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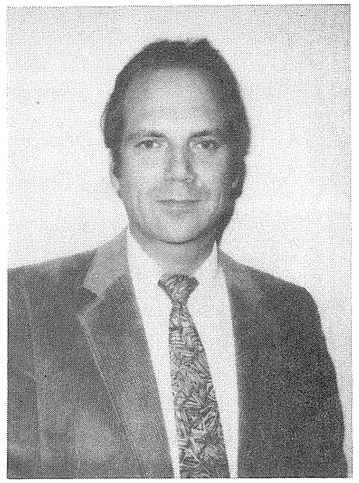
Brain Images Using Neuromagnetism

At the December 10, 1986 meeting of the Metropolitan Chapter of the Engineering in Medicine and Biology Society, "Developing A Functional Image Of The Brain Using Neuromagnetism" will be discussed by Samuel J. Williamson PhD, Professor of Physics at New York University.

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

Time: 7:30 PM, Wednesday, December 10, 1986.
Place: Rockefeller University, Tower Building, Room 305, York Ave. at 66th Street, NYC.
Pre-Meeting Dinner: 6:30 PM, Tower Cafeteria.
Further Information: Mark Restivo (718) 836-6600, ext. 318 or 160; Ben Caref (718) 270-1568.



A CLARIFICATION

The signed article by Walter Nail titled "Who's Smoking What?" which appeared on page 7 of our October issue, was a "Letter to the Editor" and should have been prominently labeled as such. This would have made it clear that the article represents the views of Mr. Nail and not those of the North Jersey Section or the IEEE.

As stated on page 8 of the same issue in the "Chairman's Corner" under the paragraph 'Age Discrimination':

"Please note that we present all views in North Jersey to clear the air and in hope of providing a solution to a problem."

The Editor accepts full responsibility for failing to identify Mr. Nail's response as a "Letter to the Editor" and apologises for any misunderstanding resulting from this oversight.

grants and funding. In addition a national program of government-industry/university matching grants is required to alleviate the continuing problem of obsolete and deteriorating equipment and facilities in engineering schools.

(8) To improve the qualification of students intending to study engineering, it is essential to increase the number of high school graduates who are literate in science and mathematics. Written and oral communications skills also need improvement at the secondary level.

(9) The under representation of women and minorities in the engineering profession deprives our nation and our profession of outstanding practitioners. The IEEE is committed to correcting this problem. Special efforts are needed in math and science preparation in precollege years.

(10) Computers, computerized instruction and televised education can be powerful educational tools which have contributions to make to the quality and productivity of our educational system. These should be exploited to an increasing extent.

(11) The engineering community has an obligation to assist the media in informing the general public and various special consistencies about the nature and status of technical careers and the contributions of engineering to society. The IEEE will help develop appropriate information sources for the media.

(12) The IEEE believes that membership in technical professional societies is important in improving engineering education and practice.

Letter To The Editor:

Max Schindler breaks a 10 year silence based on my earlier letter on age discrimination. A reasonable guess is that my letter merely provided him a convenient excuse to unload. So, although he attacks me on the basis of supposedly sole extrapolation from my former employment with AT&T "the world's most enlightened employer" and denigrates what he calls my theory of natural selection, (in a group, the promotions go to the better employees on average) I don't take it personally. Schindler illustrates the point I was trying to make. He describes one case of alleged age discrimination and thereby "proves" the case for pervasive age discrimination. In my letter I granted that age discrimination did exist. However, I attempted to make the case that apparent age discriminations could result from sound and legal business decisions made with high integrity because of below average performance of a group of older engineers.

Schindler's case, even if his description is to be taken at face value, certainly doesn't prove me to be wrong as he claims. It is worthy of note that Schindler had his day in court before the NJ Equal Opportunity Office, and he lost. He therefore denigrated the law and the office. I am in good company.

Sincerely,
EUGENE I. GORDON, Chairman & CEO, Lytel Inc.

curs with the conclusions and recommendations of this study. This position paper highlights and comments upon important conclusions and recommendations of the study which are of particular importance to electrical engineering education.

The practice of engineering is a critical element in the economic fortunes of industrialized nations. Because of the emergence of significant new electronic technologies, Electrical Engineering is a prominent major component among engineering fields. (As used here, Electrical Engineering refers to engineering in all IEEE fields of interest.) In recent years, the highly publicized problems of American international trade have focused attention on the practice of engineering in the U.S. and its engineering educational system. This concern over America's position in the international economical competition came at a time when calls of "crisis" came from engineering schools across the nation. The education establishment pointed to problems of faculty shortages, overcrowded classrooms, inadequate laboratories and teaching equipment, aging facilities, low graduate enrollments of U.S. citizens. Panels of business and professional leaders independently asked themselves whether some of the elements of America's problems might be related to the quality of the curricula of engineering schools.

Other concerns emerged related to the utilization of engineers in the work place, resulting from studies examining the type of work that engineers are asked to do and the availability of technical support personnel for engineers. There have been concerns about shortages of engineers in one field and surpluses in others, and the potential for technological obsolescence of engineers and the resultant job retraining required as fields change rapidly.

A further set of issues surrounding engineering relates to its sociological aspects. Engineers are concerned about their professional image and status in society. Somewhat related to this is the perception that the public has an inadequate understanding of technology and its role in modern society. The engineering profession has also encountered difficulties in attracting blacks, other minorities and women into engineering careers. Another overriding concern is that the quality of our precollege science and mathematics education is not what it should be. Students entering technical or nontechnical college curricula need sufficient technical grounding to participate as knowledgeable adults in a technological world.

It is clear that the Institute of Electrical and Electronics Engineers, as a professional society, must devote considerable effort to understanding, resolving or mitigating these issues and concerns, for they determine the environment in which our members must make their contributions to society. Furthermore, it is a hallmark of a professional society that its members are actively involved in a variety of ways with the education and training of individuals preparing to enter its practice.

The IEEE considers the conclusions and recommendations of the recent National Research Council study of "Engineering Education and Practice in the United States" to be an appropriate basis for IEEE positions and action programs. We believe that these conclusions apply generally to educational systems throughout the world. Moreover, the U.S. educational system has a worldwide impact since there are at least three hundred thousand foreign students in universities in the United States. We have therefore, analyzed the recommendations and the conclusions of the National Research Council study here as they apply to electrical engineering education. Based on these interpretations the IEEE will formulate appropriate policies and programs that will lead towards the satisfaction, alleviation or resolution of these concerns and a resultant enhancement of engineering education system.

In the United States, institutions of higher education and industrial firms have proven in the past to be adaptable; individual engineers too have been flexible in responding to change. This total engineering system, although resilient, is not invulnerable. Overall there is no need for actions that would fundamentally alter the function of this total adaptable system. However, there are problems of support, policy and practice, and educational curricula that should be addressed, if the responsiveness, effectiveness, adaptability and flexibility are to be maintained.

The IEEE has reached the following conclusions concerning the state of electrical engineering education in the United States. We state these here so as to establish the basis on which Institute action programs can be formulated.

(1) The shortage of qualified faculty continues to threaten the quality of Engineering Education. In the long run the solution is that engineering faculty careers must be made more attractive and rewarding. Major increases in fellowship support and engineering college research support are needed in order to attract more of the very brightest American engineers into graduate programs in engineering. Another mechanism for alleviating the faculty shortage is to identify, and utilize as faculty, individuals who have practiced with distinction in the government, military, or industrial concerns with or without doctoral degrees.

(2) The NRC report stresses that undergraduate engineering curricula must continue to emphasize a strong grounding in fundamentals of science, so as to lay the groundwork for a life long career. The IEEE, in addition, considers it important that any electrical engineering education program be permeated with principles of electrical engineering practice. In order to do this, the use of faculty with significant industrial experience should be encouraged, but most importantly, the faculty must be continually in touch with the current practice of electrical engineering.

(3) Engineers can be most productive in engineering work over their entire careers given appropriate work assignments and access to effective continuing education programs. Industrial and government organizations are encouraged to offer company support/reimbursement/released time for the continuing education of their professional employees.

(4) Industrial internship programs, including (cooperative) education programs, have a valuable role to play in undergraduate engineering education. IEEE members should take an active role in devising and encouraging such programs.

(5) The IEEE supports initiatives designed to foster closer ties between engineering colleges and industry and believes the number of such programs should be increased. The sponsorship of research by such entities as the Semiconductor Research Corporation and the National Science Foundation's Engineering Research Centers initiative should benefit academe and industry.

(6) Patterns of government support since the 1950's have led to research oriented and instruction oriented engineering colleges. Colleges of the instruction orientation do not benefit proportionately from the substantial government and industry funding for graduate education and research. The repercussions need to be explicitly addressed in programs which support higher education.

(7) Federal incentives, such as the industrial R&D tax credit, are essential for maintaining an appropriate level of equipment

Tour To Princeton Supercomputer

On December 10, 1986, the North Jersey MTT/AP is jointly sponsoring with the Princeton Section MTT/ED a tour of the Von Neumann Supercomputer Center at Princeton University.

This tour should prove eye-opening as this is one of the few Supercomputer sites in the United States, and also has one of the machines with computation speeds great enough to present microwave-type problems to circuit board designers.

RESERVATIONS REQUIRED

For reservations, please call Dick Snyder at (201) 492-1207 or Ben Epstein (609) 734-2584.

Time: Wednesday, December 10, 1986.
Place: Von Neumann Supercomputer Center at Princeton University.

Energy Center Tour

On January 22, 1987 there will be a tour of the Con Edison Energy Control Center sponsored by the Related Activities Committee. The Con Edison Energy Control Center is the headquarters energy dispatch center for its electric, gas and steam systems.

The comprehensive tour through this facility will be highlighted by a presentation on the sophisticated new System Operation Computer Control System (SOCCS). In this state-of-the-art energy management system, Con Edison has combined the latest computer technology with human engineering principles to provide the Con Edison bulk power system economically, reliably and safely.

Attendance must be limited to ensure good communication and a good tour. First come, first served. **RSVP by January 12, 1987.**

RESERVATIONS REQUIRED

Send stamped, self-addressed envelope to: Frank Doherty, Con Edison, 210 Westchester Ave., White Plains, N.Y. 10604.

Time: 5:30 PM, Thursday, January 22, 1987.
Place: Con Edison Energy Control Center, 128 West End Avenue (at 65th Street), NYC.
Further Information/Reservations: Frank Doherty, Con Edison, 210 Westchester Ave., White Plains, N.Y. 10604. (914) 993-6104.

Recruit Members To Win Gifts

YOU ARE INVITED TO JOIN THE METSAC COUNCIL GIFT CREDIT PLAN

You can get "Gift Credits" towards a gift of your choice.

Your METSAC Council has initiated a membership drive which can benefit you. For each new IEEE Member or Student Member that you bring in and is assigned to one of the METSAC Sections, you will get "Gift Credits." Two "Gift Credits" for each Member and one credit for each Student Member will be awarded to recruiters. Each "Gift Credit" is worth $3.00 and will be accumulated in your account for the duration of the drive, December 31, 1987. At that time you will be notified of the number of credits you have and you will be given a catalog of gifts from which to select your gift(s).

Below is a METSAC Council Gift Credit Form. Just cut it out and reproduce it as many times as necessary. Fill in your name (recruiter) and send it to IEEE Service Center along with your new member's application and dues payment. Or ask your recruit to attach it to his/her application. When the applicant is accepted by IEEE as a new Member or Student Member, you will be notified of your accrued gift credit.

If you have any questions on the drive please contact Mr. Robert E. Mendoza, METSAC Membership Drive Coordinator at (201) 430-7678.

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Assigned to:

Long Island ☐ New York ☐
North Jersey ☐ Princeton ☐

Radar Technology For The 80's And Beyond

"Radars Of The 80's And Beyond" is the title of a one-day seminar slated for January 26, 1987 at Uniondale, N.Y. Topics to be covered include:

Radar Fundamentals; Phased Arrays; Frequency Tradeoffs; Recent Developments in 2-D and 3-D Radars; Ultra-Low Sidelobe Antennas; Moving Target Detector and Displaced Phase Center Antenna Clutter Rejection Techniques; Signal Processing; Digital Processor Hardware and Architecture, systolic arrays (for FFT, adaptive nulling of jammers, voice recognition), distributed signal processors, wafer integration (for pulse doppler processing), silicon compilers, distributed beam steering. Impact of VHSIC/VLSI/VHPIC; Survey of 28 Digital Signal Processors; Components (Solid State: Discrete and Monolithic, UHF to X-Band; Tubes, Gyrotron); Trends in Millimeter Components and Systems; Synthetic Aperture Radar (Strip and Spotlight); Tracking (Mystery Taken Out of Kalman and GH Filters, All Explained In Simple Physical Terms); How To Look Like A Genius In Detection Without Really Trying: Constant False Alarm Rate Detection.

Time: 8 AM to 9:30 PM, Monday, January 26, 1987.
Place: Marriott Hotel, Uniondale, L.I., N.Y.
Fees: $235 IEEE Members; $250 Non-members; add $15 for registration after January 19.
Further Information: Dr. Eli Brookner (617) 440-5636 or (617) 862-7014.

Update On VCRs

The combined Long Island and New York Section Chapters of the Consumer Electronics Society will hold a technical meeting on Monday, December 15, 1986, in the offices of Gibbs & Hill, Inc.

The speaker will be Mr. Max Wexler, Vice-Chairman of the Consumer Electronics Society. He will discuss Video Cassette Recorders (VCR); their design (including the latest designs), usage and user maintenance.

We invite all interested parties to attend.

Time: 6-8 PM, Monday, December 15, 1986.
Place: Gibbs & Hill, Inc., Room 17A, 11 Penn Plaza, 7th Avenue between 31st and 32nd Street, NYC.
Further Information: Antenor Brutus (212) 613-5400, ext. 218.

IEEE Nameplates Now Available

The North Jersey Section of the IEEE is making desk nameplates available to all our members. These attractive engraved nameplates have an IEEE logo and your name (up to 15 characters) on a 2 inch by 8 inch blue background and are mounted in a gold colored base. The cost of each nameplate is $10.60 including N.J. sales tax.

Nameplates for names to 21 characters are available. These are 10 inches long and cost $12.72 including tax.

Fill out the form below or a copy of it and send it with a check payable to: "North Jersey Section, IEEE." Mail to the address below.

You can pick up your nameplate at the Executive Committee meeting or at one of the Society meetings.

Remember, the nameplate may have up to 15 or 21 characters including punctuations and spaces. Please type or print your name as you would like it to appear on the nameplate. Allow 2 weeks for delivery.

If you have any questions, call (201) 945-3000 during working hours or (201) 797-4366 in the evening.

To: Don Weinstein, 30-18 Grunstra Place, Fair Lawn, N.J. 07410

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PACE NEWS – By Richard Tax

IEEE Proposes Position Paper On Engineering Education & Practice

According to Section 15 of the IEEE Policies and Procedures, an IEEE Position Paper is a document – issued in the name of the transnational multidisciplinary Institute – developed to express a formal opinion on a specific topic. As a position paper, a document is subject to approval by the major IEEE Boards.

The following Position Paper "Engineering Education and Practice in the United States" has been initiated by the Educational Activities Board to update a 1982 position and cite a new study by the National Research Council.

The intended use of the Paper is "To urge improved quality in engineering education and to stimulate action plans to effect such quality improvement." If this Position Paper is approved, more of our IEEE funds will be allocated to and spent on Education or at least, in my opinion, education propaganda. According to this paper, we must also solve the problems of pre-college education, increase the salary of faculty members and provide them with more research.

Should we agree with this paper? Does IEEE need the additional burden and expense? Do not our academic associates, all four percent of our membership, already have other factions and societies representing their needs and desires?

I have too many problems with this Position Paper. My first negative reaction is to the glittering generalities, vague statements and unbelievable remarks. The already huge but unmentioned college growth in this country since 1960 alone will dispute a large part of this paper. Then, even with all the words and length of their paper, I'm still not convinced that quality is their goal.

Considering the problems our members are facing with under-utilization, layoffs, offshore competition, salary compression, loss in real purchasing power, etc., our limited IEEE dollars should be put to better use.

What Does IEEE Do For Me?

IEEE gives you the opportunity to participate. The Educational Activities Board's unapproved Position Paper is printed here for your information. It is important that you be aware of this paper since it will influence IEEE programs, spending and philosophy.

Participate! Mark up this Paper or a copy. Circle and check the lines or paragraphs you agree with and circle or cross out the lines and paragraphs you disagree with. If you prefer, just send in a note or comment to voice your opinion.

Attach your name, telephone number, place of employment and send it to this Newsletter (address on masthead). All names will be strictly confidential.

PROPOSED POSITION PAPER
on
"Engineering Education and Practice in the United States"

The recent National Research Council study of "Engineering Education and Practice in the United States" has provided a comprehensive review of engineering education. IEEE generally con-