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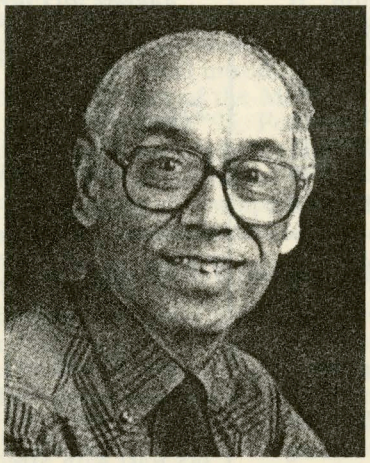
VOL. 46, NO. 3

The Pulse of Long Island

Who's Who

by Nader Bolourchi



Robert Bruce

Every month in this column of the IEEE LI section one member of the Executive Committee of the LI Section will be introduced to you. We hope this column will give you enough incentive to take the challenge to get involved in the section's exciting activities.

Robert Bruce has a BA in English, an MSEE from the City University of New York, and 36 years of experience as an electronics engineer in the aerospace industry. The last 20 years of his experience was in power electronics with AIL Division of Eaton Corporation, from which he retired in 1990. He has been an IEEE member since 1973, a member of Long Island PACE for nine years, and its Chairman for three years. He has been awarded three USAB Certificates of Appreciation and a Citation of Honor for service to the profession. He was a member of the USAB Career Maintenance Committee for eight years and is now a member of the USAB Manpower Committee. He has been the IEEE Long Island Section/USAB Liaison for ten years. Mr. Bruce participated in fourteen National FACE Workshops, and he testified at the New York State Attorney General's hearing on pension reform. He has published six articles on topics in solid state electronics and over 100 articles on topics of engineering professionalism. He holds a teaching license in electronics. His ambition is to continue participating in engineering professional activities for a long time.

Robert Bruce is the recipient of the 1993 IEEE Gruenwald Award for Advocacy in Legislation Reform which enhances the rights of professional engineers.

30 Years Ago

by Rod Lowman, Historian

Harold Nash, Technical director of the U.S. Naval Underwater Sound Laboratories in New London, CT, discussed the "Characteristics of the Ocean Which Influence the Application of Underwater Acoustics in Sonar and Other Systems." He also showed a film of deep submersibles used in carrying out the research in studying these characteristics.

It was a popular subject because several of the companies on the Island were involved with these types of equipment including Edo, Sperry and Hazeltine. During the cold war the use of sonar and deep submersibles became important in following enemy submarine activities all over the world.

It is interesting that now after 30 years, updated equipment of the same type described by Harold Nash is being used to locate and recover wreckage of the TWA Flight 800 a few miles off the southern coast of Long Island. This is but another example of how many of our technical developments find uses other than those originally intended.

A reminder– we are starting our 50th year as a Section and we are interested in your suggestions for a 50 year celebration. Give me a call at 261-1911 and give me your ideas. No matter how unusual or fanciful they are, your 50th Anniversary Committee will consider them all. To assure better consideration of your suggestions why not volunteer to serve on the 50th Anniversary committee. We welcome your help.

EDITORIAL

by Lazaros Pavlidis

Those who can, do. Those who cannot, teach. And boy do I know plenty of those. I bet many of you have heard this saying before. What was your impression of your Professors at college when you did not have the real world experience you now possess? What are your impressions of your Professors now when you look back? If your impressions are the same, you probably attended a good school and got a good education. If not, you probably regret those years. Technology is changing so quickly these days that it really requires hard work and involvement to stay current. If you are an engineer out in the field you have no choice. You keep up or you have no job. But if you are a Professor in a college, secured with tenure (especially in a non-research oriented environment) it is mainly up to you to keep up with technology and sooner or later you give up. Why bother? Unfortunately it is really difficult to change this mentality. But *you* can help the new generation of engineers and technologists (and yourself) by getting involved in teaching.

Here is how it works. Come in contact with the colleges in your area and ask for available adjunct positions. School Administrations do not prefer full-timers to teach extra classes beyond their normal load, because they cost more. Adjuncts are the choice for the extra courses. There appears to be a great demand these days for adjunct lecturers with real world experience. Based on the current projections it will be even greater over the next ten years.

Most colleges will work around your schedule if they know and like you. You can arrange for a one night a week schedule. If you like it and prove to be good you will be enormously satisfied and fulfilled. You will be affecting the lives and careers of the next generation of engineers and technologists. You will leave permanent impressions on many lives and they will remember you forever.

I read an article in the January 16, 1995 E E Times entitled "Engineers recruited as L.A. teachers". It is a $5 million program hoping to attract engineers and scientists to inner-city schools. I hope one day a requirement for teaching in the engineering and technology areas will be that you have had enough working experience in the field.

Radar -- Undergoing a Revolution

by Dr. Eli Brookner, Raytheon Company

Radar is undergoing a multi-dimensional revolution. Microwave phased arrays are now being built with low cost analog monolithic microwave integrated circuits (MMIC), chips containing many microwave transistors, the counterpart to digital integrated circuits used, for some time, extensively in computers. An example is the Theater Missile Defense (TMD) radar to be used anywhere in the world for interception at long range of enemy ballistic missiles, like the SCUD missile of Desert Storm. Radar antennas now have ultra low sidelobes for combating enemy jammers. It has been recently demonstrated that adaptive nulling of >65dB is feasible for further nulling out of jammers. Moreover, it is now practical to null out adaptively a large number of jammers (>30) simultaneously using a very small (the size of a portable compact disc player) powerful signal processor requiring only 10W of prime power. This is possible using a clever 64 degree-of-freedom architecture comprising a systolic array (a form of massively parallel signal processor) and the CORDIC trignometric algorithm used in the HP hand calculators. A practical superresolution algorithm is now available which can improve the resolution of radar images [inverse synthetic aperture radar (SAR) images] of aerospace objects and 2-D SAR ground images by a factor of 2.5. We can now go into our archives of data and obtain better images without having to improve the radar resolution, which is costly. A major breakthrough recently is the invention and demonstration of an electronically scanned laser phased array which would allow the beam to be switched in a fraction of a 1ms.

With the down-sizing in the military arena, it is nice to see the application to the commercial field of radar MMIC chips and light-weight antennas developed for a military space-based radar. Specifically, the application to the worldwide IRIDIUM® satellite telephone communication system which uses hand-held cellular phones. Also, millions of MMIC chips have been produced for the satellite-to-home TV systems at a MMIC facility built for military systems. Radar is being developed for commercial automobile collision avoidance systems. Who said radar is a mature, staid field. Why, it is still in its infancy!!

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PULSE Deadlines

for **December 1996**	**11-2-96**
for **January 1997**	**12-1-96**
for **February 1997**	**1-1-97**
for **March 1997**	**2-1-97**
for **April 1997**	**3-1-97**
for **May 1997**	**4-1-97**
for **June 1997**	**5-1-97**

LONG ISLAND IEEE CALENDAR

(No membership requirements, no registration, no fees at meeting unless otherwise noted. IEEE Office is in the AIL Main Building on Commack Road, Deer Park, LIE exit 52.)

November 6, 7:30 PM-- LI Consultants Network --- Walter Poggi, President of Retlif Labs, Ronkonkoma, NY will give a talk on "Myths and Reality of CE Marking". Coffee, bagels and more talk at the Blue Dawn diner after the meeting. LILCO training center, off L.I.E. exit 57. For more information call Peter Buitenkant at (516) 491-3414.

November 9 -- 23, 8:00 AM- 5:00 PM --- Introductory C Workshop 1, by Walt Whipple, Ph.D., P.E. The workshop will be given on Saturdays at SUNY Farmingdale. For more information call Walt Whipple (516)738-3114 or e-mail at w.whipple@ieee.org.

November 14, 7:30 PM -- The Lasers & Electro-Optics Society. Professor Stephen R. Forrest from Princeton University will give a talk on "Organic Semiconductors for Optoelectronics". Polytechnic Farmingdale Campus, Route 110, Farmingdale, Main Building Auditorium. For more information call Marie Cotrone at (516) 738-4914.

November 19, --- FREE SEMINARS ON ISO/QS 900 Management Consultants Inc. is offering a free seminar on ISO/QS-9000 at Long Island, NY. Call Nancy Bongiomo at (516) 295-0949 for exact time and location and ask for a brochure for topics to be covered.

November 20, 7:00 PM --- Employment Assistance Commitee meeting at Polytechnic University. For more information call Victor George, (718) 831-0266.

November 21, 9:00 AM - 4:30 PM -- The New York Chapter of IEEE Communications Society offers a seminar at 345 47th Street, New York, NY, on "CONVERGENCE OF NETWORKS AND SERVICES". For more information see page 4 of this publication or call (718) 816-5222(voice mail) or Jim Barbara at fax (212)465-8877 or e-mail j.p.barbera@ieee.org.

November 25, 6:00 PM — EXCOM MEETING. AT AIL.

December 4, 7:30 PM --- Networking - LI Consultants Network --- General Networking meeting. Coffee, bagels and more talk at local diner after the meeting. LILCO training center, off L.I.E. exit 57. For further information call Peter Buitenkant at (516) 491-3414.

December 9, 4:45 PM --- RADAR--UNDERGOING A REVOLUTION Dr. Eli Brookner, Raytheon Company, will be the speaker in our Distinguished Lecturer Series. See article on page 2. AIL's main auditorium in Main Building on Commack Road, Deer Park.

December 18, 7:00 PM --- Employment Assistance Commitee meeting at Polytechnic University. For more information call Victor George, (718) 831-0266.

December 23, 6:00 PM — EXCOM MEETING. AT AIL.

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

IEEE COMMUNICATIONS SOCIETY
NEW YORK CHAPTER

91st Semi-Annual Seminar
at the United Engineering Center, 345 East 47th Street, New York, NY
November 21, 1996, 9:00 AM to 4:30 PM

"CONVERGENCE OF NETWORKS AND SERVICES"

One of the Webster Dictionary's definitions states: "convergence — the act, fact or condition of converging;" and "converge — together+verge — to be in the process of change or transition into something else."

This definition completely applies to the current processes in the telecommunications industry and can be stated as "interaction between new services, technology, and network development."

This Seminar will address the main driving forces of convergence, how long this transition into "something else" will last, and will assist us in better understanding what "something else," also called the global information infrastructure, means.

Keynote Speaker	Daniel Minoli, Director of Engineering and Development	Teleport Communications Group
Evolving Broadband and Multimedia Delivery Systems	John Seazholtz, Chief Technology Officer	Bell Atlantic Corp.
Perspectives on Convergence of Communications, Information, Retailing and Entertainment	William Ebeling, Partner	Deloitte & Touche L.L.P.
The $500 Personal Computer	James Lynch, Senior Director, Business Development Network Computing Division	Oracle Communications
The Convergence of Communications, Information and Entertainment; The ISH has Arrived	Charlotte Denenberg, V.P.	Southern New England Telecommunications Corp.
Lotus Notes Public Network	Don Price, Director of Technology Products Management	Lotus Development Inc.
The Digital TV Receiver: Accessing the Global Infotainment Infrastructure	Dr. James W. Wendorf, Research Department Head, Software Systems	Philips Research
More to come. See our web site at URL http://engine.ieee.org/comsoc/chapters/NYC/com19ny4.htm, or call our voice mail at 718-816-5222.		

Fee: for registration received before November 1, 1996: IEEE Members $125, Non-members $150;
for registration received on or after November 1, 1996: IEEE Members $150, Non-members $175;

For further information contact our voice mail at (718) 816-5222, or Jim Barbera at fax (212) 465-8877 or e-mail j.p.barbera@ieee.org

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Yes, please register me for the IEEE Communications Society New York Chapter Seminar on

"CONVERGENCE OF NETWORKS AND SERVICES"

Name: ..... Title/Position .....

Company: ..... Division/Group/Mailstop .....

Address: .....

Telephone ..... Fax: ..... E-mail: .....

☐ My check in the amount of $ ..... is enclosed.

☐ Bill my company. Please give purchasing order and billing address, etc.

Mail this registration to Robert E. Puttre, 637 Stratford Road, Baldwin, NY 11510-1031.

C/C++/VC++ SEMINAR IN FEBRUARY

The well received C/C++/VC++ Seminar will be offered again, tentatively on Monday and Wednesday evenings, February 10-26, 1997. Time will be 5:30-9:00 P.. Watch future *Pulse* editions for the official announcement.

The seminar is intended for those with some programming background as well as those with either C or C++ backgrounds. It is a high level introduction to the languages and includes demonstrations of the Microsoft's Visual C++ environment under Windows '95. Followup workshops to provide hands-on experience are being planned.

Further information is available from Walt Whipple at (516) 738-3114 or via email at w.whipple@ieee.org.

Masters Program in Clinical Engineering

A Masters degree in Clinical Engineering was approved by the New York State Board of Regents at its 20 September meeting. The program is being offered by the Institute for Biomedical Engineering and Rehabilitation Services [IBMERS] of Touro College. In particular, the program is research oriented, training service-providers in Clinical Engineering on the graduate level. This program has been retraining individuals excessed from the aerospace/defense industries. Dr. Bernard Lander, President of Touro College, stated that, "Touro College is committed to forging an impact in underserved training areas in the Health Science." Dr. Joseph Weisberg, Dean of the Barry Z. Levine School of Health Science of Touro College stated that, "Touro College is very pleased with this development since technology solutions are expected to significantly impact on the Health Care industry in the next century."

Self-Study Courses from IEEE Educational Activities

Effective Communication Series (Four videos)
Contact Elizabeth Sivco (908) 562-5499
Writing Reports to Get Results, by Ron S. Blicq and Lisa A. Moretto, provides sample reports and proposals for all types of situations, from inspecting a contractor's work to proposing a new computer system. The video teaches step-by-step how to write more easily, clearly, and effectively through the unique Pyramid Method.

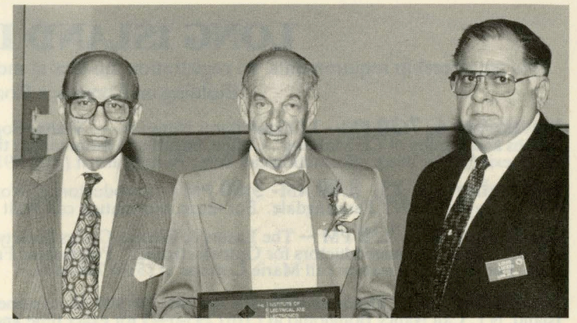
ATM Broadband Switching System Management via Open Interfaces and ATM Development and Applications: Selected Readings.
Contact Barbara Coburn or Elizabeth Sivco (908) 562-5485
Asynchronous transfer mode (ATM) technology is destined to play a major role in the public and private broadband networks of the future. This tutorial and book are necessary for network engineers, industry researchers, university students, and faculty.

Fundamentals of Power Electronics
Contact Barbara Coburn (908) 562-5498
Fundamentals of Power Electronics teaches the concepts of the characteristics of state-of-the art power semiconductor devices; principles of operation of static power conversion; pulse-width modulation (PWM) techniques for voltage and frequency control; thyristor commutation techniques; relative advantages and disadvantages of various conversion topologies; and analysis and design considerations of power electronic circuits.

IEEE LI Section Anual Award Ceremony

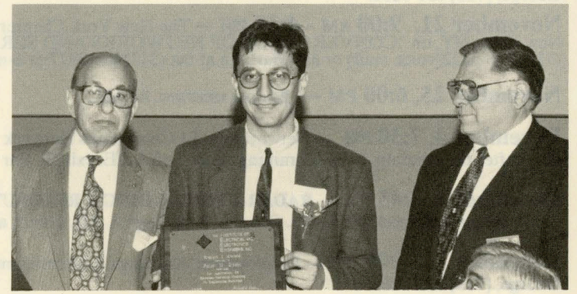
by Nader Bolourchi

Once again, award recipients; through their achievement, brought honor to themselves and their families and recognition to the LI section. Over 120 members and guests gathered together at an awards banquet ceremony, held on Sunday May 5th 1996, at the Huntington Hilton hotel to celebrate the achievements of twelve of our members. Dr. Yacov Shamash, the Dean of Engineering and Applied Science at the State University at Stony Brook was the banquet keynote speaker. Art Winston, Region 1 Director and Louis Pacieri Region 1 Chairman elect were among the distinguished guests. On this page are some photos of the IEEE Region 1 Award recipients at the awards banquet.



Rod Lowman (center) accepting his Region 1 Award from Jesse Taub(left) and Art Winston (right).

Thomas A. Cambell (center) accepting his Region 1 Award from Jesse Taub(left) and Art Winston (right).



Petar M. Djuric (center) accepting his Region 1 Award from Jesse Taub(left) and Art Winston (right).

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