



The IEEE

Newsletter

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

IEEE

**North Jersey and Princeton Sections
MTT/AP-S/LEOS/COMM.**

presents

9th Annual Symposium and Mini-Show Lectures and Booth Exhibits Focus On: HDTV

**Thursday, November 4, 1993
1:00 - 8:30 PM**

**Location: David Sarnoff Research Laboratories,
Princeton, N.J.**

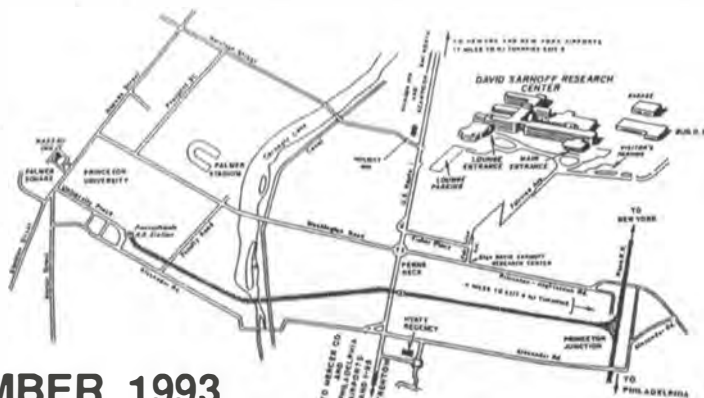
Schedule of Events:

- 1:00-2:00 PM Dr. Terence Smith, David Sarnoff Research Labs
"Advanced Television Research Digital Signal Processing"
- 2:15-6:30 **MINI-SHOW, 30 EXHIBITORS**
- 3:30-4:00 Dr. Glenn Reitmeier, David Sarnoff Research Labs
"Digital Image Processing High Definition Television"
- 6:30-7:30 **FREE DINNER TO ALL ATTENDING MINI-SHOW**
- 7:30-8:30 Jack S. Fuhrer, Hitachi America, Ltd.,
"Digital Receiver Technology in High Definition Television"

**Engineers, Technicians and
Purchasers Welcome**

For Information:

Dick Snyder (201) 492-1207; Alice Archer (609) 734-2184



**NOVEMBER, 1993
Volume 40, Number 5**

LEO & Student Chapters: Life After Graduation, Fun In Optoelectronics

The IEEE Laser & Electro Optics and Student Chapters will present a talk, "Life After Graduation, Fun In Optoelectronics." The speaker will be Professor Eugene Gordon of the Electrical and Computer Engineering Department at NJIT. This talk will be presented twice. The first time, it will be held 11:30 AM on Monday, November 8th in the ECE Seminar Room at NJIT. It will be presented again, 3:00 PM on Wednesday, November 17th at the Stevens Institute of Technology Auditorium, Hoboken, NJ.

About The Talk

The topics covered in this talk will be: The role of science and engineering in society, past and present; What to expect and key issues in working as a professional engineer or scientist; The elements of success; What you owe to your employer; What you owe to yourself; The process of invention; Some personal anecdotes in optoelectronics and quantum electronics that may be illustrative.

About The Speaker

Eugene I. Gordon is Distinguished Professor in the Department of Electrical and Computer Engineering at the New Jersey Institute of Technology. He and

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NEWSLETTER STAFF

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

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445 Hoes Lane, P.O. Box 1331
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(908) 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 usually meets the first Wednesday (except holidays and December) of each month at 7 PM. These meetings are open to all members. Information on meeting agenda is available from Art Greenberg, Section Secretary at 942-0048.

Elected Section Officers are listed above.

his group at AT&T Bell Labs discovered and developed several important laser systems, including the well known red helium-neon laser and the powerful blue-green argon ion laser. He and his group also invented and developed acousto-optic light modulators and deflectors used currently in many optoelectronic systems. Similarly, he and his group invented and developed the charge coupled device used as the video camera sensing array in many television and infra-red imaging systems, especially the CAMCORDER and facsimile machines. Dr. Gordon has 70 US patents and has published about 40 papers in peer-reviewed journals.

He is a member of the National Academy of Engineering, a Fellow of the IEEE, and has been awarded the prestigious IEEE Edison Medal and the IEEE Zworykin Field Award, as well as numerous other awards.

Monday, November 8, 1993.

Time: 11:30 PM.

Place: NJIT, ECE Seminar Room, Newark, N.J.

Wednesday, November 17, 1993.

Time: 3:00 PM.

Place: Stevens Institute of Technology, Auditorium, Hoboken, N.J.

Information:

Haim Grebel (201) 596-3533.

IEEE Engineering Management Society New York — North Jersey Joint Chapter Seminar

Communication, Diversity and Creativity

Tuesday, November 9, 1993 6:30 - 8:30 PM
The Williams Club (Chandler Room)
24 East 39th Street (between Madison & Park Avenues)
New York, N.Y.

With this seminar, our joint chapter will address the following important human aspects of engineering management that we let all too often fall in the cracks: Effective interpersonal communication, understanding people diversity and fostering creativity and innovation.

The seminar will be led by Dr. Sotiris C. Kitsopoulos, Senior Partner of InterConsult, an international management development firm based in Athens, New York and Zurich. The speaker, a senior member of the IEEE, is a veteran of both AT&T Bell Laboratories, Murray Hill, N.J. and IBM Research, Zurich, Switzerland. He has published two books and more than two dozen refereed or invited articles on engineering and management subjects. He also holds twelve US patents and is listed in "Marquis' Who Is Who in Science and Engineering" and "Who Is Who in the World."

During the evening we shall have ample opportunity to get better acquainted with each other and to network in the elegant surroundings of the Williams Club while nibbling at luscious tidbits for a cost of \$18.00 including two drinks. If you do not register in advance, the price at the door will be \$20.00. Please rush the coupon below by mail (including your check payable to "North Jersey Section IEEE") or FAX (with your signature promising to bring the check) to: **Al Connelly, Treasurer, IEEE North Jersey Section, 49 Channing Drive, Ringwood, NJ 07456. Tel./FAX: (201) 831-8171**

Registration Coupon

"Communication, Diversity and Creativity" Seminar 11/9/93

TO: Al Connelly, 49 Channing Drive, Ringwood, NJ 07456. **Deadline for receipt of the coupon is Thursday, November 4, 1993.**

Name _____ Title: _____

IEEE No.: _____ Tel.: _____ Fax: _____

Company: _____

Address: _____

Please make checks payable to "North Jersey Section IEEE"

Signature (if faxed to (201) 831-8171): _____

North Jersey Section PACE: Avoiding Those Taxing Mistakes In Retirement And Estate Planning

At the November 11, 1993, meeting of the North Jersey Section's Professional Activities Committee for Engineers the topic will be "How To Avoid The Most Taxing Mistakes In Selecting Retirement Distributions And Planning Your Estate." The speaker for this presentation will be George D. Weinstock.

The seminar will be in two parts:

Part I

Retirement Distributions:

A. Lump sum distribution prior to age 59-1/2; B. Lump sum distribution from age 59-1/2 to age 70-1/2; C. Lump sum distributions after 70-1/2; D. Special issues

Part II:

Fundamentals Of Estate Planning:

A. "Why Do I Need a Will?" - Choices; B. Methods by Which Assets Pass Upon Death; C. Federal Gift and Estate Tax System/Brackets; D. What is Included in Taxable Estate?; E. Basic Estate Tax Concepts

About The Speaker

George D. Weinstock is President and Director of Financial Planning of the Atrium Advisory Group and has over 24 years of diversified experience in the engineering, corporate and financial world.

Mr. Feinstock is on the faculties of Fairleigh Dickinson University, the College for Financial Planning and Bergen Community College where he teaches courses on Retirement and Estate Planning.

Feinstock is the author of numerous articles on retirement and estate planning including most recently in the New Jersey Law Journal entitled "Retirement Plans Can Be A Quadruple - Tax Trap" and "New Planning Flexibility re Pre-59-1/2 Retirement Distribution Taxation."

All Welcome

You do not need to be a member of IEEE to attend this meeting. Come and bring your friends.

Time: 7:30 PM, Thursday, November 11, 1993.

Place: JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, N.J.

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

North Jersey Section Activities NOVEMBER, 1993

Nov. 4—"9th Annual Symposium And Mini-Show"—No. Jersey & Princeton Sections MTTAP-S/LEOS/COMM., 1:00-8:30 PM, David Sarnoff Research Labs., Princeton, N.J. Dick Snyder (201) 492-1207.

Nov. 8—"Life After Graduation, Fun In Optoelectronics"—IEEE Student Chapter and LEO Chapter, 11:30 AM, NJIT, ECE Seminar Room, Newark, N.J. Haim Grebel (201) 596-3533.

Nov. 9—"Seminar: Communication, Diversity and Creativity"—Engineering Management Society NY/NJ Joint Chapter Seminar, 6:30-9:30 PM, The Williams Club (Chandler Room), 24 E. 39th St., NYC. Al Connelly FAX (201) 831-8171.

Nov. 10—"World Trade Center Recovery"—NY/LI PES/IAS, Con Edison Bldg., 19th Fl. Auditorium, 4 Irving Place, NYC. Joseph D. Connors (212) 943-2846.

Nov. 11—"Avoiding Taxing Mistakes In Selecting Your Retirement Distributions And Planning Your Estate"—NJ Section PACE, 7:30 PM, JCP&L Co., 300 Madison Ave., Morristown, N.J. Robert Sinusas (201) 228-3941.

Nov. 15—"Dynamic Location Area Management" and "Adaptive Averaging Methodology For Handoffs In Cellular Systems"—North Jersey Chapter Vehicular Technology Society, 2:00 PM, KDI/Triangle Electronic Systems, 60 S. Jefferson Rd., Whippany, N.J. Melvin Lewis (914) 968-2500, ext. 2304.

Nov. 16—"The Use Of Name Spaces In Plan 9"—NJ Computer & NJIT Student Chapters, 7:30 PM, Room 202, ECE Bldg., NJIT, Newark, N.J.

Nov. 16—"Fall 1993 Special Study Group No. 73: Principles And Practices Of Grounding Systems"—NY/LI PES&IAS, 5 Sessions, 6:00-8:00 PM, Raytheon Engineers & Constructors, 11 Penn Plaza, NYC. See October issue for details.

Nov. 17—"Life After Graduation, Fun In Optoelectronics"—IEEE Student Chapter and LEO Chapter, 3:00 PM, Stevens Institute of Technology, Hoboken, N.J. Haim Grebel (201) 596-3533.

Nov. 17—"Application Of Metal-Enclosed Switch-Fuse Gear"—NY/LI PES/IAS, NY Power Authority, 1633 Broadway, 21st Floor, NYC. Hazem Huss (201) 822-1016.

Nov. 18—"NJ Uniform Construction Code And 1993 NEC Update"—No. Jersey Section IAS, 7:00 PM, JCP&L Co., Punch Bowl Auditorium, 300 Madison Ave., Morristown, N.J. Ken Oexle (201) 455-8481.

Nov. 18—"Strategy For Control System Design"—North Jersey Section Control Systems Soc., 7:30 PM, John Howard Rm., Second Floor, Hazell Student Ctr., NJIT, 323 Dr. Martin Luther King, Jr., Blvd., Newark, N.J. Tim Chang (201) 596-3519.

Nov. 23—"Co-Registration And Visualization Of 3-D Multimodal Medical Images"—NY Academy of Medicine, Metropolitan Section EMBS and NJ Section Computer Society, 6:30 PM, NY Academy of Medicine, Fifth Ave. at 103rd St., NYC. Office of NYAM (212) 876-8200, ext. 235.

Nov. 30—"Intelligent Highways And Vehicular Systems"—NY Section Education Committee, 9:00 AM-5:00 PM, Con Edison Co., Auditorium, 19th Floor, 4 Irving Pl., NYC. Nicole McFarlane (201) 216-6020.

Upcoming Meetings

Dec. 1—"Hard X-Ray Camera On PBX-M"—IEEE Nuclear and Plasma Sciences Society, Princeton/New Jersey Coast Chapter, 8:00 PM, Princeton Univ., Engineering Quadrangle, Convocation Room C-217, Princeton, N.J. Charley Bowman (609) 490-2132.

Dec. 2—"IEEE Advantage—Insurance And Other Benefits Available To Members"—Consultants' Network of Northern N.J., 7:30 PM, GEC-Marconi Facility, 150 Parish Dr., Wayne, N.J. Jim Boyd (201) 584-0329.

Dec. 2—"Videoconference: Engineering Applications For Monte Carlo And Other Simulation Analyses"—NJ Section and FDU Student Chapter, 11:45 AM-3:00 PM, Edward Williams College Lecture Hall, 150 Kotte Place, Hackensack, N.J.

Dec. 7—"Use of OO Technologies In Science & Engineering Applications"—North Jersey Computer Chapter, 7:30 PM, Room M-207, Muscarelle Bldg., Fairleigh Dickinson University, Teaneck, N.J.

Dec. 8—"Pulse Power Supplies And Electromagnetic Accelerators"—North Jersey PES/IAS Chapters, 7:00 PM, JCP&L, 300 Madison Ave., Morristown, N.J. Ken Oexle (201) 455-8481.

Dec. 14—"Land Mobile Radio And Personal Communications From the Twenties To The Nineties"—NJ Chapter IEEE Vehicular Technology Society, 7:30 PM, GEC Marconi, 164 Totowa Rd., Totowa, N.J. M. Lewis (914) 968-2500, ext. 2304.

Dec. 15—"Assembly Speaker Haytaian To Address Section"—NJ. Section and CCM Student Chapter, 7:00-9:00 PM County College of Morris, Randolph, N.J.

No. Jersey Section Town Meeting With CCM Student Chapter: Assembly Speaker Haytaian To Address Section

New Jersey Assembly Speaker Garabed "Chuck" Haytaian has agreed to address and participate in a "town meeting" of North Jersey Section IEEE members and other interested engineers. This event will take place December 15, 1993, 7:00 to 9:00 PM at the County College of Morris, Randolph, N.J.

About The Meeting

Many IEEE members have both quietly and openly expressed concerns about the state of our profession and the state of our industry. This meeting was arranged to give the membership and the engineering community in general an opportunity to share their views, concerns and ideas directly with one of New Jersey's legislative leaders.

Mr. Haytaian will address the gathering with some remarks about what the legislature and the State of New Jersey has been doing to improve the business and employment climate. He will also discuss how IEEE members might lend their voice on those issues most important to the electronics and software industries in New Jersey.

The speaker is clearly interested in hearing about the concerns of our membership, but more importantly, he would like to hear proposed solutions to the problems facing our profession and industry. Thus, attendees should come prepared to offer their ideas and suggestions for solving the problems confronting our industry and profession.

About The Speaker

Chuck Haytaian is an electrical engineer by training, having graduated from the University of Alabama in 1961. He worked on missile guidance systems at White Sands Missile Range early in his career. Later, he took over the family dry cleaning business, which he operated as a small business entrepreneur for 16 years. He currently is the Marketing Director for Superior Graphics Inc. in New York City.

Mr. Haytaian won his first political office in 1976 as a Warren County Freeholder and, with re-election in 1978, held that position for six years. He served as Freeholder Director in 1977 and 1980. He won election to the New Jersey General Assembly in 1981 and is currently serving his sixth term. In January of 1992, he became Speaker of the New Jersey General Assembly.

Proud of his Armenian heritage, Chuck is a member of the Board of Directors of the Armenian Assembly of America and a member of the Board of Trustees of the

Hovnanian Armenian School. Mr. Haytaian and his wife, Joan, were married in 1961 and have three children.

Who Should Attend

This meeting is intended primarily for the engineering community. IEEE members and non-members who are engineers, including software engineers and programmers, and students who plan to enter the profession, are invited to participate.

Time: 7:00- 9:00 PM, Wednesday, December 15, 1993.

Place: Carpeted Cafeteria, Student Community Center, County College of Morris, Randolph, N.J. Parking lots 6, 7 and 8. Faculty/Staff Parking areas may be used.

Directions: I-287 to Route 10 West, then approx. 7 miles to Randolph. Follow CCM signs to college entrance. Make left at Center Grove Road, then right onto College Avenue. Follow College Ave. to Parking lots 6, 7 or 8.

Information: Richard G. Estock, (908) 388-5110.

Congratulations To Our New Senior Members

Walter Y. Chen

Tek-Ming Shen

Yun Q Shi

Anoop Singhal

Victor K. Wei

Learn how you can become a Senior Member by contacting Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605-2239, (201) 461-0900, ext. 3106.

IAS Officer Election

The following nominations have been submitted for Officers of the Industrial Application Society Chapter:

Chairman-	Ken Oexle
Vice Chairman-	Won Kim
Secretary:	Edward Roeloff
Member-At-Large:	R.V. Rebbapragada

Each person has indicated they will serve in the position nominated.

The official election of Officers will take place at the December 8, IAS meeting. IEEE members in good standing may nominate other IEEE members or themselves for each of these positions. The term of office is January 1, 1994 through December 31, 1994.

Additional nominations may be made from the membership. Such nominations must be signed by no fewer than 25 voting members of the North Jersey Section and transmitted to Edward P. Griffith prior to November 30, 1993. Mr. Griffith may be reached at (201) 455-8313. The petition must certify that the person(s) nominated have agreed to serve if elected.

Vehicular Technology Soc.: VTS Presents Two Talks

The North Jersey Chapter, IEEE Vehicular Technology Society will present two topics at their meeting on November 15, 1993. The first speaker, Dr. Hai Xie, will talk on "Dynamic Location Area Management." Mr. Ashwin Sampath will follow with "Adaptive Averaging Methodology For Handoffs In Cellular Systems."

About The First Topic

Dr. Xie will discuss his dynamic (non-fixed) location area scheme in which different users access different sizes of location areas. This overcomes performance limitations when the user's call arrival rate and mobility deviate from the mean values determined from all users on the system. The performance of this dynamic system is discussed and it is compared with fixed location area schemes based on several distributions of arrival rates. Algorithms that can be used to keep track of the changing arrival rate of a particular user are explained.

About The Second Topic

Mr. Sampath discusses the exploitation of the information in signal strength measurements to improve the quality of cellular system handoff decisions. Averaging of signal strength fluctuations leads to a tradeoff problem for the averaging interval for the signal strength measurements. This problem is discussed and a method described to adaptively change the averaging interval, based on estimating the maximum doppler frequency as a means to obtain mobile velocity.

About The Speakers

Dr. Xie is an assistant research professor at WINLAB, Rutgers. His current research interests include network architectures, signalling systems for PCNs, mobility management studies, a CDMA-based new network architecture and protocols.

Mr. Sampath is a graduate student at Rutgers, in the department of Electrical Engineering, where he is also a graduate research assistant at WINLAB. His research interests include handover algorithms for cellular systems, spread spectrum systems and information theory.

All Welcome

You do not need to be an IEEE member to attend. Come, and bring your friends. There is no charge for admission. Light refreshments will be served.

Time: 2:00 PM, Monday, Nov. 15, 1993.

Place: KDI/Triangle Electronic Systems, 60 S. Jefferson Rd., Whippany, N.J. (Route 287, Route 10 exit.)

Further Information: Mr. Melvin Lewis (914) 968-2500, ext. 2304; or Arthur Greenberg (201) 942-0048.

No. Jersey-Control Sys. Soc.: Strategy For Control System Design

The November 18, 1993 meeting of the North Jersey Section IEEE Control Systems Society will feature a talk on "Strategy For Control System Design." The speaker will be Dr. Bernard Friedland, Distinguished Professor of Electrical and Computer Engineering at NJIT.

About The Talk

Control system designers of former generations had few tools with which to address their problems. Recent advances have changed the situation drastically. Now that design tools—analytical methods, design software and simulation packages—are abundant, the problem facing the designer is the need for a strategy for selecting the proper combination of tools efficiently to accomplish the desired objective.

The design strategy advanced by the speaker consists of the following steps: 1. Development of a "design model" of the dynamic process by omission of relatively unimportant details; 2. Use of hierarchical and decentralized methods to divide a relatively large system into more manageable subsystems; 3. Application of the "extended separation principle" to separate the functions of sensing and

actuation (control); 4. Simulation of the resulting proposed design using a "truth model" of the process dynamics to which the details omitted from the design are restored.

In the speaker's experience, this strategy rarely fails. Application of the methodology will be illustrated with examples taken from several fields.

About The Speaker

At NJIT, Dr. Friedland has been teaching and conducting research in the development of modern control theory and its applications. Prior to NJIT, he was Manager of Systems Research in the Kearfott Guidance and Navigation Corporation where he planned and directed the company's program in modern control theory and its application in projects of current and prospective interest. Dr. Friedland's new textbook is "Control System Design: An Introduction to State-Space Methods."

Free Pre-Meeting Buffet

Reservations are strongly recommended for the pre-meeting buffet which starts at 6:00 PM followed by the meeting at 7:30 PM.

Time: 7:30 PM, Thursday, Nov. 18, 1993.

Place: John Howard Room, second floor, Hazell Student Ctr., NJIT, 323 Dr. Martin Luther King, Jr. Blvd., Newark, N.J.

Reservations/Information: Tim Chang (201) 596-3519; Fred Chichester (201) 744-7340.

No. Jersey Section IAS: NJ Uniform Construction Code 1993 NEC Update

On November 18, 1993, the North Jersey Section Industrial Applications Society will host a presentation on "The NJ Uniform Construction Code And 1993 NEC Update." The speaker will be Won Kim, P.E., Principal Project Engineer with Schering Laboratories.

About The Talk

The program is intended to familiarize engineers who are involved in projects and construction with the requirements of the Uniform Construction Code and the discussion will include some of the major changes in the 1993 National Electric Code.

About The Speaker

Won Kim is a Professional Engineer in New Jersey and is a licensed Electrical Inspector. He is a graduate of the University of Minnesota where he received his degree in Electrical Engineering. He has spent over twenty years in New Jersey as a Facilities Engineer and Consulting Engineer before joining Schering Plough.

Time: 7:00 PM, Thursday, Nov. 18, 1993.

Place: Jersey Central Power & Light Co., Punch Bowl Auditorium, 300 Madison Ave., Morristown, N.J.

Information: Ken Oexle (201) 455-8481.

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North Jersey Computer & NJIT Student Chapters: The Use Of Name Spaces In Plan 9

On November 16, 1993 the Joint NJ Computer and NJIT Student Chapters will present a talk on "The Use Of Name Spaces In Plan 9." The speaker will be Rob Pike of the Computing Research Sciences Center of AT&T Bell Laboratories.

About The Talk

Plan 9 is a distributed system built at the Computing Sciences Research Center of AT&T Bell Laboratories over the last few years. Its goal is to provide a production-quality system for software development and general computation using heterogeneous hardware and minimal software.

A Plan 9 system comprises CPU and file servers in a central location connected together by fast networks. Slower Networks fan out to workstation-class machines that serve as user terminals. Plan 9 argues that, given a few carefully implemented abstractions, it is possible to produce a small operating system that provides support for the largest systems on a variety of architectures and networks. The foundations of the system are built on two ideas: a per-process name space and a simple message-oriented file system protocol.

About The Speaker

Rob Pike is a Member of Technical Staff at AT&T Bell Laboratories in Murray Hill, New Jersey where he has been since 1980. In 1981, he wrote the first bitmap window system for Unix systems, and has since written nine more. With Bart Locanthi, he designed the Blit terminal. With Brian Kernighan, he wrote the book "The Unix Programming Environment." He is a Canadian citizen and claims never to have written a program that uses cursor addressing.

Time: 7:30 PM, Tuesday, Nov. 16, 1993.
Place: Room M-202, ECE Bldg., NJIT, Newark, N.J.

Directions: Raymond Blvd., to Lock St. to Central Ave., turn right onto Central, then next right onto Summit St. then straight ahead to Guard Station and reserved IEEE parking at Parking Lot 4. Overflow parking at Lots 12, 12A, 12B, and 12 C on Lock Street between Central and Sussex Avenues. Additional open parking available at Lot 18, corner of Sussex Ave. and Nesbitt St. The ECE Bldg. is located at the corner of Warren and Summit Streets and is adjacent to Faculty Memorial Hall.

Optional Pre-Meeting Dinner: 5:00 PM. Come meet the speaker. Forno's of Spain Restaurant, 47 Ferry Street, Newark. Free parking in rear of building. **Reservations required for dinner.** Restaurant directions (201) 589-4767.

Information/Dinner Reservation: Richard G. Estock (908) 388-5110.

North Jersey PES/IAS: Pulse Power Supplies And Electromagnetic Accelerators

The North Jersey Power Engineering/ Industry Applications Society Chapters will present a talk December 8, 1993 on "Pulse Power Supplies And Electromagnetic Accelerators." The speaker will be Dennis Hildenbrand of Parker Kinetic Designs, Inc., Picatinny Arsenal, N.J.

About The Talk

Since 1973, both government and industry have been pursuing the development of high current pulse power supplies for the principal purposes of electromagnetic accelerators and pulsed welding/forming. The presentation will describe the basic types, applications and operating principles of both the rotating machine and static charge energy storage devices. The discussion will also present fundamental guidelines for the proper grounding and shielding of instrumentation and control systems in a high EMI environment.

About The Speaker

Dennis Hildenbrand is employed by Parker Kinetic Designs, Inc. as the Managing Engineer of the Electromagnetic Army Research Center (EARC) Laboratory Support Group at Picatinny Arsenal.

All Welcome

Members and guests interested in the meeting topic are invited.

Time: 7:00 PM, Wed., December 8, 1993.
Place: JCP&L Co., 300 Madison Avenue, Morristown, N.J.

Reservations/Information:

Ken Oexle (JCP&L) (201) 455-8481; R.V. Rebbapragada (Ebasco) (201) 804-2011 or (212) 839-1473.

Co-Registration And Visualization Of 3-D Multimodal Medical Images

On November 23, 1993, the New York Academy of Medicine's Sections on Biomedical Engineering and Nuclear Medicine, together with the Metropolitan Sections Engineering in Medicine and Biology Society and the North Jersey Section Computer Society, will host a program on "Co-Registration And Visualization Of 3-D Multimodal Medical Images." The speakers will be Dr. Harvey Cline, Dr. Peter D. Esser, Dr. Andrew M. Scott, and Dr. David A. Weber.

About The Talk

Data Obtained from different medical imaging systems, such as computed tomography (CT), magnetic resonance (MR), positron emission tomography (PET), and single photon emission computed tomography (SPECT), generally provide complementary characteristics and diagnostic information. Co-registration of these data sets into a single 3-D image for composite visualization, can provide a greater understanding and often lead to new insights about the object(s) examined. A discussion of the principles involved in multimodal image data co-registration and visualization, with examples of clinical applications, will be presented.

About The Speakers

Harvey Cline, PhD is a Coolidge Fellow and Staff Physicist at the Research Division of GE Corporation, in Schenectady, N.Y. Peter D. Esser, PhD is Professor of Clinical Radiology and Director of the Center for Computer Applications in Radiology at Columbia University, College of Physicians and Surgeons in New York, N.Y. Dr. Andrew M. Scott is Physician in Nuclear Medicine, Nuclear Medicine Service, Memorial Sloan Kettering Cancer Center in New York, N.Y. David A. Weber, PhD is Professor of Radiology at SUNY, Stonybrook, and Senior Research Scientist and Head, Nuclear Medicine Research Group at the Brookhaven National Laboratory in Brookhaven, N.Y.

Special Notice to MDs

This program is acceptable for 2 hours of Category 1 credit for the Physician's Recognition Award of the AMA.

Time: 6:30 PM, Tuesday, Nov. 23, 1993.
Place: New York Academy of Medicine, Fifth Avenue at 103rd Street, NYC.
Directions/Parking: Limited free parking in NYAM enclosed lot at 2 East 103rd St. or take #6 subway to 96th, walk to 5th Ave. walk up 5th Ave. to 103rd.
Further Information: Office of NYAM (212) 876-8200, ext. 235; Joel Levitt (718) 891-6460; Sol Manber (516) 585-8200; Richard G. Estock (908) 388-5110.

North Jersey Section & FDU Student Chapter: Monte Carlo And Other Simulation Analyses

The seventh and last videoconference of the year, "Engineering Applications For Monte Carlo And Other Simulation Analyses," will take place on Thursday, December 2, 1993. It will provide a practical introduction to analyzing the effects of uncertainty on complex systems. Simulation modeling can be done before a system is altered or a new one is built, to emulate the risk of unforeseen bottlenecks, cost overruns, or failure to meet specific system requirements.

These techniques work by subjecting computer models to repeated random inputs and monitoring the results. A basic overview of these techniques will be presented. Also to be shown will be how these techniques may be applied using a wide array of tools ranging from common electronic spreadsheets to highly specialized simulation software. The techniques presented are relevant not only to engineering problems but business and decision support applications as well.

Course Objectives

In this videoconference, participants will learn: 1) the basic theory of uncertain events (random variables); 2) how to assess the effects of uncertainty through Monte Carlo and discrete-event simulation; 3) how simulation can be used to improve the performance (throughput, delays, etc.) of a proposed or existing communications network; and 4) how to push simulation to the limits and extend your knowledge of the subject.

About The Presenters

Dr. Sam L. Savage, Consulting Professor at Stanford Univ., Stanford, CA, who will provide an overview of modeling uncertainty with simulation. The second presenter will be Dr. Averill M. Law, President of Averill M. Law & Associates of Tucson, AZ, a simulation consultant and noted author, who will demonstrate how communication network is simulated. The final presenter will be Peter W. Glynn, Associate Professor at Stanford Univ., who will talk on pushing the limits of simulation.

Next Videoconference

The next videoconference will occur Wednesday, March 16, 1994, on "PC Workstation Operating Systems: A Comparative Analyses Including UNIX." While 1993 videoconferences were held on Thursdays, 1994 videoconference events will be held on Wednesdays.

New Admission Policy

Due to increased expenses associated with bringing the videoconferences to the membership, a new admission policy is being instituted. The general public is

now invited to attend. Admission for non-IEEE members is \$65 with pre-registration, \$75 at the door. IEEE members may attend for \$20 pre-registered, \$30 at the door (IEEE membership card required). All participants will receive a set of the conference notes; those planning to walk-in should telephone a day ahead to reserve a set of conference notes.

A special discount is being offered to non-IEEE attendees who are employees of companies who are members of the American Electronics Association: \$45 pre-registered, \$55 at the door (company employee identification required).

IEEE student members may continue to attend videoconferences at no charge, except that students will not receive a set of the conference notes. However, any student wishing a set may purchase same for \$10.

To pre-register, mail check payable to "IEEE North Jersey Section" to Richard G. Estock, c/o EDP Consultants Inc., 77 Meredith Road, Colonia, NJ 07067-3198. Important! Please include the following information on the front of your check: name, address, telephone number, IEEE

No. NJ Consultants' Network: IEEE Advantage—Insurance And Other Benefits

On December 2, 1993 the IEEE Consultants' Network of Northern NJ will present "The IEEE Advantage—Insurance And Other Benefits Available To Members," a talk by Michael J. Sosa, Staff Director-Finance of the IEEE, and Jeffrey S. Ray, Vice President of Seabury & Smith, the Administrators of the IEEE Insurance Program.

About The Topic

The IEEE now sponsors a comprehensive package of financial services with unique advantages available only to IEEE members. Building on the successful Insurance Program, the Financial Advantages Program includes mutual funds, loans, annuities and credit cards.

The session will briefly review the variety of benefits available through the program with emphasis on those of special interests to individual consultants or small business owners, including: Disability Insurance; Term Life & Universal Life Insurance; Professional Liability Insurance; and Business Owners Property and Casualty Coverages.

About The Speakers

Michael J. Sosa's many responsibilities include general oversight of the Financial Advantage Program. He has been employed by the IEEE for the past 32 years.

Jeffrey S. Ray has worked at Seabury & Smith for over 10 years and has been Account Executive responsible for managing the IEEE Program since 1986.

membership number (if applicable) and name of videoconference. Pre-registrations must be received by the Monday preceding the broadcast date.

Disabled Or Handicapped Members

Any IEEE member who is disabled or handicapped and who is unable to attend the live broadcast may request to borrow the videotape of the conference for viewing on his or her home VCR. Cost will be at the IEEE member pre-registration rate of \$20. The Edward Williams College is not handicapped accessible.

Time: 11:45 AM - 3:00 PM, Thursday, December 2, 1993. Lunch not provided. Participants should plan to arrive by 11:30 AM to check-in and pick up their set of conference notes.

Place: Edward Williams College Lecture Hall (FDU Hackensack Campus), 150 Kutte Place, Hackensack, N.J. The Lecture Hall is not handicapped accessible.

Directions: Route 4 to Hackensack Ave. south, then first left onto Kotte Place (Roy Rogers Restaurant on corner).

Further Information: Richard G. Estock (908) 388-5110.

About The Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in April 1992 to encourage and promote the use of independent technical consultants by business and industry. Meetings are held on the last Thursday of each month at GEC-Marconi. The Network will distribute its second annual Directory of Consultants in January '94. For a complimentary copy, call Alex Richardson (201) 992-0448.

Optional Pre-Meeting Dinner

Members of the NJ Consultants' Network are invited to come and meet the speaker at the Steak and Ale Restaurant in the American Way Mall on Rte 46 Eastbound, (right next to Bennigans—after Passaic Ave. and before Willowbrook), in Fairfield, N.J. For directions, call (201) 227-2134. For reservations (REQUIRED), call Frank Scholten (201) 994-9819.

Time: 7:30 PM, Thursday, December 2, 1993.

Place: GEC-Marconi Facility, 150 Parish Drive, Wayne, NJ.

Directions: From Intersection of Rte. 23 and Rte. 46, approx 1 mile east to Riverview Drive. North on Riverview for 1.5 miles to traffic light at golf course. Go straight on Valley Road to next light; turn left onto Parish Drive. Follow to "T"; left turn for 2 short blocks to Dey Rd. Left on Dey Rd. GEC entrance approx. 100 ft. on right side.

Information: For alternate directions and up-to-date meeting status call (201) 736-0771 (Walker Elec. Services VOICE MAIL - 24 hrs). For other questions regarding the meeting or the Consultants Network, call Jim Boyd (201) 584-0329.



IEEE VIDEOCONFERENCES SEMINARS VIA SATELLITE

NJ Computer Chapter: **OO Technology In Climate Prediction, Other Applications**

On December 7, 1993 the IEEE NJ Computer Chapter will present a talk on "The Use Of Object-Oriented Technologies In Science And Engineering Applications". The speaker at this meeting will be Dr. Richard L. Peskin of the CAIP Center, Rutgers University, Piscataway.

About The Talk

Object-Oriented software technologies have been promoted recently because of their possible impact on software engineering, primarily in the areas of code organization, control and reuse. Historically, object-oriented programming was developed because of its implications for simulations.

These "behavior-oriented" aspects of OOP may ultimately be more important to the scientist and engineer than its purely software features. OOP provides the simulation creator with a paradigm that clearly relates the components of physical world to their computational abstractions (as modelled by code objects). The dynamics of real world objects are simulated by the "behavior" of code abstractions in response to "messages."

In this talk, Dr. Peskin will discuss the OOP paradigm in the context of a real software system, SCENE (Scientific Computation Environment for Numerical Experimentation). SCENE is implemented as an OO system, and makes use of the OOP environment to allow distributed and/or parallel computing in a manner that is transparent to the user.

SCENE has been used at several university and industrial locations. Its OO features permit a flexibility not usually found in interactive data management tools. SCENE is implemented in

Smalltalk and C, and this talk will discuss some practical issues associated with this OOP implementation. The application of SCENE to the management of climate prediction simulation data will be discussed, and a video illustrating this application shown.

Finally, the experiences encountered in the SCENE development will be discussed in the context of the application of OOP to other scientific and engineering problems. Particular emphasis will be placed on language and environment choices, learning curves, performance issues, and portability.

About The Speaker

Dr. Peskin is Director of the CAIP Computational Engineering Systems Laboratory at Rutgers, and is a professor of Mechanical and Aerospace Engineering, as well as a member of the graduate faculty in Electrical and Computer Engineering.

He is also President of Landgrove Associates, Flemington, N.J., a computer technology consulting firm, specializing in the design and development of OO systems, interactive graphics and visualization, parallel algorithms and distributed systems, among others.

A graduate of MIT, he received his PhD from Princeton in 1960. He was a member of the research staff at the Princeton Plasma Physics Lab and has been at Rutgers since 1961.

Time: 7:30 PM, Tuesday, December 7, 1993.

Place: Room M-207, Muscarelle Bldg., Fairleigh Dickinson Univ., Teaneck, N.J.

Optional Pre-Meeting Dinner:

5:30 PM. Come meet the speaker. Pero's New Bridge Inn, 105 Old New Bridge Road, New Milford. Restaurant directions (201) 836-6394. **Reservations for dinner required.**

Information/Dinner Reservation: Richard G. Estock (908) 388-5110.

Princeton/NJ Coast NPSS:

Hard X-Ray Camera On PBX-M

The IEEE Nuclear and Plasma Sciences Society (NPSS), Princeton/New Jersey Coast Chapter, will present a colloquium "The Hard X-Ray Camera On PBX-M: Observations And Studies." This meeting will take place December 1, 1993. The speaker will be Dr. Stephen E. Jones, Postdoctoral Research Associate, MIT.

Time: 8 PM, Wednesday, December 1, 1993.

Place: Princeton University, Engineering Quadrangle, Convocation Room C-217, Princeton, N.J.

Information/Directions: Charley Bowman (609) 490-2132; Dirk Plummer (908) 219-9553.

Vehicular Technology Soc.: **Land Mobile Radio And Personal Communications**

The North Jersey Chapter, IEEE Vehicular Technology Society will present a talk on December 14, 1993. The talk and slide presentation will be on "Land Mobile Radio And Personal Communications From the Twenties To The Nineties." The speaker will be Stuart Meyer.

About The Talk

This slide presentation will begin with the primitive personal radio systems of the twenties including the first point-to-point Business Radio System in the AM broadcast band. The early public safety (law enforcement, emergency services) systems, and Taxicab services, will also be described. Mr. Meyer will explain how, with the licensing of the 450 MHz band, the concept of the "community repeater" and the first manual handoff cellular system was launched in 1949-50. He will talk about the advent of the 800 MHz allocations and Cellular, SMRS, Skyphone and Railphone applications. The presentation will detail the explosion of paging/personal portable communications, public service satellite systems, and satellite-aided emergency services.

About The Speaker

Mr. Stuart Meyer is a Senior Life Member of the IEEE and past president of the Vehicular Technology Society, where he is now an active board member. He is past president of Hammarlund Mfg. Co., has held engineering and management positions at Link Radio, RCA, Allen B. DuMont Labs, and E.F. Johnson Co. In addition, he is currently a consultant to Ericsson GE Mobile Communications, Inc., Lynchburg, VA.

All Welcome

You do not need to be an IEEE member to attend. Come, and bring your friends. There is no charge for admission. Light refreshments will be served.

Time: 7:30 PM, Tuesday, December 14, 1993.

Place: GEC Marconi, 164 Totowa Road, Totowa, N.J.

Further Information: Mr. Melvin Lewis (914) 968-2500, ext. 2304 or (201) 337-4767.

**See Page 4 for
important "Town
Meeting" on
December 15, 1993.**