network Chairman. - Networking
- H. (continuation) "Tools and Techniques for a Successful Consulting Practice", Chaired by John Dunn, network Chairman. - Networking

- I. "Digital Signal Processor Software", Principles and theory by Mohsin Imtiaz of Texas Instruments. - Networking
- J. "Retirement Plans for Business Owners" - Networking
- K. Computer Security, by Len Anderson - Networking
- L. "Photonic Crossbar Switch", 1-100 Ghz microstrip, Richard Augeri. - Networking

Please accept this invitation and you will be pleasantly surprised.

If any member or members would like to set up a committee to present talks for the Section in the coming months I would be pleased to help them get started.

You can reach me at (631)266-2428 any evening or at [i.weitman@ieee](mailto:i.weitman@ieee)

## Meeting Announcement

**TOPIC:** *E-Commerce - New Business Models For Electronics Manufacturing & Supply Chain Management*

**DATE:** Wed. Sept. 20, 2000

**TIME:** Refreshments - 5:15PM, Meeting - 5:45PM

**PLACE:** Con Ed 19th floor (use Exec. Elev.)

4 Irving Place, NYC

**SPEAKER:** Mike Chester, BS, MS, MBA

**SPONSORS:** Edison Engineering. Soc.; IEEE PES & IAS

**RESERVATION/FURTHER**

**INFORMATION:** Alan Osborne 212-460-669

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**30 Years Age**  
*Rod Lowman, Historian*

To start the 1970 fall season, Bernard Farber of Grumman Aerospace Corporation presented a case study of the design philosophy of a complex avionics system. Chosen for the presentation was the E-2C (Overland), a carrier based aircraft with a long history of successful operation. For years the E-2 provided continued surveillance of friendly and hostile aircraft, reporting the tactical situation, controlling weapons and commanding the air battle. Mr. Farber discussed problems such as design tradeoffs, provision for system growth, design for flexibility of operation and system service life. Up to five tons of avionics were interconnected by digital computer to permit real time, automatic operation in three mission environments.

This behemoth of the cold war days continued on in use many years, a tribute to the engineers design for ease of update and digital programming control. Although the cold war between the USSR and the US no longer exists, the function is still needed to provide surveillance and control in smaller danger spots throughout the

world and was used very successfully by the Israelis in their disputes with Lebanon and Syria.

Bernard was the system project engineer on the E-2 aircraft for many years. He is a graduate of CCNY, has a MEE from Polytechnic Institute of Brooklyn and is a licensed Professional Engineer in New York State. He served on a number of committees in the Long Island Section and the Professional Group on Systems And Automatic Control. Like many L. I. Engineers, Bernie provided the stability for the program. With the rapid mergers these day, many engineers outlast the company who hired them. Often engineers work for 3, 4 or 5 different companies without leaving their desk and changing their office.



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**VOL. 50, NO. 1**

**INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.**

*IEEE Pulse*  
P.O. Box 1331  
Piscataway, NJ 08855-1331