

Electronic & Software Engineers

New Communication Systems Development

New Jersey – New York – Boston – Dallas
Washington, D.C. – Los Angeles – San Francisco
To \$60,000 with Stock, and Relocation Assistance

Product Manager — Communications (3257-08) Fast-growth vendor of communications test systems seeks experienced Telecommunications Product Manager familiar with large data communications networks. Opportunity to identify product and marketing opportunities. To \$50,000.

Production Manager — Microwave Tube (3151-32) International medical technology company seeks Technical Manager to oversee production of microwave accelerator waveguide tubes. Offers excellent work environment. To \$40,000.

SATCOM Systems Engineer (3257-15) Major contractor seeks to double department of Systems Engineers in the area of communications. BSEE and five years experience sought for senior level openings. Customer interface opportunity as well as design. To \$60,000.

Senior Hardware Engineer — Networking (3263-21) Growing manufacturer of imaging systems seeks Engineer to develop new micro-processor based imaging system. Network design experience preferred. To \$55,000.

Digital Design Engineer (3154-15) Growing manufacturer of microprocessor based PBX systems seeks Digital Designer to develop hardware/software for new products. BSEE desired. To \$40,000.

RF Design Engineer (3151-09) Established electronics firm leading the industry in cellular radio communications desires RF/digital/analog Design Engineers. Rural living in mountain community with low housing cost. To \$45,000.

Hardware/Software Engineer (3257-02) Prestigious consulting firm seeks professional with BSEE or equivalent and hardware/software integration skills using mini and microcomputers. Communications experience in commercial or military network a plus. To \$52,000.

Software Engineers (3257-06) Highly visible division of major firm seeks BSEE's with DEC 11/750 and Intel 8086 background for lead positions in telecommunications and electronic warfare design. Excellent benefits and an exceptional suburban location. To \$50,000.

Electrical Engineer — Communications (3255-17) Leading manufacturer of communications equipment seeks RF analog and circuit Design Engineers for new product design. Will use CAD techniques, do prototyping, and maintain liaison with manufacturing in design completion. BSEE desired. To \$40,000.

Communications Project Engineer (3255-07) Dallas corporate position with service organization working with cellular radios. Will provide engineering liaison and market support. Three years microwave/RF Radio background and a BSEE sought. High visibility. To \$45,000.

Communications Software Design (3151-16) Well-known electronics firm seeks talented Software Engineer for their research center. Will develop office-of-the-future systems and become involved with "C", PASCAL, ALGOL, X.25, Graphics, LAN's. Excellent peer group. To \$50,000.

Reliability Engineer — Optics (3154-21) Aerospace firm seeks BSEE, ME or Computer Science background and reliability engineering experience in flex circuits, optics and printed circuit boards. Fiber optics knowledge desired. To \$30,000.

Hardware/Software Engineer (3257-01) Progressive firm seeks Engineers to take research and development projects, using TTL logic and microcomputers, from concept through implementation for this vendor of sophisticated military systems. BSEE and Top Secret clearance required. To \$50,000.

Senior Manufacturing Engineer — Telecommunications (3154-06) BSME with injection molded plastics manufacturing experience sought for aggressive company. Will be involved with contemporary telecommunication products. To \$40,000.

Manufacturing Engineer (3154-03) Fortune 100 company expanding seeks individual with B.S. in Manufacturing, IT, or ME with knowledge of telecommunications and computer in a production environment. To \$40,000.

Software Communications — Free Airline Travel (3151-14) International courier seeks Software Engineers to develop UNIX-based communication systems. New facility. To \$50,000.

RF Engineer (3151-29) Telecommunications firm seeks Product Development Engineer to lead project team developing miniature RF radio receivers and transmitters. Challenging assignment in RF design. To \$40,000.

Hardware Systems Architect (3255-16) Sophisticated manufacturer of high-tech telephony equipment seeks experienced Design Engineer with direct experience in microprocessor networking. Will develop and implement functional systems specifications. BSEE or MSEE sought. To \$41,000.

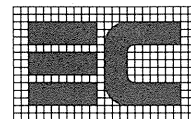
Software Engineer (3255-02) Expanding telecommunications company seeks BSEE to design and implement firmware based applications in real-time assembly. Real-time applications using 8 or 16 bit microprocessors. To \$35,000.

Communications Systems Engineers (3256-28) Join a nationally respected consulting firm for studies in fault tolerant systems, A.I., telecommunications, satellite communications and computer security. PhD preferred. To \$50,000.

Call this week:

Wayne:
201-628-7220
1044 Route 23
Wayne, New Jersey 07470

Edison:
201-246-0480



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The IEEE

Newsletter

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

NOVEMBER, 1984
Volume 31, Number 5

Publication No: USPS 580-500
"The IEEE Newsletter" is published monthly except June by the North Jersey Section of The Institute of Electrical and Electronics Engineers, Inc., a nonprofit scientific society dedicated to the advancement of electrical and electronic engineering and the allied arts and sciences. Headquarters: 345 E. 47 Street, New York, N.Y. 10017. Sent automatically and without additional cost to each member of the North Jersey Section. Printed in U.S.A. Second-class postage paid at New York, N.Y. and at additional mailing offices.

NEWSLETTER STAFF

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Business Manager A.M. Beattie

Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial-and business matters, including advertising, should be addressed to: The Newsletter, c/o Girard Associates, Inc., 6 Robert Terrace, Mt. Arlington, N.J. 07856. (201) 398-5524.

Subscription: \$0.75 per year through dues for members: \$1.50 per year for non-members.

REPORT ALL ADDRESS CHANGES TO:
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(201) 981-0060

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

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AT&T Divestiture Effect On Management

Dr. Joe H. Mullins, director of the Systems Analysis Center at AT&T Bell Laboratories will be the speaker at the Tuesday, November 13th meeting of the Metropolitan Chapter of the IEEE Engineering Management Society. Dr. Mullins will speak on "The Effect of Divestiture on AT&T Bell Laboratories Engineering Management."

About Dr. Mullins

Dr. Joe H. Mullins, director of the Systems Analysis Center at AT&T Bell Laboratories, was deeply involved in the divestiture planning as it related to the divested Bell telephone companies. In that role, his principal work was to coordinate creating, staffing, planning and organizing Bell Laboratories' portion of the divested companies' central staff.

Prior to working on divestiture, Dr. Mullins was director of Bell Labs' Switching Operations Systems Laboratory. In earlier days, he worked on the T2 transmission system, FT3 lightwave transmission system, and a millimeter waveguide system.

Joe Mullins, a native of Carrizo Springs, Texas, earned his bachelor's degree in physics at Texas A&M University, and his master's and doctor's degrees, also in physics, at California Institute of Technology.

Author of numerous technical articles about his work, Dr. Mullins is a member of the American Institute of Physics, the American Physical Society, the American

Association for the Advancement of Science the IEEE and the honor society Sigma Xi.

Time: 7:30 PM, Tuesday, November 13, 1984.

Place: ITT Auditorium, 392 River Road, Nutley, N.J.

Pre-Meeting Dinner: 6:30 PM, Jade Fountain Restaurant, 321 River Road, Clifton, N.J.

Information & Reservations: John Van Savage (201) 544-2334, Alex Brown (201) 284-2570, Martin Izaak (212) 397-7438, Vern Caspar (914) 666-3353.

Fuel Cells For Efficient Energy Conversion

The North Jersey Chapter of the Power Engineering Society will feature a talk on "Fuel Cells For Efficient Energy Conversion" at its December 5, 1984 meeting. The speaker will be Peter A. Lewis of PSE&G.

Time: 7:30 PM, Wednesday, December 5, 1984.

Place: Jersey Central Power & Light Co., Madison Avenue at Punch Bowl Road, Morristown, N.J. (Punch Bowl Conference Room).

Further Information: Augie Franzoni, (201) 926-6923.

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RICHARD F TAX
51 HAWTHORNE ST
PARK RIDGE

“Expert Systems”

“Expert Systems” is the topic of the meeting of the North Jersey Joint Chapter of the Computer & Communication Societies. Speakers for the event will be Joseph M. Fox, Andrew B. Ferrentino, or Anthony J. Magliero; all from Architecture and Engineering Inc. Members and non-members of the IEEE are all invited to attend.

About The Talk

General Overview: What is AI, its sub-fields, and its promise? What is the state of the practice?

Expert Systems: What are they, how do you use them, and how do you build them? The hardware and the software. The development tools and the run-time package. The expert and the knowledge engineer. The knowledge base. The applications to date. How long does it take and how hard is it to develop a working Expert System?

Inferencing Engines: Their future role in expert systems and elsewhere.

About The Speakers

Joseph M. Fox is Chairman of Software Architecture and Engineering Inc. (Software A&E), an Arlington, Virginia firm which specializes in software engineering and artificial intelligence. He was formerly Vice President of IBM Federal Systems Division.

Andrew B. Ferrentino is President of Software A&E. He has had primary responsibility for the establishment and operation of Artificial Intelligence Center. Previously he was with IBM’s Federal Systems Division.

Anthony J. Magliero is a Knowledge

Engineer with Software A&E. He holds a PhD in cognitive psychology.

Time: 7:30 PM, Wednesday, November 28, 1984.
Place: ITT Auditorium, 500 Washington Avenue, Nutley, N.J.
Directions and/or Dinner Reservations: George G. Pick (201) 884-6040 or B.S. Gourary (201) 783-5570.

Electro/85 and Mini/Micro Northeast Seek Volunteers for Elite “Inner Circle” Group

When Electro and Mini/Micro Northeast return to New York April 23-25, 1985, their success will largely depend on the active support of IEEE members and the engineering community. This is the opinion voiced by Bernard Kantor, Chairman of the Attendance Committee for the technical conferences and Board members in general.

A select group of volunteers are now being recruited to help increase attendance by distributing free preregistration forms within plants and other electronic establishments in the New York metropolitan area. By preregistering, long lines at the Coliseum and the Sheraton Centre are eliminated and everyone can spend more time in the exhibit areas and at the technical sessions.

Members of the “Inner Circle” (whose efforts do not go unrecognized) receive special Electro or Mini/Micro Northeast badges and their names and company affiliations are acknowledged in the official show program. Volunteers will be invited to a meeting held in their area to receive kits containing preregistration forms, programs and posters for distribution in their organizations. Additional material will be sent to them in response to their needs.

It cannot be overemphasized that this task does not demand much of a person’s time, but the effectiveness of such a program is most rewarding for those participating.

Electro 85 and Mini/Micro Northeast are sponsored by Region One, METSAC Council and the Central New England Council of the IEEE and the New York and New England Chapters of the ERA under the show management of Electronic Conventions Management, Inc.

To join the elite “Inner Circle” or to obtain more information, call Ernie Witschi, Special Operations Manager of Electro, at:

800-833-3613
(outside Massachusetts)

(617) 232-4193
(inside Massachusetts)

or write to him at 614 Hammond Street, Chestnut Hill, MA 02167.

NJ PACE Meetings

Monthly meetings of the North Jersey PACE Committee will be held at the ITT Tower Lobby, 500 Washington Avenue, Nutley, N.J. at 8 PM on the second Wednesday of every month. Free refreshments will be offered to all.

There are many active hot PACE Projects funded by IEEE’s USAB from which you benefit. Here’s your chance to learn about them and give your input!

Call Maitland McLarin, PACE Chairman at (201) 335-6847 for additional information.

Letters To The Editor

Dear Editor:

Your July 1984 issue of the IEEE Newsletter has arrived, and as a former Chairman of the North Jersey Section, I am disappointed to see that about 75% of the editorial content of this issue is again dedicated to the haranguing of a very vocal group of one segment of the IEEE members in the North Jersey Section (those associated with the aerospace industry) who seem bent on trying to change the law of supply and demand. If this were a single incident it might be tolerable. However, in my judgement, a disproportionate amount of space has been dedicated to “PACE News” since it became a regular part of the Newsletter. I, for one, believe that the IEEE members in North Jersey would be better served if the editorial material were more evenly balanced, and the role of PACE were downplayed.

Yours for a better Newsletter,
H.E. BLAICHER

A couple of letters by the same author in September’s issue contain some rather startling assertions: “Fifty percent of the members of the (North Jersey) Section are foreign students or former foreign students.” “Iranian nationals went through a great deal of unconstitutionally imposed discrimination and hardships during the hostage crisis.” “A clear majority of American and Foreign engineers indicated that they were against the return home amendment.”

The author of those letters may have difficulty understanding why the influx of foreign workers into relatively desirable jobs here has so many of us concerned, but I dare say most citizen engineers understand. When someone can get a full page in the Newsletter to air strongly pro-immigration views, criticize this country for what was overall highly civilized behavior toward Iranian nationals here despite their noisy provocations during the hostage crisis, and imply that foreign members can and will work to make IEEE policy strongly pro-immigration, it seems clear to me there is cause for concern.

GLENN PICKARD, Ringwood, N.J.

or forfeit the share of the royalties to which they are entitled for their ideas by signing contracts and releases which they may not understand from the outset. Further, many graduating students do not understand the ramifications of “terminable at will” clauses or “reduction in force” statements. Wage-busting is something which very few students are familiar with and it is only the most fortunate who are warned ahead of time as to what an employer’s history is in this regard.

Even these topics only address initial entry into the profession. There are many long term considerations which students should be aware of but never know because no one told them. Such concerns include, and this program should address such topics as:

- 1. Registration
- 2. Pensions
- 3. Continuing Education
- 4. Professional association and its value
- 5. Ethics/Ethical conduct
- 6. Civic responsibility
- 7. Career obsolescence
- 8. Age discrimination.

Join the IEEE, become active in your Branch activities, see to it that your Branch takes an active part in the Metropolitan Student Council.

Why not be a delegate to the MSC from your Branch? You could help arrange a Professional Awareness Conference at your Branch, or at the very least attend the PAC’s that will be held by the MSC in the METSAC area (New York, North Jersey, Long Island, and Princeton).

For further information contact your Branch Chairman, Branch Counselor, or your METSAC Student Activities Chairman, Dr. Charles Rubenstein, (212) 677-7420.

STUDENT AFFAIRS COMMITTEE NEWS

The following officers were elected at the last meeting of the Student Affairs Committee:

Chairman: Edward Farkas, CUNY Technical College, 297-7498.

Vice-Chairman, Branch Relations: Byron Knibbs, Polytechnic Institute of N.Y. 322-4851

Vice-Chairman, Chapter Development: Dimitri Guest, Technical Careers Institute, 543-8563.

Vice-Chairman, Operations: Flora LaPore, Technical Careers Institute, 968-9376.

Secretary: Josefina Escobedo, Graduate, CUNY Tech., 499-6380.

Corresponding Secretary: Carmen Garcia,

Technical Careers Institute, 941-7405.

Treasurer: Daniel Briggs, CUNY Tech., 858-6643.

Winter Power Meeting Liaison: Judith Garvey, Technical Careers Institute, 449-4655

The Conference Subcommittee is planning a two or three-hour one-day student conference, tentatively set for the spring semester.

The Student Affairs Committee will assist Student Branches who would like to establish Power Engineering Society (PES) Student Branches. The committee is planning to publish a student newsletter, “The Power Line” to be distributed on a regular basis to all members of Region 1 Student Branches. The newsletter will contain notices of upcoming PES meetings and conferences. It will also include news of special interest to students, including news of the Winter Power Meeting.

CALL FOR VOLUNTEERS

ELECTRO and the Power Engineering Society Winter Power Meeting are coming to town during the spring semester. If you would like to volunteer for a committee position, contact your Regional Representative, Edward Farkas, 297-7498.

STUDENT PROFESSIONAL AWARENESS CONFERENCES (SPACs)

The Metropolitan Student Council has tentative plans for SPACs to be held at the Polytechnic Institute of New York, both Brooklyn and Farmingdale campuses, Trenton State College, and Technical Career Institute. Watch “The Newsletter” for further details.

REGION 1 PRIZE PAPER CONTEST CONTEST NEWS

The tentative deadlines for the Regional contest are: 1) Area contest papers to be submitted by March 29, 1985, 2) Six copies of 4 winning papers received by April 8, 1985, 3) Regional Contest to be held Tuesday, April 23, 1985.

Papers to be submitted to Dr. Charles Rubenstein, Region 1, Student Activities Chairman.

AROUND THE BRANCHES Cooper Union

The Cooper Union Student Branch, under the direction of the officers: Sylvia Plevrities, Chairperson
Chris Lent, Vice-Chairperson
Demetrios Prountzos, Secretary
Anthony Cost, Treasurer
Richard G. Costello, Counselor
had a very successful year.

The Branch sponsored talks on the following subjects: “Computer Graphics”—George Chaken; “Professionals in Engineering”—Irwin Feerst; “UNIX Operating System”—Robert Hopkins; “Consulting Engineering”—Dr. Seinuck; and “Data Bases”—Dr. Barry Glasgow.

Field trips were made to RCA at Princeton, N.J., Sperry Corporation at Great Neck, N.Y., and Bell Laboratories at Murray Hill, N.J.

One of the most important events of the year was a Summer Job Conference with alumnus Joseph O’Neill. The conference outlined the essentials of applying for summer jobs, and in addition, students who had worked for various companies during the previous summer shared their experiences.

The Branch plans to continue its excellent programs this year under the leadership of its new officers:

James Reilly, Chairperson
Jennifer Lee, Vice-Chairperson
Richard Mirsola, Secretary
Douglas Carlone, Treasurer

New York City Technical College

Region 1 of the IEEE is presenting the CUNY Tech Student Branch an award from the United States Activities Board (USAB) for its outstanding activities during 1983. The award was based upon the quality of the Branch programs as well as its increased membership, 270 members at the close of 1983. November 15th is the tentative date of the award presentation.

Edward B. Farkas, Branch Chairman stated that the Branch has a library of nearly 400 films that it has obtained from various companies, military services, etc. In particular it has been offering two film series that serve to complement the electronics courses offered by CUNY Tech, “Digital Electronics” and “DC Networks.”
Congratulations to NYC Tech Student Branch for a job well done!

Your Student Activities Editor is anxious to print news of the activities of Student Branches in the METSAC area New York, North Jersey, Long Island, and Princeton. Please send the names of your new student officers and other pertinent information to Prof. Stella Lawrence, Dept. of Engineering Technologies, Bronx Community College, W 181 Street and University Ave., Bronx, N.Y. 10453, (212) 220-6044.

NJ Section Awards Committee Report

The IEEE North Jersey Section Awards Committee is a standing committee of the North Jersey Section. The Section Executive Committee has empowered the Awards Committee with the responsibility of identifying Section members who should be submitted for Fellow awards or other IEEE national or sectional awards. In addition, the Awards Committee also reviews nominees for Fellow awards submitted by individuals and makes suggestions to the nominators on improving these submissions. The Committee also has the option to endorse these candidates as the facts warrant.

The Section Awards Committee’s work typically begins in October when solicitations for candidates for Fellow are made by members of the Committee. The Committee meets on a monthly basis from December through April. Each member of the Committee is assigned various candidates to see that the nominators meet all IEEE requirements in preparing cases for Fellow. Progress of all cases is followed with final drafts being submitted prior to the April Awards Committee meeting. A calendar of the Awards Committee’s schedule is shown below.

In addition, Dr. Eugene I. Gordon, a member of the Section Awards Committee, has written a very informative essay on how to prepare a Fellow case. This is also printed in this newsletter.

The current members of the IEEE North Jersey Section Awards Committee are listed below:

Dr. George S. Eager, Jr.
(201) 783-7281

Dr. Eugene I. Gordon
(201) 685-2000

Prof. Gerald J. Herskowitz
(201) 420-5605

Mr. Stephen A. Mallard
(201) 430-6776

Mr. Robert L. Mattingly
(201) 538-7493

Dr. Jerry B. Minter
(201) 627-0290

Mr. Christopher O. Riddleberger
(201) 386-2581

Mr. John Van Savage
(201) 544-2334/2415

Dr. Joseph J. Suozzi, Chairman
(201) 898-1200

If anyone is interested in submitting a Fellow nomination, please contact any member of the committee or the Chairman.

Student Activities By STELLA LAWRENCE

METROPOLITAN STUDENT COUNCIL PROFESSIONAL AWARENESS CONFERENCES

The Metropolitan Student Council, has many programs oriented towards increasing the professional awareness of its members. In particular, the Council has sponsored several successful Professional Awareness Conferences. Foremost amongst these last year have been those at the New York City Technical College and at the Penta Hotel, sponsored by the Technical Career Institutes IEEE Student Branch.

Suppose that it is your first year at your first job after graduating from the college of engineering. You have recently begun to feel as if you understand what your department is doing, and as a matter of fact you are getting tired of working on such a limited aspect of it. You feel that you should be allowed to take on greater responsibility. Your annual review is scheduled for next week and you are hoping for a promotion. Suddenly your supervisor tells you that he has to go out of town unexpectedly and asks you to take his place at the monthly board meeting. He also tells you that it is vital that more money be allocated to the project with which you are presently involved. Your performance at this meeting would probably be the decisive factor in your promotion. You must decide whether you will gamble your possible advancement on your ability to perform effectively at this meeting.

Your ability to do so will depend not only on your technical ability but also on the level of your professional development.

Many engineers might have difficulty with the decision outlined in the above

situation, however a professional would not hesitate to take the opportunity to see what he could do. Perhaps you should begin to prepare yourself now for this kind of situation. Become a professional, become involved with your professional society, the IEEE.

Professional awareness includes the expectations and professional responsibilities of engineers and the social and economic considerations of an engineering career. Professional awareness should supplement the traditional technical training and education.

The areas addressed include:

A. Professional Career Development

- 1. Environmental facts
- 2. Education
- 3. Work experience
- 4. Extra-curricular activities
- 5. Personal attributes development
- 6. Career planning

B. Useful Skills Development

Topics to be addressed include important personal skills:

- 1. Problem solving tools for industry
- 2. Understanding corporate structures
- 3. Communications skills: oral and written
- 4. Human relations skills
- 5. Political skills
- 6. Observation skills
- 7. Listening skills
- 8. Flexibility as an asset not an excuse
- 9. Delegation techniques
- 10. Decision making/accepting responsibility.

C. Economic Considerations

Probably the most important concern of the young engineer is financial independence and the ability to support himself or herself and, in many cases a family. For this reason, it would be an invaluable service to many if this program would assist in explaining topics such as:

- 1. Compensation and the cost of living in a given geographical area
- 2. Compensation in terms of dollars vs. the value of the benefits offered
- 3. Job market/Finding employment
- 4. Employer/Employee relations
- 5. Promotional paths and the criteria for determining advancement
- 6. Salary trends.

D. Professional Practice—Expectations and Responsibilities of Engineers

Many young engineers, in their enthusiasm to work for a given company, unknowingly waive their rights to their inventions

Joint Chapters Meeting: Radio Astronomy & High Speed ICs Highlight Mini-Show & Lectures

SCHEDULE OF EVENTS

The North Jersey MTT/AP, in conjunction with Princeton and Jersey Coast MTT/AP, is pleased to sponsor a “Gala” event on November 16, 1984 at ITT Avionics, Nutley, Clubhouse facility.

Two Distinguished Microwave Lecturers will be featured: Dr. Sander Weinreb—“Radio Astronomy—A Challenge To The Microwave Engineer.”

Dr. Paul T. Greiling—“High Speed Digital IC Performance Outlook.”

- 1:30 PM — Opening Mini-Show
- 1:45 PM — Dr. Paul Greiling
- 2:45 to 7:30 PM — Mini-Show
- 6:00 to 7:30 PM — Buffet Dinner — hot and cold, beer, soda, coffee and tea. FREE to first 300 registrants
- 7:30 PM — Dr. Sander Weinreb

Beer, soda, tea and coffee throughout the day. DOOR PRIZES and Grand Prize Drawing.

For Reservations: Dick Snyder (201) 492-1207
Wilhelm Schmidt (201) 284-2255
Har Dayal (201) 785-7651

The North Jersey MTT/AP, in conjunction with Jersey Coast and Princeton Chapters, is pleased to announce that on Friday, November 16 a “gala” gathering will be held including two Distinguished Lecturers and a manufacturers’ mini-show. The site will be that of our success of last year, the ITT Avionics Club House facility in Nutley.

The mini-show and talk affair will run from approximately 1:30 PM to 9:30 PM. The following schedule is being planned: 1:30 to 1:45 PM -- exhibition; 1:45 to 2:45 PM — first Distinguished Lecturer, Dr. Sander Weinreb will speak on “Radio Astronomy — A Challenge to the Microwave Engineer”; 2:45 to 7:30 PM — exhibition; 6 to 7:30 PM -- FREE buffet dinner for the first 300 registrants; 7:30 to 9:00 PM -- the second Distinguished Lecturer, Dr. Paul Greiling whose topic is “High Speed Digital IC Performance Outlook.” In addition, there will be beer, soda and

person would see if he or she could see at radio wavelengths. The current status and limitations of the search for signals from extraterrestrial civilizations will be reviewed. This will be followed by an introduction to the use of antenna arrays and a description of some recent or in-construction radio astronomy facilities. Finally, the current status and future challenges in the areas of antennas, low-noise receivers, wide-band communications, and high-speed data processing will be discussed.

About Sander Weinreb

Sander Weinreb received his BSEE and PhD in electrical engineering from Massachusetts Institute of Technology in 1958 and 1963, respectively. His theses topic was a search for the galactic deuterium line using digital autocorrelation techniques.

From 1960 to 1963, Dr. Weinreb was a Research Assistant at MIT engaged in investigations of varactor frequency multipliers and digital autocorrelation techniques. In 1963 he joined Lincoln Laboratory where he was responsible for the radio-metric equipment for the Haystack antenna.

In 1975 he joined the National Radio Astronomy Observatory (NRAO) where, until 1977, he was Head of the Electronics Division and responsible for the development of radio astronomy equipment for the Green Bank, West Virginia and Tucson, Arizona observatories. In 1976 he took a two year leave at the Radio Astronomy Laboratory of the University of California and then returned to NRAO to specialize in the development of low noise devices.

Dr. Weinreb is the author of over 50 publications in the areas of radio astronomy observations, millimeter-wave receivers, and low-noise technology. He is a Fellow of the IEEE and a member of Sigma XI, Eta Kappa Nu, Tau Beta Pi, and the International Scientific Radio Union. He is also an advisor to the European Institute for Millimeter-Wave Radio Astronomy and is a Research Professor at the University of Virginia.

About High Speed ICs

To meet the functional throughput requirements of future high speed signal processing systems and commercial computers, GaAs digital integrated circuits are being developed. Applications for frequency counters, correlators, multiplexers, demultiplexers, time interval counters, and A/D converters with on-chip clock frequencies exceeding 1 GHz exist in the near-term. Such circuits are of MSI complexity, sev-

eral hundred gate equivalents. Future applications for high speed IC’s in more complex computational systems, such as radar signal processors, will require static random access memories, read only memories, high density logic arrays, and special purpose chips such as the multiplexers used in fast Fourier transform processors. For these future applications integration levels exceeding 1000 gates per chip are essential. In these advanced signal processors, the required system clock speed will be in the range from 250 MHz to 2.5 GHz.

Logic gates with tens of picosecond gate delay, tens of micro-watts power dissipation, cryogenic to hundreds °C operating temperatures and greater than 10⁷ rads radiation tolerance, will provide performance enhancements of one to two orders of magnitude for digital communications, memories and computers. The implementation of this technology in MSI/LSI chips requires stringent control on material and process parameters for tight tolerances on device and circuit characteristics and high yields, and extremely short gate delays with large fan-outs and low power dissipation for increased throughput rates.

In order to assess GaAs technology, this talk reviews the device technology and issues related to device/circuit design and fabrication of MSI/LSI complexity circuits operating at gigahertz clock frequencies, discusses limitations of the technology, compares with competing Si technologies, and presents applications where the technology will have a significant impact.

About Paul T. Greiling

Paul T. Greiling, (S’64 - M’69 - SM’82) received the BSEE degree in 1963 and BS degree in mathematics in 1963, the MSEE degree in 1964 and the PhD degree in 1970 from the University of Michigan, Ann Arbor, Michigan.

He joined the faculty of Electrical Engineering at Northeastern University, Boston, MA, in 1970. While at Northeastern he consulted for MIT, Lincoln Laboratory in the area of IMPATT diodes. In 1972, he joined the faculty of Electrical Sciences and Engineering at the University of California, Los Angeles, where he did research on the theoretical analysis and experimental characterization of microwave solid-state devices. He consulted for local industry on millimeter-wave semiconductor devices. In 1976, he did research on GaAs FETs at Sandia Labora-

tory, Albuquerque, NM, as a Visiting Faculty Member. In 1976 he joined the staff at Hughes Research Laboratory, Malibu, California, where he has been responsible for the design, modeling, and testing of GaAs digital IC’s.

At present Dr. Greiling is an Adjunct Professor in the Electrical Sciences and Engineering Department at UCLA and is head of the GaAs IC Design and Analysis Section working on both photolithography and electron-beam fabricated high-speed GaAs logic circuits. Dr. Greiling plays a

SIS Junctions, Circuits & Receivers

On Thursday, December 6, 1984 the Electron Devices Chapters of the New Jersey Coast & Princeton Sections, the MMT/AP Chapter of the North Jersey Section, and the Department of Electronic Engineering, Monmouth College, will sponsor a talk on “SIS Junctions, Circuits and Receivers.” The speaker will be Erik Kollenberg, Chalmers University, Goteborg, Sweden.

Time: 7-9:30 PM. Thursday, December 6, 1984.
Place: Monmouth College, Edison Science Building, Room E2, West Long Branch, N.J.
Pre-Meeting Snack: 5:15 PM, La Crepe Restaurant, Monmouth Mall, Eatontown, N.J. For reservations for snack call Martin Schneider (201) 949-2503.

GaAs MESFET Models

A December 4, 1984 meeting on “Two-Dimensional And Equivalent Circuit Models For GaAs MESFETs” is being sponsored by the Electron Devices Chapters of the New Jersey Coast & Princeton Sections and the MMT/AP Chapter of the North Jersey Section, and the Department of Electronic Engineering, Monmouth College. Instructor is Walter R. Curtice, RCA Laboratories, Princeton, N.J. GaAs MESFET modeling at RCA Laboratories will be reviewed. This review will include two-dimensional models, models for use in the design of GaAs IC’s, and RF equivalent circuit models.

Time: 7-9 PM, Tuesday, December 4, 1984.
Place: Monmouth College, Edison Science Building, Room E2, West Long Branch, N.J

leading role in GaAs IC technology as evidenced by his list of invited talks, papers and conference organizer/chairman positions. Dr. Greiling is a member of MTT-S ADCOM, Eta Kapp Nu, Tau Beta Pi, Sigma Xi, and Senior Member of IEEE.

Time: 1:30 PM-9:30 PM, Friday, November 16, 1984.
Place: ITT Avionics Club House, Nutley, N.J.
Reservations: Required for FREE Buffet Dinner, see article for details.

Pre-Meeting Snack: 5:15 PM, La Crepe Restaurant, Monmouth Mall, Eatontown, N.J. For reservations for snack call Russell A. Gilson (201) 544-4917.

FFT Spectrum Analyzers In Control Systems

The November 29, 1984 meeting of the North Jersey Control Systems Society will feature a slide presentation and equipment demonstration to be given by John Cies of Hewlett-Packard Company. The focus will be on applying Fast Fourier Transform (FFT) based spectrum analyzers in the area of control systems. Some of the topics covered include an overview of these FFT based analyzers and how they differ from traditional swept sine analyzers; some basic control theory, and how a Dynamic Signal Analyzer (DSA) can measure the more commonly used control system performance criteria.

About The Speaker

John Cies is a Systems Application Engineer located in Hewlett-Packard’s Paramus, New Jersey Sales Office. His primary focus is applying DSA’s in the areas of structural analysis, control systems, rotating machinery and vibration control. Mr. Cies received his BSME and MS degrees from NJIT and Rutger’s respectively and spent 10 years working in the areas of vibration testing and structural analysis prior to joining Hewlett-Packard.

Time: 8 PM, Thursday, November 29, 1984.
Place: Jersey Central Power & Light Co., Madison Ave. (Route 24) at Punch Bowl Road, Morristown, N.J.
Pre-Meeting Dinner: 6 PM, AFTON, Florham Park, N.J.
Information & Directions: Kushal Jain (201) 265-2000; Daniel Tuey (201) 567-9004; Frank Kuhl (201) 724-6267 (days), (201) 663-1381 (evenings).

SUCCESSFUL IEEE FELLOW GRADE NOMINATIONS

**By: Eugene I. Gordon, IEEE Fellow
North Jersey Section Awards Committee**

Recognition by peers is one of the important reasons for the existence of IEEE. Elevation to the grade of IEEE Fellow is the focus of much of the awards activity. A successful nomination requires two elements:

- (1) a qualified candidate, and
- (2) a well-prepared nomination form.

Assuming the (1) is satisfied, this document is designed to help produce a nomination form that will enhance the possibility of success.

A successful nomination is a tribute to the skills and efforts of the nominator as well as to the candidate. It represents considerable effort. Often the successful nominator experiences an unheralded victory, accompanied by a sense of quiet satisfaction for a tough job well done.

A key preliminary is a careful reading of the IEEE Guide for Fellow Grade Nominations. It is well written and complete, and is ignored only with great risk to potential success. Make sure that the Guide and nomination form are up to date; an out-of-date form is deathnium. Give yourself ample time to prepare a proper form, including in the schedule a review by the North Jersey Section Awards Committee. In particular, don’t impose on your references by making a last minute request for their support. A good reference is usually a busy individual with several such requests. When you do receive assent and send the appropriate material, include a draft version of the nomination. Additional background information can be helpful since it allows the reference to buttress the case.

Recognition by elevation to Fellow signifies demonstrated, outstanding effort in one case. Many good efforts do not replace one outstanding work. Many good efforts, added to one outstanding work, do not enhance a nomination. Indeed, a laundry list of outstanding efforts reduces the opportunity to make a convincing case for the validity of one. Absent the demonstration and the nomination becomes worthless.

Therefore, the key decision in establishing the strategy for a successful nomination is the choice of a single outstanding effort which can be demonstrated convincingly. There is an opportunity to list other outstanding efforts, but they have little value unless they have some credibility.

Items 1* and 2 on the form require no comment. Item 3 (proposed citation) is the most important. Although 30 words are allowed in the citation, a short, concise citation based on the one outstanding effort is more effective. Avoid the temptation to list more than the one outstanding effort you have chosen to focus on.

Item 4 (nominator information) requires no comment. Item 5 is simply the work history. Do not use it to add to the list of accomplishments or embellish the story. Keep to the point; position held by title and responsibilities. These may include number of people reporting to the candidate, mission of the organization, courses taught, nature of the courses, etc.

Item 6A is your chance to tell about the one outstanding accomplishment of your candidate. ONLY ONE. Describe it. Don’t expect the evaluation committee to be familiar with the area. Don’t use jargon. Explain, and keep it simple. Use the space provided. This section also allows you to explain why the outstanding accomplishment is significant, and why it indicates individual performance substantially better than the average senior member.

This is where you make the case. You win or lose here.

Item 6B (other contributions) is icing on the cake. But keep in mind, Item 6A is the cake. In both sections you should cross reference to tangible items listed in Item 7.

Item 7 requires TANGIBLE and VERIFIABLE evidence of the technical accomplishments listed in Item 6. If you can’t fill out this section as requested, give up. The most effective and easiest exhibits involve books, publications in peer-reviewed journals, talks at meetings with published proceedings, and patents. Describe the engineering significance and cross reference to Item 6. In the case of multiple authorship, describe the specific contribution of the candidate. The absence of books, papers, talks, or patents to support the case poses a challenge but is hardly a fatal flaw. Tangible evidence includes archived reports, presentations to august bodies, published standards, minutes, designs, etc. It is important that the existence of these be verifiable. The maximum number of items is 18. These should be numbered in sequence for the sake of reference.

Item 10 (references) is important. Finding suitable references who are genuinely familiar with the work of the nominee, who are Fellows of the IEEE, and who work for organizations other than that of the candidate is such a demanding requirement that it provides credible indication of stature. However, references can also help to provide credible support for the basic case. For this reason, providing the reference with a draft copy of the nomination form is essential.

In summary, many of the mechanicals can be found in the nomination guide. Careful study is a must. The key to success is to prove a case of outstanding performance. Best of luck!
**The item numbers in the essay refer to the item numbers on the Fellow Grade Nomination Form B-27.*

CALENDAR NORTH JERSEY SECTION AWARDS COMMITTEE 1984-1985 AWARDS YEAR

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|-------------------------|---|
| October - November 1984 | Committee members solicit Fellow nominees from their organizations or other sources. |
| December 5, 1984 | First Awards Committee meeting: AT&T Bell Labs, Morristown, N.J. |
| February 7, 1985 | Awards Committee meeting. |
| March 10, 1985 | Preliminary drafts for all Fellows should be in the Chairman’s hands. |
| March 15, 1985 | Awards Committee meeting -- Review of all drafts and recommendations to nominators. |
| April 4, 1985 | Deadline for all final drafts of new Fellows. |
| April 9, 1985 | Last meeting -- Awards Committee Final vote on whether or not to endorse. Rank order listing of Fellow nominees will be made. |
| April 16-20, 1985 | Letters of Endorsement sent to IEEE Fellow Secretary. |
| May 1985 | Final report to Section Executive Committee made by Chairman |