



The IEEE

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Research And Techniques In Cancer Treatment

On October 12, 1988, the Metropolitan Chapter of the Engineering in Medicine and Biology Section's Monthly Lecture topic is "Endoscopic Treatment of Gastrointestinal Cancer." The featured guest lecturer will be Dr. Richard S. McCray, Clinical Professor of Medicine, Columbia University College of Physicians and Surgeons in New York City. He will overview current research trends in the management of gastrointestinal cancer and discuss new devices and techniques being used in its treatment.

There will be an informal pre-lecture dinner (optional) in the Tower Building cafeteria at 6:30 PM.

Time: 7:30 PM, Wednesday, October 12, 1988. (Informal dinner starting at 6:30 PM.)

Place: Rockefeller University, Tower Building, Room 305, York Ave. & 66th St., NYC.

Further Information: Ben Caref (718) 270-1568; Vijay Kowtha (201) 932-4803; Raphael Henkin (718) 630-3738.

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. 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.

IAS To Nominate 1989 Officers

On October 20, 1988 the North Jersey Section Industry Application Society will meet to select officers for the Chapter for the coming year.

All IAS members are invited to attend. Nominations from the floor will be accepted.

Time: 7:00 PM, Thursday, October 20, 1988.

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

Further Information: Les Gabriel (201) 474-6382.

PACE NEWS

By R. Tax

This month I have turned a part of this column over to the chairman of the Professional Activities Council for Engineers—George Abbott. His article is reprinted from "IMPACT" the PACE newsletter. PACE, the Professional Activities Committee for Engineers, represents the professional concerns of IEEE members on the local and regional levels. It is the network by which these concerns are carried from members to the IEEE United States Activities Board and the IEEE Board of Directors and from those bodies throughout the membership and to the public at large. The PACE goals are member service, promoting awareness of issues of concern to the profession among the membership and the public, and action on the local, state and national levels to help solve problems. And now, our National PACE Chairman, George Abbott.

The PACE Principle—The Glass Is Half Full

We have all heard the story about the glass with half its contents gone and half remaining; to the pessimist, it's half empty, but to the optimist it's half full. As PACE leaders, we sometimes see the half-empty end, but I'd like that to change. I'd like to see an attitude of realistic optimism pervade all our activities. I don't mean we should ignore the many real problems facing our profession today, but rather we should face those problems with the conviction that we can and will find ways to resolve them.

By definition PACE leaders are concerned activists. They are problem seekers and solvers. They don't look for trouble, but they are sensitive to concerns and are looking for improvements. Solving professional problems is not always easy. These problems are complex and often involve government, industry, and other professional organizations. Solutions may involve the laws of the land, personnel and employment practices, professional ethical principles, or policies on intellectual property. Not infrequently the problems involve conflicting interests of different IEEE groups. Arriving at solutions often requires extensive negotiation and compromise, and as we all know compromising can be very difficult.

An important aspect of our work is identifying problems. Often sincere volunteers interpret a particular situation as a problem requiring attention, but they are unable to convince anyone else of its importance. Conversely a serious situation may be ignored for a time, and when it is finally recognized, the Monday morning quarterback has a field day.

Being a PACE volunteer is hard work, which is not always appreciated. Solutions don't always please everyone. Sometimes people who showed no interest in helping are the most vocal critics of our efforts. Sometimes, after long efforts no solution is arrived at, or even worse, a past solution is negated by a new problem. All of this can be very frustrating. It's no wonder the PACE volunteers get worn a little thin.

We have several ways to improve our effectiveness in PACE, and I think that these suggestions also apply to other IEEE activities:

- We must be realistic in our expectations and flexible in our approaches. Not all problems will yield to our initial efforts. We must be prepared to compromise. We must be ready to accept a partial solution rather than none at all.*
- We must improve communications both ways. We have to know what members are concerned with. Members' priorities should be*

at least as important as our own in directing our efforts. We must also make sure that members know what we have done and what we are doing.

• We must keep members informed. We must help them understand how we function—what we can and cannot do—and make them aware of specific accomplishments. Much of the criticism that has been leveled at PACE, USAB, and IEEE reveals a lack of understanding. Critics assail us for not doing things that we really cannot do, maybe should not do, or choose not to do for good reason. Because we are not always as effective as we might be in disseminating information, it's easy to assume that we have not accomplished much.

As volunteer leaders we should be enjoying ourselves, since part of enjoying is feeling that we are accomplishing something and that our efforts are appreciated, or at least recognized. To a large extent, it is all up to us.

George F. Abbott

Since IMPACT is basically a PACE newsletter George is writing to and about our PACE volunteers. However, it's important for you to know as much about your professional society as possible and also about the volunteers that make things happen. So, I have decided to keep you and other engineers more informed about IEEE's activities. I can start by passing George Abbott's comments on to you. Communication is important and our readers can help by passing information on to their associates.

George ends with, "...it is all up to us." Well George, there just aren't enough of us. In this regard, I see the glass pretty near empty. On the other hand, I see and meet many talented engineers and engineering project leaders in our field. I fully believe they have the ability to solve our problems, improve our professional status and influence our industry and nations economy. They can make things happen. In this regard, next to the empty glass, I see a full pitcher.

George, I am concerned. How can we tap or tip the pitcher to fill the glass? How can we tap this wealth of engineering talent and encourage them to join us in solving our professional problems? We have the resources but, we need the help of our members if we wish to do more.

Any suggestions would be appreciated.

George, you have got to know what we're up against. Most of the engineers I know are involved or would like to be involved in design and development. They believe their engineering skill levels will improve and be enhanced primarily by, in depth, engineering practice. Not having this opportunity to practice their profession and enhance their engineering skill level makes them very bitter.

I believe they blame IEEE and our leadership for this and their other problems. They bear a lot of animosity towards our Board of Directors and IEEE in general. In this regard, our glass appears to be badly soiled.

George, you mentioned communications and we know this is very important. We are not reaching the members or the even larger pitcher full of engineers that are not members. Somehow, we must convince these engineers that our burden is too great and we need their help. It is unfair to fault the B.O.D. and other volunteers that contribute their time to IEEE activities. Our efforts would best be spent providing our B.O.D. and leaders with the solutions to our problems.

Some way we must reach these engineers and show them how, through IEEE activities, they can help us improve our system, our profession and our industries.

Until this happens, we will just have to try harder. George, knowing that you and others are trying just reminds me that our glass is definitely half full.

Aspects Of Instrumentation In Land Mobile

The New York, Long Island and North Jersey joint Instrument and Measurement Society will meet on November 17, 1988 to hear a talk on "Aspects Of Instrumentation In Land Mobile Over The Years." The speaker at this meeting will be Stuart Meyer, President of the Vehicular Technical Society.

Pre-Meeting Buffet

There will be a buffet starting at 6 PM on a first-come-first-served basis.

Time: 7:00 PM, Thursday, November 17, 1988. (Buffet starting 6:00 PM.)

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

Further Information: George D. Gaul, Chairman I&M (201) 798-4403; Jerome Friedman, Treasurer (201) 964-6200; Ken Jacobsen, Secretary (201) 964-6200.

CCITT X.400 Tutorial Overview

At the October 26, 1988 meeting of the North Jersey Joint Computers and Communications Society, the topic will be a tutorial overview "CCITT X.400 Recommendation For Electronic Messaging." The speaker will be Mr. Charlie Combs.

About The Talk

In 1984 the CCITT adopted a series of standards covering the handling of interpersonal messages commonly referred to as Electronic Mail. Since 1984 the CCITT has been refining the messaging services and has defined the supporting Directory Service. "Understanding X.400" is a technical exploration of the new and related 1988 CCITT X.400 recommendations from several perspectives:

- As an X.400 service user
- As a private X.400 service provider
- As a public X.400 service provider
- As an X.400 implementer.

The recommendations are identified and their new organization is described. The modeling and abstraction language used in the recommendation is explained.

About The Speaker

Mr. Charlie Combs has over 25 years experience in designing and developing

software and hardware based data communications systems for circuit-switched and store and forward applications. Mr. Combs is an active member of the National Bureau of Standards OSI Workshop, where implementation agreements are reached on X.400. He is a principle with CRC Computing, Inc., and supports the public communication service providers.

Time: 8:00 PM, Wednesday, October 26, 1988.

Place: Bell Laboratories, Murray Hill Auditorium, Berkeley Heights, N.J.

Further Information/Directions: Norman Heffinger (212) 607-6716.

Apologies

The Reliability Society would like to apologize to our Jewish IEEE members for the poor scheduling of our September talk. We recognize that Yom Kippur obligations prevented many of you from attending the September 20 talk on the Space Shuttle. We hope that you understand that this was a complete oversight on our part, and not intentional. We've been having these meetings on the third Tuesday of every month for the last 3-1/2 years. Unfortunately we didn't check our calendars closely enough this time.

Please accept our apologies. We will assure that this does not happen in the future.

NJ Chapter IEEE Reliability Society & The New Jersey Institute of Technology Present

A Symposium On Testability

Tuesday, October 18, 1988 - 2:00 PM - 8:00 PM
New Jersey Institute of Technology, Newark, N.J.

The Symposium will include the following invited papers:

Keynote Address	Col. Robert T. Pinnizzoto (USAF) Air Force Logistics Command
Testability Impact On Reliability	Jon L. Turino - President Logical Solutions, Inc.
Diagnostics Impacts On Fault Tolerant System Reliability	Frank H. Born - Program Manager RADC/Griffiss AFB
Design For Testability	Mary E. Nolan - Systems Analyst Geordano Associates, Inc.

FEE: \$50 for IEEE Members; \$60 for Non-Members. (Fee includes proceedings and dinner.) There will be no charge to IEEE student members or NJIT students. For more program information, contact Hank Moss (201) 785-6458.
PLEASE REGISTER BY OCTOBER 11!

Specific details for directions, parking, campus location, lodging, dinner and final agenda will be provided upon receipt of the registration form and in future issue of NEWSLETTER.

Registration for "A Symposium On Testability"

To: John C. Wronka, AT&T Bell Laboratories, RM 14H323, Whippany Road, Whippany, N.J. 07981. Please make checks payable to NJ Chapter IEEE.

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1:30-2:30 Dr. Arthur Silver: "MICROWAVE and GIGABIT SUPERCONDUCTIVE ELECTRONICS"

8:15-9:30 Dr. Christen Rauscher: "LINEAR and NON-LINEAR APPLICATIONS of GaAs FETs"

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MICROWAVE AND GIGABIT SUPERCONDUCTIVE ELECTRONICS

Superconductive electronics is an integrated circuit technology which can provide the highest performance detection and signal processing circuits from dc to the submillimeter-wave region and the fastest digital logic and memory. This performance is achieved by combining the fundamental properties of superconductors, the superconducting Josephson tunneling diode, and the cryogenic environment required for superconductivity.

This lecture will review the fundamentals and historical development of superconductive electronics. Its inception traces from the successful discoveries of flux quantization, the Josephson effect, and the SQUID (Superconducting Quantum Interference Device) in the early 1960's; its application is a direct consequence of the development of a thin film integrated circuit technology for computer applications. From a lead alloy technology in the 1970's, we now have a highly developed niobium circuit technology which is capable of operating at picosecond speeds and into the submillimeter-wave region.

The discussion will cover the performance and application of such components as quantum-noise limited microwave and millimeter-wave amplifiers, mixers, and video detectors, voltage-controlled oscillators, analog correlators and convolvers, and analog-to-digital converters. The recent discovery of superconductivity at temperatures as high as 95 kelvin may herald the widespread use of superconductive circuits. Prospects for development and application of high temperature superconductive electronics, and its possible impact on semiconductor devices will be explored.

About The Speaker

Dr. Arnold H. Silver is a Distinguished Microwave Lecturer for 1988/89.

Dr. Silver joined TRW Space & Technology Group in 1981 after serving as Director of the Electronics Research Laboratory at the Aerospace Corporation for 10 years. Prior to that, he was with the Scientific Laboratory of the Ford Motor Company at Dearborn, MI for 12 years. He is a Member of the IEEE, a Fellow of the APS, and has been active in the superconductive electronics community including service as Technical Program Chairman of the 1976 Applied Superconductivity Conference and a member of the Organizing Committees of the Workshop on Superconductive Elec-

tronics and the US-Japan Workshop on Josephson Electronics.

Silver has been active in the application of superconductive electronics since his invention of the SQUID at Ford in the early 1960's. At Aerospace, his

Silver received the BS, MS and PhD degrees in Physics from Rensselaer Polytechnic Institute. His dissertation was on the application of nuclear magnetic and quadrupole resonance effect in the study of the structure of solids. He continued that research at Ford until his work on superconductive devices. He has authored more than 50 publications and numerous patents.

LINEAR AND NONLINEAR MICROWAVE APPLICATIONS OF GaAs FETS

About The Talk

This talk focuses on the versatility of GaAs FETs and their ability to efficiently perform a wide range of microwave and millimeter-wave circuit functions. Specific topics to be highlighted include: Active filtering, nonlinear modeling, voltage-controlled oscillation, frequency multiplication, signal mixing optical detection—with multiple functions often performed simultaneously by the same transistor. Emphasis will be on outlining the conceptual and theoretical underpinnings relevant to each application, and demonstrating practicability of each approach with hardware examples.

About The Speaker

Christen Rauscher was born in Boston, MA on November 4, 1944. He received the diploma in Electrical Engineering and the doctorate degree in 1969 and 1975, respectively, both from the Swiss Federal Institute of Technology, Zurich, Switzerland.

From 1969 to 1976, he was employed as an Assistant and Research Associate at the Microwave Laboratory of the Swiss Federal Institute of Technology, where he conducted research on computer-aided tolerance optimization of microwave active circuits and on IMPATT power amplifiers. He held an international fellowship from the Swiss National Science Foundation from 1976 to 1978. He spent this time at Cornell University, Ithaca, NY, and the Naval Research Laboratory, Washington, DC, investigating the nonlinear behavior of GaAs MESFETs. Since 1978, he has been employed at the Naval Research Laboratory, Washington, DC. His research interests are focused on nonlinear phenomena and optical signal interactions in microwave and millimeter-wave active semiconductive devices.

Dr. Rauscher is the recipient of the 1987 IEEE Microwave Prize.

PACE Meeting

The North Jersey Section's Professional Activities Committee will meet on Thursday, October 13, 1988. An informative talk and slide presentation titled "Age Discrimination Is Against The Law" will be followed by questions and participation from the audience. The speaker for the evening will be Richard W. Plummer P.E. Vice-Chairman of the IEEE/USAB Age Discrimination Committee and author of IEEE's "PACE Guide To Age Discrimination."

Copies of the "PACE Guide" will be available at the meeting.

Refreshments will be served affording you a relaxed atmosphere to meet the speaker and socialize with your friends and associates.

All IEEE members and guests are invited and encouraged to attend.

Time: 7:00 PM - 10:00 PM, Thursday, October 13, 1988.

Place: ITT Auditorium (next to the Tower), 500 Washington Ave., Nutley, N.J.

Further Information: Jacques Geyer (201) 393-2998; Raymond Sears (201) 386-2259.

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IAS Seminar On Co-Generation And Resource Recovery

On November 12, 1988 the North Jersey Section Industry Application Society will present a seminar entitled "The Electrical Aspects of Co-Generation And Resource Recovery." The seminar consists of three presentations covering the primary areas of concern to the electrical engineer. The seminar will be followed by a buffet luncheon.

The interface between the alternate (co-generated) power source and the public utility will be the first segment of the seminar. In this, requirements and provisions for power transfer will be discussed.

In the second segment, plant and generator protective relaying will be described. This will provide information on the necessity for protective relaying circuits in an environment where alternate power sources must work in harmony with the public utilities.

The third segment will present the electrical control panel, metering control, alarms and monitoring necessary for efficient operations between both power generating sources.

These three in-depth talks will be presented on Saturday morning November 12, 1988 starting at 9:00 AM and ending by 1:00 PM. The location is the Meadowlands Hilton, 2 Harmon Plaza, Secaucus, N.J.

The cost for this complete technical discussion, including the luncheon, is \$60.00. In order to provide the presentation at this price, it is essential that reservations with a \$30.00 per person deposit be made by October 22, 1988. The remaining \$30.00 will be accepted at the door. A check or money order payable to "North Jersey Section IEEE" for the deposit should be sent to: Mr. Vittal Rebbapragada, Manager of Electrical Engineering, Burns and Roe Enterprises, 800 Kindermack Road, Oradell, N.J. 07649.

Coffee and danish will be served before the talks commence and coffee will be available throughout the morning. A buffet luncheon will be served following the seminar to allow discussion of various side issues at length.

Time: 9:00 AM - 1:00 PM, Saturday, November 12, 1988.

Place: Meadowlands Hilton, 2 Harmon Plaza, Secaucus, N.J.

Further Information: Dave Dietsche (201) 829-7344.

Joint Computer/Communications Society Chapter Announces Future Sessions

Members of the Chapter Executive Committee, meeting last spring nominated Norman Hettinger as Chapter Chairman for 1989. Norm was Chapter Chairman several years ago. Norman is employed in the Marketing Department of RCA Globecom which was recently acquired by MCI.

At the Executive Committee Meeting plans for future sessions were discussed. In general, sessions are held at 8:00 PM, with a pre-meeting dinner for the speaker at which reservations may be taken by the coordinator. We are attempting to hold two meetings a month, alternating the locations between AT&T-BTL Murray Hill and ITT, Nutley. Because of the intense interest these days in communication protocols, we have decided to organize five sessions on this subject. These sessions will be held at AT&T-BTL Murray Hill, on the last Wednesday of every month.

The following calendar lists the dates, subjects, program coordinator for each session. If you have a subject in mind that you think would make a good subject for a future session, call up any of the session coordinators whose numbers are given below.

FALL 1988

Date	Topic	Location	Coordinator(s)
Oct. 26, 1988	Protocol Tutorial #1	AT&T-BTL Murray Hill	Norm Hettinger (212) 607-6716 Sven Sternung (201) 284-2111 George Parowski (212) 460-6030
Nov. 23	Image Processing	ITT Nutley	Bill Monaghan (201) 575-5552
Nov. 30	Protocol Tutorial #2	AT&T-BTL Murray Hill	(See Oct. 26)

SPRING 1989

Jan. 18, 1989	Neural Nets	ITT , Nutley Nutley	Sven Sternung (201) 284-2111
Jan. 25	Protocol Tutorial #3	AT&T-BTL Murray Hill	(See Oct. 26)
Feb. 15	Flood Control	ITT Nutley	Alex Brown (201) 284-2570
Feb. 22	Protocol Tutorial #4	AT&T-BTL Murray Hill	(See Oct. 26)
Mar. 22	Cryptography	ITT Nutley	George Pick (201) 884-6040
Mar. 29	Protocol Tutorial #5	AT&T-BTL Murray Hill	(See October 26)
Apr. 19	Point/Point Microwave	ITT Nutley	George Parowski (212) 884-6040
Apr. 26	Operating System Standards (UNIX)	AT&T-BTL Murray Hill	George Pick (201) 884-6040
May 24	MUMPS - A popular language used by hospitals and some businesses	TBD	Dave Perry (201) 325-8415
May 24	Wiring	ITT Nutley	Jim Morgan (201) 766-0969
May 31	Operating System Standards for PC's	AT&T-BTL Murray Hill	Har Dyal (201) 785-7561
June 21	Newark Airport Communications	Airport	Dave Perry (201) 325-8415

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Don Ciccolella is Branch Manager of the Saddle Brook, New Jersey office. He has a BS in Physics from Manhattan College and an MS in Physics from Adelphi University. He was a Senior Engineer in the Research Labs of Hazeltine and a Software Manager with Mission Sciences Corp. responsible for computer simulation and modeling systems. He is a member of IEEE.

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