



The IEEE

Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

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Newly Elected IEEE Fellows

The North Jersey Section is pleased to announce that the following Section members were recently elevated to the Fellow grade:

James M. Daly

"For contributions to the application of electrical wire and cable, and leadership in electrotechnical standards development"

Charles C. Huang

"For engineering contribution and technical leadership in the development of high-volume GaAs MMIC's for commercial applications"

Benjamin Melamed

"For contributions to performance analysis methodology and practice"

Stephen Pardee

"For pioneering leadership in the development of electronic design automation systems"

Jesse E. Russell

"For technical leadership in the development of digital wireless communication concepts, technology, systems, and standards"

Richard R. Shively

"For contributions to the design and application of programmable, real-time, and parallel signal processors"

North Jersey Section PACE: Technical Abilities And Social Problems

At the April 14, 1994 meeting of the North Jersey Section's Professional Activities Committee for Engineers, the topic will be "Applying Engineering Design Philosophy To The Problems Of Social Development." The speaker will be Rodney G. Cole.

About The Talk

The current rate of technological development is greater now than at any other time in the history of the world. Yet it is uncertain that our collective social development has kept pace with our technical abilities. The presentation will discuss several contemporary social problems

that are either a direct result of, or are made worse by the development and application of certain technologies. Basic design philosophy will be applied to some of these problems in order to illustrate the importance of expanding the role that engineers play in forming public policy.

About The Speaker

Rodney Cole has 12 years experience as a Development/Evaluation Engineer. He currently works as a Reliability Engineer at Electro-Biology, Inc., located in Parsippany. He has also held Production Engineering positions at Siemens Hearing Instruments, Inc. and Crosspoint-Latch Corporation.

Time: 7:30 PM, Thursday, April 14, 1994.
Place: JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, N.J.
Further Information: Robert Sinusas (201) 228-3941.

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NEWSLETTER STAFF

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Business Manager.....A.M. Beattie

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It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

SECTION OFFICERS

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Vice-Chairman-1.....Tom De Nigris
(201) 533-9325
Vice-Chairman-2.....Al Connelly
(201) 616-0755
Treasurer.....Art Greenberg
(201) 942-0048
Secretary.....Mel Lewis
(914) 968-2500, ext. 2304
Members-at-Large (3) Har Dayal
Dave Dietsche
Richard Estock

The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7 PM. These meetings are open to all members. Information on meeting agenda is available from Mel Lewis, Section Secretary at (914) 968-2500, ext. 2304.

Elected Section Officers are listed above.

North Jersey PES/IAS: Energy And Conservation Programs In Industrial Plants

On April 21, 1994, the North Jersey Power Engineering/Industrial Application Society Chapters will present a talk on "Energy Management And Conservation Programs In Industrial Plants." The speaker will be Bhawani P. Mukherjee, PE, of Lederle-Praxis Biologicals Division of American Cyanamid, in Pearl River, New York.

About The Talk

The presentation will discuss the salient aspect of an energy program, planning energy conservation and implementation to reduce the operating costs of production in industrial plants. The presentation also covers aspects of needed management support and program format which play a crucial role in the successful implementation of the program. As an illustration, Mr. Mukherjee will describe the energy management program at the Lederle Labs which has incorporated both steam and electricity conservation.

About The Speaker

Bhawani P. Mukherjee has been with American Cyanamid for the past 20 years, and he is presently the Director, Engineering and Technical Services, at Lederle Labs. He has worked on several projects for American Cyanamid through the U.S. and Europe and headed, as Chairman, the task force on Energy Management. Mr. Mukherjee is a licensed Professional Engineer in New York State and New Jersey.

All Welcome

Free Pre-Meeting Buffet

Members and guests interested in the meeting topic are invited. **Reservations are required** for the complimentary pre-meeting buffet which starts at 6:00 PM followed by the meeting at 7:00 PM.

Time: 7:00 PM, Thursday, April 21, 1994.
Place: JCP&L Co., Punch Bowl Room, 300 Madison Avenue, Morristown, N.J.
Reservations/Information:
Ken Oexle (JCP&L) (201) 455-8481; R.V. Rebbapragada (Ebasco) (201) 804-2011 or (212) 839-1473.

North Jersey MTT Chapter Looking For New Officers

The North Jersey MTT Chapter would like to recruit new officers. If you are interested in playing an active role in the running of this active chapter please contact Dick Snyder at (201) 492-1207 or Fax him at (201) 492-2471. Previous experience is not necessary.

No. Jersey-Control Sys. Soc.: Control Applications For Mobile Robots

The April 27, 1994 meeting of the North Jersey Section IEEE Control Systems Society will feature a talk on "Control Applications For Mobile Robots." The speaker will be Mr. Alan Santucci, of the Automation and Robotics Laboratory at Picatinny Arsenal.

About The Talk

A common goal of the many research and development projects in the area of automated mobile platforms has been the development and construction of completely autonomous vehicles capable of functioning in some intelligent fashion. However, even the most basic problems of navigation and collision avoidance encountered in such projects have been found to be very difficult to solve in any environment more general than that of a very structured laboratory.

The speaker will review the types of sensors that have been used to solve these problems in the past and then suggest how new technology can be applied to find alternative solutions to the navigation problems associated with automated mobile platforms. He will then describe the capabilities that his laboratory group has incorporated in the autonomous testbed that they have developed for material handling applications. He will present video tapes of such vehicles in action and of a simulation tool being used to generate the state tables for the control rules being designed.

About The Speaker

Alan Santucci has been a Research Scientist and Project Engineer in the Fire Control Division of the U.S. Army Armament Research, Development and Engineering Center (ARDEC) at Picatinny Arsenal in New Jersey, since 1981. Since 1985, he has been a Project Engineer for the Automation and Robotics Laboratory working in the fields of robotic control, image processing, autonomous navigation and digital signal processing. His work has focused upon basic research on autonomous robots and their application to labor intensive tasks.

Free Pre-Meeting Buffet

Reservations recommended for the pre-meeting buffet which starts at 6:00 PM followed by the meeting at 7:30 PM.

Time: 7:30 PM, Wed., April 27, 1994.
Place: John Howard Room, second floor, Hazell Student Ctr., NJIT, 323 Dr. Martin Luther King, Jr. Blvd., Newark, N.J.
Reservations/Information: Tim Chang (201) 596-3519; Fred Chichester (201) 744-7340.

Time/Frequency Technology State-Of-The-Art

On May 3, 1994 the IEEE North Jersey Section MTT-S/AP-S and NJIT will present "Time And Frequency Technology State-Of-The-Art." The speaker will be Hugo Freuhauf.

About The Talk

This presentation will be a technical tutorial especially designed for engineers and scientists as well as operation people, and will offer:

1. An update of the state-of-the-art in precision oscillators and a comparison of these technologies: Quartz Crystal, Rubidium Atomic, Cesium Atomic, and Hydrogen Maser Atomic Oscillators.

2. Understanding the important oscillator specs: Definitions of the parameters specified; Allan Variance stability measurements; Frequency and time domain; Environmental considerations.

3. Time and time/frequency transfer via GPS and other precision time and frequency signals: Establishment of UTC and GPS time; Available T/F transfer sources; Transfer via GPS to rubidium or quartz flywheels; GPS Selective availability.

4. Applications: Various commercial and military systems.

About The Speaker

Hugo Freuhauf is the Vice President and General Manager of Ball Efratom Time and Frequency Products, in Irvine, California and Ball Efratom Elektronik GmbH in Hofolding (Munich) Germany. Efratom is the leading developer and manufacturer of miniature Rubidium Atomic Oscillators and precision sub-miniature Quartz Crystal Oscillators. Mr. Freuhauf has been in this function for over 10 years, concentrating on the advancement of navigation and communication systems through the use of atomic oscillators and the interfacing of the GPS Global Positioning Satellite system for time and frequency.

Prior to Efratom, Mr. Freuhauf spent 15 years at Rockwell International involved in satellite systems design. He is the author of "Precision Time and Frequency" handbook, and has written many articles and papers about this subject.

All Welcome

Members and guests interested in the subject are invited.

Free Pre-Meeting Buffet

There will be a free pre-meeting buffet for attendees at 6:PM courtesy of CDB Enterprises, Inc.

Time: 7:00 PM, Tuesday, May 3, 1994.

Place: NJIT, ECEC202, Newark, N.J.

Information/Reservations: Dick Snyder (201) 492-1207; Willy Schmidt (201) 492-0371; Edip Niver (201) 596-3542 (NJIT).

North Jersey Section Activities APRIL 1994

Apr. 6, 1994—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Totowa Road, Totowa, N.J. Mel Lewis (914) 968-2500, Ext. 2304.

Apr. 14—"Applying Engineering Design Philosophy To The Problems Of Social Development"—North Jersey Section PACE, 7:30 PM, JCP&L Co., 300 Madison Ave. & Punch Bowl Road, Morristown, N.J. Robert Sinusas (201) 228-3941.

Apr. 19—"One-Day Seminar: Radar Signal Processing And Technology"—IEEE Aerospace and Electronic Systems Chapter of the Long Island Section, Radisson Plaza Hotel, Melville, N.Y. Thomas A Campbell, Chairman (516) 757-3008.

Apr. 20—"Seminar: The Business Side Of Optical And Microwave Companies; Plus, Optoelectronics Industry Show"—IEEE LEO Chapter with Center for Microwave and Optics at NJIT, 3:00-6:00 PM, NJIT, InfoTech Bldg., Room 1400, Newark, N.J. Dr. H. Grebel (201) 596-3533.

Apr. 21—"Energy Management And Conservation Programs In Industrial Plants"—No. Jersey PES/IAS, 7:00 PM, JCP&L, 300 Madison Ave., Morristown, N.J. Ken Oexle (JCP&L) (201) 455-8481.

Apr. 25-26—"Computer Integrated Manufacturing In The Process Industries (CIMPRO '94)"—National Science Foundation and Defense Logistics Agency, Brunswick Hilton Hotel, East Brunswick, N.J. For information: Ms. Cindy Ielmini (908) 932-3654 FAX (908) 932-5467.

Apr. 27—"Control Applications For Mobile Robots"—No. Jersey Control Systems Society, 7:30 PM, NJIT, John Howard Room, 2nd Floor, Hazell Student Ctr., 323 Dr. Martin Luther King, Jr. Blvd., Newark, NJ. Tim Chang (201) 596-3519.

Apr. 28—"Intellectual Property For Small And Start-Up Businesses"—IEEE Consultants Network of Northern NJ, 7:30 PM, GEC-Marconi Facility, 150 Parish Drive, Wayne, N.J. Jim Boyd (201) 584-0329.

Upcoming Meetings

May 3—"Time And Frequency Technology State-Of-The-Art"—North Jersey Section MTT-S/AP-S and NJIT, 7:00 PM, NJIT, ECEC202, Newark, N.J. Dick Snyder (201) 492-1207.

May 4—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Totowa Rd., Totowa, N.J. Mel Lewis (914) 968-2500, Ext. 2304.

May 19—"Seminar: Short Circuit Analysis"—NJ Section IAS/PES Chapters, 9:00 AM-3:00 PM, JCP&L Hq., 300 Madison Ave., Morristown, NJ 07962. V. Rebbapragada (201) 804-2011.

May 26—"Design Issues Related To Powering And Grounding Sensitive Electronic Equipment - IEEE Std. 1100 Perspective"—North Jersey PES/IAS, 7:00 PM, JCP&L, 300 Madison Ave. Morristown, N.J. Ken Oexle (JCP&L), (201) 455-8481.

Members and Non-Members Welcome
PLEASE POST

Section Seeks UNIX Instructor For Fall Semester

The North Jersey Section is seeking a UNIX instructor for a course to be given in the fall semester. Anyone interested in teaching please call John Baka at (201) 455-8534. His Fax is 644-4231.

North Jersey PES/IAS: Protecting Sensitive Electronic Equipment

On May 26, 1994, the North Jersey Power Engineering/Industrial Application Society Chapters will present a talk on "Design Issues Related To Powering And Grounding Sensitive Electronic Equipment - IEEE Std. 1100 Perspective." The speaker will be R.V. Rebbapragada of Raytheon Engineers and Constructors Inc., Ebasco Division.

About The Talk

Supplying power to and grounding of sensitive electronic equipment has been a growing concern for commercial and industrial power system designers. With the proliferation of sensitive electronic loads in industrial and commercial power systems due to rapid changes in the electronics and communications industry, new power quality-related issues have evolved. As technology advances, sources for electrical power disturbances increase. The presentation will cover power quality, grounding, protection against disturbances (EMI, surges and sags) and shielding (TEMPEST).

About The Speaker

R.V. Rebbapragada has over 30 years of experience in the engineering and analysis of electrical systems and equipment. Currently, he serves as a Senior Consulting Electrical Engineer for the Nuclear and Advanced Technology Division of Raytheon Engineers and Constructors, Inc., Ebasco Division. He is a registered professional Engineer and performs extensive consulting work in

shielding and grounding problems and applications.

All Welcome

Free Pre-Meeting Buffet

Members and guests interested in the meeting topic are invited. **Reservations are required** for the complimentary pre-meeting buffet which starts at 6:00 PM followed by the meeting at 7:00 PM.

Time: 7:00 PM, Thursday, May 26, 1994.

Place: JCP&L Co., Punch Bowl Room, 300 Madison Avenue, Morristown, N.J.

Reservations/Information:

Ken Oexle (JCP&L) (201) 455-8481; R.V. Rebbapragada (Ebasco) (201) 804-2011 or (212) 839-1473.

CIMPRO '94

The National Science Foundation and the Defense Logistics Agency is sponsoring a conference "Computer Integrated Manufacturing in the Process Industries (CIMPRO '94)." The conference, endorsed by the IEEE Systems, Man, & Cybernetics Society, and IEEE's Robotics & Automation Society, will take place April 25 & 26, 1994 at the Brunswick Hilton Hotel, East Brunswick, N.J.

The conference includes more than 85 presentations covering all major topics of interest, including: Statistical Process Monitoring and Control; CIM Information Systems; Fault Detection; Monitoring and Diagnosis of Industrial Processes; Sensors and Process Automation; Artificial Intelligence; Neural Nets and Fuzzy Logic Control; Robust Design of Processes; Scheduling and Production Control. Also, applications in continuous and batch process industries, including chemical and petrochemical, pharmaceutical, food and beverage, pulp and paper, among others.

To make reservations or to obtain conference program contact: Ms. Cindy Ielmini, CIMPRO '94 Conference Secretary, Dept. of Industrial Engineering, Rutgers University, P.O. Box 909, Piscataway, NJ 08855-0909, Tel. (908) 932-3654, Fax (908) 932-5467, email cimpro@princess.rutgers.edu.

Letter To The Editor

RE: Education for the 21st Century

Our grade school just hired a new superintendent who wants to turn the gym into a 2-story media center. That would accommodate the herds of PCs needed to implement this state's mandate of **Education for the 21st Century**. (Actually, he also wants a new gym, but that's quite another story). Well, I secured a copy of the document called *Educational Technology in New Jersey: A Plan for Action* which provides a foretaste of how our educators will make America competitive again.

On p.2 we find out why the old methods must go: "As we approach the end of the century, **knowledge is doubling every six months...**". Within a modest working life for an engineer of 20 years, our knowledge thus grows over a TRILLION times, turning a graduate prawn into about a thousand Einsteins. At such progress, even futurist Toffler must blanch. Unfortunately, after the 1.7 years since its publication, the Trenton bureaucrats' report itself is now 70% obsolete!

The key paragraph continues "If we want our students to compete in the global, dynamic, information-intensive world, they need...technology tools (to) assist in meeting the **ever-changing educational demands...**". A nicely turned phrase, but how come nations with stone-age school systems thrash our industries in the world markets?

In Japan, kids scrub their own school floors to save money and to instill civic pride. In China, which will likely overtake Japan as our top competitor, I saw "middle-class" tots sit in anoraks (no decadent glass windows there!) equipped with inkwell and brushes, practicing their 5000 basic characters. And some of the finest engineers I have met in my long career had acquired their three Rs on slates!

So why should New Jersey EEs get all steamed up over another feeble-minded scheme from Trenton? Because our children (or grandchildren) are the guinea pigs, never mind the waste of limited resources (i.e. property taxes). Teaching a few classes at the Morris County College, I've witnessed first-hand the impact of "new math" and pocket calculators. Only the few able to solve my simple ohm's-law problem in their heads came within an order of magnitude of the correct answer!

Can you imagine how putting first-graders on "computer-based instruction will improve their **higher-order thinking skills**" (p.9)? No, they will gobble down the edutainment industry's prepackaged ideas. Only an organization as unquestionably qualified in matters of "higher-order thinking skills" and computer usage as the IEEE has any hope of persuading our legislators to veto this lunacy. To this end, I'd like to see an advisory board launched at the Section level; I'll be happy to help by explaining the state's "Plan for Action" in more detail.

With best regards, **Max J. Schindler**

Engineers Network Association

If you are an experienced engineer seeking employment at a salary of at least \$35,000 per year, we invite you to join the Engineers Network Association, a metro area weekly forum for career networking and the exchange of job leads. Bring at least one unpublicized job lead that you do not intend to pursue, to share with others who may be interested. Dues are \$2 per meeting.

The Engineers Network Association meets 1:30 PM, every Wednesday at the Annunciation Church, W. 50 Midland Avenue, Paramus, N.J. G. S. Parkway to exit 163, then Route 17 north for 1/2 mile to "Midland Ave. (west) - Glen Rock" exit; Annunciation Church is just ahead on the left. From I-80: exit 62 to G.S. Parkway north, and proceed as above.

For further information, call Merrill Rutman (Member, IEEE), at (201) 447-6041.

No. NJ Consultants' Network: **Intellectual Property For The Small Business**

At the April 28, 1994 meeting of the IEEE Consultants' Network of Northern NJ there will be a presentation on "Intellectual Property For Small And Start-Up Businesses." The speaker will be Michael Schwarz of Robin, Blecker, Daley & Driscoll.

About The Topic

This talk will cover patents, trade-marks, trade secrets and copyrights ("intellectual property") as they relate to small and start-up businesses. Some of the problems and opportunities will be identified which can be presented by intellectual property rights. Mr. Schwarz will discuss how and why to avoid conflicts with the rights of others and how to protect and profit from your own rights.

Over the past few years intellectual property rights, particularly patents, have become increasingly important as competitive

tools. A well planned strategy can build up assets, boosting the value of a company and improving the prospects of raising capital for a startup company. In contrast, patent infringement problems can cripple a small company due to the cost of litigation, damage payments and being forced to take products off the market. Consequently, no technology-related business can afford to ignore the intellectual property rights of others or the need to protect its own intellectual property rights. Some guidance will be offered as to how intellectual property can be used to the advantage of the small business.

About The Speaker

Michael Schwartz is a patent attorney with a small intellectual property law firm in New York City. Prior to that, he was an in-house patent attorney with Becton Dickinson and Co. Mr. Schwarz is experienced in all aspects of obtaining, licensing and protecting intellectual property rights.

About The Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in April 1992 to

encourage and promote the use of independent technical consultants by business and industry. Meetings are held on the last Thursday of each month at GEC-Marconi. The Network's second annual Directory of Consultants is now available. To receive a complimentary copy, call Alex Richardson (201) 992-0448.

Optional Pre-Meeting Dinner

Members are invited to get together at the Steak and Ale Restaurant in the American Way Mall on Rte 46 Eastbound, (right next to Bannigans—after Passaic Ave. and before Willowbrook Mall), in Fairfield, N.J. For directions, call (201) 227-2134. For reservations (**REQUIRED**), call Frank Scholten (201) 994-9819.

Time: 7:30 PM, Thursday, April 28, 1994.
Place: GEC-Marconi Facility, 150 Parish Drive, Wayne, NJ.

Information: For directions or up-to-date meeting status call (201) 736-0771 (Walker Elec. Services 24hr VOICE MAIL). For meeting information or other questions call Jim Boyd (201) 584-0329.

NJ LEO Society Chapter:

LEO Seminar And Industry Show At NJIT

On April 20, 1994, the IEEE Laser and Electro Optics Chapter together with the Center for Microwave and Optics at NJIT will present a seminar "The Business Side Of Optical And Microwave Companies." There will be two talks and an industry show.

The talks will be: "Starting An Optoelectronics Business" by Dr. Gregory Olsen, President of Sensors Unlimited, Inc., Princeton, N.J., and "Commercial GaAs MM-Wave Integrated Circuits" by Mr. Ronald Rosenzweig, President of Anadigics, Warren, N.J.

"Starting An Optoelectronics Business"

The history of Sensors Unlimited and EPITAXX—optoelectronic device firms with roots in the RCA David Sarnoff Research Center—will be reviewed from start-up to acquisition. Topics covered will include business plans, venture capital, key employees, and R&D funding. Mistakes, pitfalls, and successes will all be included. Key issues include the environment of a small vs. large company and product quality. Resources to help start companies and the financial climate for the 1990's will be discussed followed by a question and answer period.

About Dr. Olsen

Gregory H. Olsen received the BS Physics, BSEE and MS Physics (magna cum laude) from Fairleigh Dickenson University, and PhD in Material Science from the University of Virginia. From 1971 to 1972, he was a visiting scientist at the

University of Port Elizabeth (South Africa), Physics Department. In 1972, Dr. Olsen joined RCA Laboratories at Princeton, N.J. as a member of the Technical Staff. He brought major innovations to the hydride vapor phase crystal growth of InGaAsP alloys and developed long-wavelength lasers and detectors.

In 1984, he founded EPITAXX Inc., a high-technology company in Princeton, N.J., which made fiber optic detectors and emitters. It was acquired by Nippon Sheet Glass in 1990.

Dr. Olsen founded Sensors Unlimited in 1991 for the purpose of state-of-the-art R&D and custom manufacture of optoelectronic devices for pollution monitoring and remote sensing. His background covers vapor phase epitaxy crystal growth, crystal defects, characterization of III-V compounds, and optoelectronic devices for fiber optics, near-infrared instrumentation, and imaging applications. Dr. Olsen is a fellow of IEEE and has been active in many technical societies. He was a 1992 IEEE/LEOS Distinguished Lecturer.

"Commercial GaAs MMIC Applications"

The future of the GaAs MMIC industry is in the commercial sector. There is a cornucopia of high volume applications, such as DBS cellular telephone, PCM, fiber optics and GPS that are targets for cost effective GaAs MMIC solutions. The key to success is the ability to produce functional circuits in high volume at low cost. To be successful

takes a shift in emphasis from low volume, high selling price "jewelry" applications, to the rigors and discipline of high volume manufacture.

About Ronald Rosenzweig

Ronald Rosenzweig is President and Chief Executive Officer for Anadigics, a position he has held since co-founding the Company in 1985. Anadigics is a leader in the design and manufacture of high speed, gallium arsenide (GaAs) analog integrated circuits (ICs) used in high volume commercial and consumer electronics applications.

Rosenzweig is an experienced Chief Executive Officer with a proven track record in directing the process of creating a successful business based on state-of-the-art technology. In addition to directing the successful day-to-day operations of Anadigics, Mr. Rosenzweig was also a co-founder of Microwave Semiconductor Corporation (MSC). He served as President of MSC for 15 years. MSC, a manufacturer of microwave silicon and GaAs transistors and amplifiers, was later sold to Siemens Corporation and, subsequently, to SGS Thomson.

Mr. Rosenzweig is a graduate of the City College of New York where he received his Bachelor of Science Degree in Chemical Engineering.

Time: 3-6 PM, Wednesday, April 20, 1994.
Place: NJIT, InfoTech Bldg., Room 1400, Newark, N.J.

Further Information:

Dr. H. Grebel (201) 596-3533 or Dr. E. Niver (201) 596-3542.

Professional Activities Committees for Engineers NEWS

By Richard F. Tax

The first part of this month's PACE column features an article by Charles Lessard and is reprinted from the February 1994 issue of "IMPACT." The question of the moment is: Should we or should we not continue to support USAB?

PACE Chairman's Corner

1993 PACE Chairman William D. Whipkey indicated in his Year-end Report that he was bewildered by new survey results showing that approximately half of IEEE's members prefer that professional activities be optional. Many technical society members may see IEEE-USA's activities conflicting with global expansion. Other members may view IEEE-USA as stagnant, their impressions being that the issues are always the same and nothing is achieved.

The issues are not always the same, however. Let's compare engineering employment problems in the 1970s to those of the 1990s. In those two periods, the economic and political environments driving employment rises and declines are different. Unemployment in the 1970s did not result from a political decision to downsize defense forces and the supporting industrial base, nor was the world economy in recession. Increased regulatory measures and effort aimed at reducing the U.S. deficit have contributed to employment problems in the 1990s.

Should IEEE-USA not be concerned with early employment terminations and the resulting non-hiring of engineers more than 50 years of age; or with the fact that approximately one-third of engineering graduates between 1990-93 are unemployed; or with the possible effects of Federally mandated health care reforms? If IEEE-USA doesn't care, who will? The transnational technical societies? I don't think so. Back to square one.

In the 1970s IEEE's leaders and members wisely created USAB to focus on the nontechnical, socioeconomic and political issues that affect the careers and well-being of IEEE's U.S. members. Out of USAB, PACE grew from a committee to a council. A record number of volunteers disseminated information to Section and Society members and detailed numerous USAB Council activities. Consider the PACE Workshop Report—an overview of PACE's numerous efforts and accomplishments.

Shifting to the future, IEEE revealed its "globalization strategy" after a retreat the last week of January. As a result, USAB will undergo a reorganization that will reshape council structures. It is necessary to plan from the top down; however, bottom-up, grass roots feedback is also essential in the restructuring process.

Though the future is uncertain, IEEE-USA and concerned volunteer members must continue to work on long-term problems and emerging issues. The basic problem of focusing efforts and communicating with members remains.

As Chairman Whipkey pointed out on numerous occasions, "PACE is USAB's communications network that flows in both directions." In future years PACE's task will continue to be effective communications with grass roots members, generation of interest in professional issues, and recruiting members to volunteer and participate in professional activities.

Charles S. Lessard

Whipkey's concern is for IEEE-USA (USAB) and that the membership have split opinions about supporting this entity in the future. Lessard defends the existence of IEEE-USA citing their concerns about employment terminations, age discrimination, unemployed graduates, etc. "If IEEE-USA doesn't care, who will?" he writes.

It has been my long time impression that some committees of IEEE-USA or USAB are trying to solve some of the problems that other committees of USAB are producing. The problems cited by Professor Lessard are problems and symptoms produced by an over supply of engineers and excessive degree production by the engineering colleges. Engineers have always been treated better when they are in demand. USAB's Precollege Education committee has been encouraging degree production since its inception and is responsible for and spending your assessment money on student recruiting. Therefore, this committee and its members are the problem producers.

Although I have been a supporter of USAB for many years I have my doubts about their value to the engineering members of IEEE. Eliminating USAB would reduce IEEE's membership fee by 25% and perhaps increase our membership or at least retain some of the members we are losing. Supporters of USAB argue that eliminating USAB because of some committee's activities would be "throwing out the baby with the bath water." I believe the only people we would be throwing out would be a group of selfish dirty old men, from the good old boy network, that refuse to change and consider the needs of the profession.

IEEE and USAB's management have been taking more from the members, producing less, listening less and preventing members from participating. They cite communications as a problem and that "PACE is USAB's communications network that flows in both directions." Communications are not the problem. The problem lies in the fact that the goals of USAB are no longer the goals of the members and PACE is closer to the members. This expensive stand-off continues. Perhaps it's time to pull the plug.

Our North Jersey Section's membership contribute \$100,000 to USAB every year. Our Region I members contribute one million dollars to USAB every year. In return, USAB provides Region I with a budget of \$11,000 to carry on Region and Section PACE activities. USAB does not provide any funding for our Section PACE activities. Last year a PACE leader scoffed at a North Jersey Section officer who requested clearance and funding to attend the annual PACE conference to represent our Section. The PACE leader said we should find our own funding to cover the cost of sending a representative to the conference. What happened to the \$100K we sent to USAB? This management action discourages participation by the active membership of IEEE.

I want you to know that the North Jersey Section officers work very hard for the Section, and for every dollar they spend they put in a lot of time making it work for the Members' benefit. As a past chairman of the North Jersey Section, past Chairman of the Metropolitan Sections Activities Council and an active member of the Section and the Region I Executive committee I believe it's time to vote on the continued existence of USAB. What do you think?



An IEEE Seminar on **SHORT CIRCUIT ANALYSIS**

**presented by the IAS and PES Chapters,
New Jersey Section**

**Thursday, May 19, 1994, 9:00AM to 3:00PM
Jersey Central Power and Light HQ
300 Madison Ave., Morristown, NJ 07962**

Topics

- Introduction
 - Seminar overview
 - Reasons for a short circuit study
 - Basic concepts
 - Per-unit system
 - Equivalent circuits
 - Symmetrical components
- How to do a short circuit study
 - Single-line diagram
 - Defining study requirements
 - Determining system impedances
 - Typical impedance data
 - Impedance diagram
 - Calculations
 - Manual
 - Computer
- Interpreting and applying results
 - Interrupter evaluation
 - Circuit breaker ratings
 - Fuse ratings
 - Breaker-fuse combinations
 - Protection coordination
 - Inputs to other studies
 - Harmonics
 - Motor starting
- Case studies
- Review of key concepts

The seminar is based on the "IEEE Brown Book," IEEE/ANSI Std 399-1990, *IEEE Recommended Practice for Industrial Power Systems Analysis*.

Speakers

M. Shan Griffith, P.E., Fellow, IEEE. Electrical Analysis Manager, Brown & Root, Inc., Houston, TX. Working Group Chairman for the IEEE Brown Book.

Richard H. McFadden, P.E., Fellow, IEEE. Chief Electrical Engineer, Advanced Technology Division, Science Applications International Corp., New York, NY. Former Working Group Chairman for the IEEE Brown Book.

R. Vittal Rebbapragada, P.E., Senior Member, IEEE. Senior Consulting Engineer - Electrical Power Systems, Ebasco Services Division, Raytheon Engineers and Constructors, New York, NY.

Cost - including materials, morning refreshments, and luncheon:

IEEE members	\$150.00
Non-members	\$195.00
Students with valid ID	\$50.00

All paid attendees will receive a complimentary copy of the IEEE Brown Book.

Registration opens at 8:30AM

Reserve your place by mailing a check payable to "IEEE North Jersey Section" to R.H. McFadden, SAIC, 8 West 40th St., New York, NY 10018 **by May 7, 1994.**

For information or late registration, call Vittal Rebbapragada, (201) 804-2011, Ken Oexle, (201) 455-8481, or Dick McFadden, (212) 764-2820.

Programmable Logic Devices

1-Day Design Workshop

Saddle Brook, NJ: April 25, 1994
May 19, 1994

Manhattan, NYC: April 28, 1994
May 25, 1994

Registration: 8:30 am - 9 am. Workshop: 9 am - 4:30 pm
(Exact location will be provided in the confirmation letter)

Attendance limited to 10 per workshop. Advance registration is required.

You are invited to attend a one day tutorial and a hands-on individual training in designing Programmable Logic Devices (PLDs/CPLDs). We will also discuss PLDs' competitive advantage in the quickly changing technology environment. Altera's MAX+PLUS II software (PC version) for development of programmable logic will be used during the class.

PLDs and complex PLDs (CPLDs) have become a preferred method of logic design, allowing for user-configurable digital integrated circuits. With costs decreasing, complexity up to 16,000 usable gates and increasing constantly, and a short time-to-market, PLDs/CPLDs are more and more often the first choice for original designs and may also be used in prototyping some Application Specific Integrated Circuits (ASICs).

WORKSHOP HIGHLIGHTS.

- Review briefly various logic device types available
- Discuss PLDs/CPLDs as a replacement for older logic designs and as an alternative to or a prototype for ASIC
- Discuss different design entry methods and use them to implement a specific logic design
- Learn how to: compile a design for a specific device; simulate design; perform timing analysis; and program a specific logic device.

WHO SHOULD ATTEND. Component and systems designers, test engineers, project leaders and R&D managers who are using or considering PLDs/CPLDs. Digital logic design background is required. **CAD/CAE experience is not required.**

INSTRUCTOR. Dr. Ewa Herbst has experience in basic research and R&D in both academia and biomedical electronics industry in Sweden and in the U.S. She has a Ph.D. in electrical engineering from Chalmers University of Technology in Sweden and has held visiting professorships at the University of Kentucky in Lexington, KY and at Tulane University in New Orleans, LA, where she also taught electronics courses. She is a Senior Member of IEEE and has been involved in PLD projects for several years. Dr. Herbst is currently heading her own research and consulting business.

Your attendance at this Workshop will entitle you to utilize the MAX+PLUS II development tools, free of charge, for 30 days following the Workshop. Since attendance is limited, it is important that you register as soon as possible. To ensure the availability of the software package for your platform (PC, Sun SPARCstation, HP 9000 Series 700 or DEC Alpha AXP platforms), we need to have your registration no later than 3 weeks prior to the Workshop.

For more information, call PLD Workshop: (201) 487-7997.

PLD Workshop Registration Form

Name _____	Phone _____	Fax _____
Company _____	Position _____	
Address _____	City _____	State _____ Zip _____
Workshop:	Registration (Workshop, Notes, Refreshments, 30-Day Software Use):	
NJ <input type="checkbox"/> April 25 <input type="checkbox"/> May 19	IEEE Members:	\$445 IEEE #: _____
NYC <input type="checkbox"/> April 28 <input type="checkbox"/> May 25	non-IEEE Members:	\$495
On-site courses available upon request.	Group rates:	\$445 (3 or more)
Amount enclosed: \$ _____	(Registration less than 3 weeks prior to workshop: + \$50)	

I ☐ request/ ☐ do not request MAX+PLUS II development tools for 30 days use following the course for:
☐ PC (Windows) ☐ HP 9000 Series 700 ☐ Sun SPARCstation ☐ DEC Alpha AXP
☐ I am interested in receiving information on future seminars/workshops.

Signature _____

Make your check payable to: Ewa Herbst & Associates (for PLD Workshop), P.O. Box 89, Edgewater, NJ 07020-0089
 Cancellation fee: \$50. No refunds on cancellations received 2 weeks or less prior to the course.