



## COMMITTEE on SOCIAL IMPLICATIONS of TECHNOLOGY

ISSUE NO. 8 - NOVEMBER 1974

# Report on CSIT Workshop on ENGINEERING IN THE SERVICE OF SOCIETY: New Educational Programs

Attendees at the CSIT Workshop on Engineering in the Service of Society presented 25 papers and generated seven pages of recommendations from five working sessions on New Educational Programs. Titles will be found on page 11. These will be published in the Record of the Workshop which will be available for purchase from IEEE Headquarters in December 1974.

The Workshop was held August 26-27, 1974, at Carnahan House, Lexington, Kentucky under the joint sponsorship of the IEEE Committee on Social Implications of Technology and the IEEE Education Group and with the cooperation of the University of Kentucky, College of Engineering, Office of Continuing Education, the Technology and Society Division of ASME, and the Education Division of the American Nuclear Society. It was organized by Toni Robbi, RCA, and John Jackson, University of Kentucky.

Attendees included a sprinkling of deans and department chairmen, a professor of philosophy holding a BSEE, a company president, a professor of pharmacy, a Kentucky state government transportation executive, a student technologist, an IEEE Director, a political scientist, an executive of a social aid society and assorted engineers from industry and academia.

The keynote address was given by Dean John Truxal of the State University of New York. He described the programs at SUNY, Stonybrook, for education of engineers on their social influence and responsibilities and expressed his belief in the need to educate not only university administrators, but also, corporate executives in particular in the importance of wide-spread awareness among engineers at all levels of the impacts of their activities on society. Dean Truxal also stressed the need for bringing some understanding of technology to liberal arts undergraduates. The challenges that this task poses to traditional engineering departments is imposing.

Continued on page 4...

### IN THIS ISSUE

Report on CSIT Workshop on Engineering in the Service of Society.....	1
Letters.....	2
Associations for EE's, R. B. Rudd.....	5
More is not Enough, J. H. Cyr.....	6
Engineering in the Public Interest.....	8
Professional Activities.....	8
News, Notes, & Comment .....	9
CSIT Roster.....	10

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New subscriptions: IEEE members wishing to receive this Newsletter should write to: IEEE, CSIT Newsletter, 345 East 47th Street, New York, New York 10017.

The editorial staff invites letters and articles from readers. We are interested in publicizing news of all upcoming meeting, study groups, discussions, lectures, or workshops that in any way relate to the interaction between technology and society. Correspondence may be sent to any of the above editors. Material for publication must be received at least by the 7th of each odd numbered month.

## Letters

Dear Editor:

I thought that you or a member of the CSIT might be interested in a report recently published here "Living with Technology", and enclose a copy.

For those members living outside the States may I make a plea that before you use abbreviations in the Newsletter you spell out in full the organisation concerned. I counted ten unexplained abbreviations in Issue No. 6.

Yours sincerely,  
R. C. Winton  
London, England

Periodicals and reports in the area of S.I.T. are welcomed. As to the abbreviations problem, we will try to mend o.w. in future I. - Ed.

Continued.

Dear Editor:

I have received the CSIT Newsletter, Issue No. 6. Please send me the issues beginning with number one until last one. I have been reading your interesting and valuable publication.

We have structured a Committee on Social Implications of Technology in the Mexico Section of the IEEE; the idea originated in the Communications Society Chapter and has been spreading over the section. In Spanish: "Comité de Implicaciones Sociales de la Tecnología, CIST."

The first important activity is to cosponsor the INTERNATIONAL CONFERENCE AND EXPOSITION ON RESEARCH AND DEVELOPMENT OF TELECOMMUNICATIONS "MEXICON'74".

In this event two programs will be developed, the (formal) technical program and the Social Implications of Technology, "IST" (in this event: implications of technology of telecommunications). In the conference the technical and the IST program are complementary.

Very truly yours,  
Salvador Rodriguez  
Chairman, IEEE Communications Society Chapter,  
Mexico Section

EDITOR'S NOTES: The author of the following letters, is the editor of the IEEE Power Engineering Society Newsletter. Its stated policy is not to publish any letters to the editor.

Dear Editor:

I take issue with your reply to my letter printed in the June 1974 CSIT Newsletter, page 12.

Your editorial in the March Newsletter clearly states, and I quote: "Officials may request that a Newsletter reprint an article written by a corporate manager in an area of interest to his company (4)." The reference (4) was to the reprinting of the P. N. Ross article in the #35 November 1973 Power Engineering Society Newsletter.

My letter printed in the June 1974 CSIT Newsletter stated that... "the leaders of the Conference requested that it be made available through the PES Newsletter."

The leaders of the "Conference on Research for the Electric Power Industry", Washington, D. C. December 11-14, 1972, were not members of, or in any way related to, Mr. P. N. Ross or his company. The value of the article to the Industry is indicated by the deluge of requests for spare copies of the Newsletter, even including 40 copies from an engineering school of note. One of the country's largest electric utilities later borrowed the camera-ready copy to reprint for their employees.

To me this means there were no valid divergent views to the informative article.

Sincerely,  
E. W. Morris, Editor  
IEEE Power Engineering Society Newsletter,  
and Transactions on Power Apparatus Systems

Dear Editor:

(BART - The Other Side of the Coin)

The CSIT Newsletter indicates an interest in presenting divergent views on a subject. Such apparently is not the case in the illiberal presentations of the three "righteous" engineers released by BART management in March 1972. See issues 4, 5, 6 and 7 of the CSIT Newsletters. All CSIT references indicate there is but one side to the story, that of the three "martyred" engineers. CSIT Newsletters 5 and 6 invite support of this unilateral position. No request was made for information on the other side of the story. It is time that readers were given more of the facts.

As a resident of Contra Costa County since 1958, I have been close to the inspiration and growth of BART almost from the beginning. I know some of the early planners, particularly former Director and now Chairman of the San Francisco Bay Area Metropolitan Transportation Commission. I know several members of the consortium of engineering firms given the prime contract to design the system, consulting engineering firms having an excellent national record of design engineering capability. I know BART engineers, representatives of the car manufacturer, and major electrical suppliers. Above all, I ride BART, and talk to many of the passengers, who to date have helped ring up over 200 million passenger miles. If you want an enthusiastic report on BART service, ask the riders.

BARTD and its PBTB consulting design engineers set out on their promise that the public would have the best rapid transit system that modern technology could provide. It was to be a "design-for-the-future", more versatile and sophisticated than any inter-urban mass transit system in the world today. Extensive observations were made of other existing systems. A three mile test track was laid for the purpose of field testing various drives and control systems.

Eighteen months delay in final designs and equipment orders were caused by taxpayer's suits, negotiations with cities about rights-of-way, station locations, and types of construction to be used.

PBTB and BARTD had planned intensive tests of ten prototype cars to be followed by six months testing of the first ten production or revenue cars, before they were placed in revenue service. The design engineers, the manufacturers, Bart engineering and operating staff, expected that some early component failures, and equipment malfunctions, would occur, and needed this time for a "shakedown" of the equipment.

The public, however, was clamoring for service, which they themselves had delayed by taxpayer suits, debates over rights-of-way, location of stations, track location, etc. BART management decided to initiate service on one line with the first production cars, and do the "shakedown" tests in revenue service. It was during the first three months of this service that a minor component failure caused the car to fail to stop at the Fremont station. Bear in mind that in 200 million passenger miles to date, there have been no passenger fatalities or serious injuries.

Had BART been able to make the "shakedown" tests before starting revenue service, many of the element failures, and design change would have been discovered. Had the three BART engineers, Messrs. Hjortsvang, Blankenzee and Bruder been willing to cooperate and wait until such an "out of revenue shakedown" was completed, there should have been no dispute with their management.

Continued...



As I understand the situation, from unimpeachable sources, the three engineers were dismissed, not because they disagreed with management, but the way they went around BART management to serve their position. They employed a private consulting engineering firm, spent the greater part of 24 hours discussing their engineering position with him, and he then presented a report to the BART management. In the meantime the three engineers had gone around BART management, and had reported to some of the BART Board of Directors, and to the daily press.

It is my opinion that the above actions taken by the three engineers, involving the Diablo Chapter of CSPE, the press, and the Board members unfavorable to BART General Manager B. R. Stokes, were the cause of unnecessary involvement of the State Senate Utilities Committee, the California Public Utilities Commission, and Legislative Analyst A. Alan Post. It is a locally well known fact that the owner-publisher of the Contra Costa Times has a ~~relationship~~ with BART General Manager B. R. Stokes, who ~~on~~ July 1, 1974, to become executive director of the new American Public Transit Association (APTA), headquartered in Washington, D. C.

The State Senate Utilities Committee and Public Utilities Commission, long dissatisfied with BART's "deficit financing", and failure to provide for 1970 brand inflation, pounced upon the safety features and electrical component failures developed during "shakedown", as an entry to becoming involved. Just prior to revenue service in 1972 the State Utilities Committee issued its ultimatum to BART that they would not consider aid in additional funding unless back-up to the Westinghouse Automatic Train Control (ATC) Systems was provided. The ATC had been built to comply with the original consulting and design engineers' specifications. The "back-up" control selected was one designated by a panel of engineers which included Dr. Bernard Oliver (Hewlett-Packard), an engineer of established capability. An order for this back-up control was placed by BART (\$1.3 million), since it was not a requirement in the original design specifications. In May 1974 Dr. Oliver accused State Legislative Analyst A. Alan Post of misstating the facts of the Oliver recommendations, and the reliability of the original ATC system.

BART, on its own, employed TRW, Inc. (Thompson, Ramo, Woolridge), whose reputation is well established, to check and test the system adequacy of the original design of ATC. In a report submitted in March 1974, TRW, Inc. states: "Results of recent BART system tests indicate the extreme unlikelihood of any need for train protection beyond that provided by the existing (original) train control system, given that the circumstances of the tests are shown to be representative of the general system performance."

The report states further: "Based on that conclusion (the tests to date), the improvement in train protection achieved by the (\$1.3 million) SOR back-up system over that offered by the primary (existing original) train protection functions of the train control system cannot be shown to be significant."

Where does BART stand today? The Concord line has been operating completely automatic, without telephone dispatching, since March 1974. The Hayward and Richmond lines were put on full automatic control on May 1, 1974. Service through the trans-bay tube between Oakland and San Francisco is reliably expected to begin on Sept. 16, 1974, based on five minute headway between trains. The goal is to reduce this lead time to 90 seconds at an early date.

To repeat, over 200 million passenger miles since Sept. 1972, with no passenger fatalities or serious injuries. BART parking lots are crowded and overflowing, with consideration being given to double-decking in some locations. Some suburbs have developed their bus feeder systems to BART stations, and many others are in process of formation. It is a thrill to ride in comfort on this 80 miles per hour system, see the cars stop with doors at prescribed markings on the platforms, and know that you are riding for less money than the present parallel bus system, and at 20 to 25 percent of the cost of commute by automobile.

Back to the original point of this letter, all that engineers Bruder, Hjortsvang and Blankenzee had to do was to cooperate with the shakedown testing, and help work out the early component failures, and any needed changes in design. All of their early fears would have been answered.

Sincerely,  
E. W. Morris, Life Fellow, IEEE

The Editor Comments: Similar views by Mr. Morris have been published in Spectrum (October 1974) and Communications (September 1974). His comment regarding a BART management decision to "do the shakedown tests in revenue service" represents a unique application of engineering first principles—public clamor or no. His comment on the present status of BART masks the fact that the automatic train control computer has been programmed to include a "fake" train stop at the tube midpoint—by edict of the California Public Utilities Commission. Prior to his retirement, the writer was with Westinghouse (the automatic train control contractor) for 43 years.

#### ENGINEERING IN THE SERVICE OF SOCIETY: NEW EDUCATIONAL PROGRAMS -- Continued from page one...

##### Classification of the papers:

Life & Social Sciences (programs or courses) for engineering students	8
Technical courses for non-engineering students	3
Continuing education programs	3
"Novel" engineering programs	3
Socio-technological philosophies and modelling	6
"Special student" programs	2

##### Selected Recommendations:

Initiate joint educational projects with units outside engineering departments so that "students" appreciate the need to move outside their own specialities in order to contribute to their professional growth.

Schedule one-day retreats for faculty from engineering and liberal arts departments in order to promote collaboration on technology-and-society courses.

Make much use of case studies.

Encourage the view that an educated person should have an understanding of technology.

Engineering schools have the responsibility to provide courses for non-engineers on technology and society.

Professional recognition must be accorded to faculty members who teach courses on technology-and-society.

Continued on page 11...

# Associations FOR EE'S

**R. B. Rudd**

The Association of Scientists and Professional Engineering Personnel (ASPEP) represents research, development and design engineers, and scientists at RCA in the Camden, N. J. area. After certification by the National Labor Relations Board in 1945 as the collective bargaining representative for the professional community at RCA, a contract was negotiated with RCA covering salaries, pensions fringe benefits and all terms and conditions of employment, including a formal merit review system, layoff and rehiring procedures, a severance pay program and an arbitration procedure for the settlement of disputes between the parties. This contract has been renegotiated 17 times since 1945.

ASPEP is not unique within industry; similar organizations are to be found at Boeing, Lockheed, McDonnell-Douglas, Westinghouse, and among the professional community employed by the City of Los Angeles. A federation of organizations involved with the economic welfare of engineers and scientists (CESO - The Council of Engineers and Scientists Organizations) was founded in 1967.

The EE as well as a vast majority of the professional community in industry, found little reason to establish employee organizations for more than 20 years after World War II. During the period of 1950 to 1970 few petitions were filed with the National Labor Relations Board by any group seeking to represent professionals in industry. Typically an individual would take a position with a firm. If, after a year or so, the employer's programs in such areas as merit review were found to be deficient or nonexistent, or no cost of living increases were forthcoming, or fringe benefit programs such as pensions and hospital plans were inadequate, the professional contacted a placement specialist, set new objectives (usually salary), and left his or her place of employment.

In doing so the most unprofessional course of action possible has been taken. The same problems that had instigated departure were left for a replacement to encounter through this one-man "rebellion". No group leverage on employers was exerted, though the employers met to discuss such items as salaries, working conditions, and fringe benefit programs. Those meetings among employers were held -- and are held today -- to be certain that no participating company within that industry gets too far out of line. Thus, the individual in the past gained little by such "strikes" against the system.

In the late '60's a radical change occurred. Suddenly there were more engineers than jobs. New problems then arose. In some cases, the older and more costly engineers were the first to be laid off -- losing their pensions along with their jobs. Other companies scheduled overtime without pay -- (this is possible because a "professional" employee is exempt from the protection of the Fair Labor Standards Act, which provides a legal right to overtime compensation).

Editor's Note: The question of the Electrical Engineer as an employee has received little attention in the trade or professional publications -- usually in innocuous or general terms -- while corporate or management activities are routinely publicized. There exists an IEEE professional group devoted to engineering management matters. There are few structures dealing with matters related to engineers. This article is the first of several dealing with employee associations (which represent EE among others) and their impact on the field. Articles and letters by EE's of any shade of opinion related to this area are welcome. News items related to relevant employee association activity in any IEEE region will be considered for publication.

Under existing law, EE's can find effective means to correct inequities at a place of employment by the establishment of a bargaining unit (an association, a guild, a union).

Of major concern is the description of what under the National Labor Relations Act, is called the "appropriate unit" for the purpose of collective bargaining. A supervisor within the meaning of the National Labor Relations Act is an individual who has the authority to hire, discharge, discipline, grant merit increases, and in general affect the terms and conditions of employment of others. Should the company employ not only EE's who have degrees, but also computer programming engineers, and scientists, these individuals would probably be considered part of an "appropriate unit" for the purpose of collective bargaining.

Another factor that a group must consider is: "If the company has more than one plant in the immediate area would the National Labor Relations Board hold that all professional employees in the employ of the company in that area be considered part of the "appropriate unit"?"

There are four stages under the National Labor Relations Act through which a group must pass before it can represent employees in negotiations with an employer. First, it must gather the signatures of at least 30% of the people in the "appropriate unit" on a statement certifying that they wish to be represented by the petitioning group. It must then file a petition for a consent election with the NLRB. The petition must include the definition of the "appropriate unit" and the number of employees in it. Informal and formal hearings are held by the NLRB. It is possible to reach an agreement on the appropriate unit with the employer. Alternatively, the National Labor Relations Board will order an election in what has been determined to be the appropriate unit for the purpose of selecting the group to represent the employees in their collective bargaining.

The third stage is a secret ballot election of the individuals within the appropriate bargaining unit. A majority of those voting must vote in favor of the petitioning organization, in order for it to be certified.

The final stage is the negotiation of a binding contract covering all conditions and terms of employment.

The most successful bargaining structure to date has been an independent self-governing organization, an organization run by and for the particular group dealing with the employer.

The Association of Scientists and Professional Engineering Personnel, for instance, has no compulsory membership clause in its contract with RCA. Yet more than 85% of the professional community are active members. Members of ASPEP support the

Association with dues of 8/10's or 17% of their gross salary; the average member pays more than \$160.00 annually. From recent Congressional and Senate hearings, we learn that the average length of employment for employed engineers and scientists is six years; our average is 15 years.

Within the last three years, there has been a marked increase by the professional community in attempts to establish new organizations. In some cases, an employee committee has been created but a program was not initiated; in others, a committee was formed but did not reach a point of sufficient interest to allow the group to file for an election; still other groups filed for an election and did not receive a majority vote. However, groups (e.g. Worthington CEI in Buffalo, New York) do form, are certified, and do secure a contract.

If the employed EE is interested in solving problems such as salary, merit review, reduction in professional staff, pension, or hospitalization, and is interested in establishing effective two-way communication with his employer, he will participate in an organization similar to ASPEP -- or will create one if none exists in his company.

Don't look for others to solve your problems. At a recent Senate hearing, Senator Jacob Javits said to the professional community, "Do not sit around doing your knitting, waiting for us. Use your bargaining power. Don't rely solely on government to solve the pension problem." Or any other problem, for that matter.



# More *IS NOT* Enough

*J. H. Cyr*

Persons in today's technological environment, be they rich or poor, live amidst an ascendancy of discovery and innovation, and a cornucopia of goods, gadgets and communications. Stimulated - even goaded - by the positive feedback of commercial advertising, individuals in all circumstances want (not necessarily need) more. The people who control resources strive in every way for expansion, and in a modern world where "success" is linked to "growth", the extravagant increase of demand, by an increasing longer-lived population, has yielded a phenomenal crescendo of patents, printed matter, miles traveled per capita, vehicle speed, income, and energy consumption/1/. The time is nigh when growth, in terms of increased sales and production, will have generated a social cost far in excess of societal benefits derived. It is not enough to wait until government and others who control the money, resources, and communications exert the influence required to decrease or reverse this acceleration to catastrophe. Nor, in the face of the impulse-buying mania of "free" societies and rigid economic disciplines of others, can it be expected that the earning consumers be ever sufficiently organized - or disposed as a whole - to resist and overcome inertia and exert their economic pressure potential in order to assure their ultimate benefit. The task, it seems, must fall on those of us who lie between - those who supply the wherewithal: engineers, scientists, analysts, technicians, organized labor, and others who wish to become concerned consumers (whose concern is not "more" products, or even "better" products, but "clean" products, the manufacture of which has gener-

ated a minimum of waste and which has after-use potential and value.) Motivated initially by public opinion and pressure, and subsequent legislation enforced, and now, perhaps, by profit, the industry (and technology) involved with recycling and other commercial solid waste processing is growing. What else can be done?

1. As Mr. Goldner suggests/2/ analyses should now incorporate the social costs of conflict, health, preservation of resources and environment for us and our descendants.
2. Social improvement can be forced through contract negotiation and labor contracts. Examples are (1) insisting that specified pollution standards not be exceeded, and (2) requiring that the firm's products comply with certain criteria of manufacture and recyclability, such as those suggested herein. Of course, these measures of effectiveness should first be agreed upon by the professional societies, unions, and other bargaining organizations in all industries (here lies a practical difficulty), and not be considered another tool for use at whim against management.
3. Consumer products can be designed to be constructed of materials which have recyclable value, or which will bio-degrade if discarded. Alternatively, a real trade-in or cash payment for turned-in products (as has been the case for tires and batteries in the past) can be offered to consumers.

Continued...

4. Goods can be designed to be repairable without the need for special tools or equipment; pop-rivets and bent tabs may do the job in appliances and toys, for example, but they discourage attempts at dismantling for cleaning or repair, thus increasing both demand and waste. Is it too-large a challenge for the engineer to design a fastener which can be inserted as a rivet during assembly and removed as a screw, permitting manual disassembly and reassembly if required?

Implementation of proposals to increase social benefits of products can certainly be challenging to the engineer and scientist. Dean C. W. Hall points out in his most interesting document on engineering and society/3/, "...most of the desired improvements [for society] require development and application of science and technology, and involve considerable engineering". This sort of development, of course, includes improving efficiency of production to reduce energy consumption.

Turning now from the sphere of consumer-oriented products to the macro-world of projects with international and environmental implications, consider, for example, the recent proposal by Hult and Ostrander/4/5/ to wrap Antarctic icebergs in plastic for towing across the Equator in order to supply fresh water to U.S. west coast cities. This project is sure to generate new technology and present technical and ethical challenges to the engineer. Certainly, an iceberg moored close to San Diego or Los Angeles might, in addition to providing water, affect the surrounding air and sea temperature and create unusual environmental conditions for life in its vicinity and "downstream".\* The wisdom of proceeding on such a technological adventure without prior international agreement as to who "owns" or may use Antarctic ice is, too, questionable. Is it not the responsibility of any rational person who might become involved in implementing or "benefiting" from such a project to insist on satisfactory answers based on thorough experiment and careful treaty action concerning the social implications of the endeavor before contributing his talents to the enterprise? And should not the same apply to other technological endeavors, the magnitude and irreversibility of which portend awesome social implications ... mining from the sea, disposition (and creation) of hazardous material, indiscriminate "developing" and parcelling of land, and in Toffler's "throw-away Society"/6/, the fabrication of virtually indestructible "consumables" - to list a few?

In addition to their inquiries, then, into the "steady state" where "t tends to infinity", engineers and scientists perhaps should include inquiries into the implications of, albeit here simplistic,

$$D + W < R$$

where D is a measure of goods produced (may be less than that demanded)

W is waste

R is the finite resources available

and

$$\partial D / \partial t > 0$$

$$\partial W / \partial t > 0$$

in the face of

$$\partial R / \partial t < 0.$$

Now that engineers and scientists have established beachheads in their myriad of technological excursions, let them now turn inward with their accumulated knowledge to nurture and improve that which has been spawned and to preserve that which is irreplaceable.

\*Hult and Ostrander acknowledge some of these problems, and declare in their summary that "before any large scale operational use of Antarctic icebergs is implemented, there should be a comprehensive assessment of the potential societal and environmental impacts."

## REFERENCES

1. C. W. Hall, "Perspectives on Technological Progress", Washington State University College of Engineering Bulletin, No. 327, 1973.
2. R. B. Goldner, "Costs and Constraints", IEEE CSIT Newsletter, Issue No. 5, December 1973.
3. Hall op. cit., p. 35.
4. J. L. Hult and N. C. Ostrander, "Antarctic Icebergs as a Global Fresh Water Source", RAND Report R-1255-NSF, October, 1973.
5. \_\_\_\_\_ and \_\_\_\_\_, "Applicability of ERTS for Surveying Antarctic Iceberg Resources", RAND Report R-1354-NASA/NRF, November, 1973.
6. A. Toffler, Future Shock, chapter 4, Random House, 1970.

# IN THE PUBLIC INTEREST

Periodically we learn of opportunities for engineers to serve as technical experts on matters of local public interest. Recent examples are: a request from the Federal Power Commission for names of advisers to local legislators and industries on energy conservation; information from the Center for Science in the Public Interest on their need for experts to assist consumer groups and citizens action groups; a similar need by the Environmental Defense Fund for expert witnesses in court proceedings. In such cases, the technical expert speaks for himself, not for IEEE.

Professional Activities Committees have been set up in numerous IEEE Sections. These are not necessarily oriented toward engineering in the public interest in the sense of this term that the above examples indicate. Their findings as IEEE Committees may carry more weight than an individual engineer's. Do you know if your Section has a PAC? Are you participating if it does? How does it define "professional" in action?

If you wish to be informed of the names of your local IEEE Section officers and PAC chairmen, if any, or,

If you wish to volunteer your services in the public interest as a technical expert, speaking for yourself, not for IEEE,

You are invited to complete the form below and return it. CSIT will try to put you in touch with appropriate people.

To: CSIT, IEEE, 345 E. 47 St., New York, N.Y. 10017

- ☐ Please tell me the names and phone #s of my IEEE Section officers.
- ☐ Please tell me the name and phone # of my IEEE Section PAC chairman, if any.
- ☐ I wish to volunteer my services in the public interest as an individual technical expert, speaking for myself, not for IEEE, as
- ☐ consultant to:
- |                                                        |                  |
|--------------------------------------------------------|------------------|
| <input type="checkbox"/> local legislators             | Locality _____   |
| <input type="checkbox"/> local small business          |                  |
| <input type="checkbox"/> local consumer groups         | Conditions _____ |
| <input type="checkbox"/> local citizens' action groups | _____            |
| <input type="checkbox"/> Other( _____ )                |                  |
- ☐ expert witness for Environmental Defense Fund cases
- ☐ Other( \_\_\_\_\_ )

Please describe the nature of your technical expertise by key-words.

Name: \_\_\_\_\_ Phone (home) \_\_\_\_\_  
(office) \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_ Signature \_\_\_\_\_  
\_\_\_\_\_ zip \_\_\_\_\_ Date: \_\_\_\_\_

## PROFESSIONAL Activities

An increasing number of IEEE Sections are taking advantage of the recent change in the constitution of the IEEE, and are becoming actively involved in professional activities. The Boston Section has established a Professional Activities Committee (PAC) affiliated with the IEEE United States Activity Committee (USAC). During the coming year PAC hopes to be quite active and lists at least four areas of major concern:

- a) Government relations
- b) Public relations
- c) Community science and technology projects
- d) Industrial and University relations.

In the future PAC hopes to expand this list in accordance with the wishes of the section members.

Recognizing that increased numbers provide a greater clout, some of the PAC activities in the Boston Section are coordinated with other technical societies, which together make up the Massachusetts Engineering Council (MEC). Through this organization several study committees have already been formed to present background briefings to groups of legislators on matters of technical concern; a service which the leadership of the Massachusetts Legislature has stated would be received with great appreciation. Among the MEC committees with Boston Section representation are the Computer Privacy and Human Rights Committee, and the Energy Committee. The latter is currently concerned with plant sitings, rate setting, and alternate sources of power.

Of immediate interest, the Boston Section is sponsoring at NEREM-74 [The IEEE Northeast Electronics Research and Engineering Meeting] a panel discussion to describe recent developments in the area of professional activities and to consider the goals that IEEE has established for the future to make it an organization responsible and responsive both to its own members and to society. The session will be held at 2:00 p.m. (following the opening luncheon ceremonies) on Tuesday, October 29, 1974 in the K. C. Black Room of the John B. Hynes Veterans Auditorium in Boston, Massachusetts. The session will be chaired by Dr. Myron J. Ross, Chairperson, Professional Activities Committee, Boston Section. The panel includes: Robert Asdal, Manager, Student Services, IEEE Headquarters; Harold Goldberg, Chairperson, Committee on Social Implications of Technology (CSIT); Madeline S. Johnson, Chairperson, National Pension Committee; Dr. Leo Young, Chairperson, United States Activities Committee (USAC).

The choice of panelists insures a lively and straightforward interchange. The format includes a discussion period for questions from the audience. The sessions should be of interest to those who just want to be informed about what IEEE is doing and plans to do, to those who have specific questions to ask, and to those who are interested in finding out how they can become active participants in these areas. If you plan to attend NEREM, the session should be high on the priority list. At least be informed.

From time to time other Section activities will be reported for informational (and perhaps inspirational) purposes.



# CSIT Roster

EDITOR'S NOTE: CSIT welcomes participation by any IEEE member interested in social implications of technology. The following is a list of current members of the committee. Information regarding the committee, membership, the establishment of new topical groups, the newsletter mailing list, etc. may be obtained from Mr. Goldberg, Mr. Robbi, or Dr. Edmonds. Information regarding a specific working group may be obtained from its chairman.

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# news, notes, & comment

## CSIT WORKING GROUP ON EDUCATION

Dean Basil R. Myers, College of Engineering and Science, University of Maine, Orono, Maine, 04473, who recently succeeded Dean H. William Welch, Arizona State University, as Chairman of the Working Group on Education would be pleased to hear from those who wish to be placed on the Group's mailing list for information regarding the Group's activities, and would be particularly pleased to receive the names of volunteers who wish to participate actively in the work of the Group. IEEE membership is not a prerequisite, but is expected. □

## 1975 FRONTIERS IN EDUCATION INTERNATIONAL CONFERENCE -- OCTOBER 20-22, 1975 -- Atlanta, Georgia

The 1975 Conference on Frontiers in Education will be held in Atlanta, Georgia with the cooperation of Georgia Institute of Technology on October 20, 21, and 22, 1975. This conference, the annual meeting of the IEEE Education Group and the Educational Research Methods Division of ASEE aims to increase understanding of the role of educational technology through exposition and discussion of its applications, scope and potential with particular reference to engineering education and training.

Papers relating to the following areas are invited:

EVALUATION IN EDUCATION  
NEW TECHNIQUES IN INSTRUCTION  
APPROACHES FOR EDUCATION THROUGHOUT LIFE  
EDUCATING ENGINEERS FOR THE MODERN WORLD  
IS ENGINEERING EDUCATION RELEVANT?  
COST EFFECTIVENESS OF EDUCATION  
SYSTEMS APPROACH TO EDUCATION  
EDUCATIONAL TECHNOLOGY--HARD AND SOFT  
TASK ANALYSIS  
MULTI-MEDIA SYSTEMS  
SELF TEACHING SYSTEMS  
CONTINUING ENGINEERING EDUCATION  
EDUCATIONAL RESOURCE CENTERS

Potential authors should send five copies of a 500 to 750 word abstract not later than December 15, 1974 to:

Dr. LAWRENCE P. GRAYSON  
National Institute of Education  
Washington, D. C. 20208 □

The Intersociety Conference on Engineering Ethics will be held on May 18 and 19, 1975 in Baltimore, Maryland. Cooperating Societies include: IEEE, ASME, ASCE, AICHE, and NSPE.

For further information, please contact: Prof. Carl Barus, Swarthmore College, Swarthmore, Pa. 19081 □

▶ A Symposium entitled "Ethics in the Age of Pervasive Technology" will be held at the Technion-Israel Institute of Technology - beginning Sunday, 22 December 1974.

The specific aim of the symposium is to reexamine the concept of ethics and ethical techniques of the past from the points of view of both the technocrat and the humanist, and from the scientific as much as from the religious and legal approaches.

The organizers believe that the usual polar attitude holding that technology and pure science are at opposite ends of a continuum is at best shortsighted. It is their conviction that the positivistic attitude according to which the man of knowledge produces disembodied ideas which are taken up by the morally free individual, and used for either constructive or destructive aims, is misleading. It is this attitude that has resulted in the growing alienation between those who produce knowledge and those who use it, and has systematically misled the decision makers.

The symposium will comprise a series of working sessions in which the participants will discuss previously distributed papers. These sessions will be open to the press and a limited number of observers. Proceedings of all the discussions will be transcribed, edited and published in book form.

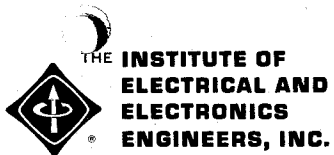
There will also be several public sessions and a panel meeting at which symposium participants will confront faculty and students from the Technion and Haifa University.

Those interested may contact Dr. Mordechai Levy, co-chairman of the Symposium Organizing Committee, Senate Building, Technion, Haifa, for detailed information about participants, conference schedules and discussion topics. □

## ▶ SIT DIRECTORY

Newsletter #8 of the Harvard University Program on Public Conceptions of Science is a preliminary directory reviewing contemporary activities in the field of ethical and human value implications of Science and Technology. It was compiled by W. A. Blanpied and Gerald Holton. For further information, contact the above at the Jefferson Physical Laboratory, Harvard University, Cambridge, Massachusetts 02138. □

▶ It takes one acre of strip-mined coal to burn six 100-watt bulbs continuously for one year; 2.4% of America's energy goes into meat production; the Defense Department uses over 6% of America's energy. -- From "Lifestyle Index", Center for Science in the Public Interest, Washington, D.C. □



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