



The IEEE

APRIL, 1990
(XXXVII NO. 9)

MONITOR

PUBLISHED BY THE NEW YORK SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NEW YORK SECTION'S NEW IEEE FELLOWS



Dr. Leroy L. Chang

For contributions to superlattices and semiconductor quantum wells.



Dr. Jane K. Cullum

For contributions to practical numerical algorithms for large-scale systems.



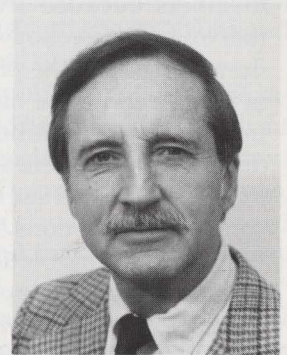
Dr. Peter A. Franaszek

For contributions to the theory and practice of coding for constrained channels and digital magnetic recording.



Mr. Jack D. Kuehler

For technical leadership in the design, development evolution of hi-performance disc storage systems.



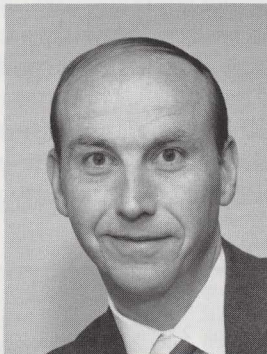
Dr. Richard E. Matick

For contributions to the development of digital storage systems.



Mr. Philip R. Nannery

Mr. Philip R. Nannery, Orange & Rockland Utilities



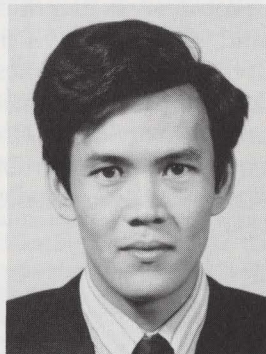
Mr. Stanley E. Schuster

For contributions to high-performance static random access memory design.



Dr. Betalel R. Shperling

For contributions to analysis and improvement of transmission system transient performance.



Dr. Denny Duan-Lee Tang

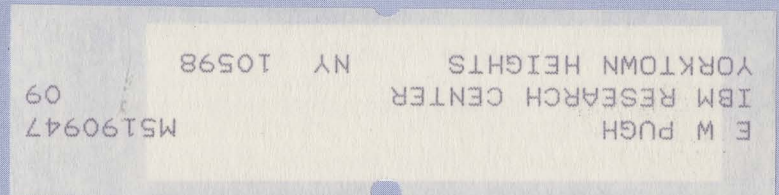
For contributions to the design and scaling of high-speed silicon bipolar devices.



Dr. Jerry M. Woodall

For contributions to the preparation of compound semiconductor structures for high speed and optoelectronic applications.

More on Page 8



**SECOND CLASS MAIL
TIME SENSITIVE MATERIAL**

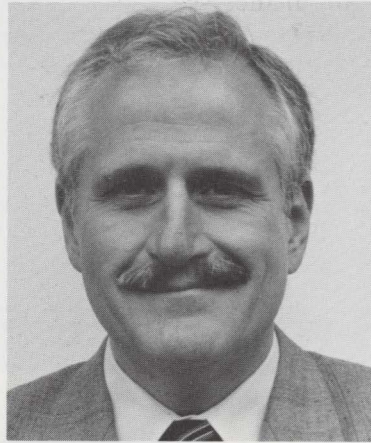
THE CHAIRMAN SAYS:

Recently, I received a letter from an IEEE member that was critical of the IEEE and, specifically, the way the New York Section conducts its business.

I welcome comments and/or criticisms from members because from this input the Section Officers can adjust the pitch of the Section to be more in tune with members' desires. In fact, there is not enough input from the Section membership. This last letter gives an opportunity to clear up some misconceptions that the author and others may have.

The New York Section leadership comprises IEEE members who must reside or be affiliated with the Section. All of the Officers, Executive and other Committee members are hard-working and dedicated volunteers who are willing people to use their own time to produce the programs advertised in the MONITOR.

The topics, speakers and locations of presentations at Section or Society Chapter meetings are decided upon by member-volunteers and thought to be of interest to many members. Next, a speaker or a company is identified that could make the presentation and, to keep down the expenses, would not charge for it. If there are other topics that are not being covered and should be addressed, contact one of the Officers, the Standing Committee or Society Chapter Chairs that are listed in the December issue of the MONITOR. I am sure they would be receptive to any suggestions of topics of interest to one or a group of members.



Bob Dent, Chairman

The locations of these presentations are determined by many factors. Among these are: capacity, nearby transportation facilities, security requirements, insurance requirements, audio-visual equipment availability, need for and price of refreshments and room rental fee, if any. Obviously, the last factor has a significant importance and, frequently, a room rental fee is avoided by the generosity of local universities or companies that allow the use of their facilities after normal working hours. I believe that a fee is avoided for all meetings except those held at the United Engineering Center. A final note on the location issue: the New York Section encompasses the City of New York, Westchester and Rockland Counties. The Westchester Subsection has worked hard and done an excellent job in arranging for presentations to members in the northern area of the Section.

There are many local meetings which are free to members and nonmembers sponsored by the Section and the Society Chapters; EMB (Engineering in Medicine and Biology), PE (Power Engineering), IA (Industry Applications), EM (Engineering Management), I&M (Instrumentation & Measurement), C (Computer), SIT (Social Implications of Technology) and COM (Communications). In addition, there are one-day seminars held each Fall and Spring by the Computer Society Chapter and the same for the Communication Society Chapter at a nominal cost (\$125 or less for member and \$150 for nonmembers with both discounted for early registration) which includes the seminar proceedings (if any), lunch and coffee. These seminars are usually held at the UEC in NYC. Finally, study groups are held for seven or more nights by the PES/IAS Chapter for a fee of about \$100.

For your information, at a professional development course offered several years ago, the PES/IAS Chapter presented a ten-session study group taught by two lawyers: "A Law Course for Engineers and Managers" which covered patent law and other topics.

The New York Section offers pertinent courses taught by practicing professionals to practicing professionals at no or nominal cost at easily accessible locations. This

continued

APRIL, 1990

APRIL, 1990

The Chairman Says

continued

Section does not have the manpower, facilities, desire and financial resources to be a university. In many cases, the courses and study groups offered by the Chapters are so relevant to an individual's job that employers reimburse their employees to attend the seminars.

I have always felt that the responsibility for my employment and advancement rests squarely on my shoulders. The factors normally used to accomplish this include, but are not limited to: family, friends, motivation, self-discipline, education (in the classroom or by one's self), hard work, a good organization and a bit of luck. The IEEE is not a placement firm. However, the IEEE has tried to help the employed, underemployed and unemployed engineer. In the October 1989 issue (page 10) of the MONITOR, Professor S. Lawrence discussed the IEEE-USA employment database services:

Nonconfidential Databases: NEER - Non-Employed Engineers Registry, GEER - Graduate Engineers Employment Registry, SEER - Self-Employed Engineers Registry.

Confidential Database: PEER - Professional Engineering Employment Registry.

Whether an engineer is employed or not, PEER is a confidential service available at no charge to IEEE members to find employment or improved employment. Prospective employers can review the resumes of the individuals in the Registry but do not gain access to the names.

Also, on Saturday, April 29, 1989 Region 1 and the North Jersey Section held a CAREER CONFERENCE in Nutley, NJ lasting from 9:00 AM to 4:00 PM. The topics included: Career Development, Employment Assistance and Economic Forecast. The Workshop was well publicized, well attended and well done by John Miller, a retired engineer and a member of the IEEE USAB Employment Assistance Committee. Lunch and refreshments were provided. There was no

Letters to the Editor

Dear Ms. Lawrence,

In the most recent IEEE Monitor your name was listed as the person to write to with any comments about the Monitor or members of the IEEE. I have been a member of the IEEE since 1980 (including student membership). I feel that I have been a full member long enough to see what the IEEE can do for me and what I can do for it. In the time I was a student member my college, the University of New Haven, gave seminars in new technologies. I enjoyed it enough to get involved and get myself elected to a student IEEE board position. It was my responsibility to get the guest speakers and choose topics which would benefit not only the engineers, but the student population as a whole.

Now that I am a full member I feel something is lacking in the views and goals of the New York section and the IEEE as a whole. In my opinion, the function of a professional society is to help advance the profession and the members as well. Lately all I have been seeing in what the IEEE has to offer is a group of simple information only seminars (sometimes at a substantial fee) given at prestigious research centers. If the

goal of the IEEE is to advance the profession, then the elected officials had better realize that advancing the profession starts with advancing the individual. The engineers of today need a society willing to take a chance at offering full blown cross training classes. I don't want to see a large fee, my membership is high enough. The computer people need classes in UNIX, the communications people need classes in applied optics, not abstract research papers. The list could go on and on.

All signs show a recession in the works. If the IEEE cannot give me confidence that they are going to help me when staff cuts are on, then the society serves me no purpose. Instead of big, expensive dinners at glamorous restaurants, lets offer a confidential placement service for employed engineers. I know the IEEE has a service for unemployed engineers, but don't you think that at that time it's little late. If I really wanted to be a radical I would even propose the IEEE offer a discount lawyer service for engineers trying to hold onto their patents, or who are let go because of "whistle blowing".

What the bottom line is that myself and the members of the IEEE deserve a better service for the money we pay. Don't turn yourself into

charge for IEEE members and unemployed engineers.

I want to mention the way New York Section is able to survive financially since the misconception comes through that the membership dues are funneled directly to the Member's Section to be spent providing services to the members. The work "survive" is used with thought. The longevity (70 years) of the Section is testimony to the planning, executing and managing by its volunteers of the Section's activities. Some events are planned to be operated cash neutral (such as the Fellows Awards Dinner Dance) with the help of the industrial sponsors. Many programs are operated at a loss (Candidates' Night, Society Chapter one-hour topical presentations) because they serve the members' needs to be informed. The MONITOR which is mailed to the 7,000 members in the New York Section is a negative cash flow item. The difference is made up by a small rebate from IEEE HQs, a share of the ELECTRO surplus, advertising revenues and any other legitimate and appropriate source.

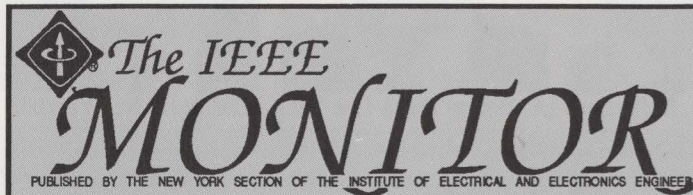
Like it or not, the IEEE is a major publisher of technical information throughout the world and has gained an excellent reputation. For many engineers, this is the most important reason for belonging to the IEEE. Through its publications, electrical and electronics engineers stay aware of technical advances, in general (Spectrum) and through the Societies, in detail (Transactions).

In the years I have been active in IEEE, I have met many truly sincere and hard-working volunteers. People who believe in the goals of IEEE and have put their time and energy where their mouth is. Occasionally, one of these people is given a token of appreciation to recognize their individual effort. The form of this token called an award usually comes after 20+ years of dedicated action. And the truth of the matter is, if it wasn't for these people, the Section would cease to exist. Of the near 7,000 IEEE people in the New York Section, 7 received a 1989 Region I Award and they each deserved it. I wish the Section had more volunteers like them.

a publishing house. I can get magazine subscriptions for a tenth of the price of IEEE membership. Give the members something that is a commodity that is offered with membership.

Confidential placement service, free training in technologies advertised for in the New York Times, representation for members ignorant of the world of patent and corporate law. Last and certainly not least, offer the members more than just cute little articles in bimonthly papers, or reader digest analysis of advanced systems (a.k.a. IEEE Spectrum). Please don't insult my intelligence by thinking that this is going to keep me abreast of today's world of technology. If the answer from the IEEE is to use other branches of the profession to advance myself then I have to ask, what do I need the IEEE for. Stop spending so much time patting each other on the back and giving out more awards that I can count. Give us a reason to get involved and a reason to stay full members and beyond. If you can do that then you will have members willing to get involved, and members willing to recommend IEEE to fellow colleagues.

Sincerely,
Clifford Roberts,
Communications Engineer, IEEE Member.



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April Meetings

N. Y./No. J. Chapter IEEE Engineering Management Society and the Stevens Institute Chapter American Society for Engineering Management.

Announces a Meeting on:

How To Manage Your Time So It Does Not Manage You.

Speaker: *Brian Horan*

Do you find yourself always running out of time, not being able to do all the things you have to do or would like to do?

Join us at this presentation by *Mr. Horan*, which will discuss time tested techniques of time management which are universally applicable and which are practiced, in one form or another, by all successful people.

Mr. Horan is Vice president and Director of training for the Union Bank of Switzerland, North America. He is a nationally recognized speaker and seminar leader. *Mr. Horan* regularly gives presentations on topics such as, Management, Communications Skills and Entrepreneurship. In addition to corporate audiences, he regularly speaks on these subjects to student audiences. Recent engagements include: Executive MBA Program, Rutgers Graduate School of Management, Stevens Institute of Technology, and Indiana University, Graduate School of Business.

The meeting will be held:

Time:
7:00pm, April 24, 1990
Refreshments, 6:30pm

Place:
4th Floor, Stevens Center, Stevens Inst. of Tech., Hoboken, N.J.

For information call:
Al Bottani (201) 265-7797

Future meetings to place on your calender:

May 15, Joint dinner meeting with the Program Management Institute.

June 19, Speaker from the Federal Emergency Management Agency.

Sept. 18, Dr. Deborah Kezsbom will speak on the Engineer as Manager.

The Engineering Management Society Chapter is seeking volunteers to participate in the chapters operations. Call Al Bottani (201) 265-7797 or Deborah Kezsbom (201) 871-1640 for details.

domestic telephone-based services, network service has been diversified into two areas. One is International Service and the other is Broadband Service. Regarding the former, international ISDN service was started from late 1989 between the USA and Japan. Regarding the latter, fiber optic subscriber network has been planned to provide visual communication services. At the presentation, these telecommunications networks perspectives will be reviewed.

8. The New Structure of the German PTT and the Consequences for the Opening of the Market will be presented by *Achim S. Klein*, Counsellor, Embassy of the Federal Republic of Germany.

9. Testing and Certification of OSI/ISDN Products will be presented by *Howard Berkowitz*, Principal Consulting Engineer, Corporation for Open Systems.

10. Perspective on International Telecommunications: The Fibre Optic Ring will be presented by *Roger Hattam*, Group Manager Network Development, Cable & Wireless, UK.

About the Speakers:

Warren Falconer is Executive Director of the Network Planning Division at AT&T Bell Laboratories. He provides management support for planning domestic and international network capabilities and services for the AT&T Communications Services Group business units and the Network Services Division.

Prior to assuming his present position, he was Executive Director of the Transmission Systems Engineering Division, planning the domestic and international transmission products for AT&T Network Systems, and

April Meetings continued

Election of Officers for 1990-1991

New York Section, and Chapter Officers for the Communications, Computer, Industry Applications and Power Engineering Societies will be elected at a meeting:
To be held:

at 7:00pm on April 26, 1990,
at the United Engineering Center,
345 East 47th Street, NYC.

All Section and Society members are encouraged to attend to cast their vote.

The New York Section slate recom-

mended by the nominating committee is: Chairman: *Peter J. Greco*, PATH Corp., VC Operations: *Frank G. Logan*, Con. Edison Co. of NY Inc., VC Activities: *James P. Barbera*, NY Telephone Co., Treasurer: *Harold Ruchelman*, Con. Edison Co. of NY Inc., Secretary: *Leon Katz*, NYC Transit Authority.

For information contact:
New York Section Chairman,
Robert A. Dent, (914) 681-6662.

The New York Chapter IEEE Communications Society slate recommended by the Chapters Nominating Committee is: Chairman: *Valene Skerpac*, Vice Chairman: *Lawrence Bolick*, Treasurer: *Robert Puttre*, Secretary: *Mario Madrigal*.

For information contact:
Rene Handwerker (718) 266-4258.

The New York Chapter IEEE Computer Society slate recommended by the Chapters Nominating Committee is: Chairman: *William M. Kern*, Vice Chairman: *Andrew*

H. Weigel, Treasurer: *Frank X. Kadien*, Secretary: *Lawrence Muller*.
For information contact:
Jim Barbera (212) 395-8765.

The New York/Long Island Chapter Power Engineering & Industry Applications Societies slate recommended by the Chapters Nominating Committee is: Chairman: *Jalal Gohari*, Vice Chairman: *Roland M. Dixon*, Treasurer: *Robert M. Pellegrino*, Secretary: *Robert A. Schulte*, Members-at-Large(4): *Andrew Montano*, *Lew Eitlinger*, *Raymond C. Amara*, *Frank Doherty*.
For information contact:
Ralph Tapino (212) 904-4526.

Independent nominations made by petition will also be presented. In accordance with the New York Section and Chapter By-laws, nominations, in addition to those made by the nominating Committee, will be accepted when made by petition.
For information call one of the contacts listed above.

New York Chapter Communications Society

Holds 79th Semiannual Seminar:

International Telecommunications: Global Networking in the 1990's

Speakers: *Warren Falconer*, *Alan Kamman*, *Bowley Moore*, *Joseph McQuaid*, *Irving Nazzario*, *Keith Newell*, *Ken-ichi Aihara*, *Achim S. Klein*, *Howard Berkowitz*, *Roger Hattam*.

The program includes:

1. The keynote speech "Global Networking - History and Impact" will be presented by *Warren E. Falconer*, AT&T Bell Laboratories.

This presentation will build upon the 19th and 20th century communications milestones that are the foundation for global communications capabilities of today and the future. It will develop examples of evolving global information movement and management capabilities that will draw the nations and corporations of the world ever closer together into a single world community. The evolution of technology from intercontinental telegraphy to today's satellites and fiber optic systems, enhanced with the high technology switching fabric, and linked together through CCITT standard signalling and control capabilities provide unparalleled opportunities for future communications engineers and service providers. The talk

looks at the enabling technologies of the 80's and the future. It then explores some of the nascent capabilities of ISDN, integrated transport and control, and the unified network management architecture concept, key vehicles for providing feature rich communications to multinational corporate customers as well as residential and small business consumers.

2. **Global Networking: Gateway to the 21st Century** will be presented by *Alan Kamman*, National Director: Telecommunications Markets, KPMG Peat Marwick.

3. **A Financial Services View of International Communications** will be presented by *Bowley Moore*, VP: Strategic Planning, Communications, J.P. Morgan.

4. **International Networking: Politics and Technology** will be presented by *Joseph McQuaid*, VP, France Telecom.

5. **An RBOCS's view of International Communications** will be presented by *Irving Nazzario*, Director International Operations, NYNEX International.

6. **Using the United Kingdom as a Gateway to Europe** will be presented by *Keith Newell*, VP, Technical Services - North America, British Telecom International.

7. **Telecommunications Networks Perspectives in Japan** will be presented by *Dr. Ken-ichi Aihara*, VP, NTT America.

In Japan, 64Kb/s-ISDN and 1.5 Mb/s-ISDN service were started from 1988, and 1989, respectively. Starting from these

new transmission network capabilities and services for the domestic and international AT&T network.

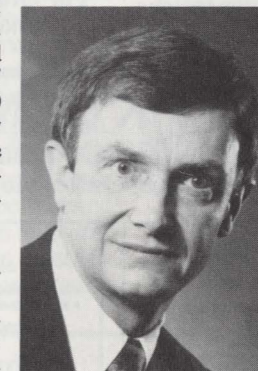
Mr. Falconer is a member of the Institute of Electrical and Electronics Engineers, the American Physical Society, and the COSMOS Club of Washington. He was a NATO Science Fellow at the University of Louvain, Belgium. He is the author of more than 100 scientific articles on telecommunications and physical sciences.

Mr. Kamman is National Director: Telecommunications Markets for KPMG Peat Marwick and Telecommunications Markets Director for Nolan, Norton & Co., an information technology firm of Peat Marwick. *Mr. Kamman* has 35 years of experience in all aspects of telecommunications and has managed his own consulting business. His areas of consulting expertise include planning, organization, operations, maintenance and productivity measurement aspects of public and private communications carriers and manufacturers. *Mr. Kamman's* previous associations included: Nolan, Norton & Co.,

G and A Unlimited, Inc., Arthur D. Little, Inc., and Bell Telephone Company of Pennsylvania. *Mr. Kamman* was commended by the President of the United States for forming and directing the United States Council for World Communications Year, in 1983. *Mr. Kamman* serves on the Advisory Board for the Graduate Program in Telecommunications Management and Policy, McLaren Business School, University of San Francisco.

Joseph G. McQuaid has recently been appointed vice-president of sales and marketing of France Telecom, Inc. *Mr. McQuaid*, the first American to hold an officer level position in the company, is responsible for overseeing the sales and marketing efforts of France Telecom's North American operations. He joined

France Telecom after serving as the director of carrier sales at Teleport Communications, where he formed close working relationships with AT&T, MCI, and US Sprint. His prior positions were with Teleport, where he was vice-president of sales at Cables and Wireless responsible for leading a nationwide sales force marketing an array of telecom services,



Warren E. Falconer

and ITT World Communications, where he was manager of sales training.

Dr. Ken-ichi Aihara is Vice President-R&D of NTT America. He received his B.S., M.S. and Ph.D. degrees in Electronic Engineering from Waseda University, Tokyo. He joined NTT labs. in 1974, and has engaged in research and development on transmission network planning, network synchronization, cross-connect system, network operation system and ISDN trials. He received the NTT president award and the Kajii Memorial award for his contribution to cross-connect system development. In 1988 he joined NTT America, where he has responsibility for network standardization activities and is the NYY America representative to the T1 committee and T1S1 subcommittee. He is a senior member of the IEEE, and its Communications Society. He was secretary general of GLOBECOM '87 and participated in ICC, GLOBECOM, NOMS, ISDN, INFOCOM, and Multimedia. He is also a member of the IWSC committee and of IEICE in Japan. He published more than 25 papers.

The Seminar will be held:

Tuesday, April 24, 1990,
9:00am to 5:00pm, at the
United Engineering Center,
345 East 47th Street, NYC.

Fee: \$140 for Non-Members, \$110 for Members, and a \$10 discount towards early registration before March 23, 1990. Fee includes lunch and coffee breaks. Special student and group fees available. Agenda is subject to change. For further information contact Bertil Lindberg at (212) 825-1527, Bob Puttre at (914) 683-3151 or Larry Bolick at (201) 467-9650.

Registration for "International Telecommunications: Global Networking in the 1990s."

To: Robert Puttre, NYNEX Science & Technology, 500 Westchester Avenue, White Plains, NY 10604. Make checks payable to: "NY IEEE COMSOC".

Name _____
Title _____ Phone _____
Affiliation _____ IEEE Mem. No. _____
Address _____

**April Meetings
Continued**

No. Jersey Section IEEE, the Center for Microwave and Lightwave Engineering, NJIT, and the Graduate Student Association, NJIT

Present:

Optoelectronic Seminar Series

at the New Jersey Institute of Technology
Frontiers of Optoelectronic Opportunities & Industry Exhibition, 3:00 to 7:00pm Wednesday, April 4, 1990.

1. Future Optical Communications - William F. Brinkman, AT&T Bell Laboratories
 2. Optical Probing of High Speed Electrical Signals - Jay M. Wiesenfeld, AT&T Bell Laboratories
 3. Squeezed Light - Bernard Yurke, AT&T Bell Laboratories
 4. Exhibition - 4:00 to 5:00pm (at break)
- Registration: There is no charge for this

seminar series. Refreshments served. Reserved Parking in Lot #7.

Location: Seminars will be held in the NJIT Alumni Center Seminar Rm., 323 Martin Luther King, Jr. Blvd., Newark, N.J.

For Further Information, directions for travel to the meeting, or a copy of abstracts of topics covered call: Dr. Gerald Whitman, (201) 596-3232; Department of Electrical & Computer Engineering, NJIT, (201) 596-3512.

N.Y./L.I. Chapter Microwave Theory & Techniques Society

Announces a meeting:

Chaos: A Tutorial

Speaker: *Dr. D. Zwillinger*

About the Talk:

Chaos is a sub-discipline of dynamical systems that describes random-looking behavior in deterministic systems. It has been observed in virtually every scientific discipline. This talk will offer an overview of the main concepts of chaos. The basic terminology of chaos, such as limit cycles, strange attractors, and fractal dimensions, will be described. We will address the use-

fulness of knowing whether chaos is present in a data stream, and how to determine its presence. Finally, a simple electronic circuit that exhibits chaotic behavior will be on display. This circuit will be available for examination by the audience.

About the Speaker:

Daniel Zwillinger received his PH.D. in applied mathematics from the California Institute of Technology and has held positions at Rensselaer Polytechnic Institute, Exxon Research and Engineering, and NASA's Jet Propulsion Laboratory. Dr. Zwillinger's interests span many areas of applied mathematics. He is the author of Handbook of Differential Equations, a reference book on differential equations.

Time: 6:00 PM, Tuesday, April 24, 1990
Refreshments will be served.

Place: Plainview Plaza Hotel, Sunnyside Blvd. (Exit 46 Long Island Expressway), Plainview, L.I., N.Y.,

For information call: Vince Boccio (516) 595-4250.

**April Meetings
continued**

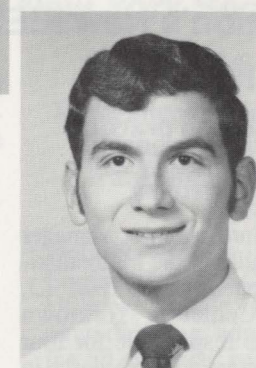
N.Y./L.I./No. Jersey Chapter Engineering in Medicine & Biology Society, N.Y./L.I. Chapter Power Engineering & Industrial Applications Societies, N.Y. Chapter Social Implications of Technology Society

Present:

An Electromagnetic Theorist's View of Fields and the Human Body - (Electromagnetic Fields and Health Effects).

Speakers: *J. K. Raines*, PhD; *Sally Faith Dorfman*, M.D.

In the IEEE Transactions on Antennas & Propagation Cumulative Index 1952-1984, only five letters or papers appear under the topic Biomedical Effects of Electromagnetic Radiation. Yet the human body resembles antennas in many ways, including geometry and even materials. Perhaps these analogies need further exploration. The subject of electromagnetic fields and the human body is controversial and emotionally charged, especially for bewildered citizens living near emitters such as power lines and antennas. It is also an interdisciplinary subject requiring the cooperation



J. K. Raines

epidemiological studies performed by the latter group. This contrasts with the approach of electromagnetic engineers in which precise theoretical computations often precede and provide direction for comprehensive measurement programs. What sort of predictions could an electromagnetic theorist make concerning the complex human body? How might these predictions clash or reinforce the experimental work performed so far? In this talk, we will look at some analogies between electromagnetic devices and the body, perform some (perhaps outrageous) computations, and hopefully provoke a lively discussion.

Dr. J. K. Raines has specialized in antennas & arrays, electromagnetic scattering, radar cross sections, and radio wave propagation since starting Raines Electromagnetics in 1972. Curiously enough, since 1978 he has been solicited by Government agencies, commercial broadcasters, and private groups to perform computations, measurements, and to provide testimony concerning the health effects of electromagnetic fields. Could it be that a background in an-

tennas and electromagnetic radiation provides a fresh perspective to this area?

Dr. Raines received his Ph.D. in Electromagnetics from MIT, his M.S. in Applied Physics from Harvard University, and his B.S. in Electrical Science and Engineering from MIT, in 1974, 1970, and 1969, respectively. While at MIT, he taught a laboratory course in bioelectronics under Profs. Steven K. Burns and Roger Mark. This is where he first became interested in electromagnetics and the body.

Panel discussion follows the talk.

Panel Speakers: *Sally Faith Dorfman*, M.D., Commissioner of Health for Orange County, New York, and *J. K. Raines*, PhD.

The meeting will be held:

Time: 7:30pm, Wednesday, April 18, 1990.

Place: Room 305, Tower Building, Rockefeller University, 1232 York Ave., NYC (Entrance at 66th Street Gate). Parking is available.

There will be an Informal Get-together in the First Floor, Cafeteria, Vending Machine dining area (hot drinks supplied), Tower Bldg., Rockefeller University.

For information contact:

Joe Bogovic, (EMBS) Chairman, (212) 241-8032, *Edna Feher*, (EMBS) Member at Large, (212) 757-0610, *Edward B. Farkas* (SITS) Chairman (718) 476-5018, *George Gross* (PE&IAS) Chairman (516) 938-0600 Ext. 276.

IEEE L.I. Section, its Student Activity Committee, & New York Institute of Technology

Presents:

1990 L.I. Student/Professor Conference on Neural Networks

Artificial Neural Networks (ANN) is now considered one of the top priority technologies in the world. With the new discoveries made last year, there is a possibility that ANN is about ready to take off and possible take its place alongside such technology as supercomputers in the near future. ANN is being used for a multitude of applications (e.g. sensor processing, financial decision making).

Keynote Speaker - *Dr. Harold Szu* of NRL

Dr. Harold H. Szu of the Naval Research Laboratory is a much sought after speaker and expert in ANN. His talk, "Neural Network Computer" will (1) review learning algorithms & architectures, (2) cover R & D directions on the horizon, including applications of self-architectures and general purpose Neural Network computers, and (3) compare various hardware implementation schemes such as optics, VLSI, and Hi Tc Superconductors. He is also extremely humorous.

Papers from students, undergraduates and graduates, and also coauthored papers by student/professor from universities of the nearby states will be presented. These papers are definitely of "Professional" quality. In fact, some are DARPA related, even funded by DARPA. For example, the Ivy League universities of Yale and Columbia will be presenting five (5) papers, at least two of which represent "Revolutionary" breakthroughs for this technology. Approximately sixteen (16) papers will be presented and included in a Proceeding for

the attendees.

Other universities include CCNY, Lehigh U. NYIT, Polytechnic U., Rutgers U., and SUNY at Stony Brook. Awards of \$50 and IEEE certificates will be given to the best paper in each of the three categories.

Registration fee: non-authors \$10 for students, and \$20 for non-students (covers the cost of the Proceedings, box lunch, etc.) A box lunch will be served during the Keynote speech by *Dr. Szu*.

The conference will be held: Time: 10:00am to 5:00pm, Saturday, April 21, 1990.

Place: N.Y. Institute of Technology Student Center (Diary Barn), Route 25 A, Old Westbury, L.I., N.Y.

For information contact: *Prof. Robert Hong* (516) 921-4446, *Prof. Frank Li* (516) 686-7970, *Susan Hobbie* (516) 696-6493.

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Meet the New York Section's New IEEE Fellows

Leroy L. Chang

For contributions to superlattices and semiconductor quantum wells.

Leroy L. Chang was born on January 20, 1936 in Honan China. He received his B.S. from Taiwan University in 1957, M.S. from the University of South Carolina in 1961, and Ph.D. from Stanford University in 1963, all in electrical engineering.

Dr. Chang joined IBM Thomas J. Watson Research Center in 1963 where, except for 1968-69 when he spent one year as an Associate Professor in the Department of Electrical Engineering at the Massachusetts Institute of Technology, he served as Research Staff Member (1963-75), Manager of Molecular Beam Epitaxy (1975-84), Staff to Research Director for Technical Planning and Control (1984-85), and assumed his present position as Manager of Quantum Structures in 1985. Since 1989, he has also been an Adjunct Professor of Engineering and Physics at Brown University.

His research covers a broad spectrum of semiconductor materials, physics and devices, with over 200 technical publications. Among his early work were atomic diffusion in semiconductors and electron tunneling through insulators. He developed the interstitial-substitutional model, the dominant mechanism for impurity diffusion in compound semiconductors. His work on tunneling spectroscopy demonstrated its use for the investigation of band-structure and related effects at interfaces. He started working on superlattices and quantum wells in 1969, which succeeded in fabricating fine structures on the atomic scale and observing fundamental phenomena of energy quantization and low dimensionality of electron systems. This led to the creation and subsequent growth of what has become today a large, multi-disciplinary field in physics and electronics, known as Quantum Heterostructures or Artificially Structured Materials. In his present position, he continues to direct and conduct research on the transport, optical and magnetic properties of such structures.

Dr. Chang is a fellow of the American Physical Society (APS) and the Institute of Electrical and Electronics Engineers (IEEE), and a member of the American Vacuum Society (AVS) and the Materials Research Society (MRS). He is also a member of the National Academy of Engineering. He served as a Councillor of MRS (1982-85) and is currently a Councillor-at-large of APS (1989-92). Dr. Chang received the APS International Prize for New Materials in 1985, and the IEEE David Sarnoff Award in 1990.

Dr. Jane K. Cullum

For contributions to practical numerical algorithms for large-scale systems.

At present, Jane Cullum is Senior Manager of Applied Mathematics in the Mathematical Sciences Department at the IBM T.J. Watson Research Center in Yorktown Heights where she is responsible for four groups of people who are doing research in a variety of areas such as statistical process control, fluids, semiconductor simulation, numerical algorithms for IBM computers, magnetics simulations, medical statistics, signal processing, and numerical linear algebra. She received a Ph.D. in Applied Mathematics from the University of California at Berkeley and a B.S. in Chemical Engineering from Virginia Polytechnic Institute. She has been an active member of the IEEE Control Systems Society, serving in many different positions, and this past year, 1989, was the President of that Society. Her research has centered on devising and analyzing numerical algorithms for various types of optimization and numerical linear algebra computations. Her most recent research has been on algorithms for large scale modal analyses, and she has co-authored a two-volume book, *Lanczos Algorithms for Large Symmetric Eigenvalue Computations*, Birkhauser Publishers, Basel, Switzerland, 1985. She has written more than 45 papers on modal analyses, control theory, optimization, and data analysis.

Dr. Peter A. Franaszek

For contributions to the theory and practice of coding for constrained channels and digital magnetic recording.

Peter A. Franaszek received the Sc.B. degree from Brown University in 1962, and the M.A. and Ph.D. degrees from Princeton University in 1964 and 1966 respectively (all degrees in electrical engineering). From 1965 to 1968, he was employed by the Bell Telephone Laboratories, first at Murray Hill and later at Holmdel. While there, his work was on channel coding, channel characterization, and filtering theory. In 1968 he joined the IBM Research Division at the T.J. Watson Research Center, Yorktown Heights, New York. During the 1973-74 academic year, he was on sabbatical leave to Stanford University as a Consulting Associate Professor of Computer Science and Electrical Engineering, where he taught courses on discrete mathematics in computing, data structures and computer architecture. He is currently manager of System Theory and Analysis in the Computer Science department at the

T.J. Watson Research Center, heading a group investigating basic issues in operating system, machine organization and analysis methodology. His work on channel coding has received wide application in digital recording and transmission systems. His interests also include a variety of topics in computing and communication theory, operating system, interconnection networks and computer organization and performance. He has received a variety of IBM awards for work in the areas of algorithms, networks and channel coding, and the IEEE 1989 Emanuel R. Piori Award for contributions to the theory and practice of constrained codes in digital recording. Dr. Franaszek is a member of Sigma Xi, Tau Beta Pi, and the IEEE.

Jack D. Kuehler

For technical leadership in the design, development evolution of hi-performance disc storage systems.

Jack D. Kuehler, 57, is President and a member of the Executive Committee, the Corporate Management Board, and the Management Committee of International Business Machines Corporation. He joined IBM in 1958 as an associate engineer in the San Jose Research Laboratory. Over the years, he played a significant management role in many of the corporation's advanced technologies. He served as director of the Raleigh Communications Laboratory, director of the San Jose Storage Products Laboratory, and president of the Systems Product Division. In 1980, he was elected an IBM Vice President and named president of the General Technology Division. In 1981, he was named Information Systems and Technology Group Executive. He was elected an IBM Senior Vice President in 1982, and the following year a member of its Corporate Management Committee and Business Operations Committee. He became a member of the IBM Board in 1986, executive vice president in 1987, and was named Vice Chairman and member of the Executive Committee in 1988. In May 1989, he was elected President.

He is a member of the National Academy of Engineering and a Fellow of the Institute of Electrical and Electronics Engineers. He is a trustee of Santa Clara University (from which he graduate with a B.S. degree in mechanical engineering and an M.S. degree in electrical engineering). He is a member of the Engineering Advisory Board, College of Engineering, Cornell University, and a member of MIT's Visiting Committee for Sponsored Research. He is a director of the Olin Corporation, a director of the National Association of

continued

Meet the New York Section's New IEEE Fellows

Mr. Philip R. Nannery

For leadership in the application of advanced technology to electric transmission and distribution systems.

Philip R. Nannery is Director of Electrical Engineering for Orange and Rockland Utilities, Inc. He is responsible for planning, directing, administering and managing all electrical engineering activities for the utility, which serves parts of three states, New York, New Jersey and Pennsylvania.

Prior to working for O&R, Mr. Nannery was employed for twenty years by American Electric Power Service Corporation. At American, he was Manager of Electric Station Projects, and was responsible for the engineering and project coordination for all EHV transmission and distribution substations on the AEP system. He worked on many 765KV transmission and substation projects, the system's UHV project, current limiting devices and static VAR compensator applications at 138KV.

A leader in the development, design and application of the Advanced Static VAR Generator for more than a decade, Mr. Nannery was instrumental in the demonstration of the prototype ASVG (1 MVAR) on the Orange and Rockland system.

He has served on key committees of the IEEE, Edison Electric Institute and the Conference Internationale des Grands Reseaux Electriques a Haute Tension (CIGRE), for which he is presently the U.S. representative for substations. He is Chairman of the IEEE Substations Committee; Vice Chairman of the Association of Edison Illuminating Companies' Committee on Electric Power Apparatus; an alternate member of the New York Power Pool; and has served as Advisor to EPRI Projects.

Mr. Nannery attended the Cooper Union School of Engineering from 1961-1964 and received his BSEE from the New Jersey Institute of Technology in 1966. He has published several IEEE papers on a variety of subjects ranging from constructing and operating experiences of 765KV systems to extending the service life of 15KV polyethylene URD cable.

Mr. Stanley E. Schuster

For contributions to high-performance static random access memory design.

Stanley Schuster received the B.S. and M.S. degrees in electrical engineering from New York University, New York City, in 1962 and 1969 respectively. From 1962 to

continued

Manufacturers, a director of the National Action Council for Minorities in Engineering, and a director of the New York State Business Council.

Dr. Richard Matick

For contributions to the development of digital storage systems.

Richard E. Matick received his BS, MS, and Ph.D. in Electrical Engineering from Carnegie Mellon University in 1955, 1956, and 1958. He joined IBM in October 1955, and worked in the areas of thin magnetic films, memories, and ferroelectrics. As manager of the Magnetic Film Memory Group from 1962 to 1964, he received an Outstanding Invention Award for invention and development of the Thick Film Read-only Memory. One-half year was spent at IBM Hursley, England developing this read-only memory for S/360 applications. He joined the Technical Staff of the IBM Director of Research in 1965 and remained until 1972, serving in various staff positions including responsibility for the Research Divisional plans, and Technical Assistant to the Director of Research. He took a sabbatical in 1972 to teach at the University of Colorado and IBM in Boulder, Colorado. Dr. Matick spent the summer of 1973 teaching and doing research at Stanford University. He is currently working in the areas of VLSI functional memory chip and microprocessors design. In April, 1986, he received an Outstanding Innovation Award as co-inventor of "video RAM", the memory chip that is becoming popular for use in bit buffered displays, and used in the high-resolution display announced with the IBM PC-RT. Dr. Matick is the author of the books "Transmission Lines for Digital and Communication Networks", McGraw Hill, 1969, and "Computer Storage Systems and Technology", John Wiley, 1977. He is also the author of chapters on memories in "Introduction to Computer Architecture", (Editor-Stone), SRA 1975 (first edition), 1980 (second edition), as well as in "Electronics Engineers' Handbook" second and third editions, McGraw Hill, 1982 and 1989. He has written numerous papers on magnetic devices and memories, semiconductor circuits, memory and logic, as well as virtual memory chips and systems both inside and outside of IBM. His pioneering work in high density, CMOS cache memory design served as the foundation for the high-speed, functional cache system being used in the IBM second generation RISC processor. He is the holder of numerous patents and patent publications, and a member of Eta Kappa Nu.

1963 he was with the Bendix Corporation, and from 1963 to 1965 he served as an officer in the U.S. Army Signal Corps.

In 1965 he joined the IBM Research Division, working initially on NMOS device characterization and circuit design for logic and memory. This work was part of the effort that led to IBM's NMOS technology for main memory. He also was involved in the application of semiconductor technology to communication systems. During the early 1970's he did extensive work that demonstrated the leverage of word and bit line redundancy on semiconductor memory yield. This effort was instrumental in IBM's implementation of redundancy in their DRAM products. His work on redundancy included the development of laser personalization techniques for integrated circuits. This technique was also used to achieve fast turnaround times in the personalization of PLA's.

Since the late 1970's he has done research on the design and application of a series of NMOS and CMOS memory chips for very high-speed operation. Recently this work has included the design of very high-speed pipelined CMOS ECL-compatible SRAM's with cycle time less than access time. Currently he is manager of the SRAM group in the VLSI Logic and Memory area.

Mr. Schuster is an associate editor for the IEEE Journal of Solid-State Circuits and was a guest editor for the Special Issue on Logic and Memory in October 1986. He served on the ISSCC program committee from 1985-1988. He received IBM Outstanding Invention and Contribution Awards in 1970, 1971, 1973, 1980 and 1983 and the Eighth Level IBM Invention Achievement Award.

Dr. Betsalel R. Shperling

For contributions to analysis and improvement of transmission system transient performance.

Betsalel (Ben) R. Shperling received the Dipl.-Eng. Degree in Electrical Engineering (equivalent to MSEE) from the Leningrad Polytechnic Institute in 1960, and the Science Degree (equivalent to Ph.D.) in Electrical Engineering from the Direct Current Research Institute in Leningrad in 1968.

Dr. Shperling had been with the Leningrad Direct Current Research Institute from 1960 until 1976, where he worked in the High Voltage Technology Laboratory. From 1976 to 1980 he was with American Electric Power, Research and Development Division. He joined New York Power Authority, Engineering-System Operations Division in 1980.

continued

Meet the New York Section's New IEEE Fellows

continued

The area of Dr. Shperling's scientific and technical expertise covers transient and steady-state analysis in power systems, transmission system shunt and series compensation techniques, analysis of system harmonics, insulation coordination in EHV and UHV networks, high voltage testing techniques, etc.

Dr. Shperling published more than thirty technical papers and made approximately twenty-five presentations at U.S. and International Conferences. He is a member of General Systems Subcommittee and Working Groups on Switching Surges and Power System Harmonics. He is also a CIGRE member and a member of the Working Group on Temporary Over voltages. He is a Professional Engineer of the State of New York.

Dr. Denny Duan-lee Tang

For contributions to the design and scaling of high-speed silicon bipolar devices.

D.D. Tang received a Ph.D. degree in Electrical Engineering from The University of Michigan, Ann Arbor, Mich. in 1974.

He had worked in the area of microwave semiconductor devices and circuits prior to joining IBM T.J. Watson Research Center in 1975, where he initially conducted research on the holographic memory device using piezoelectric material. In 1977, he joined the Silicon Technology Department and worked in the area of bipolar devices and circuits for high performance logic and memory. He has been Manager of the Bipolar Devices and Circuit Group from

1982 to 1989, with responsibility in the area of device physics, modeling, design, and characterization. He is presently a member of Technical Planning Staff. He actively involves in the development of high-performance devices and circuits and had been invited to write book chapters for three publishers, and is author and co-author of more than 70 technical papers covering GaAs and Si device physics, and bipolar devices and circuits. He served in the IEDM and DRC conferences, and is a mentor of SRC. He has been granted seven U.S. patents.

Dr. Jerry M. Woodall

For contributions to the preparation of compound semiconductor structures and devices for high-speed and optoelectronic applications.

Dr. Woodall was born and grew up in the metropolitan area of Washington, D.C. He attended MIT where he received his B.S. degree in metallurgy in 1960. In 1980 he attended Cornell University and received a Ph.D. degree in electrical engineering in 1982.

In 1960 he joined Clevite Transistor Products in Waltham, Mass. where he worked on Ge crystal growth and device processing. In 1962 he joined the IBM Thomas J. Watson Research Center in Yorktown Heights, N.Y. During the early phase of his career he studied the chemistry and crystal growth of high purity bulk GaAs. This work resulted in state-of-the-art high purity material used in Gunn effect research. Subsequently he worked on the growth of crystals for injection laser re-

search and reported the first use of the liquid phase epitaxy method for fabricating Si doped p-n junction GaAs LEDs, and GaAlAs LEDs and lasers. In the late sixties he invented the GaAlAs/GaAs high efficiency solar cell and with co-workers at IBM developed this structure into a state-of-the-art high efficiency solar cell.

Recently he has turned his attention to the studies of GaAs surfaces and interfaces with particular emphasis on the fundamental aspects of the formation of both Schottky barrier and ohmic contacts, and the use of photo-electrochemical techniques for device fabrication and surface passivation. Also he has been studying the role of effusion cell chemistry on epitaxial layers grown by the molecular beam epitaxy method. Very recently he has turned his attention to the use of new materials for high speed device applications.

His efforts are recorded in 121 publications in the open literature, 54 issued patents, and 16 patent applications filed. His accomplishments have been recognized by four major IBM Research Division Awards, 27 IBM Invention Achievement Awards, the 1980 Electronics Division Award of the Electrochemical Society, the 1984 IEEE Jack A. Morton Award, the 1985 Solid State Science and Technology Award of the Electrochemical Society, the 1988 Heinrich Welker Gold Medal and the International GaAs Symposium Award, his election as Fellow of the American Physical Society in 1982, his election as IBM Fellow in 1985, his election as Vice President of the Electrochemical Society in 1987, his election to the National Academy of Engineering in 1989 and his election to IEEE Fellow in January 1990.

Stephane G. Mallat, Courant Inst. of Math. Science; Ali N. Akansu.

The seminar will be held:
9:00am to 4:15pm, Monday
April 30, 1990,

Place:
NJIT, Ballroom, 323 Martin Luther King Blvd., Newark, NJ.
Parking will be available.

Registration:
\$10 for Lunch, no charge for the seminar.

Due to limited seating and parking, early registration is recommended.

For registration, directions, or information contact:

Ali N. Akansu, NJIT, ECE Dept.,
323 Dr. Martin Luther King Blvd.,
Newark, NJ 07102. (201) 596-5650.
E mail: AKN@MARS.NJIT.EDU

April Meetings

continued

New Jersey Institute of Technology Center for Communications and Signal Processing Research

Presents a Symposium:

Multi-Resolution Signal Decomposition Techniques: Wavelets, Subbands, and Transforms.

Organizers: Ali N. Akansu, NJIT ECE Dept.; Ephraim Feig, IBM T.J. Watson Research Center.

Topics:

1. Algebraic structure of the discrete cosine transform,
2. Filter banks and wavelets: relationships, new results and applications,
3. Subband coding of video,
4. A different way of looking at subband coding
5. Multiresolution methods for "Intelligent", motion adaptive, image compression,
6. Complete signal representation with multiscale edges,
7. An efficient QMF-Wavelet structure.

Lectures: Ephraim Feig; Martin Vetterli, Columbia Univ.; John Woods, RPI; Ingrid Daubechies, AT&T Bell Labs; Peter J. Burt, SRI David Sarnoff Research Center;

April Meeting continued

N.Y./L.I. Chapter Power Engineering & Industry Applications Societies

Presents a Technical Discussion:

Nonlinear Loads Mean Trouble

Speaker: Mr. Arthur Freund, Consultant

About the Talk:

With the installation of more and more solid state equipment such as computers, UPS units, motor control and other non-linear loads new problems are surfacing as a result of excessive line noise and harmonics. Particularly in commercial, industrial and institutional facilities, non-

linear loads have been identified as the source of problems ranging from overheated neutrals to transformer and generator failures.

The talk will describe what nonlinear loads are and why they have suddenly become the focus of attention. The effects on neutral sizing and transformer and generator capacity will also be discussed. Other topics to be covered include the necessity of true RMS measurements, effects on overcurrent devices, and practical solutions to problems created by non-linear loads.

About the Speaker:

Mr. Arthur Freund is currently President of Noble Electrical Consultants, Inc., providing forensic services, lectures and seminars, writing, editing and technical information and training to the electrical industry. Mr. Freund is a familiar name to many in the electrical industry having

recently retired as Senior Editor of Electrical Construction and Maintenance magazine, a position he held since 1978. Prior to that he worked for 21 years as manager of Specification Engineering for Federal Pacific Electric. Author of numerous publications, papers, articles and books, he has been actively involved in the industry for over 40 years. He earned a Bachelors Degree in Engineering from New York University and is a senior member of IEEE.

All are welcome, there is no fee required.

The meeting will be held:

Time:

6:00pm, Thursday, April 19, 1990
(refreshments served 5:30 to 6:00pm)

Place:

Room 1425, Con Edison,
4 Irving Place, NYC.

For information contact:

Rick Miller (201) 688-2900.

Westchester Happenings

by Denise Carpentier

The Westchester Subsection (WSS) closed out 1989 with a bang with our December 7th meeting on Fiber Optic Lans. Michael Coden of CODENOLL Technology Corporation, gave us a spectacular presentation on "Networking Computers with Fiber Optics". We had the best turn out ever with a whopping seventy-five (75) engineers in the audience. It was an interactive session with a great deal of audience participation. So much interest in the topic was shown that the Administrative Committee of the WSS will look into bringing more to you from Michael Coden and fiber optic lans in the near future.

The WSS needs your support and input. Let us know what your interests are, we'll do our best to bring those topics to you. If you or your company would like to share information about your product or upcoming technical events, let us know. We'll share the information with the other readers of MONITOR.

Please call WSS:

Jim Seiden, Chairman (914) 359-7384 or Denise Carpentier, Editor (914) 333-2622 with any feedback, comments or ideas you may have.
Contact us we're interested in what you have to say!

The Westchester Subsection

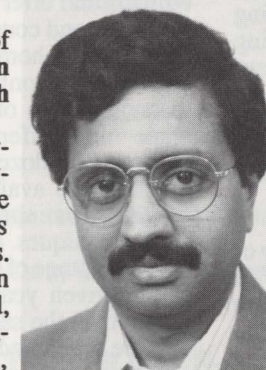
Presents on May 1, 1990:

"Speech Recognition".

Speaker: Dr. Gopalakrishnan

About the Program:

Dr. Gopalakrishnan, of IBM, will present "An Overview of Speech Recognition Research". The purpose of speech recognition is to interface with computers through spoken words. The nature of human speech is multifaceted, it consists of acoustical, intonational, grammatical, phonetical and a host of other characteristics. The rate at which different people speak and the many dialects that exist pose additional complications in understanding spoken language. It is these characteristics of speech that create the challenge of perfecting speech recognition in computers. He will present an overview of recent trends in speech recognition research. The presentation will begin with a discussion of the various issues in the field, followed by a look into the different approaches taken towards speech recognition. Dr. Gopalakrishnan will explain the hidden Markov modeling techniques and discuss an IBM PC based large vocabulary real time isolated word recognition system. The limitations and capabilities of current systems will be illustrated and recent re-



Dr. Gopalakrishnan

search results will be reviewed. The meeting will conclude with a discussion of the problems still unsolved and the approaches that are taken to solve them. As always, questions are welcomed and encouraged.

About the Speaker:

Dr. Gopalakrishnan has been a member of the Research Staff at the IBM Thomas J. Watson Research Center in Yorktown Heights since 1986. His research interests include speech recognition, parallel algorithms and optimization. He earned his B.S. Degree in Physics from the University of Calicut in 1977. He continued his education at the Indian Institute of Science and was awarded his second B.S. in Electronics and Communication in 1980 and his M.S. Degree in Automation in 1982. Dr. Gopalakrishnan went on to the University of Maryland to earn his Ph.D. in Computer Science which he completed in 1986. He is a member of IEEE Computer Society and ACM.

The evening of May 1, 1990 promises to be an exciting one. Please come and join us.

Time:

5:45pm, Tuesday May 1, 1990.

Place:

NYNEX Science and Technology,
500 Westchester Avenue,
White Plains, New York,
(at the William Butcher Bridge, near
the intersection of I 287 and the
Hutchinson River Parkway).

For more information call:

Denise Carpentier (914) 333-2622
or Dr. John Chang (914) 766-1471.

Education Notes

by Leon Katz, Chairman, Education Activities Committee

The IEEE and The Engineer

One of my college professors once told me that getting my B.E.E. degree does not mean that I am now an engineer, but rather that I am now qualified to learn how to become an engineer. What he meant was that our technical and social education is a continuing process, even after graduation.

Older engineers, like myself, now completing their careers, studied electrical engineering when vacuum tube circuits were at the leading edge and transistors and computers were newly being introduced. Engineers who did not keep up with those dramatic changes were most certain to be relegated to lower level positions or found themselves working as technicians rather than professionals.

What about the future? You know better than I that the rate of change in electrotechnology is increasing rather than decreasing. Solid state technology continues unabated. Memory chips holding 4M bits are in production and 16M bit chips are being developed. Smart electronics are bringing the advantages of ICs to higher power applications, optical fibers are replacing copper conductors in communication links and high temperature superconductivity has been discovered in ceramic material that I once thought were insulators.

A recent study by the National Academy of Engineering suggests that the half-life of an electrical engineer's skills is less than five years.

In addition to what you learn as you gain experience in your employment, the IEEE offers the opportunity to broaden your knowledge and training, helping you

keep aware of the latest technology.

Our members tell us that the two most important reasons they belong to the IEEE are to keep current in their own specialties and to keep abreast of other fields of electrotechnology. The need for continuing education is clear. How good is our response?



Leon Katz

Let's look at two key areas: publications and conferences.

The IEEE publishes 47 transactions and journals, and 18 magazines. It also sponsors nearly 300 major conferences each year. Conferences and journals have always appealed to specialists who wish to keep up with the latest advances. To counter the problems of overspecialization, our conferences increasingly offer tutorials and survey sessions. Furthermore, our magazines, which emphasize tutorials and practical applications, have increased fourfold in number during the 1980's.

The IEEE also has a variety of formal educational offerings: Self study courses, seminars, and courses transmitted by satellite. About 35 home-video tutorials, including tapes of conference sessions on new technology are offered each year, as are some nine different individual learning programs. A dozen personal development products are available; courses on topics ranging from speed learning to management techniques. More than 30,000 people take advantage of our educational offerings in any given year, including 11,000 participants in the satellite video conferences that are scheduled roughly once every two months.

It is my responsibility as Education chairman to ensure that these resources are con-

stantly available and are being kept current. But the most valuable resource that the IEEE has to offer to you is US, ourselves, to each other.

What I am referring to is the numerous professional societies within the IEEE that give us the opportunity to meet each other, at both the professional and social level. This is where we learn from one another through our common interests, where our profession is now and where it is headed in the future. This is where you become true professionals by not only adding to the limited expertise obtained from your employment, but also gaining a complete education ranging from the latest technical innovations to the latest news of opportunities and benefits for our own welfare as a human being.

The IEEE is where we have the opportunity to improve our situation.

It is here that those in our profession can be made aware of the needs of the profession and of our responsibilities to that profession, to each other and to our society.

As professionals, it is here that we can take charge of our own careers.

It is here that we can get industry and government involved and make certain that they are aware of the link between progress in a technology and the continuing educational needs of its practitioners.

It is here, in the IEEE that we can get the recognition and reward for the quality of our contributions to industry and the country.

Therefore, it is the IEEE, the only organization you have, that can ensure that your future does not become the future of a glorified technical clerk, but one of a true professional, but this cannot be done by just obtaining membership. It can only be accomplished by truly active participation and the contribution of your time, your expertise, and your support to each other and to the IEEE.

New York Chapter IEEE Computer Society

Plans to present a Seminar in May:

A Perspective of Mainframe / PC Cooperative Processing.

The discussion will include requirements such as Links, common languages ('C'), common operating systems (UNIX), and common Databases (DB2). Other topics will include why,

when and the financial benefits of Cooperative Processing. The scheduled presenters are IBM, AT&T, Hewlett Packard, SAS Institute, Information Builders (FOCUS) and UNISYS.

This seminar will be held:

Time: 9:00am to 4:30pm, Thursday, May 24, 1990.

Place: United Engineering Center, 345 East 47th Street, New York, N.Y.

Fee: \$125 for IEEE members, \$150 for non-members, \$25 discount for early registration with payment by May 10, 1990. Fee includes seminar proceedings, lunch, and coffee.

For information contact: Jim Barbera, NYNEX Service Co., Room 8N1, 1166 Ave. of the Americas, New York, N.Y. 10035, (212) 395-8765



EDUCATION PROGRAM -SPRING 1990

SPECIAL STUDY GROUP

Presented by:

NY/LI Chapter Power Engineering & Industry Applications Societies

Study Group No. 73

Batteries & Applications

Mondays starting April 23, 1990

6:00pm to 8:00pm

New York University

269 Mercer Street, NYC

6th floor

Instructor: Brad Radimen, PSE&G-Best Facilities (201) 359-7570

Sponsor: Pat Carey, Port Authority of NY & NJ (201) 963-7786

Coordinator: Lew Ettlinger, N.Y. University (212) 998-1425

A course for engineers and designers that deals with the proper selection, installation and maintenance of batteries for various types of applications.

April 23 - Battery fundamentals

April 30 - Battery selection and sizing

May 7 - Installation design and installation

May 17 - Maintenance, testing and inspection

May 21 - Special topics - UPS Systems, nuclear, solar storage, energy management.

FOR FURTHER INFORMATION CONTACT: Pat Carey (201) 963-7786 or Lew Ettlinger (212) 998-1425

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REGISTRATION INFORMATION	REGISTRATION FORM STUDY GROUP 73
FEE STUDY GROUP 73:	Name(printed) _____
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IEEE student members \$50 if paid in advance as pre-registration.	Business Address _____
*A \$10 fee deduction is applicable for early registration postmarked prior to April 16, 1990	Phone _____
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Mail to:	Non-Member _____
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Port Authority of NY & NJ,	Admission card no. _____
5 Marine View Plaza, Hoboken, NJ 07030.	Refund certificate no. _____
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	Date By _____

Your Section

by Stella Lawrence, Editor-at-Large

PR CAMPAIGN FOR EES?

In the January 22, 1990 issue of Electronic Engineering Times Bob Bellinger suggests that engineers could use a Public Relations campaign.

Bob has received letters from Rochester, New York where they are thinking "image". "The Rochester Engineer Newsletter Editor, Jacob Z. Schanker states that "we can see clearly the power of image makers in the political area, the same combined public relations and advertising approach could work for the engineer's image".

Bob Bellinger asks, "Does anyone outside of our industry really understand what you do? This industry needs a little braggadocio. We need to inject a sense of awe into the stunning accomplishments electronics engineers have made in the past decade".

Bob thinks that engineers are too modest, a "low-keyed" bunch. Think of what the engineers have achieved recently. In graphics, screens, radars, personal computers, laptops, supercomputers, biotechnology chips.

Bob suggests "a profile-raising campaign aimed at the masses". He feels that stories about engineers should appear on '60 Minutes', 'Inside Edition', '20/20' and in 'People Magazine', for example. "Except for an occasional Public Television program engineers never get out before the public." That is because of their image. They are thought of as mused-up nerds who cannot communicate properly.

Engineers need a PR campaign that will stir up the interests of network and big-circulation magazine editors who are always scouting for human interest, people-oriented, photogenic stories. Bob suggests, "EES transform Medicine (New York Times), Crime in the Clean Room (60 Minutes), Barbara Walters Interviews Seymour Cray (20/20), Graphics Smash the 3D Barrier (Life Magazine), Neural Chips An Alien Plot (National Enquirer)".

I agree with Bob, it's better than being ignored! Let's do something about it!

Memorial Fund for the December 6, 1989 Victims.

I am sure that by now you are aware of the terrible murder of fourteen female engineering students that took place this past December in Montreal. I know that your thoughts and sympathy go along with mine to the family and friends of these brave young women.

The Ecole Polytechnique and its Student Association (AEP) have created a "Memorial Fund for the December 6, 1989 Victims". The Fund's general objective is to promote and support the study of engineering for women at Ecole Polytechnique. Its specific objectives, admissibility and other criteria, will be defined together with representatives of the victims' parents, the students and the donors. The Fund will be managed by the



Stella Lawrence

"Foundation de Polytechnique".

Contributions should be labelled as follows:

Ecole Polytechnique, "Fonde des victimes du 6 decembre 1989", C.P. 6079, Succ. A, Montreal, Quebec, H3C3A7, Canada.

Further information is available from:

Mr. Bernard Lavigueur, Eng., President of "Foundation de Polytechnique", Tel: (514) 737-0647 or Mr. Roland Dore, Eng., President of Ecole Polytechnique, Tel: (514) 340-4704, Fax: (514) 340-4333.

Furthermore, the Canadian Council of Professional Engineers (CCPE) will administer a Pan-Canadian trust fund for the support of women students in engineering.

Further information is available from:

Mr. Donald Laplante, Eng., Executive Director, CCPE, Tel: (613) 232-2474, Fax: (613) 230-5759, or Ms. Claudette McKay-Lassonde, Eng., Northern Telecom, Tel: (416) 238-7296, Tel: (416) 238-7431.

IEEE Insurance Plans Available

IEEE makes a number of insurance plans available to members. The Institute is not directly involved in the management of the group insurance program. It has approved these programs solely as a service to IEEE members. Plans available to members are listed below:

Group Life Insurance - low-cost term life insurance for members and their families.
High-Limit Accident Insurance provides protection against the loss of life or limb. Dependent coverage also available.

Disability Income Insurance - provides monthly income in the event you are disabled and unable to work as a result of illness or injury.

Comprehensive Health Care Insurance - designed to protect you against financial hardship from medical bills - in and out of the hospital.

In-Hospital Insurance - provides benefits during stays in the hospital. Also provides benefits for nursing home confinements and home nursing care.

Medicare Supplement Insurance designed for members eligible for Medicare to help meet many of the expenses Medicare does not cover.

Long-Term Care Insurance - provides for all levels of nursing home care and can continue even after you return home. Available to members, their spouses, parents and parents-in-law.

Small-Employer Group Insurance Group benefits for small firms (1 - 20 employees) in which members are owners or principals. Offers complete selection of Medical and Life Insurance policies.

For More information contact: Smith-Sternau Organization, Inc., Group Insurance Program for IEEE Members, 1255 Twenty-Third Street, NW, Washington, D.C. 20037. Call toll-free (800) 424-9883.

Reader Input

The IEEE Monitor would like to publish articles of interest to members. If there are any topics that interest you or if you have any news regarding members or member activities, please write your Editor-at-Large:

Professor Stella Lawrence,
Dept. Of Engineering Technologies,
Bronx Community College,
W. 181 Street and University Ave.,
Bronx, N.Y. 110453.

ELECTRO/90 NEWS

by Stella Lawrence

The annual Electro conference and exposition will be held: **May 9 to 11, 1990 in Boston, at the Hynes Convention Center and Bayside Exposition Center. More than 5000 products and 800 vendors will Exhibit.**

Focal point for the event will be the Professional Program, consisting of approximately 50 plenary, tutorial and panel sessions. The program will be organized in general groupings, addressing the primary concerns of Electro attendees, which will be as follows:

Computer aided software eng'g,
Devices,
Education,
Electronic CAE/CAD/CAM, General (varied topics),
Marketing,
Manufacturing CAE/CAD/CAM, Mechanical
CAE/CAD/CAM, Quality control,
Test engineering.

A keynote address:

"Global Electronics in the Market Place"

Will be presented by:

Thomas H. Bruggere, Chairman of the Board of Mentor Graphics, at 9:15am on Wednesday May 9, 1990.

Electro/90 will also present a special half-day conference sponsored by the Electronics Group of the National Association of Purchasing Management on "Purchasing's Role in Corporate Success". The NAPM event will take place on the afternoon of May 9, 1990, and feature these topics:

"Global Purchasing" by Frank Tahmouh, purchasing executive of the Polaroid Corporation,

"Purchasing's Role in Corporate Success" by purchasing consultant Robert J. Nahabit,

"Honest Answers To Tough Questions" by a panel including corporate purchasing executives, distributors and representatives.

Conference Hours:

Wednesday & Thursday, May 9 & 10, 9:30am to 5:00pm.
Friday May 11, 9:30am to 2:30pm

Exhibit Hours:

Wednesday May 9, 10:00am to 5:00pm, Thursday May 10, 9:00am to 5:00pm, Friday May 11, 9:30am to 4:00pm.

Registration:

For the Keynote Event, Exhibits and Professional Program will be \$10 at the door or FREE if made in advance (to be received by Electro/90 by April 6, 1990).

A Registration Form is inserted in this issue of the monitor for your convenience.

For further information regarding Electro/90, contact:
Electronic Conventions Management, (213) 215-EXPO.

The Vice Chairman's Thoughts

by Frank Logan

Announcing the extraordinary annual Great Springtime Humor Contest! Sponsored more or less every twelve months by the New York Section!

This is your golden opportunity to become famous in the Section for having a Sense of Humor, so let's go, Gang, and send in those hilarious entries.

The numerous Items in question can be in almost any form: one-liners, stories, puns, plays-on-words, jokes, shaggy transistor stories, etc. Anything in the form of the written word can be submitted, and all will be accepted. The best, according to our esteemed panel of judges, will be printed, with your name attached, in this column in the near future. See your name in Print! Be proud of yourself! Show your kids that you aren't always such an old grouch, but have a spot of true humanity, after all.

Now then, can we come up with a bit of inspiration for all of you out there in the Section, a bit of Industrial Humor? A spot of Low Tech Comedy? Ha! Let's see now...

How about his and hers IEEE bumper stickers (B.S.): His reads, "MALE-EE's HAVE GREATER CAPACITY" Hers reads, "FEMALE-EE's ARE BETTER RESISTORS" Talk about ancient stereotypes.

Another old dog of a B.S.: "COBOL PROGRAMMERS DO IT FROM LEFT TO RIGHT ONE BYTE AT A TIME". No end to those ambiguous "do it" messages. What is it they "do", anyway? A bit of a byte, or a nibble, perhaps.

If a rheostat could drive a car (Disney Studios take note), its B.S. might read: "THERE'S NO PLACE LIKE OHM".

In San Jose, can you still get a ride on an IEEE Bus?

No doubt, any one of you can do better. So do it, don't just sit there and groan (a deep sound of pain, distress or disapproval). Send in your superior contest entries...your talent will be acknowledged without hesitation. Show The World that engineers DO have a sense of humor, after all.

Frank G. Logan, Vice Chairman, Section Activities

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**APRIL 1990 CALENDAR
OF EVENTS AND MEETINGS
PLEASE POST
ALL MEETINGS ARE OPEN TO
NON-MEMBERS AS WELL AS MEMBERS**



*Please make reservations for any event requiring
reservations according to instructions in the announcements.*

April 4 - North Jersey Section

NEW OPTOELECTRONIC DEVICES - SEMINAR and Exhibit - 3:00pm to 7:00pm, NJIT Alumni Center, 323 Martin Luther King Blvd., Newark, N.J. No registration fee. For information call Dr. Gerald Whitman (201) 596-3232 **SEE THE IEEE MONITOR**

April 18 - E.M.B. /P.E.& I.A./S.I.T. Societies - NY/LI/No. Jersey

AN ELECTROMAGNETIC THEORISTS VIEW OF FIELDS AND THE HUMAN BODY - 7:30pm, Room 305, Tower Bldg., Rockefeller University, 1200 York Ave. (at 66th St.) NYC. Pre-meeting get-together, 6:30pm, Tower Cafeteria. For information call: Joe Bogovic (212) 241-8032, George Gross (516) 938-0600 Ext.276, Ed. Farkas (718) 476-5018 **SEE THE IEEE MONITOR**

April 19 - Power Engineering & Industry Applications Societies - N.Y./L.I.

NONLINEAR LOADS MEAN TROUBLE - 6:00pm, Room 1425, Con. Edison Co., 4 Irving Place, NYC. For information call Rick Miller (201) 688-2900. **SEE THE IEEE MONITOR**

April 21 - Long Island Section & N.Y.I.T

1990 L.I. STUDENT/ PROFESSOR CONFERENCE ON NEURAL NETWORKS - Student Center, N.Y. Institute of Technology, Route 25A, Old Westbury, L.I., N.Y. For information call Prof. Robert Hong (516) 921-4446. **SEE THE IEEE MONITOR**

April 23 to May 21 - Power Engineering & Industry Applications Societies - N.Y./L.I.

BATTERIES & APPLICATIONS - STUDY GROUP - 6:00pm, 6th Floor, New York University, 269 Mercer Street, NYC. For information call Pat Carey (201) 963- 7786. **SEE THE IEEE MONITOR**

April 24 - Communication Society - New York

INTERNATIONAL TELECOMMUNICATIONS: GLOBAL NETWORKING IN THE 1990's - 9:00am to 5:00pm, United Engineering Center, 345 East 47th Street, NYC. For information call Bertil Lindberg (212) 825-1527. **SEE THE IEEE MONITOR**

April 24 - Engineering Management Society - New York/No. Jersey

HOW TO MANAGE YOUR TIME SO IT DOES NOT MANAGE YOU - 7:00pm, 4th Floor, Stevens Center, Stevens Institute of Technology, Hoboken, N.J. For information call Al. Bottani (201) 265-7797. **SEE THE IEEE MONITOR**

April 24 - Microwave Theory & Techniques Society - N.Y./L.I.

CHAOS: A TUTORIAL - 6:00pm, Plainview Plaza Hotel, Sunnyside Blvd., Plainview, L.I., N.Y. For information call Vince Boccio (516) 595-4250. **SEE THE IEEE MONITOR**

April 26 - N. Y. Section, Communication, Computer, Power Engineering, & Industry Applications Societies Chapters, ELECTION OF OFFICERS, 1990-1991 - 7:00PM, United Engineering Center, 345 East 47th Street, NYC. For information call Robert Dent (914) 681-6662. **SEE THE IEEE MONITOR**

April 30 - N.J. Institute of Technology - Symposium.

MULTI-RESOLUTION SIGNAL DECOMPOSITION TECHNIQUES: WAVELETS, SUBBANDS & TRANSFORMS - 9:00am to 4:15pm, NJIT Alumni Center, Newark, N.J. For information call Ali Akansu (201) 596- 5650. **SEE THE IEEE MONITOR**

May 1- Westchester Subsection - New York

SPEECH RECOGNITION - 5:45pm, NYNEX Science & Technology, 500 Westchester Ave., White Plains, N.Y. For information call Denise Carpentier (914) 333-2622. **SEE THE IEEE MONITOR**

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Friday, May 11
9 a.m. - 4 p.m.

Conference Hours
Wednesday, May 9
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EF	Microwave/RF Comp.; Instruments
EG	Test, Measurement, Insp. Instruments
EH	Automated Test Equipment
EI	Power Supplies/Batteries
EJ	Mechanical/Packaging Components
EK	Production Equipment, Machinery
EL	Production Supplies, Materials
EM	Contract Design; Contract Mfg.
EN	Other _____

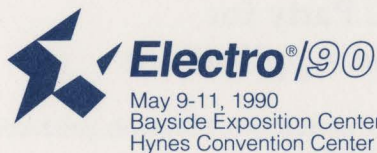
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***Important Note:** Complete this card and mail to arrive by **April 6, 1990** to receive admission credentials back by mail prior to the show. Or bring with you to Electro for Free admission. Card must be filled out completely. **Persons under 18 years of age not admitted.**



**You're Invited to the
Boston T.E.A. Party**



The largest exhibition and conference for design engineers and electronics purchasing professionals on the East Coast returns to Boston May 9, 10 & 11, 1990 with more of what you need:

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- Keynote address by Mentor Graphics chief Tom Bruggere

To RSVP: Use this pre-paid admission card to pre-register for the exhibits and technical sessions as our guest. Return the top portion of this card by April 6, 1990 and you will receive your admittance credentials by return mail before ELECTRO opens. Or bring this card with you to ELECTRO for **FREE** admission. Persons under 18 years of age (including children and infants) not admitted. All information **MUST** be complete to process badge.

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