IEEE
North Jersey Section Seminar
PROGRAMMING IN THE LANGUAGE C

Thursdays, February 15- May 17, 1990, 6:30 PM - 9:00 PM
Jersey Central Power & Light Co.,
Madison Avenue & Punch Bowl Road, Morristown, N.J.

The North Jersey Section is offering an evening course titled "Programming In The Language C." The course will focus specifically on the Microsoft QuickC compiler, on the IBM PCs and compatible computers with DOS.

C is a general purpose programming language that has become one of the most widely used languages in the world. C features have been known to be efficient, economical and portable, and have proven especially useful in system programming because C facilitates writing fast, compact programs that are readily adaptable to other systems.

The lecture will be covered from fundamental to advanced data structures and handling. All the examples and techniques used throughout the course, are oriented toward the development and maintenance of serious, real-world C applications. Upon completion of the course, the student will have the skills to write useful and practical programs.

Students will be given assignments to do on their own IBM PC or compatible, if one is available; either at home or on the job. A **Microsoft QuickC compiler** and two **text books** will be supplied.

Prerequisites: The student should be familiar with at least one of the following languages - BASIC, COBOL, PASCAL, PROLOG and/or FORTRAN.

The instructor is Mr. Tuan Q. Nguyen, a Systems Engineer at Jersey Central Power and Light Company.

(1) February 15 - Introduction to C: Why learn C?; Why QuickC?; Hardware Requirements; Knowledge Requirements; Convention and Style; Directories and Files Used by QuickC; Setting up QuickC; Starting QuickC; Getting Help; Fixing Errors; QuickC Editor and Environment.

(2) February 22 - C Fundamentals: Basic Elements of C Programs; Punctuation and Spacing in C Programs; Using Comments in C; Data Types and Declarations of Variables; The Power of Printf ( ).

(3) March 1 - Getting Input with Scanf ( ); Shortcut Assignments, Increments, and Decrements; Relational Operators; Logical Operators.

(4) March 8- Repetition and Looping: The For Loop; The While Loop; Debugging and Loops.

(5) March 15 - Decisions and Branching: The If Statement; The Conditional Assignment Statement?; Multipath Branching; The Switch Statement; The Break Statement; The Continue Statement; The Goto Statement; More Complex Conditions for Branching.

(6) March 22- Functions and Function Calls: Functions and Program Design; Declaring and Defining a Function; Local and Automatic Variables; Register Variables; Passing Information to a Function; Functions with Many Parameters; Functions that Return Information; Recursion; Noninteger Functions; Function Prototypes.

(7) March 29 - Arrays: How Arrays Are Stored in Memory; How to Declare Arrays; Referencing and Using Array Items; Bounds Checking Arrays in Your Code; How to Initialize Arrays; Arrays and Functions; How Array Offsets Advance; Multidimensional Arrays; Advanced Topics and Tricks; The Bitwise Operators, Tiny Arrays.

(8) April 5 - Addresses and Pointers: Addresses Reviewed; What Is A Pointer?; Accessing Variables with Pointers; Passing Pointers to Functions; Pointers and Arrays; Pointer Arithmetic; The Interchangeability of *amts and amts [ ]; 1value vs rvalue.

(9) April 12 - Advanced Pointers: Type Casting pointers and Addresses; Far Pointers; Functions that return addresses; Dynamic Arrays; Advanced Pointer techniques.

(10) April 19- Strings: Declaring and Initializing Strings; The String Pool and String Addresses; Pointers and Initialized Strings; Formatting strings with printf ( ); String Input and Output; String Manipulation Routines; Arrays and Strings; The Arguments to main( )-argv and argc; Character Classification and Transformation.

(11) April 26 - Managing Files: Top-level I/0; Mid-Level (Unbuffered) File I/0; The File System; Advanced Error Handling.

(12) May 3 - Advanced Data Types: Structure - An Array of Different Types; Union-Multiple Types in the Same Space; Enumerated Data with enum; Bit Fields; Advanced typedef.

(13) May 10 - Large Project: Advanced C Preprocessor; Using QuickC for Large Projects.

(14) May 17 - C and the Hardware: Keyboard Input functions; Reading Non-ASCII Keys; Console I/0 Functions; Keyboard Control with ANSI.SYS; Using QuickC to Access BIOS; Cursor and Screen Control with BIOS Calls.

May 24—Snow Day.

Class Size will be limited to a maximum of 25 with a minimum registration of 15. Early registration is recommended. Phone Reservations will not be accepted. Reservations accepted after February 8, 1990 will require an additional **late fee** of $25.

Where: Jersey Central Power & Light Co., Madison Ave. & Punch Bowl Rd., Morristown, N.J.
When: Fourteen sessions, Thursday evenings, starting February 15, 1990 from 6:30 PM to 9:00 PM. (Snow Day—May 24, 1990.)
Cost: With Text Books and QuickC compiler, IEEE Members $230; non-IEEE Members $305.
With Text Books only, IEEE Members $160; Non-IEEE Members $235.
Contact: Mr. John A. Baka at (201) 455-8534 (Business)

Registration "Programming In The Language C"

To: Mr. John Baka, Distribution Engineering, JCP&L Company, Madison Avenue at Punch Bowl Road, Morristown, NJ 07960

Name_____IEEE No. _____

Affiliation_____ Phone No._____

Address_____

_____

Check if QuickC Compiler is needed or not Yes [ ] No [ ] Enclose required fee made payable to **"North Jersey Section IEEE"**

Signature_____

The IEEE
Newsletter

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

PACE Meeting:
OUR COMMITMENT TO PROFESSIONAL ACTIVITIES

The North Jersey Section's Professional Activities Committee for Engineers will meet on Thursday, January 11, 1990. The topic will be "New Directions For Professional Activities in the 1990s." Our guest speaker will be Dr. Raymond W. Sears Jr., Chairman of the North Jersey Section of the IEEE.

About The Talk

The talk will address changing views of business on the role of engineers, and roles that the IEEE may play in a changing business environment. This meeting is important for any engineer concerned with salvaging their profession, a life-long career in engineering and their technical and economic future.

About The Speaker

Dr. Raymond Sears received a BEE degree from Cornell University in 1958 and a MSE and PhD from Johns Hopkins University in 1963 and 1967 respectively.

After serving with the U.S. Naval Security Group from 1958 through 1961 he was employed with the Department of Defense developing high speed computer systems, pattern recognition systems, and signal processing systems. In 1964 he received a fellowship from the DOD to pursue graduate studies at Johns Hopkins.

Dr. Sears has been with AT&T Bell Laboratories since 1967 and is currently responsible for Reliability and Maintainability programs for Transmission and Communications projects.

Dr. Sears has published articles on high-speed computer circuits, pattern recognition, systems organization, ocean acoustics, and sonar system design.

All IEEE members and guests are invited to attend. Refreshments will be served.

Time: 7:30 PM, Thursday, January 11, 1990.
Place: ITT Auditorium, 500 Washington Avenue, Nutley, N.J.
Further Information: Richard F. Tax (201) 664-0803.

JANUARY, 1990

NORTH JERSEY SECTION ACTIVITIES
JANUARY

January 10, 1990--"Speech And Speech Synthesizers"--New York Academy of Medicine's Sections on Biomedical Engineering and Otolaryngology with the IEEE New York Section Engineering in Medicine and Biology Society, 5:00 PM, New York Academy of Medicine, 5th Ave. at 103rd St., NYC. Sheryl Isbell, (212) 876-8200.

January 11--"PACE Meeting: Our Commitment To Professional Activities"--North Jersey Section's Professional Activities Committee for Engineers, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Richard Tax (201) 664-0803.

January 31--"Law Enforcement Science vs Money Laundering Networks"--North Jersey Section IEEE Intersociety Committee, 8:00 PM, Bell Labs Auditorium, 600 Mountain Ave., Murray Hill, N.J. David P. Perry (201) 325-8415.

January 31--"Millimeter Wave Antennas"--North Jersey IEEE MTT-AP Chapter, 7:30 PM, NJIT Seminar Room at the Alumni Center, Newark, N.J. Dick Snyder (201) 492-1207.

Upcoming Meetings

February 7--"Optoelectronic Seminar Series—first of three Seminars"--North Jersey Section IEEE & Graduate Student Assoc., NJIT, 323 Martin Luther King Jr. Blvd., Newark, N.J. Dr. Gerald Whitman (201) 596-3232/3512.

February 15--Failure Prediction Of Components And System In Utility/Industrial Plants"--North Jersey Section Industrial Application Society, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Vittal Rebbapragada, (212) 839-2262.

February 15-May 17--"Seminar: Programming In The Language C"-North Jersey Section, 14 Sessions, 6:30-9:00 PM, JCP&L Co., Madison Ave. & Punch Bowl Rd., Morristown, N.J. John A. Baka (201) 455-8534.

February 20--NY/NJ Engineering Management Society Meeting (tentative date)--Al Bottani (201) 265-7797.

February 21--"Seminar: Applications Of Neural Networks"--NY Chapter IEEE Computer Society, 9:00 AM-4:30 PM, United Engineering Center, 345 East 47th St., NYC. **For details call** Andrew Weigel (212) 440-8533.

February 28--"Industrial/Government Cooperation For Economic Growth"--North Jersey Section IEEE Intersociety Committee, 8:00 PM, Bell Labs Auditorium, 600 Mountain Ave., Murray Hill, N.J. David P. Perry (201) 235-8415.

March 20--"Seminar: Electrical Design Aspects Of Cogeneration Plants"--North Jersey Section Industry Application Society, 8:30 AM-4:00 PM, Meadowlands Hilton, Secaucus, N.J. Vittal Rebbapragada (212) 839-2262.

PLEASE POST
Members and Non-Members Welcome

JANUARY, 1990
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NEWSLETTER STAFF
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Business Manager.....A.M. Beattie

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REPORT ADDRESS CHANGES TO:
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445 Hoes Lane, P.O. Box 1331
Piscataway, N.J. 08854-1331
(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.

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.

Millimeter Wave Antennas

The January 31, 1990 meeting of the North Jersey IEEE MTT-AP Chapter will take place at the New Jersey Institute of Technology Campus, Alumni Center Seminar Room, Newark, N.J. The talk will be on "Millimeter Wave Antennas." The speaker will be Felix K. Schwering, PhD. Members and guests interested in this subject are invited.

About The Talk

An overview over the area of mm-wave antennas will be presented. For the purposes of the review, two broad classes of mm-wave antennas are distinguished, i.e., antennas of conventional configuration and antennas based on new design concepts.

The first class is composed of well known radiating structures such as reflector, lens, horn and slotted waveguide antennas. The design principles and performance characteristics of these antennas are well established at microwave and lower frequencies, and scaling into the mm-wave region is straightforward in most cases. The small size of mm-wave antennas and their much tighter fabrication tolerances suggest certain modification in their design, and the question as to which antenna type should be used for a given application may be answered differently in the microwave and mm-wave regions. But, in principle, these antennas can be regarded as well understood. Most mm-wave antennas which are currently in use belong to this class of "conventional" antennas.

The second class, consisting of antennas with significiant features that are peculiar to the mm-wave region, is still under study, although much interesting work on such antennas has been done in recent years. This class includes radiating structures such as printed circuit mm-wave antennas; traveling wave antennas derived from open mm-waveguide; and integrated antennas. Some of these antennas have microwave counterparts. However, scaling into the mm-wave region usually is not straightforward but leads to new problems and new opportunities. Other antennas of this class are completely new with no microwave heritage.

About The Speaker

Felix Schwering was born in Cologne, Germany. He received the Dipl.Ing. degree in Electrical Engineering and the PhD degree from the Technical University of Aachen, West Germany, in 1954 and 1957, respectively.

From 1956 to 1958, he was Assistant Professor at the Technical University of Aachen. In 1958 he joined the U.S. Army Research and Development Laboratory at Fort Monmouth, N.J., where he performed basic research in free space and guided propagation of electromagnetic waves. From 1961 to 1964 he worked as a Member of the Research Staff of the Telefunken Company, Ulm, West Germany, on radar propagation studies and missile electronics. In 1964 he returned to the U.S. Army Electronics Command in Fort Monmouth and has since been active in the fields of electromagnetic-wave propagation, diffraction and scatter theory, theoretical optics, and antenna theory. Recently he has been involved, in particular, in mm-wave antenna and propagation studies.

From 1969 to 1978, he was leader of the Antenna Research Team of the Center of Communication Systems at Fort Monmouth and since 1979 has been a member of the Research Council of this Center. During 1984-85, he worked with the U.S. Army Research Office, Research Triangle Park, N.C., under the Visiting Laboratory Associates Program.

Free Buffet Dinner

There will be a free buffet dinner for attendees in the Seminar Room, Alumni Center at 6 PM. **Reservations for the complimentary dinner are requested.**

Time: 7:30 PM, Wednesday, January 31, 1990. (Pre-meeting buffet dinner at 6:00 PM. **Reservations required.**)
Place: NJIT Seminar Room at the Alumni Center, Newark, N.J.
Information/Reservations: Dick Snyder (201) 492-1207; Willie Schmidt (201) 284-2255; Gerald Whitman (201) 596-3232.

NY/NJ EMS Seeks Volunteers To Help Plan 1990 Meetings

As the world moves into a post "cold war" environment the engineer may have to think and move beyond narrow specialities, ie: electrical, mechanical, chemical, engineering and take a broader view of their profession. The Engineering Management Society would like to help engineers develop this broader view and is in need of volunteers to serve on the administrative committee to help plan the 1990 program. In addition, since the EMS Chapter serves members in both the New York and New Jersey Sections, the Chapter is in need of volunteers to plan programs which might better serve the Long Island and Westchester members of the Society. Anyone interested should contact Al Bottani at (201) 265-7797.

The tentative meeting dates for 1990 are as follows: February 20; March 20; April 24; May 15-Joint meeting with Project Management Institute; June 19; September 18; October 23; November 20.

All meetings, except the May meeting, are tentatively scheduled to be held in the ITT Auditorium, Nutley, N.J. Topics and speakers will be announced as they are finalized.

PACE NEWS

By R. Tax

SOS.....

I would like to take this opportunity to wish Carlton Bayless, IEEE's President, a Very Happy, Healthy and Successful New Year. May he be increasingly satisfied and comforted by his accomplishments and his potential to improve the engineering profession thru this year as our President. His potential is great, may his accomplishments be many, and may our engineers and engineering capabilities thrive under his leadership.

In reflecting, I note that our IEEE Constitution was revised in 1972 to add professional activities to our scientific and educational activities. We have been trying to advance the standing of our engineers and industries for 18 years and with our great strides for mankind we have made none to improve the status of our engineering community. Is this a poor reflection of our leadership or an example of the lack of leadership and the capabilities of past IEEE presidents and Board of Directors?

Since nothing has changed, nothing has improved; indeed for many, engineering careers are more threatened. We are presently using IEEE funds to recruit next years class of engineers to replace the class that graduated only last year. A life long profession in engineering is virtually an impossibility. Many of our new graduates will not be able to enter the profession for which they have studied so hard. IEEE's leaders have made the MBAs the winners and the Engineers the losers.

The following is most appropriate and still current even though it is a year old, having been printed in the February, 1989 issue of the "IEEE Newsletter."

February 19-25, 1989 is National Engineers Week. This is the week we should dedicate to honor our engineers. This is the week we should honor engineers such as Roger Biosjoly, the eighth victim of the Space Shuttle Challenger disaster. No, Roger Boisjoly wasn't on board the Challenger when it disintegrated, taking with it the lives of the seven astronauts. Roger Boisjoly is the mechanical engineer who tried to postpone the launch of the Challenger for more favorable weather conditions; weather conditions and temperatures within which the system was designed to operate.

Roger put his career on the line when he spoke out against a management decision to launch the Challenger. Instead of being listened to and honored he has been branded a "whistle blower." Roger says,"...in the true sense of the word, I didn't blow the whistle, I merely told the truth." It is now three years since January 28, 1986 when seven of our astronauts needlessly lost their lives and Roger Boisjoly is still without a job—truly the eighth victim. Roger is now a Senior Member of the IEEE. We think of him and wish him our best.

While we honor Roger Boisjoly and other members of our engineering community during National Engineers Week there are others who will turn National Engineers Week into a period of lying and deception. They will use this time to recruit (seduce) our youth into Engineering with statements of Engineer Shortage Propaganda (ESP).

It is interesting to note that when I write or speak out against ESP I am sometimes accused of trying to control the number of engineers being produced. But, controls are like vectors, they have both magnitude and direction. These controls can be either positive, to increase, or negative, to decrease the supply. I believe the people and groups that are fabricating the ESP are the people that wish to control the number of engineers and keep the numbers as high as possible and without regard for the consequences.

What are the consequences? First, we have and are losing our engineering capabilities. When we have a surplus of engineers, engineers are underutilized. When an engineer does engineering work 10 percent of the time, then for a ten year period the engineer has gained only one year of engineering experience. During a supply-demand balance, engineers are fully utilized, increasing their engineering skill level, their experience, their capabilities and their values.

Milton Alpern wrote "Quantity Instead of Quality: A Sabotage of Engineering and Its Education by 'Engineer Shortage' Propaganda?" in 1976. He discusses the engineer's professional impotence and economic insecurity. He blames the engineering surplus and writes "It is the threat of displacement by that 'extra' engineer that is the key to this problem of economic insecurity and resulting professional impotence." The professional impotence Alpern refers to is exemplified by the actions of Roger Boisjoly and others before him that tried fruitlessly to prevent technological disasters only to become victims of their efforts. Milton Alpern wrote his paper in 1976 and fought against ESP as a Director of NSPE and a member of the Engineering Manpower Commission (EMC).

Today, we are still fighting those that deal in ESP. Now, NSPE, the American Consulting Engineers Council (ACEC) and Betty Vetter's Commission on Professionals in Science and Technology (CPST) are responsible for the dissemination and fabrication of ESP. We know who is responsible and Betty Vetter tells who is financing the operation. CPST is funded by science societies and corporate members. In the November 1988 article in *"Electronic Engineering Times"* about Ms. Vetter's Commission they say "Among the participants are IBM, Honeywell, Bell Labs and the American Medical Association." Since this effort is detrimental to the engineering and technical staff at these corporations it is safe to assume that the non-engineering staff is responsible and the issue is splitting our major corporations and industries.

Obviously, this has been going on for years. Shall we seduce this generation of children into engineering just as we seduced the last generation with ESP? Is our nation's engineering capability any better today than it was in 1966, before ESP and a higher production of engineers? Is National Engineers Week better utilized to honor our engineers or to recruit our youth?

— If you always do what you always did
you will always get what you always got.—

ENGINEERING LAYOFFS

Please make copies of all articles on engineering layoffs and send to: Mike Alterman, 509 Green Pond Road, Rockaway, NJ 07866.

PACE Committee Meets Monthly

The PACE Committee meets on the second Thursday of every month at the ITT Auditorium, 500 Washington Avenue, Nutley, N.J. (near the the ITT Tower) at 7:30 PM. Our Section Executive Committee meets there on the first Wednesday of every month (except in December) at 7:00 PM. Any questions or comments will be well received. Contact Richard Tax at (201) 664-0803 (after 7:00 PM) or write to R. Tax, 630 Montview Place, River Vale, N.J. 07675.

Congratulations
New Senior Members

Michael F. Bondy
Michael R. Garey
Joel D. Ingleheart
Israel H. Kalish
Russell C. Pepe
W. Wood

Join the ranks of our Senior Members. For information and application form contact Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, N.J. 07605 (201) 461-0900.

Letter To The Editor

(The following letter was sent to Agriculture Secretary Yeutter and to our representatives in Congress. I urge all my colleagues in the North Jersey Section to help stop the insanity discussed in it.)

Open letter to the Secretary of Agriculture:

When I toured our beautiful Northwest (from Oregon to Alaska) some years ago I was often saddened by whole nenuded mountainsides. But I told myself, the country does need timber to house us. **Now it turns out that these trees, some a century old, don't provide timber for anyone—they are ground into pulp for Japanese newsprint, which any sapling can provide.** What insanity!

Did it occur to you that you are destroying national resources in payment for high-tech goods like VCRs and camcorders? This is the mark of a third-world nation! You add insult to injury by supporting this perversion with tax money, taken from the very workers forced to buy Japanese products because our own consumer electronics industry has been annihilated by subsidized "competition."

Indeed, how can you square these subsidies with the much touted faith in free and fair trade? (The Japanese certainly won't complain—we must be the only nation to tilt the playing field in the opponent's favor!) Apparently your policy aims to save the jobs of a few hundred lumberjacks. I'm an engineer, forced to retire early because of the rape of the American electronics sector. So I would much rather see my tax money invested in a revival of this vital industry whose demise probably caused us well over a **million** skilled jobs.

The emergence of high-definition television will provide us with a perfect opportunity to get back into the game. With the money now wasted on supporting Japan and the lumber industry we could probably create hundreds of thousands of new jobs and cut into the trade deficit to boot. And, unlike the pulp lunacy, this solution does not deplete national treasures, or export tax dollars.

Max J. Schindler

Intersociety News

by
Dave Perry

The Joint Computer/Communications/LEO Chapter with the Intersociety Committee, invite you to attend a discussion January 31, 1990 on "Law Enforcement And Money Laundering Networks." The speaker will be Dr. Richard W. Harms. The talk will be held at the auditorium at Bell Labs, 600 Mountain Avenue, Murray Hill, N.J. at 8:00 PM.

The talk is open to the public and the topics covered while general in nature will be of interest to analysts, network designers, law enforcement officials, and policy makers connected with financial institutions.

A pre-meeting dinner will be held at September's, Bonnie Brae Road, Watchung at 6:00 PM for those wishing to have informal discussions with Dr. Harms. For dinner reservations, call Dave Perry, (201) 325-8415 **no later than January 19, 1990.**

About The Talk

Recently, a Columbian economist arrested in Columbia allegedly used some of New York's most prominent financial institutions like Citibank, American Express, Bank of New York and Republic National Bank to help move $1.2 billion in cocaine profits out of the US. More than $100 billion a year in drug money flows through the nations banks according to experts in Treasury (from an article in a recent NY Sunday Times).

A new center is being established in the Washington area to process information about drug money laundering. The new organization will operate a computer system called FINSEN. Extracting data from the Federal Wire Transfer System involves processing large amounts of data. The average daily volume of US transactions is about $700 billion and on one day the Clearing House processed $1.25 trillion. New regulations that require some banks and S&L's to report cash deposits of less than $10,000 have already gone into effect.

Dr. Harms says that while artificial intelligence and numerical analysis methods are being used, it will not be possible to disclose precise details.

About The Speaker

Richard Harms has been a supervisor within the Financial Intelligence Branch of the Customs Office of Intelligence for the last four years. He has recently been serving as Chief, responsible for the development and implementation of the Customs Financial Intelligence program. Since late 1984, he has managed the project to use Federal Reserve cash flow data to surface suspicious currency flows. Recently, he has been project manager for the Customs Artificial Intelligence System, a computerized expert system designed to target suspicious currency activity through analysis of Bank Secrecy Act data. In 1989, he managed a project that resulted in the publication of two base line studies on money laundering for the customs service titled "Money Laundering: Methods" and "Money Laundering: Geographic Threat."

Dr. Harms is scheduled to take on the responsibility of Chief, Strategic Analysis in the new organization that will operate FINSEN.

Dr. Harms is a native of Northern California, where he taught at College of the Redwoods for twelve years after receiving his BSc, MS and PhD at University of California (Berkeley).

OUR CALENDAR FOR 1990:

January 31 - "Law Enforcement Science vs Money Laundering Networks"
Rich Harms, Chief, Financial Intelligence Branch, Customs, 8:00 PM, AT&T-Bell Labs, Auditorium, 600 Mountain Ave., Murray Hill, N.J.
February 28 - "Industrial/Government Cooperation For Economic Growth"
Eric Sumner, IEEE President Elect
8:00 PM, AT&T Bell Labs, Auditorium, 600 Mountain Ave., Murray Hill, N.J.
March 28 - "Radon In New Jersey" - 8:00 PM
April 25- "The Waste Management Crisis"
May 30 - "Industrial Dynamics, Modeling Industry"
Sept.26- "Input-Output Economics, Modeling Industry And National Economics"
Oct. 31 - "Engineering in Undeveloped Countries"

If you have questions about any of the above programs or suggestions about future programs that would be of general interest to the engineering and scientific community, please write or call David P. Perry, 57 Forest Hill Road, West Orange, NJ 07052, Phone (201) 325-8415.

Center for Microwave and Lightwave Engineering at NJIT
North Jersey Section IEEE
& Graduate Student Association, NJIT
present
The New Jersey Institute of Technology
OPTOELECTRONIC SEMINAR SERIES

PLANNING COMMITTEE

M. Ettenberg, DSRC; E. Gordon, Photon Imaging; W. Kosonocky, NJIT; R. Leheny, Bellcore; T. Li, AT&T; S. Nagel, AT&T; E. Niver, NJIT; I. Reingold, SCEEE; G. Whitman, NJIT, J. Yardley, Allied-Signal.

I. NEW OPTOELECTRONIC DEVICES
February 7, 1990, Wednesday 3-6 PM, Theater

Optical Amplifiers	Nils Anders Olsson AT&T Bell Laboratories
Quantum Well Devices for Optical Processing	David A.B. Miller AT&T Bell Laboratories
New Solid-State Lasers	Michael L. Shand Allied-Signal, Inc.

II. BROADBAND SYSTEMS
March 7, 1990, Wednesday 3-6 PM, Theater

High Definition Television	Scott A. Keneman David Sarnoff Res. Ctr.
Coherent Optical Subcarrier Multiplexed Systems	Richard Gross GTE Laboratories Inc.
Broadband Electronic Switching	Joseph E. Berthold Bell Comm. Research

III. FRONTIERS OF OPTOELECTRONIC OPPORTUNITIES
April 4, 1990, Wednesday 3-6 PM, Theater

Future Optical Communications	William F. Brinkman AT&T Bell Laboratories
Optical Probing of High Speed Electrical Signals	Jay M. Wiesenfeld AT&T Bell Laboratories
Squeezed Light	Bernard Yurke AT&T Bell Laboratories

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

Registration Information:
There is no charge for this Seminar Series. Refreshments served. Reserved Parking in Lot #7. Directions Available.

For Further Information Call:
Dr. Gerald Whitman, E.E. Dept., NJIT
(201) 596-3232/3512

EMBS Meeting: Speech and Speech Synthesis

On January 10, 1990, the New York Academy of Medicine's Sections on Biomedical Engineering and Otolaryngology with the IEEE New York Section Engineering in Medicine and Biology Society, will present a program on "Speech and Speech Synthesizers." Dr. Eugene Murphy, Advisory Committee Member of the Academy's Biomedical Engineering Section is coordinator. The speakers will be Dr. Martha Sarno, Dr. Patrick W. Nye, and Ms. Iris Fishman.

About The Talk

Disabilities in speech and language from many causes or inability to read texts, numbers, or computer screens because of blindness, may now be overcome with the aid of speech synthesizers. The program will address the medical problems, the development of computer methods to synthesize understandable speech, and review commercially available devices.

Dr. Martha Sarno's topic "Neurogenic Speech And Language Disorders" will cover such disorders as cerebral palsy, aphasia following stroke, and some head injuries. Dr. Nye will speak on "Evolution Of Speech Synthesis" and Ms. Fishman's presentation "Commercially Available Speech Synthesizers For Non-Speakers" will describe the current state-of-the-art representing compromises between sound quality, speech rate, size, portability, cost, power, ease of control by the user with an impairment, and other related issues. A panel discussion with question and answer period, and demonstrations of equipment will round out the program.

About The Speakers

Dr. Martha Sarno is Associate Professor, at the Clinical Rehabilitation Medicine Department, NY University School of Medicine, Director of the Speech Language Pathology, Howard A. Rusk Institute of Rehabilitation Medicine, NY University Medical Center, NYC.

Patrick W. Nye, PhD is Vice President, Haskin Laboratories, New Haven, CT.

Iris Fishman, MA, is Augmentative Communication Consultant at United Cerebral Palsy, NYC, Consultant at Bird S. Coler Hospital, Roosevelt Island, NY.

Exhibit starts at 5:00 PM, dinner at 6:00 PM followed by lectures at 7:00 PM. We hope you will be able to join us for a most stimulating evening.

Time: 5:00 PM, Wednesday, January 10, 1990.
Place: New York Academy of Medicine, 5th Ave. at 103rd St., NYC.
Information/Dinner Reservations: Sheryl Isbell, Office of Medical Education (212) 876-8200, Ext. 232; Edna Feher (212) 757-0610; Joe Bogovic (212) 241-8032.

Talk On Electrical System Component Protection

On April 19, 1990, the North Jersey Section Industrial Application Society will host a presentation on "Component Protection, Current Limitation And The National Electrical Code." The speakers will be Robert Denis and Stephen Norako, both are District Sales Engineers in the New Jersey area for the Bussmann Division of Cooper Industries.

About The Talk

The presentation covers proper protection of electrical system components. They will discuss how higher interrupting ratings have been misinterpreted and do not in themselves assure proper downstream protection. The topic of withstand rating is discussed. The presentation is concluded with the concept of current limitation as an effective means of assuring proper component protection.

About The Speakers

Robert Denis has been with the Bussmann Division of Cooper Industries for the past four years. Prior to that he was a sales engineer with the Brown Boveri Electric Inc. company. He holds a BSEE from the Polytechnic Institute of New York.

Stephen Norako has been with the Bussmann Division of Cooper Industries for the past seven years. Prior to that he was a sales engineer with the Electrical Equipment Group of GTE Sylvania, Inc. He holds a BSEE from Fairleigh Dickinson University.

Pre-Meeting Dinner

The pre-meeting buffet dinner starts at 6:00 PM and the presentation begins at 7:00 PM.

Time: 7:00 PM, Thursday, April 19, 1990. (6:00 PM, buffet dinner.)
Place: ITT Auditorium, 500 Washington Ave., Nutley, N.J.
Further Information/Reservations: Vittal Rebbapragada, Chairman, IAS Chapter (212) 839-2262, or Max C. Schramm (201) 887-1120.

IEEE-IAS Chapter (NJ Section) Seminar
Electrical Design Aspects of Cogeneration Plants

Tuesday, March 20, 1990 — 8:30 AM - 4:00 PM
Meadowlands Hilton, Secaucus, New Jersey

On March 20, 1990, the North Jersey Section Industry Application Society, in association with the New Jersey Energy and Facilities Management Exposition, will present a workshop on the electrical design aspects of cogeneration plants. One of eight workshops sponsored by professional organizations at the 15th annual Energy Expo, this day-long panel symposium on cogeneration design will address the primary areas of concern to the electrical engineer.

R.V. Rebbapragada of Ebasco Services, Inc., Chairman of the IAS/North Jersey Chapter, will serve as moderator for in-depth presentations by speakers with experience in the field.

Selected speakers and topics include:

8:30 AM	Registration, Coffee and Danish	
9:00-9:15	Introduction	R.V. Rebbapragada Ebasco Services, Inc.
9:15-10:00	Planning Cogen Plants—Licensing and Utility Rates/Tariff Considerations	Harry Kociencki Director of Corporate Engrg. Hoffman-LaRoche
10:00-10:45	Utility Requirements for Cogen Plants	E. Griffith JCP&L
10:45-11:00	Break	
11:00-11:45	Plant and Generator Protection Requirements for Cogen Units	R.V. Rebbapragada Ebasco Services, Inc.
11:45-12:30	Electrical Control Panel, Metering, Alarms and Monitoring	Speaker to be announced
12:30-2:00 PM	Lunch	
2:00-2:45	Design Considerations of 30kw-1000kw Cogen Plants Using Reciprocating Gas Engines	Les Cadigan Tecogen, Inc.
2:45-4:00	Cogen Units: An Operator's Perspective	Speaker to be announced

The cost for this complete technical discussion—including materials, morning refreshments, luncheon and entrance to the Energy Expo Exhibit Hall—is $150 for non-members, $100 for IEEE members, and $50 for students.

To reserve your place, make check or money order payable to Energy Expo, Inc., and mail to Energy Expo, Inc., P.O. Box 222, Maplewood, NJ 07040. **Deadline: March 10, 1990.**

For more information on the IEEE workshop, please call Vittal Rebbapragada at (212) 839-2262 or Max Schramm at (201) 887-1120. For information about the Energy Expo, please call Sally Gambrill at (201) 763-5739.

New Officer Slate For IAS

The North Jersey Section Industry Applications Society is pleased to announce the results of the election of new officers for 1990 held on 12/7/89. The new officers will assume their posts at the first meeting on January 18, 1990. For information contact either the Chairman or the Program Coordinator.

Chairman:	
Vittal Rebbapragada	(212) 839-2262 or (201) 568-5849
Vice Chairman-I:	
Joseph Nelson	(516) 349-2413 or (201) 866-9581
Vice Chairman-II:	
Bhowani Mukherjee	(914) 732-2321
Secretary:	
Edward R. Muchmore	(201) 262-7900
Treasurer:	
Max C. Schramm	(201) 887-1120
Program Coordinator:	
Steve Norako	(800) 322-1577 Ext. 8474
Members-At-Large:	
J. David Goldsmith	(201) 235-5659
Anthony Shuen	(201) 746-3998

The IAS executive committee looks forward to an active 1990 with technical presentations and seminars relevant to the needs of electrical engineers in the area of Industrial/Utility applications. The IAS Chapter will meet on the third Thursday of every month. Look for the announcements in your newsletter.

Call For Fellow Nominations

The Awards Committee of the North Jersey Section reminds the membership that it's time to identify potential IEEE Fellows, and to begin work on the preparation of the material on the basis of which the IEEE Board of Directors, upon recommendation of the National Fellow Committee, will award the Fellow grade.

The requirements are basically these:

1. On April 30, 1990, the candidate must be a Senior Member. In addition, the candidate must have been a member in any grade for at least five years on January 1, 1990. Tenure as a member need not have been continuous, but the aggregate period of membership cannot be less than five years.
2. The candidate must have made significant individual contributions to our profession. There is an emphasis on **individual**. Evidence of these contributions is normally based on published papers in the open literature (preferrably in refereed journals), patents, and oral presentations.

A "Fellow Grade Nomination Kit" is available for the asking from: Dolores Wright, IEEE Headquarters, 345 East 47th St., New York, NY 10017, (212) 705-7750. This kit contains quite a readable and informative "Guide" together with all the forms which the nominator must complete and distribute.

In order to qualify for consideration in 1990, a nomination, in the proper form, must reach two places no later than the close of business on April 30, 1990. Those two places are: (1) IEEE Headquarters and (2) the cognizant IEEE Technical Society whose specialty most nearly coincides with that of the candidate. Addresses are provided in the Nomination Kit. No extensions are ever granted. For all practical purposes, the nomination must be complete, and in final form, no later than April 1, 1990, in order to allow some reasonable time for the Fellow references (a minimum of five are required) to prepare their remarks and have them in the hands of IEEE Headquarters no later than April 30, 1990.

The North Jersey Awards Committee, which has the authority to approve the nomination on behalf of the North Jersey Section, is anxious to work with the nominator in preparing the strongest possible case for the candidate. Any member of the Awards Committee, as listed below, can provide additional information.

G.S. Eager, Jr.,
GRJ Consulting Services, Inc.
PO Box 43078
Upper Montclair, NJ 07043
(201) 783-7281

J.D. Hebson, Jr.
PSE&G Co. T-14A
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Newark, NJ 07101
(201) 430-6670

J. Van Savage
US Army AMSEL-RD-C3-AC-C
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M. DiDomenico
Bellcore
435 South Street
Morristown, NJ 07960
(201) 829-4325

H. Rowe
Stevens Institute of Technology
Dept. of EE & Computer Science
Hoboken, NJ 07030
(201) 420-5625

A Statistical Approach To Failure Prediction

On February 15, 1990, the North Jersey Section Industrial Application Society will host a presentation on "Failure Prediction Of Components And System In Utility/Industrial Plants." The speaker will be Dr. Alan J. McElroy, Ebasco Services Inc., New York City.

About The Talk

There has traditionally been a lot of uncertainty associated with estimating equipment and structural failure rates from limited data. Yet the importance of such estimates is beyond question when the equipment is expensive or the consequences of failure are severe. With recent advances in the application of mathematical statistics and in computer hardware capability, failure rate predictions have been improved sufficiently to permit application of optimization strategies. These include assigning automatic equipment replacement intervals even before failure occurs. The basis for improved predictions and for optimizing maintenance will be described and illustrated within the context of industry application.

About The Speaker

Alan McElroy has over thirty years of experience in the electric utility industry, the last ten of which has been spent pioneering a prediction technology based on time series analysis of failure related data. His most recent assignment involves modeling for predicting likelihood of failure of electrical distribution systems and rates of components in bridges and tunnels operated by New York City's Triborough Bridge and Tunnel Authority. He is a Fellow of the IEEE and in 1978 was awarded their Standards Medallion for his leadership role in IEEE Standard 500, the Nuclear Plant Reliability Data Manual.

He is an electrical engineer by training and in 1969 received his doctorate from MIT, with a major in statistical physics.

Pre-Meeting Dinner

The pre-meeting light buffet dinner starts at 6:30 PM prior to the technical presentation.

Time: 7:30 PM, Thursday, February 15, 1990. (6:30 PM, buffet dinner.)
Place: ITT Auditorium, 500 Washington Ave., Nutley, N.J.
Further Information/Reservations: Vittal Rebbapragada, Chairman, IAS Chapter (212) 839-2262, or Max C. Schramm (201) 887-1120.