

IEEE-IAS Chapter (NJ Section) Symposium  
Electric Utility, Communication And  
Reliability And Risk Assessment  
Of Industrial And Utility Systems

Saturday, December 8, 1990 — 9 AM - 2 PM (Registration 8:30-9:00 AM)  
Howard Johnson Plaza Suite Hotel  
350 Route 3 West, Mill Creek Drive Secaucus, N.J. (201) 863-8700)

On Saturday, December 8, 1990 the IEEE North Jersey Section Industry Application Society will host a panel symposium on the fundamental techniques dealing with Reliability and Risk Assessment (RA) covering various aspects of Electric Utility Systems (Power Systems and Nuclear Plants), Communication Systems and Industrial Electric Distribution Systems. The symposium will focus on the basic concepts that the engineers need to understand the various techniques that will be used for making reliability assessment and failure prediction of components and/or systems encountered in electric utility, communication and industrial systems. This analysis is relevant to the evaluation of designs and/or to analyze the causes of operating system problems through statistical means. The present day management methods are increasingly demanding such type of evaluation from the engineer, before making investment decisions or appropriating maintenance budgets. The seminar will be given by speakers having hands-on experience on reliability and risk analyses and will describe fundamentals and practical applications. R.V. Rebbapragada, Ebasco Services Inc., Chairman of IAS/North Jersey Chapter, is panel symposium chairman.

Selected topics include:

Fundamentals and Techniques of Reliability Analysis	Dr. M.P. Bhavaraju Fellow-IEEE PSE&G
Fundamentals and Techniques of Risk Assessment, Electric Utility and Industrial Systems	Dr. A.J. McElroy Fellow-IEEE Ebasco Services Inc.
Failure Modes and Effects Analysis With Examples From Electric Utility Industry	Dr. M.P. Bhavaraju Fellow-IEEE PSE&G
Reliability Improvement Techniques With Applications In Communication Industry	Dr. R.W. Sears AT&T-Bell Labs
Key Statistical Estimation Concepts In Reliability Analysis	Dr. M. Liechenstein Integrated Technology Serv.
Probabilistic Risk Assessment (PRA) Of Electric Distribution System In Industrial And Nuclear Plants	Mr. R.V. Rebbapragada Ebasco Services Inc.
Failure Predictions	Dr. A.J. McElroy Ebasco Services Inc.

Registration will take place 8:30-9:00 AM. Coffee and Danish will be available. Presentation after registration with the introduction by Mr. R.V. Rebbapragada.

Cost—including materials, morning refreshments and luncheon: \$130 for Non-Members, \$90 for IEEE Members, and \$35 for students with valid I.D.

To reserve your place, make check or money order payable to "IEEE-North Jersey Section" and mail to Max Schramm, 8 Deerfield Rd., Whippany, NJ 07981.

**Deadline: 11/30/90.**

For information: Vittal Rebbapragada (201) 804-2011; Max Schramm (201) 887-1120.

**Registration "Electric Utility, Communication and Reliability and Risk  
Assessment of Industrial and Utility Systems"**

**To:** Max Schramm, 8 Deerfield Rd., Whippany, NJ 07981.

Name \_\_\_\_\_ IEEE No. \_\_\_\_\_

Affiliation \_\_\_\_\_ Phone No. \_\_\_\_\_

Address \_\_\_\_\_

*North Jersey-IAS:*  
**Officer Election And  
Talk On Electrical  
Distribution Design**

On December 12, 1990, the North Jersey Section Industrial Application Society will host a presentation on "Electrical Distribution Design With Advanced Technology Applications." The speaker will be Vittal Rebbapragada. There will be an election of officers prior to the start of the technical presentation.

Mr. Vittal Rebbapragada is presently a Senior Consultant at Ebasco Services, Inc., and has done studies and worked on projects requiring advanced technology transfer and applications in Industrial and Utility plant electrical distribution systems.

**Election**

Prior to the technical presentation there will be an election of officers. The North Jersey Chapter of the Industrial Application Society has been in existence for many years. This is an interactive group with varied interests in power generation, in-plant electrical distribution, lightning protection, grounding, switching surges, alternative energy sources such as Co-Generation, wind and solar power, computers, fiber optics, SCADA, semiconductors, electric machines, industrial drives, etc. The aim of the Society is to keep members abreast of the developments in the aforementioned areas with quality speakers having detailed background in their respective areas. The North Jersey Chapter has scheduled seven technical sessions in 1990, and is planning even more vigorous programs for the year 1991. This requires active participation by all IEEE members in the Metropolitan area. With this end in view, an executive committee election is scheduled at this meeting. All members with interest please join us and make our program an even greater success.

**Pre-Meeting Dinner**

The pre-meeting complimentary buffet dinner starts at 6:00 PM with the Election taking place prior to the technical presentation.

**Time:** 7:00 PM, Wednesday, December 12, 1990. (6:00 PM, buffet dinner.)

**Place:** ITT Auditorium, 500 Washington Ave., Nutley, N.J.

**Further Information/Reservations:** Vittal Rebbapragada, Chairman, IAS Chapter (201) 804-2011; Max C. Schramm (201) 887-1120.



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

*NY/North Jersey-EMS:*  
**Managing Software  
Reliability  
Engineering**

The New York/North Jersey IEEE Engineering Management Society will meet on October 23, 1990. The meeting topic will be "Software Reliability Engineering For The Development Managers." The speaker will be Mr. John Adams from the AT&T Bell Laboratories Kelly Education and Training Center.

**About The Talk**

In this presentation, a new technology for managing the development of software of specified reliability will be discussed. Particular attention will be given to the management of the software development process and how Software Reliability Engineering can assist in that endeavor.

Topics to be discussed include: Issues typically faced by software development managers; Basic Software Reliability Engineering concepts; Applications of concept and values achieved.

**About The Speaker**

John "Jack" Adams has held a number of product development engineering, engineering management and product management positions in his 25 years at AT&T Bell Laboratories. He earned his undergraduate and graduate degrees in the fields of Electrical Engineering (NJIT 1969, 1974) and Computer Science (Stevens Institute 1978) respectively. His professional associations include Senior Membership in the IEEE Computer Society, and the Association for Computing Machinery. He is presently part of AT&T Bell Laboratories Kelly Education and Training Center. His current research interests are in technology transfer process of software engineering techniques with particular emphasis on Software Reliability Engineering.

Refreshments will be available 6:30 to 7:00 PM.

**Time:** 7:00 PM, Tuesday, October 23, 1990.

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

**Information:** Al Bottani (201) 265-7797.

*North Jersey Section PACE:*  
**Career  
Management**

The North Jersey Section's Professional Activities Committee for Engineers will meet on Thursday, October 11, 1990. The topic at this meeting will be "Leading Edge Career Management" a presentation on what is new in high tech career management. The speaker will be Dr. Nancy Russell

**About The Talk**

The presentation will cover the newest techniques for career management in the working environment, as well as up-to-date job search strategies. The talk will also touch upon global issues affecting work.

**About The Speaker**

Dr. Nancy Russell is a vice-president at Manchester, Inc. There she is involved with outplacement, career development, and corporate management development. She is active in the Management Forum which provides guidance and counsel to women in industry. She volunteers her time for career guidance and counsel of adolescents and young adults. She has a private practice in career, life, and work issues. Dr. Russell holds a PhD in Counseling Psychology from Fordham University and in 1988 she received the "Tribute to Women in Industry" Award.

Members and non-members are welcome.

**Time:** 7:30 PM, Thursday, October 11, 1990.

**Place:** ITT Auditorium (by the Tower), 500 Washington Avenue, Nutley, N.J.

**Further Information:** Robert Sinusas (201) 228-3941.

*Metro EMBS:*  
**Panic Attacks And  
Sugar Metabolism**

On October 17, 1990, the IEEE Metropolitan Section Engineering in Medicine and Biology Society, will present a program on "Panic Attacks And Sugar Metabolism—What's the Connection?" The speaker will be Professor Joel H. Levitt.

This will be a tutorial rather than research-report session. The intent is to explain and clarify in non-technical terms some important concepts from the viewpoint of the Bioengineer.

Some of the topics to be reviewed:

Function of Adrenalin, relation to anxiety and panic; The Feedback Control System Concept; Hypoglycemia vs. Diabetes; Allergic Response and sugar metabolism; Dietary Manipulation and Supplementation Benefits.

Professor Levitt is a member of the faculty of the School of Engineering, Pratt Institute, Brooklyn, and is an officer of the EMB Society. He studied Bioengineering and Biophysics as part of an interdisciplinary program in Electrical Engineering and Physics at Columbia University.

Informal get-together (optional) prior to meeting at 6:30 PM, Tower Bldg., First Floor Cafeteria, Rockefeller University.

**Time:** 7:30 PM, Wednesday, October 17, 1990.

**Place:** Rockefeller University, Room 305, Tower Bldg., York Ave., (Entrance at 66th St. Gate), NYC. Parking Available.)

**Further Information:** Robert Heyman, (914) 631-2600; Joel Levitt (718) 891-6460; John Frederick (212) 595-2599; Edna Feher (212) 757-0610.

**OCTOBER, 1990**

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NEWSLETTER STAFF  
Editor.....M.M. Perugini  
Business Manager.....A.M. Beattie

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REPORT ADDRESS CHANGES TO:  
IEEE Service Center  
445 Hoes Lane, P.O. Box 1331  
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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.

SECTION OFFICERS  
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The North Jersey Section Executive Committee meets the first Wednesday (except holidays and December) of each month at 7 PM. These meetings (held at ITT, 500 Washington Ave., Nutley, N.J.) are open to all members. Information on each meeting agenda is available from David A. Dietsche, Section Secretary at (201) 579-1610.  
Elected Section Officers are listed above.

North Jersey Section Activities  
OCTOBER

October 9, 1990--"Modeling Time Varying Systems Using A Hidden Control Neural Network Architecture"--North Jersey Section ASSP Chapter, 7:30 PM, AT&T Bell Labs, Murray Hill Auditorium, 600 Mountain Ave., Murray Hill, N.J. John Burgess (201) 386-2736.

October 10--"Equipping The Consultant's Office"--IEEE NY Consultant's Network, 6:00 PM, Con Edison, 4 Irving Place, 14th Floor, NYC. Jim Wetterau (212) 321-1999.

October 11--"Leading Edge Career Management"--North Jersey Section PACE, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Robert Sinusas (201) 228-3941.

October 17--"Gas Insulated Switchgear (GIS)"-- (Meeting followed by Officer Elections) North Jersey Section IEEE Power Engineering Society, 7:30 PM, JCP&L, Punch Bowl Road and Madison Ave., Morristown, N.J. Augie Franzoni (201) 926-6923.

October 17--"Panic Attacks And Sugar Metabolism—What's The Connection"--NY/LI/North Jersey Chapter Engineering in Medicine & Biology Society, 7:30 PM, Rockefeller University, York Ave., NYC. Robert Heyman (914) 631-2600.

October 18--"Trouble Shooting Programmable Logic Controllers"--North Jersey Section Control System Society, 7:30 PM, Fairleigh Dickinson University, Teaneck Campus, 1000 River Road, Teaneck, N.J. Professor V. Gogate (201) 692-2120.

October 22-24--"International Conference: Directions In Electromagnetic Wave Modeling"--Weber Res. Inst of Polytechnic University, IEEE AP and MTT Societies and US National Committee of URSI, Penta Hotel, Manhattan. For details call Ann Drury (516) 755-4310.

October 23--"Software Reliability Engineering For The Development Managers"--NY/North Jersey Engineering Management Society, 7:00 PM, ITT, 500 Washington Ave., Nutley, N.J. Al Bottani (201) 265-7797.

Upcoming Meetings

November 8--"MTT-S & AP-S Symposium And Mini-Show"--IEEE North Jersey and Princeton, 1:30 PM to 9:30 PM, Tower & Clubhouse, ITT-Avionics, 417 River Rd., Nutley, N.J. Dick Snyder (201) 492-1207.

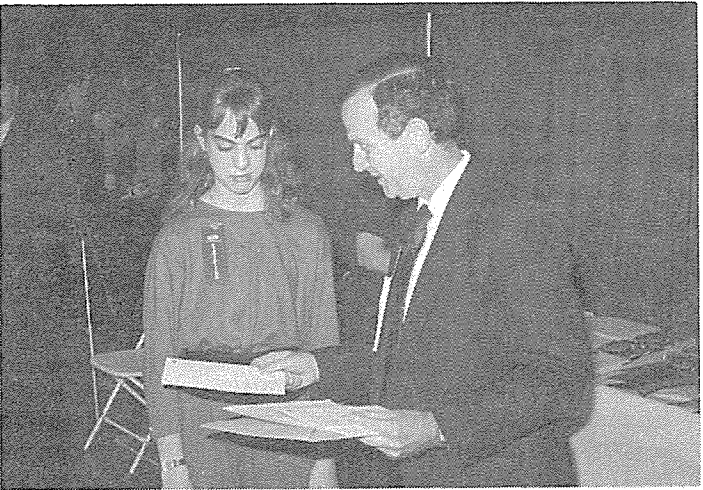
November 14--"HighTech P/CWorkstation Applications Conference"--North Jersey Section and United Societies of Engineering & Science of New Jersey, Inc. (USES), 9:00 AM-8:00 PM, Governor Morris Inn, Morristown, N.J. Donald Hsu (201) 585-1226 or (914) 359-7800.

December 6--"Non-Linear GaAsFET Modeling, A Mixture Of Art And Science"--North Jersey MTT/AP Chapter, 7:15 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Dick Snyder (201) 492-1207.

December 8--"Symposium: Electric Utility, Communication and Reliability and Risk Assessment of Industrial and Utility Systems"--IEEE North Jersey Section Industry Application Society, 9 AM-2 PM, Saturday, Howard Johnson Plaza Suite Hotel, 240 Rte. 3 West, Mill Creek Drive, Secaucus, N.J. (Please note this is rescheduled from September 22nd and is at a new location.) Vittal Rebbapragada (201) 804-2011.

December 12--"Officer Election And Talk On Electrical Distribution Design With Advanced Technology Applications"--North Jersey Section Industrial Application Society, 7:00 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Vittal Rebbapragada (201) 804-2011.

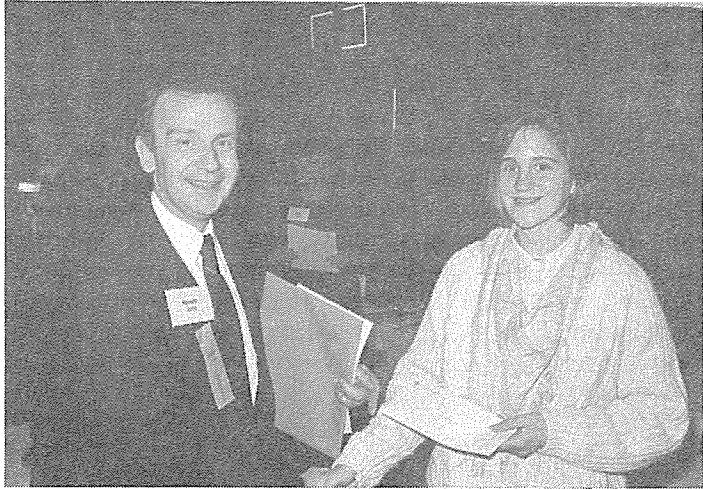
Members, Student Members and  
Non-Members Welcome  
PLEASE POST



WINNER—Heather Kirby, receives award from Past Chairman Ken Oexle at Student Exposition on Energy Resources.



WINNER—Brian Sullivan is from Hopatcong Middle School.



WINNER—Alyssa Majesto accepts Award at Morristown event.

Student Awards Presented

The National Energy Foundation sponsored its annual Student Exposition on Energy Resources at the Morristown Armory on May 11, 1990. The North Jersey Section sponsored three awards, one in each age category, which were presented by Kenneth J. Oexle, Past Chairman of the North Jersey Section.

Recipients for the awards included:  
Heather Kirby, Readington School, Whitehouse, N.J.; Brian Sullivan, Hopatcong Middle School, Hopatcong, N.J.; and Alyssa Majesto, Villa Walsh Academy, Morristown, N.J.

The purpose of the annual competition is to develop student proficiency in research and scientific experimentation, Nearly 300 students participated in the program.

International Conference Oct. 22-24, 1990:  
Directions In Electromagnetic  
Wave Modeling

An International Conference on "Directions In Electromagnetic Wave Modeling" will be held October 22-24, 1990 at the Penta Hotel in Manhattan. This conference is sponsored by the Weber Research Institute of Polytechnic University, in cooperation with IEEE AP and MTT Societies and the US National Committee of URSI. Its purpose is to provide a critical in-depth assessment of the state-of-the-art, new directions and challenges in the modeling of electromagnetic wave radiation, guiding, propagation and scattering.

The focus will be on analytical, numerical and combined techniques for modeling wave interactions in applications ranging from integrated circuits to remote sensing. In contrast to other conferences dealing with specific applications, this conference is devoted to the techniques of electromagnetic wave modeling as such, in order to integrate specialized approaches into a broader perspective. In order to foster an integrated view of the area, there will be no parallel sessions, and one session will be held in a poster format.

An assessment of future needs and goals for electromagnetic wave modeling, as seen by government agencies, will be discussed by agency scientists. Also, some speakers will provide a broad perspective in their area of interest. These include Professor D.C. Chang of the University of Colorado, Professor A. Ishimaru of the University of Washington, Dr. E.K. Miller of Los Alamos National Laboratory, Professor R. Mittra of the University of Illinois, Professor H. Schmidt of MIT and Professor L.B. Felson of Polytechnic University.

Registration for the conference can be done by mail before the conference, or at the conference itself. The registration fee is \$140 prior to October 8, and \$160 thereafter. This fee includes the cost of the hard-bound Conference Proceedings. Students with a valid I.D. may register at the conference for \$40.00 not including the cost of the proceedings.

The Co-chairmen for the conference are Professors Henry L. Bertoni and Leopold B. Felsen of Polytechnic University. Further information and registration forms may be obtained by contacting the Conference Secretary, Ann Drury at (516) 755-4310.



IEEE North Jersey Section and  
United Societies of Engineering & Science  
of New Jersey, Inc. (USES)  
HighTech PC/Workstation  
Applications Conference

Wednesday, November 14, 1990 - 9:00 AM—8:00 PM  
Governor Morris Inn (Royce Hotel), Morristown, N.J.

On November 14, 1990, the IEEE North Jersey Section and United Society of Engineering and Science (USES) will host a conference on the hi-tech PC and workstation applications. Many conferences have been held for PCs and workstations applications in business. This conference will focus on the PC and workstation applications in science and engineering. Five tracks will be held concurrently and the six track is for the exhibitors. Selected topics and speakers are:

HDTV	Karen Frank, ACM
Statistics	F.M. Julian, du Pont de Nemours & Co.
DNA analysis	K.O. Ellison, Merck Sharp & Dohme
CAD medicine	V.L. Houston, NY Medical Center
Mech. Engineer	R. Smith, AFGA Co.
Load locus	W.J. Bigley, FMC Corp.
Finite Elements	T. Rizzo, AT&T
Electro-optics	E. Whittaker, Stevens Inst. of Technology

Registration will take place from 8:30 - 9:00 AM. Cost to the attendees registering before October 15, 1990 is \$75 for IEEE and USES Affiliates, including refreshments, lunch, and proceedings. The fee for non-members is \$100. The fee for late registration is an additional \$25. The \$20 fee for student members with valid I.D. does not include lunch or proceedings. To register, make check payable to "IEEE-North Jersey Section" and mail it to Jay Shah, Conference Treasurer, 7 Tonelle Avenue, Apt. 3Q, Jersey City, NJ 07306.

USES Representatives

IEEE, D.P. Perry; ASME, Mel Human; SPSE, Maury Kahn; ISA, Robert Lindner; ISNA, Steve Lohm; TIMS/ORSA, Toon Six; NJIT, Dean George Pincus; Stevens, Audry Smith.

For further information

Donald Hsu (201) 585-1226 or (914) 359-7800

Registration for "Hi-Tech PC/Workstation Applications Conference"

To: Jay Shah, Conference Treasurer, 7 Tonnele Avenue, Apt. 3Q,  
Jersey City, NJ 07306

Name \_\_\_\_\_ IEEE No. \_\_\_\_\_

Society \_\_\_\_\_ Member No. \_\_\_\_\_

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Please make checks payable to "IEEE North Jersey Section"

Congratulations  
To Our  
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Get information and an application for advancing to Senior Member Grade by contacting Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605 (201) 461-0900, ext. 238.

NY-Consultants' Network:  
Equipping The  
Consultant's Office

At the October 10, 1990 meeting the IEEE New York Consultants' Network will hear a discussion on "Equipping the Consultant's Office." The speaker will be Mr. John Conti, President of Digicom Group, Inc.

About The Talk

The discussion will cover some of the typical tools needed to support the consultant practice as well as some of the emerging trends in technology and how consultants can utilize them to enhance their practices.

If you are considering your first PC acquisition, or whether to upgrade, or what to upgrade to, or whether to wait, come get some practical tips on current, cost effective technology.

About The Speaker

John Conti has been active in the area of personal computer hardware, software and networks for several years. He has installed systems for both small and large users in the New York area. Mr. Conti, besides being an independent consul-tant, has helped many small business automate their practices.

Time: 6:00 PM, Wednesday, October 10, 1990. (Please note the earlier meeting time, for our members convenience.)

Place: Con Edison, 4 Irving Place, 14th Floor, (one block East of Union Square, just off 14th St.), NYC.

Further Information: Jim Wetterau (212) 321-1999; Hulan Jack (212) 206-3049.

North Jersey Section-PES:  
PES Election Of  
Officers for 1991

On October 17, 1990 the North Jersey Section IEEE Power Engineering Society will conduct its annual elections for 1991 officers. The election will be held following the 7:30 PM PES technical meeting at the Punchbowl Room of Jersey Central Power and Light (JCP&L) in Morristown, N.J. JCP&L is located on Punchbowl Road and Madison Ave. (Route 24).

Officer nominations are as follows:  
Chairman: Thomas Piascik  
Vice-Chairman: Joseph Kane  
Secretary & Treasurer: Augie Franzoni

Any additional nominations should be submitted prior to 10/15/90 and sent to Joseph Kane at JCP&L, Madison Ave. at Punchbowl Road, Morristown, NJ 07960 (201) 455-8456.

No. Jersey-Control Sys. Soc.:  
Trouble Shooting  
Programmable  
Logic Controllers

On October 18, 1990 the North Jersey Section IEEE Control System Society will present a lecture entitled "Trouble Shooting Programmable Logic Controllers." The speaker will be Shane Bradley of Marshall Institute, Raleigh, N.C.

Refreshments will be available.

Time: 8 PM, Thursday October 18, 1990.  
Place: Fairleigh Dickinson University, Teaneck Campus, Rm. RA100, 1000 River Road, Teaneck, N.J.  
For further information: Professor V. Gogate (201) 692-2120.

North Jersey-ASSP:  
Modeling Time  
Varying Systems

On October 9, 1990 the IEEE North Jersey Section, Acoustics, Speech and Signal Processing Chapter will continue its series of technical talks related to current topics in signal processing. The topic at this meeting will be "Modeling Time Varying Systems Using A Hidden Control Neural Network Architecture." The speaker will be Dr. Esther Levin, AT&T Bell Laboratories, Murray Hill.

Free Buffet

A free buffet will be provided on a first-come-first-served basis an hour prior to the scheduled talk.

Time: 7:30 PM, Tuesday, October 9, 1990. (Free buffet at 6:30 PM.)  
Place: AT&T Bell Laboratories, Murray Hill Auditorium, 600 Mountain Ave., Murray Hill, N.J.  
Further Information: John Burgess (201) 386-2736; Steve Laico (201) 386-2031.

North Jersey Section-PES:  
Gas Insulated  
Switchgear

On October 17, 1990 the North Jersey Section IEEE Power Engineering Society will feature a special presentation on "Gas Insulated Switchgear (GIS)." Mr. Arun Arora will be the speaker. Election of Officers for 1991 will be held after presentation.

About The Talk

SF<sub>6</sub> Gas Insulated Switchgear offered from 50 to 800 KV by ABB Power T&D Co. Inc., will be discussed. SF<sub>6</sub> GIS has gained worldwide acceptance as a viable alternative to the conventional open type, air-insulated High Voltage (HV) sub-station. Over 20 years of operational experience have established not only the greater reliability of SF<sub>6</sub> GIS over conventional switchgear, but also its lack of maintenance requirements and higher degree of safety. These factors, together with other advantages, such as freedom from all forms of environmental influence, space economy, environmental compatibility, etc., have established the SF<sub>6</sub> GIS to be the economic alternative to conventional open type HV switchgear.

About The Speaker

Mr. Arun Arora received the BSc degree in Electrical Engineering in 1959. He gained extensive experience in power generation, transmission, and distribution systems including transmission lines. He joined GEC (UK) and engineered substations in all phases of work. In 1961, he joined the power plant division of M.A.N. in West Germany and did the electrical systems planning. In 1963, he joined ABB West Germany in the power plant electrical systems planning division and later covered all equipment until transmission end of power plants. Since 1978, he is responsible for the marketing of HV equipment in the U.S, and as of 1986, responsible for the gas insulated switchgear equipment marketing with close ties to the engineering division.

He served as Secretary and Vice-Chairman of the IEEE PES, Princeton, N.J. and was an active IEEE working group member on surge arresters. He is a member of IEEE, VDE (Germany), and VDI (Germany).

Time: 7:30 PM, Wednesday, October 17, 1990.  
Place: Jersey Central Power & Light Co., Punchbowl Room, Punchbowl Road and Madison Ave., Morristown, N.J.  
Further Information: Augie Franzoni (201) 926-6923 or Hady Salloum (201) 829-5058.

North Jersey MTT/AP:  
Nonlinear GaAsFET  
Modeling—  
Art And Science

On December 6, 1990 the North Jersey IEEE MTT-AP Chapter meeting will feature a talk on "Nonlinear GaAsFET Modeling, A Mixture Of Art And Science." The speaker will be Dr. Walter R. Curtice, W.R. Curtice Consulting, Princeton Junction, New Jersey.

About The Talk

It is a significant challenge for microwave scientists to develop large-signal models for the GaAsFET's since the models must be simple enough to execute rapidly in circuit simulation software but sufficiently sophisticated to accurately describe the complex behavior of these devices. The purpose of this presentation is to review the nonlinear FET modeling work directed toward development of computer-aided design techniques. Emphasis will be given to microwave applications although FET models for digital circuits will also be described.

The presentation has three major parts: 1. Introduction to active device modeling; 2. Equivalent circuit models: Complexity, calibration, and verification; 3. Applications of GaAsFET models in commercial simulators for the design and optimization of hybrid and MMIC circuits.

About The Speaker

Walter B. Curtice received the BEE, MS and PhD degrees from Cornell University in 1958, 1960, and 1962, respectively. Upon graduation, he joined the Microwave and Power Tube Division of Raytheon as a Senior Research and Development Engineer and participated in microwave tube development programs and experimental and theoretical research on linear-beam and cross-field devices.

In 1973, Dr. Curtice joined RCA Laboratories, Princeton, New Jersey, as a Member of the Technical Staff in the Microwave Technology Center.

Dr. Curtice was Manager of Computer-Aided Design and Modeling at Microwave Semiconductor Corporation, Somerset, New Jersey from April 1987 to December 1988. He became an independent consultant in 1989.

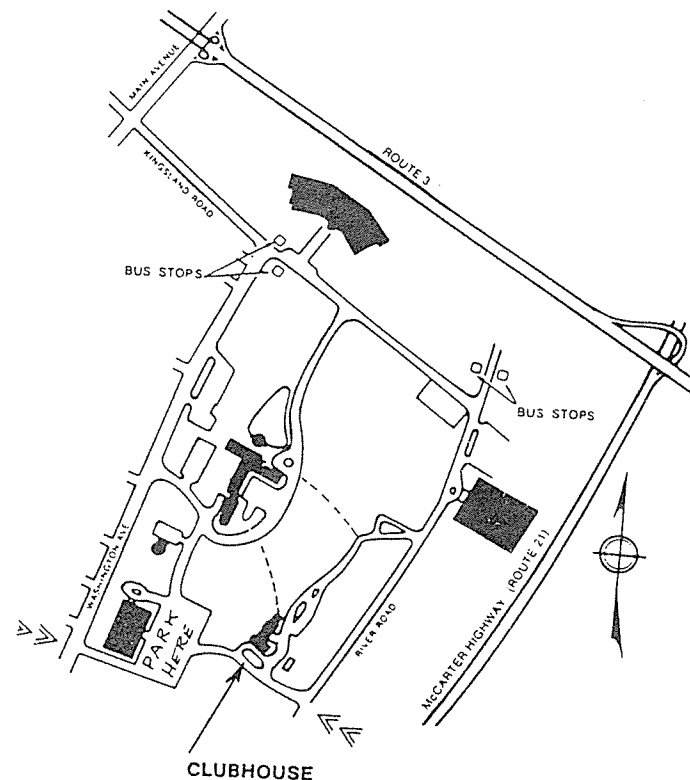
Free Buffet Dinner

There will be a free buffet dinner at 6 PM. Reservations for the complimentary dinner are requested.

Time: 7:15 PM, Thursday, December 6 1990.  
Place: ITT Auditorium (at the Tower), 500 Washington Ave., Nutley, N.J.  
Information/Reservations: Dick Snyder (201) 492-1207; Willie Schmidt (201) 284-2255.

**IEEE**  
**North Jersey and Princeton**  
**Presents**  
**MTT-S & AP-S**  
**SYMPOSIUM AND MINI-SHOW**  
**TWO LECTURES 7 BOOTH EXHIBITS**

**Thursday - NOVEMBER 8, 1990**  
**1:30 PM to 9:30 PM**



**TOWER & CLUBHOUSE**  
**ITT-AVIONICS**  
**417 River Road**  
**NUTLEY, NJ**

**DOOR PRIZES**

**DISTINGUISHED LECTURERS**

**1:30 - 2:45-** Ron Schineller and Tony Pospishil  
 "The Phase 1 MIMIC Program - An Update"  
**7:30 - 9:30-** Barry S. Perlman and Lorna Carmichael  
 "Pursuit of an Hardware Description Language for  
 Analog/Microwave Design"

**BOOTH EXHIBITS: 2:30 to 7:00 PM**

**BIGGER AND BETTER**

**FREE BUFFET 6:00 to 7:15 PM**

**ENGINEERS, TECHNICIANS, AND PURCHASING PEOPLE WELCOME!**

For Details Call:

Dick Snyder (201) 492-1207 — Willie Schmidt (201) 284) 2255

In Memoriam: Dan Brodow

**MTT-S & AP-S Symposium**  
**And Mini-Show**

**THE PHASE 1 MIMIC**  
**PROGRAM - AN UPDATE**  
**Speakers:**

**Ron Schineller and Tony Pospishil**

The three year MIMIC program is now into its third year, and significant progress has been made by all four contractor teams. This talk will present an overview of the MIMIC program and then describe in more detail the status of the work at ITT. This will include a description of the MIMIC chips and modules being developed for two EW systems. Measured data will be shown for a variety of broadband chips including amplifiers, power dividers, switches, variable attenuators, mixers and oscillators. The benefits of MIMIC technology will be shown by examples taken from the brassboard demonstrations. Finally, the status of MIMIC Phase 3 and MIMIC phase 2 programs will be discussed.

**About The Speakers**

**E. Ronald Schineller** received his BSEE degree from Manhattan College in 1960 and his MSEE degree from the Polytechnic Institute of Brooklyn in 1964. From 1960 to 1970, he was employed by Wheeler Laboratories, where he was engaged in microwave, antenna and electro-optic laser work. From 1972 to 1978, he was employed by Hazeltine Corp., where he worked on various antenna subsystems including the microwave landing system. Since joining ITT in 1978, Schineller has been engaged in the development of MIC and MMIC circuitry. Currently, he is manager of the Design Technology Department and is responsible for planning and directing advanced technology programs, both internally funded and government sponsored. Since 1986, he has served as engineering manager for the MIMIC program at ITT, with direct responsibility for the EW system brassboard development.

**Anthony Pospishil** received his BSEE degree from CCNY in 1981 and his MSEE degree from CCNY in 1984. He has been associated with ITT Avionics since 1981. As a Principal Member of the Technical Staff, he is currently responsible for the design, development, packaging, and test of MMIC EW circuitry on the MIMIC Phase 1 program as well as management of several ongoing IR&D projects including the development of the RF subsystem used in an Advanced RF Memory. Mr. Pospishil has over eight years experience in the design and development of MIC and MMIC broadband EW components, as well as the RF subsystems they are used in.

**PURSUIT OF AN HARDWARE**  
**DESCRIPTION LANGUAGE FOR**  
**ANALOG/MICROWAVE DESIGN**  
**Speakers:**

**Dr. Barry S. Perlman and**  
**Lorna Carmichael**

An effort has been organized to develop an Analog-Microwave Hardware Description Language (A-MHDL). This is a DARPA/Tri Service DoD initiative supported by both the MIMIC and VHSIC Programs. The ultimate objective of this effort is the development and acceptance of a design language suitable to describe analog circuits and systems operating at frequencies from dc to microwave/millimeter-wave. The intent is that such a language would develop as a commercial standard supported by DoD and not a DoD standard incompatible with industry. For this reason, industry is invited to participate in all phases of its development. The immediate task is to formulate language requirements and definitions. While the requirements for a A-MHDL will be developed independently from the requirements of VHDL (IEEE Std. 1076-1987), VHSIC Hardware Description Language), every effort will be made to make A-MHDL compatible, if not an extension of VHDL. This will allow for support of both analog as well as mixed mode analog-digital electronic systems.

As a standardized, common language, A-MHDL will provide a means for engineers to efficiently and unambiguously describe, specify, document, communicate, exchange designs and complex ideas between multiple component/system designers, test engineers, manufacturers and DoD. It will enable description of the behavior and functional structure of analog circuits and systems and unambiguous semantic representation of microelectronic hardware at various levels of abstraction. Use of hierarchican descriptions will enable top-down design tradeoffs and decisions to be made at the highest level where needed. Parts remanufactures, replacement, and continued life cycle support will be greatly facilitated. Use of A-MHDL will compliment the CAD tools that aid bringing new designs to reality through simulation, layout and design management.

**About The Speakers**

**Dr. Barry S. Perlman** is Chief, Microwave-Lightwave Technology Branch, Electronics Technology and Devices Laboratory, USA LABCOM, Ft. Monmouth, N.J. He is responsible for research and development of microwave/millimeter-wave and photonic com-

ponents for radar, EW, communications, and smart weapons. He is also leading development of advanced design and test automation techniques and use of computational methods for electromagnetic analysis, physical and phenomenological modeling and MIMIC CAD. Prior to his current position, he was Head, Design Automation Research in the Microwave Laboratory at the David Sarnoff Research Center (formerly RCA Laboratories) in Princeton, N.J.

Dr. Perlman is an IEEE Fellow, a member of Sigma Xi, a member of the IEEE Societies on Microwave Theory and Techniques, Circuits and Systems, the MTT AdCom, the Educational and Financial Committees and is co-chairman of subcommittee MTT-1 (CAD). He is Vice-President of the Automatic RF Techniques Group (ARFTG) and is Deputy and Technical Chairman of IEEE SCC 30: AHDL, to develop an analog hardware descriptive language. He is a member of the IEEE advancement committee and Princeton Chapter Awards Committee and is listed in "Who's Who in Science and Technology" and "Who's Who in the East." He is a member of the NSF Advisory Board for the MIMIC CAD Center at University of Colorado and the Policy Board for CAEME (Computer-Aided Electromagnetics Education) at University of Utah. He holds four U.S. patents and has published over 40 technical papers on solid-state circuits and devices, microwave networks, signal processing, computer-aided design and automated testing, has received four RCA Outstanding Engineering Achievement Awards, was elected to the Hall of Fame of INTEREX, a computer users group and received the Automated Measurements Technology Award from ARFIG. He received a BEE degree from Electrophysics College of New York in 1961 and an MSEE and PhD in Electrophysics from the Polytechnic Institute of New York in 1964 and 1973, respectively.

**Lorna Carmichael** is an Electronics Engineer with the U.S. Army Laboratory Command (LABCOM), Electronics Technology & Devices Laboratory (ET&DL), Microwave/Lightwave Technology Branch at Ft. Monmouth, N.J. She is the Technical Area Specialist for Computer-Aided Design and Databases in support of the MIMIC program and related internal research. She is also the Project Engineer for the Microwave/MMIC/Analog Hardware Description Language (MHDL) effort. Mrs. Carmichael received a BSEE from North Carolina AT&T State University and is currently pursuing an MSEE at Rutgers University.