



The IEEE

# Newsletter

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

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## Simulation In Controls

The February 16 meeting of the NJ Controls Group will cover "APPLICATION OF SIMULATION TO CONTROL SYSTEMS." The speaker will be Dr. Dwayne L. Knirk.

The control of complex chemical processes is extremely difficult to synthesize because of involved interactions. In such cases, continuous analogue simulation can be employed to model the process and the control system. The ability to easily change the control system as represented in the simulation model, facilitates the engineer to quickly "cut-and-try" until the best available system is found. Once the design of the control system has been determined, the utility of the simulation is not finished. Rather, the model can be interfaced with physical I/O devices and used to train operators before they have gained hands-on experience. This is particularly useful when hazardous products are involved in the actual process as the degree of safety is increased. Simulation is also useful to maintain operator proficiency during equipment layaway. This talk will present the simulation as a step-by-step process with an example given in the manufacture of energetic materials so that the technique can be readily used by any engineer.

Dr. Dwayne Knirk is a research scientist with Electronic Associates, Long Branch,

N.J. He is presently applying simulation technology to the study of control systems for the Army Armament Research and Development Command, Dover, N.J.

Time: 8 PM, Thursday, February 16, 1978.

Place: Bell Telephone Laboratories, Whippany Road, Whippany, N.J.

Further Information: Jerry Uhrig, Bell Labs, 386-6845.

## Cardiac Output

The Metropolitan New York Chapter of the IEEE Group on Engineering in Medicine and Biology announces that its program for March 1978 will detail "Advances in Cardiac Output Instrumentation." The speaker will be Mr. David Rosenberg, Product Coordinator, Cardio-Pulmonary Systems, Instrumentation Labs, Lexington, Mass.

Time: 7:30 PM, Wednesday, March 1, 1978.

Place: Rockefeller University, South Laboratory, Room 204, 66th Street and York Avenue, New York City.

Pre-Meeting Dinner: 6:00 PM, Tower Cafeteria, 64th Street and York Avenue, New York City.

For Further Information: Harry Rice, at (212) 554-7075 (The Roosevelt Hospital).

## SECTION BANQUET — MARCH 8, 1978

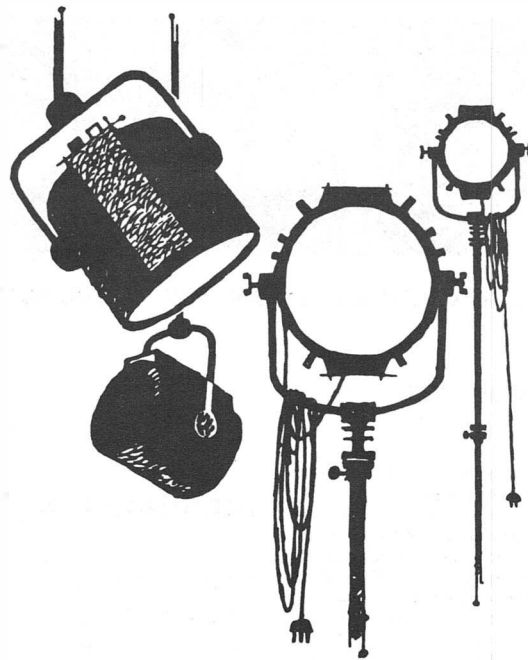
Four NJ Section Members have been elected Fellows of the IEEE. The four: Joseph A. Giordmaine, R.M. Lauver, Gentaro Miyazaki and Neil J.A. Sloane will be honored at the Section Banquet on March 8, 1978. Speaker for the Banquet will be J.S. Mayo, Vice President Electronics Technology at Bell Laboratories, Murray Hill, N.J.



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## SPOTLIGHT ON NORTH JERSEY

Is the IEEE a Great Institute? Consider this statement by Frank Rhodes, Cornell University's President - "The great universities are those in which people grow by contact in ever-widening circles". Now substitute, "Institutes" for "Universities". The statement still works. But, do we qualify?

Think about it. This institute certainly provides the opportunity for contact in ever-widening circles. As a matter of fact, that may be the single most important reason to belong to IEEE. And, yet it is the one reason that is almost never mentioned. People ask "why should I belong to IEEE?" and they receive answers like, "It is your duty to support your profession; for the insurance; to obtain literature that will keep you current; for professional recognition; etc., etc., etc."

Gentlemen and ladies, what is it with engineers? We seem to be reluctant to acknowledge the value of professional contacts. Are we afraid of being branded with that old shibboleth, "It's who you know, not what you know, that counts"? That should not be an either-or situation. The answer is that both factors are important. Read the biographies of our greatest scientists and engineers and discover how much their work was influenced by their contemporaries. Think of your own career. How did you choose your college? How did you get your present job? Why did you decide to be an engineer? I am willing to bet that in most cases the answers will be based on some form of personal contact or influence. Computer dating is often a last resort. So is computer career. We grow by contact in ever-widening circles.

Are you satisfied with your own professional growth? If not, maybe you should ask yourself if you haven't been widening your circles lately. Your IEEE membership provides you with the perfect opportunity to do just that. Being a member of the North Jersey Section makes it easy to take the first step. We're not a gregarious group, but we are sincere and we try to be helpful. Those of us who are active in the Section would like to widen our circles, too, by getting to know more of you. Contact any one of us and let's help each other grow. If you don't recognize any of the other names in this paper (maybe that's a sign that your circles need widening), call me at 465-2316.

D.G. Bathke

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## Solar Energy Program

The February meeting of the North Jersey Power Engineering Society will have Mr. Edward H. Ernst of the Space Division of General Electric Company as the speaker. The Space Division is engaged in a wide variety of Advanced Energy Programs which draw upon the technologies and system engineering developed from the U.S. Space Program. Of particular interest is the development and application of Solar Energy. Mr. Ernst's presentation will review General Electric's participation in the solar program including solar heating and cooling, solar process heat, solar total energy, photovoltaics and wind.

Edward H. Ernst received his BME degree from Villanova University and his MSME degree from Syracuse University. He is currently Manager of Energy Engineering with engineering responsibilities for solar, improved energy utilization, space nuclear as well as wind technologies. Mr. Ernst is also the focal point for General Electric's Corporate Center of Research for Solar and Wind Energy Systems and the Chairman of the Space Division Energy Technology Panel. He is a member of the AIAA, the International Solar Energy Society and the Solar Energy Industries Association.

Those in attendance will have a chance to win a calculator or a bottle of wine which will be awarded to the winners of a door prize drawing.

**Time:** 7:30 PM, Wednesday, February 22, 1978.

**Place:** Jersey Central Power & Light Company, Madison Ave. (Rt. 24) at Punchbowl Rd., Morristown, New Jersey 07960.

**For Information:** John A. Langenfeld, Chairman, 753-1100; Seymour Salowe, Vice Chairman, 465-2938; John A. Baka, Secretary, 539-6111 ext. 487.

## Digital Transmission Techniques Seminar

The fourth annual Communications Transmission Seminar will be held March 20, 1978 at Princeton University. The theme for this year's Seminar is "High Speed Digital Transmission Techniques and Switching Systems". Supporting this theme the following topics will be discussed by eminently qualified speakers:

"Economic Analysis of Integrated

Voice and Data Networks," H. Frank and I. Gitman, Network Analysis Corporation.

"Recent Trends in Cryptography," C. Leung, MIT.

"The Role of the ITU and CCITT in Telecommunications," J.S. Ryan, Bell Laboratories.

"Fiber Optics - An overview and State-of-the Art," P. Steensma, ITT/D.C.D.

"Implications of Demand Assignment for future Satellite Communications Systems," J. Pultz, Booz Allen Applied Research.

"The New Tri-Tac Family of Circuit and Message Switches," R. Halligan, General Telephone and Electronics - Sylvania.

"Digital Switching for Telephony" - Dave Messerschmitt, Univ. of California.

This one-day Seminar is sponsored by the New Technical and Scientific Activities Committee (New York Section IEEE), IEEE Communications Society (Jersey Coast Chapter), Princeton Section IEEE and Princeton University.

For further information contact: M. Carrio (CORADCOM) - Conf. Chairman (201) 544-4944 or B. DeMarinis (Booz Allen Applied Research) (201) 747-9303.

## Update On Optical Fiber Transmission

The North Jersey MTT/AP Chapter Meeting for February will feature a talk on "PRESENT AND FUTURE DIRECTIONS IN OPTICAL FIBER TRANSMISSION" by Mr. P. Steensma of ITT.

Over the past five years the development of a transmission technology based on optical fibers has gone on at a rapid rate. This has been driven by the fact that optical fiber can move more information further at less cost than conventional truck transmission techniques. Additionally this technology is lighter weight and does not have the emanations and ground loop problems that have plagued conventional interconnect techniques. To date, effort has concentrated on developing point-to-point transmission systems. But given the economic viability of the technology, its impact will expand into the way we perform switching and multiplexing functions.

This talk will review the basics of optical fiber transmission technology and review the characteristics of some of the

current fielded systems. Some examples of the impact of this technology on the tactical transmission environment will be given. Then a more general view of how optical fiber systems can accomplish switching and multiplexing in unique ways will be discussed.

A laser source driving a fiber optic cable will be demonstrated.

Mr. Steensma received his B.S. degree from Calvin College in 1969 and his M.S. degree from Polytechnic Institute of New York in 1972. Following additional graduate studies at Princeton, 1972 - 1973, he is presently completing his Doctoral studies at PINY.

In 1970, Mr. Steensma joined the Advanced Development Lab or ITTDCD, Nutley, N.J. and has been extensively engaged in Research, System and Device Studies in Fibre Optics. He spent one year on special assignment with ITT/EOPD, Roanoke, Virginia.

**Time:** 8 PM, Thursday, February 23, 1978.

**Place:** "Chart Room", ITT Avionics, 500 Washington Ave., Nutley, N.J.

**Pre-Meeting Dinner:** Jade Fountain Restaurant, Off Route 3 (Westbound) 6:00 PM. Reservations Required, Call E.W. Niemiec, ITTDCD, (201) 284-2758.

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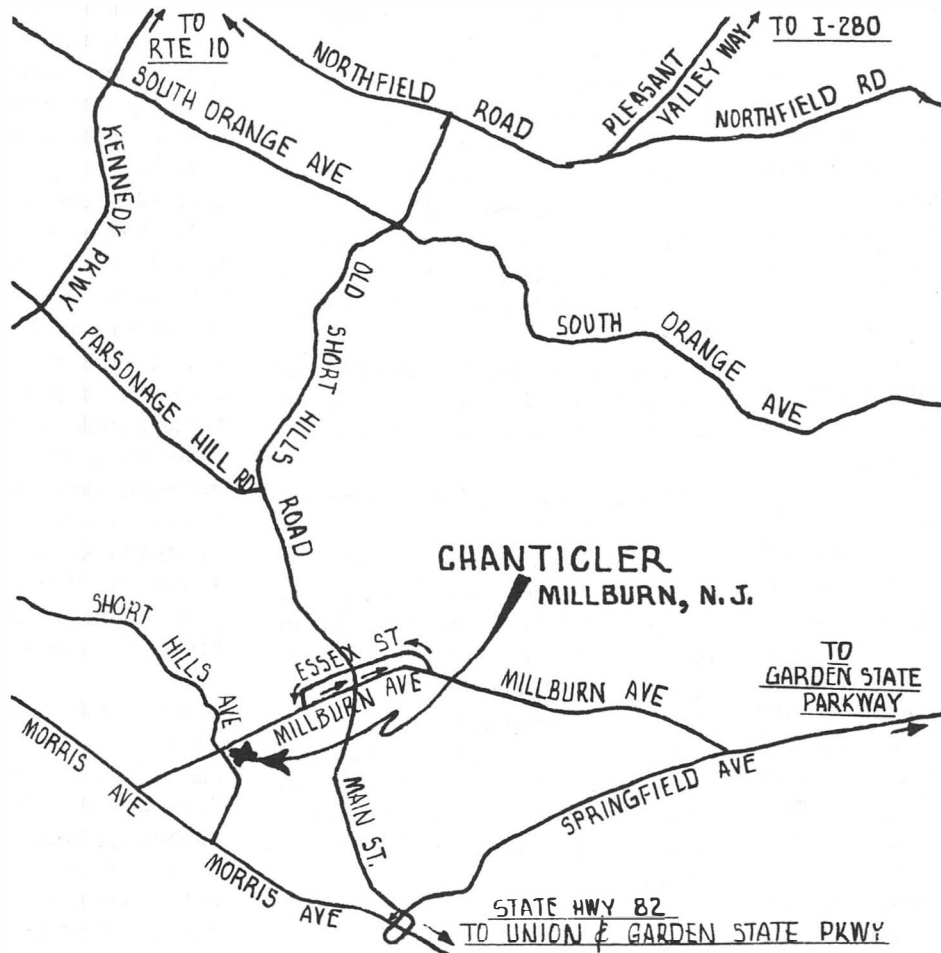
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## An Event For You And Your Spouse



Following the enthusiastic response of those who attended the Banquet last year, we are returning to the Chanticleer in Millburn. The affair is scheduled for Wednesday evening, March 8, 1978. Tickets are priced at \$20 per person and includes a complete prepaid Cocktail Hour preceeding dinner.

Reservations are required by February 22, 1978. Complete the reservation form below and include it with your payment. If any additional information is required concerning the Banquet, contact Ken Oexle at (202) 539-6111, X-488.

Use the form below for Banquet reservations enclosing a stamped self-addressed envelope. Reservations required by February 22, 1978. Mail reservation request to:

Kenneth J. Oexle  
Jersey Central Power & Light Company  
Madison Avenue at Punch Bowl Road  
Morristown, N.J. 07960

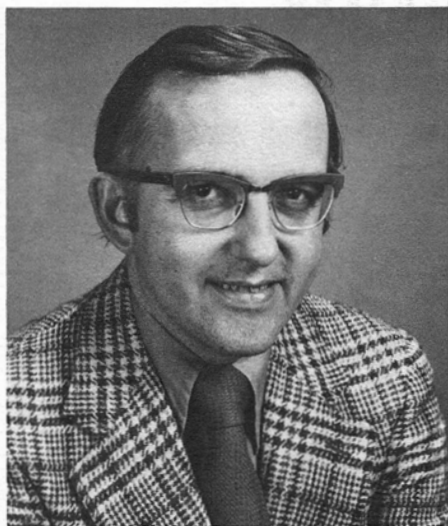
Please forward \_\_\_\_\_ tickets at \$20 each (make checks payable to North Jersey Section IEEE) to:

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_ Zip: \_\_\_\_\_

I would like to share a table (seating \_\_\_\_\_) with the following:



**JOSEPH A. GIORDMAINE**

**For pioneering contributions to nonlinear optics.**

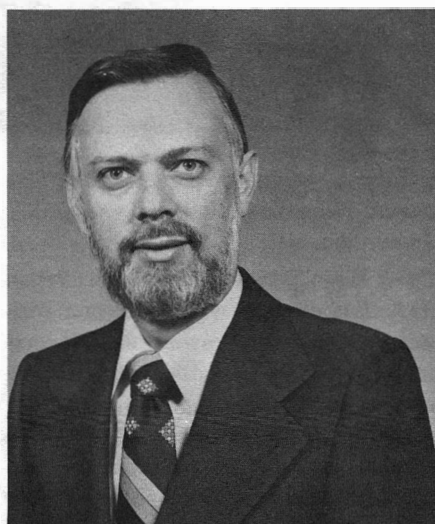
Joseph Giordmaine was born in Toronto, Canada. He studied at the University of Toronto and with Charles Townes at Columbia University where he received his Ph.D. degree in Physics in 1960. After teaching at Columbia for two years he joined Bell Labs in Murray Hill, New Jersey, where he had headed research in Solid State Spectroscopy and Chemical Physics.

At present he is Director of the Solid State Electronics Research Laboratory. His research has been in quantum electronics and nonlinear optics. He and Bell Labs colleagues developed the phase matching technique used extensively in optical harmonic generation and frequency conversion, the optical parametric oscillator source of continuously tunable visible and infrared light, and the two photon fluorescence technique for time duration measurement of picosecond light pulses.

He served as Visiting Professor at the Technical University, Munich during 1966. He has been a senior member of the IEEE since 1970 and is a Fellow of the American Physical Society, the Optical Society of American, and the New York Academy of Sciences.

He has served on numerous IEEE conference, program and steering committees, as well as on government advisory and other professional society committees.

## NEW IEEE FELLOWS

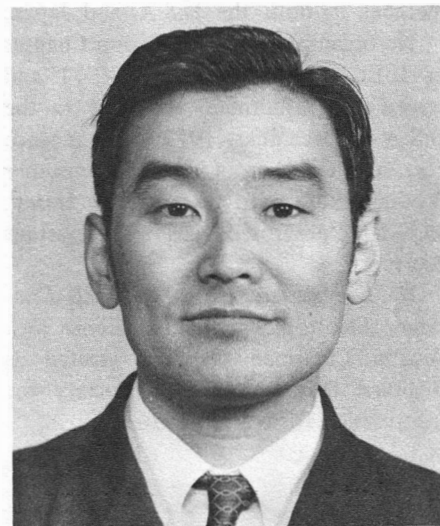


**ROBERT M. LAUVER**

**For contributions to ocean acoustic surveillance systems.**

Robert M. Lauver was born in Bridgeport, Connecticut, on August 25, 1934. He received the B.S. degree in Electrical Engineering from the University of Connecticut in 1956 and following a tour of duty in the U.S. Air Force as a communications officer, received the M.S. degree in Electrical Engineering from New York University in 1961. He joined Bell Telephone Laboratories in 1956 where initially he worked on airborne missile guidance systems. Since 1961, his work has been in ocean acoustics and anti-submarine warfare systems development. He is currently head of the Ocean Acoustics Research Department at Bell Telephone Laboratories.

Mr. Lauver is a member of Tau Beta Pi and Eta Kappa Nu.



**GENTARO MIYAZAKI**

**For contributions to color television receiver development and leadership in international communications.**

Gentaro Miyazaki was born in Japan and raised in the Northeast part of China Mainland. He received his B.S. degree from Tohoku University, Sandai, Japan in 1953. From 1953 to 1960 he was a development engineer of the Technical Research Laboratories of Japan Broadcasting Corp. (NHK).

Returning to the Graduate School he received his Ph.D degree from Tokyo Institute of Technology in 1962. Since 1962 he has been the Department Manager of Advanced Television Systems Dept., Consumer Products Research Center, Hitachi, Ltd., in Yokohama, Japan.

He has more than ten patents and has published four papers on the IEEE, etc., in English; nineteen papers and six books in Japanese.

He received the Ichimura Award for outstanding contributions to the development of Transistorization of color TV receivers, from the New Technology Corp., (semi-governmental) in 1970, and many other achievement awards including Great Inventors awards. In 1978 IEEE awarded him a Fellowship with a citation "Contributions to the Color TV Receiver Development."

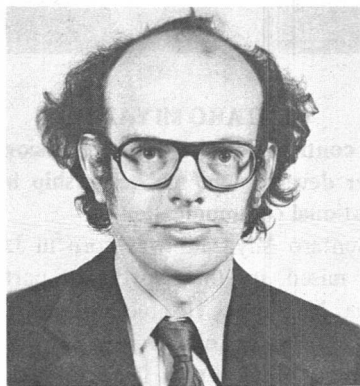
He has served EIA-J (Electronics Industries Association of Japan) as the first chairman of Color Television Engineering from 1963 to 1965. In addition, he assisted many other Institutes and



Societies as a Secretary or Committee member in both the U.S.A. and Japan.

He organized the BTR Group Chapter in IEEE Tokyo Section in 1971 and served as a Chairman. He came to the U.S.A in December, 1972 and has since been the Director of Hitachi Consumer Products Research Center in New Jersey, and has promoted various important projects.

He has served the 1976 IEEE Consumer Electronics Fall Conference as a Session Chairman. He was elected as Regional Director of SID (Society for Information Display) in 1976.



**NEIL J. A. SLOANE**

**For contributions to the theory of error correction in communication systems.**

Neil J. A. Sloane was born in Beaumaris, Wales, on October 10, 1939. He received the B.E.E. and the B.A. degrees from the University of Melbourne in 1959 and 1960, respectively, and the M.S. and Ph.D. degrees from Cornell University, Ithaca, N.Y., in 1964 and 1967.

From 1956 to 1961 he worked for the Postmaster General's Department of the Commonwealth of Australia. From 1963 to 1965 he was a research assistant with the cognitive Systems Research Program at Cornell University, and was an instructor in Electrical Engineering at Cornell University from 1966 to 1967. In 1967 he became an assistant professor of Electrical Engineering at Cornell, and remained at that post until 1969. Since 1969 he has been a Member of Technical Staff at Bell Laboratories, Murray Hill, N.J.

He is engaged in research in coding theory, communication theory, and combinatorial mathematics. He is the author of four books and the editor of the IEEE Transaction on Information Theory.

Dr. Sloane is a member of The American Mathematical Society and the Mathematical Association of America.

## BANQUET SPEAKER



John S. Mayo is Vice President Electronics Technology at Bell Laboratories, Murray Hill, New Jersey.

Dr. Mayo joined Bell Laboratories in 1955. Initially, he was concerned with research on transistorized digital computers and use of digital computers in defense systems. He then turned to the development of transmission systems utilizing pulse code modulation techniques. He was responsible for the development of the T1 carrier repeater, several high-speed PCM projects, and the D2 channel bank. He also worked on the command decoder and switching unit for the TELSTAR communications satellite project and was involved in the development of methods for transmitting Picturephone signals.

In 1967, he was promoted to director of the Ocean Systems Development Laboratory. In this position, he was responsible for the development of electronic systems for use in the ocean, and associated signal processing equipment. In March 1971 he became executive director of the Ocean Systems Division, and in July 1973 he transferred and became executive director of the Toll Electronic Switching Division. He assumed his present assignment in July 1975. Dr. Mayo is responsible for direct-

ing design and development of efficient, low-cost, high reliability electronics components and associated technologies for use in the Telephone Companies, and for directing design and development activities to provide energy sources, power supplies, and building environment designs for the Operating Telephone Companies.

A native of Greenville, N.C., Dr. Mayo received his B.S., M.S., and Ph.D. degrees in electrical engineering from North Carolina State University in 1952, 1953, and 1955 respectively.

He is a Fellow of the Institute of Electrical and Electronic Engineers and has served on a number of Institute committees. He is a member of the honor societies Phi Kappa Phi and Sigma Xi and was selected as Outstanding Engineering Alumnus at North Carolina State University in 1977. He has served in various professional capacities, including Chairman of the International Solid State Circuits Conference, Chairman of the NSIA Study of Global Communications, Member of the NSIA COMCAC Advisory Committee, and Member of the Board of Directors of the National Engineering Consortium, Inc.

Dr. Mayo holds a number of patents and has authored numerous technical articles.



# PAC NEWS

## IEEE Board Votes On ETHICS COMMITTEE

(The following is reprinted by permission from "Electrical Engineering Times," Monday, November 28, 1977).

### IEEE BOARD VOTES DOWN HELP FOR ENGINEERS

SAN DIEGO — It appears that engineers rights have been shelved once again, at least until early next year, as a result of the November 18 Institute of Electrical and Electronics Engineers (IEEE) board of directors meeting.

A proposal which would have established a permanent IEEE ethics committee was tabled for the second time. The committee would have supported engineers whose jobs might be in jeopardy because of their adherence to the IEEE code of ethics. In addition,

the committee would have been authorized to sanction IEEE members who do not comply with the code. A separate addition to bylaw 112.1, allowing the Institute to take action against a member violating the code of ethics, was also tabled.

When asked if the fact that the board is dominated by high-ranking members of industry had any effect on the ethics-committee decision and on other professional-activities decisions, John Guarrera, vice president of IEEE professional activities, replied, "There is no doubt in my mind whatsoever that the board's industry affiliations affected its decisions." According to one United States Activities Board (USAB) representative with regard to the establishment of an ethics committee, IEEE president-elect Ivan Getting, former head of Aerospace Corp., El Segundo, CA, remarked that it's not proper for the Institute to come between an engineer and his employer.

Guarrera commented that Getting is "industry-oriented" and not familiar with the background of USAB activities. Guarrera has scheduled a meeting with Getting, vice president-elect C. Lester Hogan and Bruno Weinchel, the newly selected vice president of professional activities, to brief them on the Institute's professional activities.

A proposal for an IEEE-sponsored political action fund, to be supported by voluntary contributions from the membership, met with sound defeat. In addition, the board suspended implementation of a movement toward the mandatory registration of engineers. No action will be taken until the task force on registration submits a full report to the board, probably sometime next summer. Industry is also sensitive to the question of registration, says Guarrera. Other member benefits, including a proposal to establish a member loan plan, were also defeated.

Also, during the board meeting, the annual assembly, consisting of only elected members of the board, selected next year's executive committee. Members of that executive committee, which also includes president-elect Ivan Getting and vice president-elect C. Lester Hogan, of Fairchild Camera and Instrument Corp., were chosen exclusively from industry.

Vice president of professional activities for 1978, Bruno Weinchel, is president of Weinchel Electronics, Gaithersburg, Md; vice president of

technical activities is Eric Herz, project engineer at General Dynamics, San Diego. Educational activities will be headed by vice president Jerry Suran, manager of General Electric's Electronics Laboratories, Syracuse, NY; regional activities will be lead by Paul Carroll, president of a Chicago distributor firm. Robert Lucky, of Bell Labs, was selected vice president of publications, and Robert Briskman, assistant vice president of COMSAT, Washington, DC, was reelected treasurer. Cathy Figorito

## PAC Member Is Named Engineer Of The Year

Frank Palmer, Task Force Leader on efforts to combat wage busting practices was recently named Engineer of the Year by the Florida Engineering Society (FES). The citation read as follows:

For foresight and untiring and fruitful efforts in the cause of his fellow engineers whom recent Congressional legislation has singled out as the only major employee group exposed to continued wage-busting in the times of contract renegotiation and high engineering unemployment, the Florida Engineering Society names Frank Palmer as "Engineer of the Year."

As Chairman of the Professional Activities Committee of the Canaveral Section of the Institute of Electrical and Electronic Engineers, in a period of less than six months, Frank Palmer has made the plight of the contract service engineer the act of concern of not only such major national professional societies as the Institute of Electrical and Electronics Engineers, the American Institute of Aeronautics and Astronautics, and the American Society of Mechanical Engineers, but of such regional engineering associations as the Canaveral Council of Technical Societies, the Florida Council of Engineering Societies, the American Institute of Plant Engineers, the Instrument Society of America, as well as of the national engineering press. Due to his dedication, over a dozen separate articles and editorials have appeared in such widely circulated publications as the Electronic Engineering Times, the IEEE Spectrum, Electronics, Machine Design, Electrical Design, and Electronic Design News. Further, in large part through Frank Palmer's tireless efforts, House Bill 314, (appropriately named after the engineers' crucial constant Pi) designed to extend to engineers the protection against

wage-busting, has been introduced in the House by Representative Thompson of New Jersey. Frank's tireless efforts continue to bring influence to make this bill into law.

When House Bill 314 is finally passed, giving the engineer the protection against wage-busting already enjoyed by all of the other Cape workers, it will be in no small part due to the efforts of Frank Palmer. Since wage-busting of engineers' salaries indirectly hurts every engineer, all engineers owe a debt to Frank Palmer, and he richly deserves the recognition as "Engineer of the Year."

## Pension Answers

Responsible employers, employees and other citizens are truly concerned that the great mass of pension plans existant today do survive and ultimately deliver the benefits that future retirees expect to receive. You, of course, are also vitally concerned. Aren't you?

But, will those benefits be there for you, at the very time that you will need them most? That is the gnawing question!

Now, all of us, employers, employees and other citizens, can surely help each of us to substantially decrease the number of those of us who will surely be disappointed, unless all of us act now. All of us means you, too. We can't do a respectable job without you. We need your personal help now.

Here is where you come in. We must get a real feel for what is going on in our own pension world, how you sense things, whether you have any uneasy feelings about your retirement future. So, you must be candid and tell us the way it is.

The questionnaire which follows is a start which will help us put a hand on your pulse. If you have additional commentary, we will be delighted to hear it.

So, please turn off that background TV, radio or whatever, and help yourself and us by carefully completing this questionnaire right NOW.

Upon completion, please mail the questionnaire to:

Saul Kozuck  
320 South Harrison Street  
East Orange, N.J. 07018

Your help in this effort is sincerely appreciated, and we thank you for your concern and assistance.

Saul Kozuck  
Pensions Sub-Chairman, PAC  
North Jersey Section, IEEE

## QUESTIONNAIRE - EMPLOYEE PENSION PLAN

1. How old are you? \_\_\_\_\_
2. What kind of work do you do; i.e., E.E., M.E., Mathematician, Scientist, etc?  
\_\_\_\_\_  
\_\_\_\_\_
3. How many years have you been working? \_\_\_\_\_
4. How many employers have you had? \_\_\_\_\_
5. How many of these employers had pension plans? \_\_\_\_\_
6. Of those employers, how many plans have you actually vested in? \_\_\_\_\_
7. At present do you have an employer? \_\_\_\_\_
8. How long have you worked for your present employer? \_\_\_\_\_
9. Does your present employer have a pension plan? \_\_\_\_\_
10. How much does your present employer put into this plan for you each year?  
\_\_\_\_\_  
\_\_\_\_\_
11. If your employer does not, when will the employer start to? \_\_\_\_\_  
\_\_\_\_\_
12. How much will your employer put in each year? \_\_\_\_\_
13. On what date will you vest in this plan? \_\_\_\_\_
14. Do you realistically expect to be in this employ on that date? \_\_\_\_\_
15. If not, why not? \_\_\_\_\_  
\_\_\_\_\_
16. Would you be interested in having your own retirement plan completely independent from one that an employer provides? \_\_\_\_\_
17. How much money would you put into your own plan each year? \_\_\_\_\_
18. Will you contribute each year until retirement? \_\_\_\_\_
19. Would you prefer that your employer did not provide a pension plan for you?  
\_\_\_\_\_  
\_\_\_\_\_
20. Why? \_\_\_\_\_  
\_\_\_\_\_