



The IEEE

# Newsletter

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It is not necessary to inform the North Jersey Section when you change your mailing address. The 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 - 2 . . . . . Joseph Fink 761-1809  
Treasurer . . . . . Eugene Niemiec 239-4389  
Secretary . . . . . Charles Coulomb 455-8547  
Member-At-Large . . . . Theodore N. Higginson  
Member-At-Large . . . . Robert Sinusas  
Member-At-Large . . . . John F. Van Savage  
Jr. Past Chairman . . . . Alex Brown

### Honor Perlis

At its April 6th meeting, the Executive Committee of the IEEE North Jersey Section voted to honor past chairman Harlan Perlis by donating \$100 to the memorial fund bearing his name at NJIT.  
Members who may wish to send personal contributions should contact NJIT.

### To Tour No. 4 ESS At AT&T Long Lines

A tour of a No. 4 Electronic Switching System (ESS) at AT&T Long Lines, Rochelle Park, N.J., will be sponsored on May 18th, 1983 by the North Jersey Computer/Communication Chapter.  
The No. 4 ESS in Rochelle Park is a PCM, local tandem switch with TI compatibility. It is relatively new, installed in August 1982, and is one of four regional switches within New Jersey. In addition, the tour will include an explanation of the Fiber Optic Light Guide Installation. Due to the limited number of personnel to conduct the tour, the tour attendance will be limited to the first 25 reservations.

The No. 4 ESS is located on the 5th floor of a nine story building at 75 W. Passaic Street (south side). Parking is available across the street in front of another AT&T Long Lines Building (white 2 story).  
West Passaic Street can be reached when north bound on the Garden State Parkway at exit 160. If south bound on the Garden State, take exit 163 on to Route 17 south, then take the first exit past the Garden State Plaza on to Rochelle Avenue, final-

ly take the first right on to West Passaic Street.  
For an update on the latest switching technology, please plan on attending by making your reservation now. RESERVATIONS ARE REQUIRED.  
  
Time: 7:30 PM, Wednesday, May 18, 1983.  
Place: AT&T Long Lines, 75 West Passaic Street, Rochelle Park, N.J.  
Information & Reservations: George Parowski (201) 529-6141.

### PACE Sets New '83 Meeting Dates

The North Jersey Section Professional Activities Committee will sponsor its regular monthly meeting the third Wednesday of every month. Meetings will be held from 7:30 PM to 9:30 PM at Singer-Kearfott, Plant 3, 1250 McBride Avenue, Little Falls, N.J.  
These meetings are open to all members and interested public professionals with refreshments free of charge.

Further Information: M. McLarin (201) 335-6847; H. Waters, (201) 785-6417.

### "Potentials" Supported

The Executive Committee of the IEEE North Jersey Section has donated \$500 to support the IEEE student magazine, "Potentials." The gift, in the name of all Section Members, will be sent to the IEEE to help defray the substantial deficit of the publication.

#### HOWARD H. LEACH, JR. — Member-At-Large

Howard H. Leach, Jr., currently Chairman of the Computer/Communications Chapter, has been a member of the IEEE for about 15 years. He was also active within the North Jersey Section as Vice Chairman of the Computer/Communications Chapter from 1980 through 1982.  
Mr. Leach holds a BEE from Rensselaer Polytechnic Institute, a MSEE from Union College, Schenectady, N.Y., and a PE license with the State of New York. Presently, he is employed by IBM as a Staff Programmer in the Advanced Techniques Department within the Interactive Systems Support Group, Franklin Lakes, NJ. Previous experience with IBM includes system test and system engineering work on defense as well as commercial projects. He also has served 5 years on active duty as an Air Force Electronics Officer and is still active in the Reserves as a Computer Operations Officer.

#### MAITLAND McLARIN — Member-At-Large

Maitland McLarin has been actively engaged in IEEE activities for many years, especially at the Section level. This past year he has served as chairman of two local committees: Professional Activities Committee for Engineers (PACE) and Program. Previously he was active in the Control and Computer Chapters.  
Presently a consultant, he previously served as an Electronics Engineer at Picatinny Arsenal for 14 years. Earlier experience included systems design work at Univac; programming analysis at General Electric; and experimental flight navigation and communication research at Lockheed.  
A PE and CDP, McLarin's work at Picatinny included missile testing, component design analysis and modification, telemetry system design and flight data analysis. He also served as coordinator for the safeguard atomic warhead product assurance management system developed by the computer branch.

#### ROBERT SINUSAS — Member-At-Large

Robert Sinusas has been involved with the Executive Committee of the North Jersey Section of the IEEE since 1975. During 1975-1976 he was the Chairperson of the Socio-Economics Committee. The Socio-Economics Committee was the forerunner of the present PACE Committee. Since 1979 he has held the position of Group Coordinator and has been involved in forming new groups and societies in the North Jersey Section. He was elected Member-at-Large in 1981.  
For his undergraduate studies he attended Drexel University in Philadelphia, Pa. He continued his graduate studies at the New Jersey Institute of Technology in Newark. He has worked and consulted for a number of companies in the North Jersey area; Fairchild, Monsanto, Dumont Labs, Weston and Bendix. He is currently associated with T.P. Consultants.

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BE SURE TO SIGN ON  
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MAILING BY  
MAY 31, 1983

All grades of membership, except students, should vote for one candidate for each office (except members-at-large).

#### NJ Section Ballot 1983-1984

##### Chairman

☐ Anne Giedlinski

##### Vice Chairman 1

☐ Eugene Niemiec

##### Vice Chairman 2 (Vote for 1 only)

☐ Ted Higginson  
☐ Dick Tax

##### Treasurer

☐ John Van Savage

##### Secretary

☐ Charles Coulomb

##### Member-At-Large (Vote for three only)

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☐ Maitland McLarin  
☐ Robert Sinusas

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advises other IEEE Sections on PACE activities. Richard originated and managed Project EGO, a program to stimulate member interest by adding the PACE NEWS column to our Section Newsletter. This project is now in its 6th year and was funded by USAB. He wrote more than 60 articles dedicated to professional activities.

Richard has actively participated in seven National PACE/USAB Conferences and assisted members of the Service Contracts and Career Maintenance Task Force.

In 1977, he started the USAB Task Force for the BLS, Occupational Outlook Handbook. With Congressional assistance this Task Force made significant corrections to the Handbook. He has directed the efforts of this operation for the past 6 years. This effort is now supported by the entire USAB Manpower Task Force.

During 1982 he Chaired the ad-hoc committee to write the "1983 USAB Management Goals." The primary Goal being to, "Fulfill the needs of our members."

Richard is presently a member of the USAB Manpower Task Force and he continuously stresses the importance of Membership participation at our North Jersey Section level.

**JOHN F. VAN SAVAGE — Treasurer**

Mr. John F. Van Savage is associated with the United States Army Communications and Electronics Command (CECOM) as a senior electronics engineer in its Center for Systems Engineering and Integration Lab.

He was the recipient of the North Jersey Section's Meritorious Service Award in 1981. He was the past chairman of the Control Systems Society and is presently chairman of the New York/New Jersey Section Engineering Management Societies and a Member-at-Large, North Jersey Section. He was also active in the Educational Committee and coordinated the CMOS and MOS Circuit Design courses with RCA engineers who worked in this state-of-the-art discipline.

Mr. Van Savage also serves on the Admissions and Advancements and Fellows and Awards Committee. He served on the IEEE ELECTRO 79 Industry Reception Committee and played a major role in obtaining the 1/50th scale model of the Apollo Space Shuttle from Rockwell International for ELECTRO 79. He is a member in the New York Academy of Science.

**CHARLES A. COULOMB — Secretary**

Charles A. Coulomb joined Jersey Central Power and Light Co. in 1963. He has held positions in facility planning, forecasting and project management. Presently, he is Distribution Planning Manager in charge of distribution facility planning and project management. His IEEE activities include Publicity Chairman and Secretary of the North Jersey Section as well as a member of the Admissions and Advancement Committee and an Electro committee member.

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## 1983-84 SECTION OFFICERS NOMINATIONS

### ANNE M. GIEDLINSKI — Chairman

Anne M. Giedlinski is employed by Jersey Central Power & Light as Northern Area Engineering Manager. She was graduated from Penn State in 1967 with a BSEE. She began working for Jersey Central Power & Light in 1967 in their System Planning Department and was transferred to the Distribution Engineering Department in 1975. Miss Giedlinski was promoted to Supervisor-Area Engineering, Northern Area, in 1977, where she remained until being promoted to her present position in May, 1982.

Currently serving as Vice Chairman 1 for the Section, Miss Giedlinski has been active in the Power Engineering Society as well as the North Jersey Section. She was the 1976-77 chairman of the North Jersey PES. In 1978 she was elected Member-at-Large in the Section; in 1979, Secretary; in 1980, Treasurer; and in 1981, Vice Chairman 2. She has also served on the Host Committee for the ELECTRO show in New York for the past three shows.

### EUGENE W. NIEMIEC — Vice President — 1

Eugene W. Niemiec is a graduate of Newark College of Engineering, 1961, BSEE. After a seventeen year career as Senior Member of the Technical Staff with the Microwave Advanced Development Department of ITT Defense Communications Nutley, N.J., Mr. Niemiec joined Merrimac Industries Inc., of West Caldwell, N.J., as their Technical Director in June, 1979. In August, 1981, he was appointed Executive Vice President/Technical Director.

Mr. Niemiec presently holds the post of Treasurer of North Jersey Section IEEE. He also held the posts of Secretary and Member-at-Large in 1981 and 1982 respectively as well as Chairman of North Jersey MTT/AP Chapter for 1976 thru 1978.

Mr. Niemiec holds numerous patents related to the microwave field and has authored several papers, most recent of which was presented at the North Jersey IEEE sponsored BCEE Chapter during April, 1981.

### THEODORE N. HIGGINSON — Vice Chairman — 2

Theodore N. Higginson received a BSEE degree from Villanova University, Villanova, Pennsylvania. In 1966 he received an MBA from New York University.

He began his career as an engineer with the Western Electric Company in 1962. From 1962 through 1966, he had various engineering assignments. He is past Co-Chairman of Western Electric National Engineer's Week Activities.

Ted is currently Manager, Sales (National Accounts). Presently he is responsible for a Network Systems Design Organization, performing consulting on local networks.

Ted joined the IEEE as a student member in 1958 and became a member in 1962. In 1982 he became a Senior Member. He is past Chairman of the Computer/Communications Chapter, North Jersey Section, and is currently a Member-at-Large of the North Jersey Section.

### RICHARD F. TAX — Vice Chairman — 2

Richard Tax has a BSEE degree and is a Senior Member of the IEEE. He was awarded his Senior Membership based on his experience in the design of precision electro-mechanical servo systems.

Mr. Tax received the North Jersey Section Award for Leadership in 1979 and the Region I, United States Activities Board (USAB) Award for Leadership in 1981. He has been active in the Section since 1974 and was appointed as Chairman of our Professional Activities Committee for Engineers (PACE) in 1976. Richard has also served the Section as a Member-at-Large.

As PACE Chairman he obtained Section support to extend coverage of the IEEE Code of Ethics to include all IEEE Members and not only engineers. He was responsible for extending Section Executive Committee and PACE meetings to include the summer months, thus maintaining Section activities and continuity throughout the year.

As PACE Chairman he organized more than 40 meetings and

## Distinguished Lecturer On Microstrip Antennas

Distinguished AP-S Lecturer Keith R. Carver of New Mexico State University will address the May 11 meeting of the North Jersey Chapter of MTT/AP. Dr. Carver will discuss analytical and practical empirical techniques used in the design of microstrip antennas.

### About The Talk

Microstrip antennas are attractive as a means of satisfying performance criteria for low profile, lightweight, conformable narrow-band radiators for use as individual radiators or as unit elements in either planar or conformable arrays. In the past five years there has been an enormous growth of interest in the microstrip antenna, particularly by the theoretical community which has produced so much literature on the subject that it is difficult to separate those analytical techniques which are currently useful to the designer from those which are of strictly academic interest. In this same period of time, a great deal of practical design experience has been accumulated including a better understanding of the tolerance constraints placed by etching techniques and substrate dielectric constant variability, along with many practical approaches to the design of microstrip patches for specialized applications. Microstrip arrays are now used routinely in aerospace systems applications.

In this presentation by the AP-S Distinguished Lecturer, Keith Carver, a balanced approach toward the design of microstrip antennas is offered, emphasizing those analytical techniques which are truly useful to the designer along with a survey of a variety of practical empirical techniques. The extension of this approach to planar arrays is discussed, with particular emphasis on the problems and pitfalls in the design of monolithic feed systems for microstrip arrays. Several practical microstrip designs and arrays are presented which are currently in use. The intent of the presentation is to provide some design approaches which would be helpful to the antenna engineer.

### About The Speaker

Keith R. Carver received the BS degree from the University of Kentucky in 1962 and the MS and PhD degrees from The Ohio State University in 1963 and 1967, respectively, with all the degrees in electrical engineering. He was on the faculty of

the University of Kentucky from 1967-69 and joined the faculty of New Mexico State University in 1969 where he is Professor of Electrical Engineering. He has recently finished a 16-month assignment at NASA Headquarters, where he was Program Manager for Radar Remote Sensing Systems. He is currently Director of the Engineering Research Center at New Mexico State University.

Dr. Carver is the author of numerous articles on microwave antennas, microwave, remote sensing and wave propagation. He is the co-author of the textbook "Electromagnetics," 2nd ed. with Dr. John Kraus. He is President of the IEEE Geoscience and Remote Sensing Society, is on the National Research Council's Committee for U.S. Army Basic Research, and is a member of URSI Commission F.

**Time:** 8 PM, Wednesday, May 11, 1983.

**Place:** ITT Avionics, 500 Washington Avenue, Nutley, N.J.

**Pre-Meeting Dinner:** 6 PM, The Jade Fountain Restaurant, 321 River Road, Clifton (adjacent to Nutley).

**Dinner Reservations:** Dick Snyder (201) 492-1207 or Hy Goldman (201) 284-3739.

## PES Officers' Slate

The Power Engineering Society, North Jersey Section nominations for the 1983-84 year are:

Chairman: E.P. Griffith (JCP&L)  
Vice Chairman: Carl Bass (GE)  
Secretary/Treasurer:

Augie Franzoni (Westinghouse)

Elections will take place at the May 25 meeting, 3:00 PM, JCP&L, Route 24, Convent Station (Morristown).

## Use Of Programmable Controllers In Industry

The Control Systems Society of the North Jersey Chapter of the IEEE will sponsor a meeting on May 25, 1983, to discuss "Programmable Controllers—Their Application to Industrial Systems". Programmable Controllers have added a new dimension to the control and automation of industrial equipment and processes. Programmable controllers were once considered merely substitutes for hardwired relays.

However, substantial development in PC technology has caused a major change to take place in the industrial control field.

The discussion will cover the composition, operation, uses, and programming of PCs. Future trends in the field will be presented. The discussion will also include displays of actual equipments and a hands-on demonstration.

The speaker is Mr. Eric Fraistat, a graduate engineer from Cornell University, who is an application engineer with the Square D Company. Mr. Fraistat has an extensive experience of working with the Programmable Controllers and will share his experience with the listeners.

**Time:** 8 PM, Wednesday, May 25, 1983.

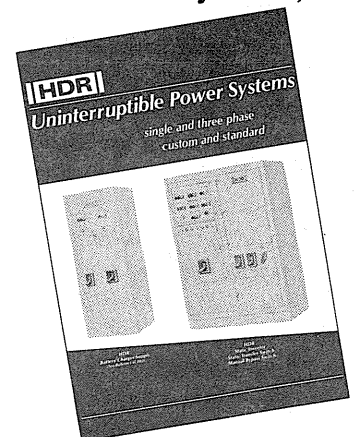
**Place:** Jersey Central Power & Light Co., Madison Avenue (Rt.24), Morristown, N.J.

**Pre-Meeting Dinner:** 6:15 PM, AFTON, Hanover Road & Columbia Turnpike, Florham Park, N.J.

**Further Information:** Frank Kuhl (201) 663-1381 (evenings); Kushal Jain (201) 265-2000 (days), (201) 263-9168 (evenings); John F. Van Savage (201) 985-2084 (evenings).

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Trichapter Short Course

“Advances In Compound Semiconductor Technology And Devices” is the subject of a joint IEEE trichapter short course scheduled for May 24, 1983. The course is sponsored by the ED and MTT Group Chapters of Princeton, North Jersey, New Jersey Coast, and the Department of Electrical Engineering at Rutgers University. The speaker will be Lester F. Eastman, Professor, Electrical Engineering, Cornell University.

About The Speaker

Lester F. Eastman (A '53) (M '58) (SM '65) (F '69) is an IEEE 1983 Electron Device Society National Lecturer, and is a Professor in the Electrical Engineering School at Cornell University, where he also serves as the Director of the Joint Services Electronics Program. He obtained his BS ('53), MS ('55) and PhD ('57) degrees from Cornell.

He has initiated and led the development of the graduate research and education in compound semiconductor materials and devices at Cornell and was a founding member of the National Research and Resource Facility for Submicron Structures there in 1977. He, together with his graduate students, post doctoral researchers, and Senior Research and Technical Associates, have made substantial efforts in molecular beam epitaxy, organometallic vapor phase epitaxy and liquid phase epitaxy leading to state-of-the-art results. The advanced assessment of these materials has also been developed with low temperature photoluminescence and computerized deep level transient spectroscopy. Fine line optical and electron beam lithography, along with the epitaxy, have also been used to make submicron transistor and optical devices.

About half of the 60-70 U.S. industrial, government and university laboratories active in compound semiconductor materials and devices have personnel who trained with Professor Eastman. He and his co-workers also initiated the concept of ballistic electrons at the maximum velocity limit in GaAs and related compounds, for use in high frequency, high speed devices. Professor Eastman has served as a member of the IEEE EDS administrative committee and is presently serving on the U.S. Government's Advisory Group on Electron Devices in the microwave area. He also consults for various industrial and university laboratories and Lincoln Laboratory.

About The Talk

The two-part lecture will first cover fundamental technology and physics, and then experimental results and projected device performance. The limits of purity doping and composition abruptness is going to be treated. MBE and OMVPE growth of GaAs and related alloys will be discussed. The physics of electron motion in GaAs during gradual and rapid acceleration for the highest possible average electron velocity will be presented. Transistor devices with operations up to 100 GHz, and switching times down to 5 picoseconds will be predicted, along with today's state of the art. The use of hetero-junctions for selectively doped FET's, and for launching ballistic electrons into Schottky gated regions or bases of bipolar transistors will also be covered. Some application to mm-wave oscillators and high-speed optical devices will be included.

**Time:** 6:30 to 9:30 PM, Tuesday, May 24, 1983.  
**Place:** Rutgers University, Busch Campus Hill Center, Room 114, Piscataway, N.J.  
**Reservations:** Reservations by phone are needed to attend the course. Attendees will be issued a ticket at the door for a complimentary sandwich and beverages served from 5:45 to 6:20 PM. Call Dick Snyder on (201) 492-1207 before Thursday, May 19, 5:00 PM.

PCB Perspectives

The May meeting of the North Jersey Section IEEE Power Engineering Society will feature a slide presentation entitled "PCB Perspectives."  
The speaker, Mr. Bryce I. MacDonald, is Manager, Environmental Issues Resolution, General Electric Corporate Environmental Issues Project. His presentation is designed to update thought leaders so they will be able to respond more effectively to demands made upon them, their businesses or their communities on PCB issues.  
PCBs developed a reputation in the early 1970s as being toxic, even cancer causing, materials. By 1976, PCBs had been declared toxic in the Toxic Substances Control Act, and EPA was ordered to ban most uses of these materials. Extensive research since 1976 shows that adverse human health effects were grossly exaggerated and that health fears are not well founded.

The presentation puts PCB issues into perspective by identifying the issues and describing their development. Topics include: PCB manufacture and use; Recent human health studies; Environmental concerns; PCB equipment replacement; Human health concerns; and Regulatory changes.  
The presentation should be valuable to engineers and community leaders who are consulted for guidance in addressing PCB problems when they arise in a community. It is based in part on recent scientific and statistical studies done under the sponsorship of the Edison Electric Institute and the National Electrical Manufacturers Association.  
Attendance at the meeting is free and open to all interested parties.

**Time:** 3 PM, Wednesday, May 25, 1983.  
**Place:** Jersey Central Power & Light Co., Madison Avenue (Rt. 24) & Punch Bowl Road, Morristown, N.J.  
**Further Information:** John A. Baka (201) 455-8534.

Ferrites Developments

A meeting of the Magnetics Chapter of the Princeton Section of the IEEE will be held at 8:15 PM, Thursday, May 26th at the AB Auditorium, Allied Corporation, Morristown.  
The featured speaker will be Dr. R.K. Tenzer, Technical Director of Indiana General Ferrite Products, Keasbey, N.J. His topic is "Recent Developments in Ferrites."  
**About The Talk**  
The applications for soft and hard ferrites have been steadily increasing since their commercial introduction after World War II. All major ferrite material inventions were accomplished before 1955. Thereafter, progress was made in step-by-step improvements of functional properties.  
Material improvements for soft and hard ferrites during the last fifteen years have resulted in increased efficiency and size reduction of electronic equipment. These improvements and some new applications in bubble memories, xerography, power supplies, and other equipment will be discussed.  
A pre-meeting dinner will be held at La Monet, 190 South Street, Morristown.  
For information, call R. Hasegawa (201) 455-4307 or G.E. Fish 455-3420; for dinner reservations, call D. Americo 455-2002.

PICA '83 Set

The 1983 Power Industry Computer Applications Conference (PICA '83) will be held at the Adams Mark Hotel in Houston, Texas from May 17 to May 20, 1983. This 13th PICA Conference, sponsored by the IEEE Power Engineering Society and the IEEE Houston Section, is devoted to all aspects of computer applications in the electric utility industry. PICA '83 will continue the tradition of serving as the leading forum for the exchange of ideas and experiences of specialists in the computer applications field in the electric utility industry.  
The technical program will emphasize subjects which focus on the practical application of computers and computer-based tools, and the implementation of solution methodologies to problems of current interest. The Call for Papers for PICA '83 solicited technical papers in all areas related to utility industry software engineering and computer utilization. Topics of interest include: interactive applications in engineering and planning; software applications in modern control centers; training simu-

lators for power system operations and control; large-scale data base management; development of utility management decision support systems; applications of specialized hardware; power system effectiveness and reliability calculations; and computer and software development economic tradeoffs.  
All papers presented will be bound and provided to all Conference registrants.

Mixer Devices

The NJ Coast Section IEEE, the Joint Group Chapter on Microwave Theory and Techniques, Electron Devices and Quantum Electronics and the Department of Electronic Engineering, Monmouth College will sponsor a June 7, 1983 meeting on "Advances In Mixer Device Technology."  
The instructor will be Erik Kollberg, Chalmers University, Goteborg, Sweden.  
**Time:** 7 - 9:30 PM, Tuesday, June 7, 1983.  
**Place:** Monmouth College, Edison Science Building, Room E2, West Long Branch, N.J.  
**Pre-Meeting Snack:** 5:30 PM, La Crepe

Restaurant, Monmouth Mall, Eatontown, N.J.  
**Reservations:For Snack:** Martin Schneider (201) 949-2503.

Computer/Comm Offers 1983-84 Slate

The North Jersey Computer/Communications Chapter nominating committee has selected the following candidates for the 1983-1984 program year.  
**Chairman:** Richard Aiken  
**Vice-Chairman:** Mel Cassidy  
Both candidates have been very active in Chapter affairs over the past two years and have agreed to serve. A Chapter Administrative Committee meeting has been scheduled for May 25th to plan for next year's program agenda. All members interested in serving on this committee should contact Dick Aiken.  
**Time:** 6 PM, Wednesday, May 25, 1983.  
**Place:** La Monet, 190 South Street, Morristown, N.J.  
**Information:** Dick Aiken (201) 428-7842.



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Radar Technology

The Boston Chapter of the IEEE Aerospace and Electronics Systems Society is putting on their well-received one-day Radar Technology course at West Point. This up-to-date course is framed around the new 432-page book "Radar Technology" edited by Dr. Eli Brookner, lecturer for the course. This book (\$45 list price) and supplementary notes (updated to 1983 technology) are free to attendees. The course is geared to those unfamiliar with as well as those experienced with radar design and is scheduled for Monday, June 13, 1983 from 8:00 AM to 9:30 PM at Hotel Thayer, West Point, New York.

About The Course

The course covers:  
 Fundamentals of Radar: Phased Arrays, Cobra Dane, Pave Paws, Foreign Radars, Very Low Sidelobe Antennas, METTRA. Signal Processing: SAW, Acoustoelectronic and Monolithic SAW convolvers, CTD, CCD, BBD, FFT, and pulse compression explained in simple terms; Impact of VHSIC/VLSI on radar signal processors of the future (1985 and beyond); Survey of 28 existing and developmental signal processors (represented are Raytheon, Hughes, Westinghouse, GE, TI, RCA, NEC, IBM, TRW, Lockheed and Lincoln Laboratory); Microcomputers ( $\mu$ C), Memories, Josephson-Junction, Logic.

Solid State: Bipolar and Monolithic modules and radars. Tubes: Differences, Life, Cathodes (CPC, TFEC), Efficiency, MM.

Synthetic Aperture Radar: strip and spotlight.

Tracking, Prediction and Smoothing:  $\alpha$ - $\beta$ , Kalman and Weiner filters in very simple terms, with emphasis on physical understanding.

Detection: Simple cookbook procedure presented.

Fees are: \$125 (IEEE Members), \$140 (Nonmembers); add \$15 for late fee after June 4, 1983. Fee includes course text, Radar Technology supplemental notes as well as reprints of three papers, lunch, dinner and three coffee breaks.

About The Lecturer

Dr. Eli Brookner is a Consulting Scientist with the Raytheon Company Equipment Division. He conceived and helped design the Wake Measurement Radar, the first TWT radar put into space. He has consulted on the Cobra Dane, NATO Seasparrow, MILIRAD, AEGIS, MSR, Cobra

Judy, WAAS, and Pave Paws radars. Dr. Brookner is an IEEE Fellow and has received the first Franklin Institute Premium Award.

Registration

Mail registration to Boston IEEE/AESS, 282 Marrett Road, Lexington, MA 02173. Give name, organization, title, business address and business and home telephone numbers. For further details on course, contact Dr. Eli Brookner (Boston IEEE/AESS Chairman), (617) 358-2721, Ext. 2366.

Student Activities
By STELLA LAWRENCE

METROPOLITAN STUDENT COUNCIL MEETING

The first Metropolitan Student Council meeting of the current academic year was held on Thursday evening, March 10, 1983, at the Technical Career Institutes, 320 West 31 Street, New York, N.Y. 10001.

The following schools sent representatives to the meeting:

BRONX COMMUNITY COLLEGE: Henry Iyasere, Branch Secretary; Hugues Bastien, Prof. Stella Lawrence, Counselor, (212) 220-6044.

COUNTY COLLEGE OF MORRIS: Colleen Walsh (201) 786-5536; Tim Henderson (201) 839-0734; Prof. Joseph Vallery (201) 361-5000, Ext. 313, Counselor.

FAIRLEIGH DICKINSON UNIVERSITY: Dr. M. Chris Wernicki, Counselor. HOFSTRA UNIVERSITY: Ken Kearney (516) 825-6253; Peter Dewerdts (516) 483-0192, Branch Chairman.

LaGUARDIA ACADEMY OF AERONAUTICS: Michael Abato (212) 339-4966; Byron Knibbs (212) 322-4851; Brian Toyota (212) 275-8122; Horozio Calcagno (212) 336-3603; Robert Babani (212) 459-2605.

NEW YORK CITY TECHNICAL COLLEGE: Sal Totella; Eduardo Farkas; IEEE Office (212) 643-4363.

TECHNICAL CAREER INSTITUTES: Prof. Fernando B. Segovia, Counselor (212) 594-4000; Dimitri Guest, President IEEE Branch; Michael Cusmano, Computer Branch President; Also present were the

Vice-President of Technical Career Institutes, Academic Dean, Associate Dean and several branch members.

TRENTON STATE COLLEGE: Dr. A. Katz, Counselor, (609) 771-2487; H. Charles Ross Jr. (609) 771-8814, Erik W. Wendt (609) 883-2940.

Several other Student Branches had planned to attend but were not able to do so. Among them was the Bramson ORT Technical Institute, because Dr. Rubenstein had just become the father of a third son! Congratulations from all of us.

The Council elected Dimitri Guest, President of the Technical Career Institutes Student Branch, President Pro-Tem of the Metropolitan Student Council.

Alex Gruenwald, Vice-Chairman of Electro/83, described the scope of Electro and Mini-Micro, outlining the various lectures, seminars and exhibits.

Mr. Gruenwald, in his official position as Region I Professional Activities Chairman, and as METSAC candidate for Region I Director for 1984, introduced Victor Zourides, a prominent member of the Professional Activities Committee.

Zourides, Chairman of Area B, Region I, IEEE, explained the aim, and purpose of the Student Professional Awareness Conferences. He also described the procedures to be followed by a college which wishes to host a Professional Awareness Conference.

The members of the Metropolitan Student Council, and all student members of the IEEE and their friends, were invited to attend a seminar on Personal Computers at the Sheraton Centre on Wednesday evening, April 20, 1983.

Dr. Katz, Chairman of the Department of Engineering Technologies at Trenton State College, invited the Metropolitan Student Council and all interested IEEE members to attend the Eighth Annual Trenton Computer Festival. The Festival was held on Saturday, April 16 - Sunday, April 17, 1983 at Trenton State College. It is the original personal computer show sponsored by Trenton State College Computer Society, IEEE/ACM Princeton Section, Dept. of Engineering Technology, Trenton State College, etc. Trenton State College was the host of the Region I Student Conference in 1982, held in conjunction with the 1982 Trenton Computer Festival. Students who attended the 1983 Trenton Computer Festival were also given a guided tour of the facilities of the Department of Engineering Technology at TSC.

An Intensive One-Day, Short Course  
 Sponsored by the IEEE Boston Section AESS  
**RADAR TECHNOLOGY**  
 Monday, June 13, 8:00 am - 9:30 pm  
 Hotel Thayer, West Point, New York  
**DAY BEFORE TRI-SERVICE RADAR CONFERENCE**



The lecturer for this highly acclaimed course is Dr. Eli Brookner, Consulting Scientist, Raytheon Company, Equipment Division, Wayland, Massachusetts. The course is framed around parts of the new book, *Radar Technology*, edited by Dr. Brookner. This book (which sells for \$49) will be given out free to attendees. Also supplied free are paper reprints (valued at \$30) plus supplementary notes of over 700 vugraphs updated to 1983 state-of-the-art technology.

COURSE CONTENT:

Radar fundamentals; Phased arrays (COBRA DANE, PAVE PAWS); Frequency Tradeoffs; Recent Developments in 2-D and 3-D Radars; Ultra-Low Sidelobe Antennas ( $\leq$ -40 dB); Moving Target Detector (MTD) and Displaced Phase Center Antenna (DPCA) Clutter Rejection Techniques; Signal Processing; What Is: Pulse Compression, SAW, Monolithic SAW Convolver, CCD,  $\mu$ P,  $\mu$ C, FFT, Pipeline FFT, Fast Convolver, Digital Processor Hardware and Architecture; Impact of VHSIC/VLSI/VHPIC; Survey of 28 Digital Signal Processors; Components (Solid State: Discrete and Monolithic, UHF to X-Band; Tubes, Gyrotron); Trends in Millimeter Components and Systems; Synthetic Aperture Radar (Strip and Spotlight); Tracking (Mystery Taken Out of Kalman and G-H Filters). All Explained In Simple Physical Terms , How To Look Like a Genius in Detection Without Really Trying (Simple Cookbook Procedures); Constant False Alarm Rate (CFAR) Detection.

REGISTRATION:

Fee: \$125 IEEE Members, \$140 Nonmembers; add \$15 for registration after June 4.

Lunch, Dinner, coffee breaks, course book and notes included (not lodging).

For further information call Dr. Eli Brookner (617)358-2721, X-2366 (Raytheon).

RADAR TECHNOLOGY  
 Monday, June 13, 1983  
 REGISTRATION FORM:  
 Name \_\_\_\_\_  
 Title \_\_\_\_\_  
 Organization \_\_\_\_\_  
 Bus. Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone: Home: \_\_\_\_\_  
 Business: \_\_\_\_\_  
 IEEE Member: Yes ☐ No ☐  
 Payment enclosed: ☐  
 Purchase Order enclosed: ☐  
 DETACH AND MAIL TO:  
 Boston IEEE AESS  
 282 Marrett Rd.  
 Lexington, MA 02173



# PACE NEWS

Professional  
Activities  
Committee for  
Engineers

By R. Tax

## Quote of the Month.

"...IEEE did a very good job in Congress on March 10, 1983."

IRWIN FEERST

## Feerst Praises IEEE Board!!

In a letter dated March 14, 1983 to the IEEE Board of Directors, Mr. Feerst wrote:

"I have criticized you so much in the past that this letter may come as a shock. But IEEE is to be congratulated for the forward-looking statement it presented before the House Subcommittee on Immigration on March 10, 1983. Your support of the "return home" provision of H.R.1510 (whereby all foreign graduates of American universities would be required to return home for at least two years) deserves the thanks of all American working engineers. It was also gratifying to have observed that IEEE, as a logical consequence of its new stance, also informed the Subcommittee that this nation is suffering from a glut (!!) of engineers. Had I not been a member of the same speakers' panel, I would not have believed it!"

Bill Anderson's article (this issue) tells how it happened.

## Keeping Up With The PACE

This column is dedicated to keeping IEEE Members and other professionals up to date with PACE. We need and appreciate your comments and your participation. We invite you and your associates to attend any and all Section Meetings. Our Executive Committee meets on the first Wednesday of every month. Other meetings are listed throughout the Newsletter. Call any Section Officer listed on the masthead for information about Executive Committee meetings.

You may copy this Newsletter or show it to your associates. Encourage other professionals to support PACE by joining IEEE. Contact Don Weinstein at (201) 945-3000 for a free information kit about IEEE membership.

## Lewis Testifies For IEEE; PACE Representative Observes

On March 10, Dr. David Lewis, chairman of the IEEE Career Activities Council, testified before the House Subcommittee on Immigration, Refugees, and International Law. A representative of the Boston Section's Professional Activities Committee for Engineers (PACE) was in Washington to observe the hearings, to talk with aides of Rep. Barney Frank, and to meet staff members of the IEEE Washington office.

Dr. Lewis addressed those sections of the Mazzoli-Simpson Immigration Bill (H.R.1510) that deal with the return home of foreign students who have studied in the U.S. Speaking for IEEE and for the Engineering Affairs Council of the American Association of Engineering Societies (AAES) Dr. Lewis said: We advocate the position that ALL students, upon completing their education, should return to their home country for a period of at least two years.

He went on to testify: H.R.1510 accepts the questionable notion that there is a manpower shortage and EXEMPTS, until 1989, students with degrees in natural science, engineering and computer science, or mathematics with certified job offers in universities or in industry ... We of the AAES/EAC contend that there is no basis for this exemption.

He further stated: If there were a shortage of engineering manpower, we would expect to see a significant escalation in salaries paid engineers ... (but) the IEEE salary survey data (for 1981) show no significant escalation, and salaries even decreased in constant dollars. In fact, our data base shows that the second lowest paid engineering speciality is computer science, the speciality in which the shortage is supposed to be most acute.

IEEE was invited to testify by the office of Rep. Barney Frank. Frank had discussed the immigration issue with Boston Section PACE members in November at his Newton office. IEEE Washington staffers feel that the November meeting and subsequent letters from Boston PACE to Rep. Frank helped bring about the invitation. Because of this prior communication, and because Frank is a member of the subcommittee which held the hearings, Dr. Lewis and IEEE Washington staff invited a Boston Section PACE representative to come to Washington for the hearings and for a meeting with Frank's aides.

Dr. Lewis was part of a six person panel which gave testimony on the foreign student issue. Two other panel members, Irwin Feerst of the Committee of Concerned EEs and Bill E. Reed of the American Engineering Association, also favored the two year return home provision and the elimination of the temporary waiver for engineering students. The three panelist opposed to the

return home provision were Dr. Paul Gray, president of MIT, who spoke for the Association of American Universities; John Calhoun, director of business development for Intel, who spoke for the American Electronics Association; and Marvin Baron, president-elect of the National Association of Foreign Student Advisors.

Mr. Baron stated that with the hiring of foreign students "displacement of Americans will not occur because of the certification process." Dr. Gray also mentioned the labor certification process. Certification is a process whereby, before an alien can be hired, it must be shown that no U.S. citizen is available to fill the position at the prevailing wage. Lewis, Feerst, and Reed all agreed that the current certification process does not work. Subcommittee Chairman Rep. Ron Mazzoli (D. Kentucky) even suggested that prior testimony had convinced him that the certification process did not work in other fields and would probably not work in engineering. (Boston Section PACE has been investigating the certification process for some time and feels that the current system is ineffective and is not being administered as intended by the law. PACE data indicate that salary surveys are not being conducted properly and that recruitment ads, which are used to certify that no one is available for a particular position, are overly specific and offer extremely low salaries. One ad placed by the Mass. Div. of Employment Security in the December 13, 1982 "Boston Globe," offers a salary of \$18,000 for a position which requires "B.S. in relevant science plus 5 years experience in neutron activation or Ph.D with dissertation in area of neutron activation." Another ad placed by the Division in the November 15, 1982 Globe, requires a "Masters Degree in Computer Science or Computer Engineering" and "Verbal and written fluency in English, French, and Arabic is a must as well as knowledge of European and Middle eastern cultures.")

Rep. Don Lungren (R. California) appeared frustrated by the lack of reliable, accepted data regarding engineering employment. He went on to stress that, even if the waiver is adopted now, academic and industrial leaders should not expect to return to Congress in 1989 and easily obtain an extension. The "sunset provision" is meant, he said, to provide "an incentive for better education of Americans." He made it clear that Congress desires an improvement in American secondary education and that, in the future, American universities should plan to recruit more engineering students from American high schools.

Toward the end of the hearings, Rep. Mazzoli mentioned that prior testimony made him feel that agricultural interests prefer alien labor because it "is tractable and doesn't talk back." "Is this then a possibility," he asked, "that we have the same thing with engineering?" The final draft of the bill is not yet ready. When it does appear, it may indicate how Mazzoli answered his own question.