ELECTRO/93
In New Jersey

The ELECTRO/93 Professional Program Committee has selected 23 papers for presentation at the upcoming ELECTRO exhibition and conference, April 27-29, 1993. The ELECTRO exhibition will be held at the new Raritan Center in Edison, New Jersey. The conference sessions will be presented nearby at the Holiday Inn Raritan Center. Sessions will be divided into vertical subject tracks and will explore such areas as computer technologies, communications technology, competitiveness, advanced technologies, and general interest topics.

For more information about ELECTRO/93, write to: ELECTRO/93, 811 Airport Blvd., Los Angeles, CA 90045. Tel: 561-641-0177; ELECTRO/93, 7990 Organics Pkwy., San Diego, CA 92121. Tel: 619-554-6534. ELECTRO/93 is supported by Region 1, CNEC and METSAC, the Institute of Electrical and Electronics Engineers, and the New York and New England Chapters, Electronics Representatives Association. It is produced by Electronic Conventions Management, Los Angeles.

NY/LI/PS & HAS
Tour OF COGEN
Technologies Plant

On Wednesday, March 24, 1993 at 2:00 PM, join us for a tour of the COGEN Technologies Plant in Linden, N.J.

Take this opportunity to learn and see about the largest non-utility cogeneration plant in the U.S. The tour is limited to 20 people and is for NY/LI members only. Advance reservations sold out by the end of February.

Contact: George Marotz at (212) 460-2123.

Professional Activities Committees for Engineers NEWS
By Richard F. Tax

This month we will hear from Frank Lord, Senior Editor of IEEE's "Vehicular Technology Society Quarterly." Frank has been a leader in the IEEE and we served together on the USAF Manpower Committee.

WHAT HAPPENS NOW?
The fear state in which the engineering community finds itself at present has developed for quite specific reasons. The very beginning, the rise of the MBA schools, goes back 30 years. The main influence may be categorized as foreign competition, unfavorable climate, drop in demand and increased supply.

While the United States, through biening neglect, has been allowing an unfavorable climate to become established, other countries have been overtaking us economically, so that we must now fear the day will come when we may lose the markets. The harmful notions that have hurt our position a great deal are the concentration on close horizons such as the next quarter's bottom line and the concept of amassing fortunes through manipulation.

A large factor in the drop in demand has been the cutback in defense spending which had been accounting for approximately 15% of the total demand. The impact of this drop was intensified by the fact that there was no transition plan to shift human resources to other programs such as space and civil works. At the September 1991 EMG Conference on Engineers in America's Future, a Defense Department representative revealed that DOD did not do any planning in the area of technical manpower, but just counted on obtaining such personnel from the existing vast pool whenever needed. There was no real effort to make a transition or to train people when the process was reversed.

At the same time that demand is dropping, the Administration is encouraging young people to stay in science and mathematics so that they can be prepared to participate in our industrial society. No spokesman for the Administration dares go so far as to suggest that such study is a preparation for college work leading to a desirable career in engineering. At the same time, Congress further increased the potential supply of engineers by passing a new Immigration Law which provides a new category for technically trained people. There seems to be no concern for the opportunities that would be lost by young people who are already here.

We see the plan from both angles, but the Administration has already shown that influence factors that affect you, write or phone legislators when appropriate.

The IEEE

Videoconference Calendar for 1993

Via satellite Videoconferences IEEE Seminars have been announced. They are:

- May 27: Delivering Products for the Global Marketplace
- June 17: Technical Currency of the Engineering Workforce
- September 30: Product Engineering
- December 2: Moral Analysis

Any questions should be directed to Richard G. Estock (908) 388-5110.

MARCH, 1993

North Jersey Section PACE • The Institute of Electrical and Electronics Engineers

Networks

North Jersey Section PACE: Financial Planning Workshop For Retirement

At the March 11, 1993, meeting of the North Jersey Section's Professional Activities Committee, the topic will be "Financial Planning For Retirement." The speaker will be Edward Landau.

About The Talk

A secure and sensible retirement requires careful planning. This workshop will address the many decisions the engineer nearing, or already in, retirement must face. Topics to be covered include: IRA's and pension, rollovers vs. forbidden gains, the law affecting 401K, rollovers, risk management, Medicare and other health insurance options, taxable vs. tax-exempt investment vehicles, social security "when to take it" and minimizing estate and inheritance tax. The workshop will also examine how to anticipate retirement needs and how to best hedge against inflation.

About The Speaker

Edward Landau is a Personal Financial Planner with IDS Financial Services, an American Express Company. As a financial planner, he is licensed by the National Association of Securities Dealers, members of the National Association of Insurance and Securities licenses. Before becoming a financial planner, Mr. Landau served over twenty years as an FD Design Engineer, Consultant and Engineering Manager.

Time: 7:30 PM, Thursday, March 25, 1993

Place: JCPAL, Co., 300 Madison Ave.,

Further Information: Robert Sinusis (201) 229-3941.
North Jersey Section Activities
MARCH

MARCH 1, 1993—"Orthopaedic Protocols 1985: Biomechanical Principles for Footwear Design"—Meten EMBRS & NY Academy of Medicine, 7:30 PM, NY Academy of Medicine 5th Ave. at 103rd St., NY. Joel Levitt (718) 891-4400.

Mar. 2—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Towota Rd., Totowa, NJ. Al Connely (201) 616-0755.

Mar. 10—"Optoelectronics Industry Show '93 & Optoelectronic Seminar II—Optics in Computing"—NJIT Center for Microwave and Lightwave Engineering, North Jersey Section IEEE & EITC Group Room, 2:00-5:00 PM, NJIT, Alumni Center, Newark. N.J. Dr. Whitman (201) 596-5700/2922.

Mar. 11—"Financial Planning Workshop For Retirement"—North Jersey Section PAC, 9:00 PM, PPC, 300 Madison Ave., Morristown, NJ. Robert Binaus (201) 228-3941.

Mar. 17—"Harmonics Solutions"—NYU PDS & IAS, 5:30-7:30 PM, Gibbs & Hill, 11 Penn Plaza, 5th Floor, NY. Max Hansen (201) 992-1916.

Mar. 17—"Future Trends—Internetworld"—NY Consultants' Network, 6:00 PM, Con Edison Co., 18th Floor Press Room, 14th St. & Irving Pl., NY. For information call Jim Wetterman (212) 521-1495.

Mar. 24—"1993 Control Systems Seminar—Series I & Industry Show"—NJIT, North Jersey Section IEEE, 5:00-6:00 PM, garlic ICT-1400, Newark, NJ. Prof. Tim Chang (201) 596-3813.

Mar. 24—"Tour Of COGEN Technology Plants"—Advance reservations required. For details call George Maruoli (212) 460-2121.

Mar. 25—"Videoconference-Channels, Fringe and Non-Linear Dynamics"—North Jersey Section, 12 noon-3:00 PM, Edward Williams College Lecture Hall, (FDU Hackenback Campus), 150 Kotte Pl., Hackensack, N.J. For playback location see article. Richard Estock (908) 388-5110.

Mar. 25—"Challenges And Opportunities In The 1990s"—Northern N.J. IEEE Consultants' Network, 7:30 PM, GEC-Marconi Facility 150 Parish Dr., Wayne, NJ. Jim Boyd (201) 584-0329.

Mar. 31—"1993 Control Systems Seminar—Series II & Industry Show"—NJIT, North Jersey Section IEEE, 5:00-6:00 PM, garlic ICT-1400, Newark, NJ. Prof. Tim Chang (201) 596-3815.

Mar. 31—"Improvements In Distribution Feeder Protective Relaying"—North Jersey Section PES/IAS Society Chapters, 7:30 PM, JCP&L, Punch Bowl Rm., 300 Madison Avenue, Morristown, N.J. Ken Oele (201) 645-8481.

Upcoming

Apr. 7—"North Jersey Section Executive Committee Meeting"—7:00 PM, Plant 11, GEC-Marconi, 164 Towota Rd., Totowa, NJ. Al Connely (201) 616-0755.

Apr. 7—"1993 Control Systems Seminar—Series III & Industry Show"—NJIT, North Jersey Section IEEE, 5:00-6:00 PM, garlic ICT-1400, Newark, NJ. Prof. Tim Chang (201) 596-3813.

Apr. 21—"Computer Technology Court War"—NJ/NY Chapter of the Engineering Management Society, 7:00 PM (location to be announced later).

Apr. 21—"Imaging Systems—1993 Optoelectronic Seminar III"—NJIT, Center for Microwave and Lightwave Engineering, North Jersey Section IEEE & NJITE Graduate Student Chapter, 2:00-5:00 PM, NJIT, Alumni Center, Newark, N.J. Dr. Whitman (201) 596-5700/2922.

Apr. 22—"Videoconference—POSTIX: Delivering Open Systems Portability"—North Jersey Section PES/IAS Society Chapters, 12 noon-6:00 PM, Lecture Hall, Edward Williams College Lecture Hall, (FDU Hackenback Campus), 150 Kotte Pl., Hackensack, N.J. For playback location see article. Richard Estock (908) 388-5110.

Apr. 29—"BROADCAST/3—Baristan Center, Edison, N.J. (800) 877-2688 or FAX (901) 641-5117.


May 16—"The VISION Project—Automated Mapping and Facilities Management." PES/IAS/ISE Chapter, 5:30-7:30 PM, Con Edison Rm., 19th Floor Auditorium, 1400 St. & Irving Place, NY. (This meeting was postponed from March 16th). For information: Ray Amara (212) 576-2941.


W. Dexter Johnston, Jr. 
AT&T Bell Labs

"For contributions to optoelectronic materials and device technology."

Israel H. Kalish

David Sarnoff Research Center

"For the development of the first commercial process for the fabrication of complementary metal oxide semiconductor (CMOS) integrated circuits."

Robert L. Martin

Bell Communications Research, Inc.

"For technical leadership as an architect and implementor of telecommunications operations systems."
North Jersey Section: Chaos And Fractals Videoconference

The first North Jersey Section spon- sored videoconference will be held on March 25th. The topic is "Chaos, Fractals, and Bifurcations" and the presenter will be Dr. Robert L. Devaney, Professor of Mathematics, Boston University. If you are interested in video conferencing, please see to it that you get a AEA Petition to sign relative to this meeting. If you have any engineering acquaintances that are facing or being faced with the pros- pect of video conferencing, please let me know. This year 1992 was the worst year I have experi- enced for the video conference. In 1991. How can many of our IEEE mem- bers find positions if foreign engineers are not allowed to enter the US and take such positions at salaries far below normal rates?

The need to reform the USAA is long overdue, and I for one, have been very critical of it for many years, if not several years. Withholding funds seems to be the only way to make a statement. Maybe Region I should consider the solution.

But let's talk a few reasons behind the loss of membership in Region I, and certainly in Region I, many North Jersey members have been severely hit by a loss of engineering positions due to industry cut- backs. In 1970, there were 300 engineers, and the fact that a lot of unemployed people are in the area at a salary far below his level. In order to provide for his family, he accepted it. Isn't that a sad commentary. The answer is due to the relative lack of advanced training, who should be developing new 21st century technology, and advanced engineers who should be doing research in our schools just so he can live. Have the engineering opportunities in New Jersey as a result of such a loss of ex- cited engineers minds go untapped in this state.

Is North Jersey fast becoming an engin- eering desert? No, we could have added as much as the existing engineering nightmare in New Jersey, but let me now go on for engineering horror stories, I wouldn't have any at all.

Dr. William R. Klaczek

North Jersey PES/IAS:

Improvements In Distance

Oakland, NJ

Protective Relaying

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Dr. William R. Klaczek

Position Wanted

Seasoned Project Administrator and Sales Engineer with proven track record. Outstanding project management and communications skills. Diplomatic negotia- tor. Excellent written and oral communication skills.

Call for resumé. Merrill Rutman (211) 447-6041.

North Jersey Section:

Chaos And Fractals

Videoconference

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Dr. William R. Klaczek
New Jersey Institute of Technology
1993 Optoelectronics Seminar Series and Industry Show
sponsored by
The Center for Microwave and Lightwave Engineering
North Jersey Section IEEE & NJIT Graduate Student Association

Planning Committee:

II. OPTICS IN COMPUTING
March 10, 1993, Wednesday, 3:00-5:00 PM, Alumni Center

Smart Pixels for Optical Interconnections and Processors

Optoelectronics Technology for Computer Interconnections
Donald J. Chinn, David Sarnoff Research Center

Optoelectronics Industry Show
2:00-6:00 PM, Alumni Center

III. IMAGING SYSTEMS
April 21, 1993, Wednesday, 3:00-5:00 PM, Alumni Center

From Telephone to Tele-Presence
Kica Ganapathy, AT&T Bell Laboratories

High Definition Displays
M. Robert Miller, U.S. Army Electronics Technology and Devices Laboratory

Registration:
By mail, telephone or in person. Those who register in advance will be sent a map. There is no registration fee. Refreshments will be served.

Dinners:
Garden State Parkway to Exit 145, Route 280 East; take King Blvd. Exit 14A and turn right at the traffic light. Continue straight and after three traffic lights, turn right onto Central Ave, Humble Road, into campus. Proceed to the house, the attendant will direct you to reserved parking.
From Route 280 West; take the King Blvd. exit, make a left at the foot of the ramp, go downhill and make a left onto Englewood Ave. After four traffic lights, turn right onto Central Ave. Follow directions above.
For Information: Contact Dr. Gerald Whitman (201) 996-5709/3229.

1993 IEEE Vehicular Technology Conference
May 18-20, 1993
The North Jersey Section of the IEEE is hosting this year’s Vehicular Technology Conference, which has as its theme “Personal Communication—Freedom Through Wireless Technology.” The Technical Program will be organized into five major technical areas: Cellular Communications, Mobile and Personal Communications, Vehicular and Rail Communications, Wireless Personal Networks, and Wireless Local Area Networks. The Conference Technical Program will be held at the Sheraton Cliffside Hotel, Cliffside Park, New Jersey, May 18-20, 1993. The workshop is open to all IEEE members and nonmembers.

1993 Optoelectronics Seminar II, March 10
“OPTICS IN COMPUTING” Smart Pixels for Optical Interconnections and Processors
Stephen K. Forrest
Department of Electrical Engineering, Princeton University
Abstract: A common problem confronting the realization of optoelectronic interconnection technology is the ability to both perform logical operations and rapidly and simultaneously reconfigure the processor in a compact and simple manner. For example, while several “optical computers” have been demonstrated, they have suffered from a lack of reconfigurability and speed, thus limiting their ability to solve a wide range of computational problems. On the other hand, dynamic interconnections which have generally led to rapid computation. In our laboratory, we have recently demonstrated a fully integrated, optically powered, “smart pixel.” This circuit has the ability to operate as an optoelectronic amplifier, bistable switch, inverter and latch. Due to the use of optical powering of the individual pixels, circuit layout complexity, and active cross-talk between pixels is greatly reduced, thereby enhancing overall system performance. By making minor variation to the basic circuit, we can extend array to a 2D array of interconnections. In this talk, we discuss the design and implementation of these circuits.

Optoelectronic Technology for Computer Interconnections
Donald J. Chinn
David Sarnoff Research Center
The evolution of computing technologies has evolved to the point where the speed of processing dwarfs the progress in any other major technology in our lifetime. Since 1990, the processing power one could buy for a constant dollar has increased by sixfold. The next generation of optics must be the next technology to drive this growth. How, when and why will this take place will be discussed. This discussion will focus on the role of optics as an interconnect technology. The benefits here are: Bandwidth, Multiples of 1,000, and more. The role of silicon as the basis for logic and fast memory is likely to be challenged for a decade at least. However the promise of higher speeds and larger memories calls for a massive effort in the interconnect area. The introduction of optoelectronics into microcomputers would greatly increase the capability of the interconnect capability. This interconnect capability includes device packaging, signal transmission, interconnection protocols and overall interconnect architecture. As silicon devices offer high performance, low power, and cost together determine the capability of the interconnects to support the growth of the overall computer capability.

Posix is the topic of the second of seven 1993 IEEE Vehicular Technology Conferences being offered by the North Jersey Section. This live and interactive event will cover the latest in this interdisciplinary field. Attendance is open to IEEE members only.

Posix is an evolving and emerging set of software standards for open computer systems that have been developed by the U.S. Government, the European Commission and a wide range of countries. It is the cornerstone of future use of information systems. Consequently, this videoconference should be of great interest to computer scientists, data processing and technical managers, software engineers and software developers.

The agenda for the videoconference includes: basic principles of the Posix standards to both user application developers and system providers: how to implement the Posix standards within the context of other standards to accomplish specific functional objectives; the role of validation in obtaining the benefits expected of open systems, and how the capabilities and availability of the Posix standards can be applied to achieve application portability among different hardware platforms.

The agenda for the videoconference includes:
- A panel discussion on the importance of open system concepts in the industry.
- The expectations and current status of open systems; how to apply these concepts in the real world, and the essential role of conformance testing.

Sponsored by Digital Equipment Corporation, the presentation will be held by Jim Issak, POSIX Strategy Director for DEC. Other presenters will be Roger J. Martin, Manager of the Software Engineering Group of the National Institute of Standards & Technology; Dr. Eugene Sheaffer, Member of theTechnical Staff at Sandia National Laboratories.

A set of conference notes and copies of the viewgraphs will be available for $10 to those who register in advance. The workshop will be held on April 21, 1993, 10:00 AM-3:00 PM, at Princeton University, Fine Hall, Room 415. For a copy of conference notes, follow instructions below.

Playback of taped “POSIX” videoconference for those unable to attend the live interactive session will take place on April 22, 1993, 8:00 AM-9:00 PM, Room M 207, Fine Hall, Fairleigh Dickinson University. For a copy of conference notes, follow instructions below.

Time: 12 noon - 3:00 PM, Thursday, April 22, 1993. Playback 6-9 PM at location shown above.

Sponsor: The New Jersey Section IEEE & NJIT Graduate Student Association

Admission FREE to IEEE Members
Admission is free to IEEE members, other presenters and their guests. A separate application form for membership with payment of 1993 dues—$95 for regular

THE NEW JERSEY INSTITUTE OF TECHNOLOGY
1993 CONTROL SYSTEMS SEMINAR SERIES
The North Jersey Section IEEE
The Department of Electrical & Computer Engineering
Location: Gotsenburg Information Technology Center FTC-1400
March 21, 1993, Wednesday, 4:00PM - 6:00PM,
"Studies in Control Theory to Biomedical and Rehabilitation Engineering"
Dr. W. Repperger, Armstrong Laboratory, Wright-Patterson Air Force Base.

March 21, 1993, Wednesday, 6:00PM - 6:00PM,
"Real-time Models for Discrete Event Systems"
Professor P.J. Ramadge, Department of Electrical Engineering, Princeton University.

March 21, 1993, Wednesday, 6:00PM - 6:00PM,
"Nonlinear Control of Advanced Fighter Aircrafts"
Dr. G. Keeswes, Corporate Research Center, Grumman Corp.

Industry Show: 3-5 PM
March 21, 1993, Wednesday, 4:00PM - 6:00PM,
"Real-time Models for Discrete Event Systems"
Professor P.J. Ramadge, Department of Electrical Engineering, Princeton University.

March 21, 1993, Wednesday, 6:00PM - 6:00PM,
"Nonlinear Control of Advanced Fighter Aircrafts"
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For further information:
- Seminar and workshop details: Prof. Tim Chang at NJIT, (201) 596-3219 or by email: tchang@njit.edu.
- Advertising: Mr. Dave Harring Jr. at GEC Marconi, (201) 208-2767.

NY-Consultants’ Network: Future Trends—Internetworks
On March 17, 1993 the IEEE NY Consultants’ Network will meet 6:00 PM at the Conn Edion Company, 16th Floor Press Room, 14th Street and living area, NYC, (212) 661-4200 (6:00 PM). The talk will be on “Future Trends in Local Area Networks and Modern Internetworks.” The speaker will be Mr. Chuck Wade, Director of Systems Architecture at Bell, Baranek and Newman.

This seminar will cover the management of the modern internetwork with its rapidly growing size and components from many different vendors. This has implications and presents opportunities for consultants. Other future Spring meeting dates: April 15, May 17, and June 15, 1993.

For information call Jim Werdel (212) 321-9999 or Hulan Jack (212) 200-3049.