

# IEEE Student 2 Newsletter

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December 1975

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AWARDS

## What's in it for me? A Look at Career Planning Possibilities

Before joining the Institute of Electrical and Electronics Engineers, or as you recently contemplated renewing your membership, did you ask yourself, "Why be a member of IEEE. I could certainly borrow a copy of SPECTRUM from a friend or read it in the library for free." If you ever did the least bit of head-scratching on this question then you are probably not aware of the many benefits, services, and capabilities of the organization available that can have immediate and long term value to you in developing and building upon your career plans.

As an organization, possibly one of the most meaningful services that IEEE can offer to you as a Student member is the opportunity for active involvement in ways that contribute to your career planning needs in preparation for entry into to profession. An exposure to SPECTRUM, one or more of the 30 TRANSACTIONS of the various technical Groups and Societies, the Student Newsletter, and publications and meeting notices you receive from your local Section has given you a feel for the many tangible benefits of membership and services available. Each, in its own way, gives you perspective insight into the role of engineers, various career possibilities, and a better understanding of how your professional society can serve you. Your local IEEE Student Branch and parent Section offer what might be considered less physically tangible, but certainly no less real, benefits of membership. Inspection trips to industry, guest speakers, attendance at Conferences, Student Employment Workshops, Student Paper Contests, and interaction with the professional members of your Section affords numerous opportunities to take full advantage of your IEEE membership. And that's really what IEEE is all about. Each opportunity afforded by the Institute gives you a chance to find out where you're at and a chance to better direct where you're headed. It's career planning in action.

Career planning has already played a major role in your life. As a result of an inward look at your interests, capabilities, aspiration and with the guidance of others, you are now at a college or university working toward a career in engineering. In the near future you must face other important questions concerning the direction your career is to take. Job interviews, graduate education, and other alternatives may soon be in the offing. The need for adequate career planning was expressed clearly by Richard Crystal and John Bolles, authors of "Where Do I Go From Here With My Life?" They noted, "The single factor which seems to influence people's career or occupation more than any other, is their first job opportunity into which they glide or slide, without much conscious decision or examination. This first job opportunity then conditions the whole subsequent course of their progress in the world of work, in altogether too many cases. It decrees what their degree of specialization shall be. It decrees their life-style. It decrees their attitude toward the whole world of work, and the readiness with which they greet--or abhor--personal change."

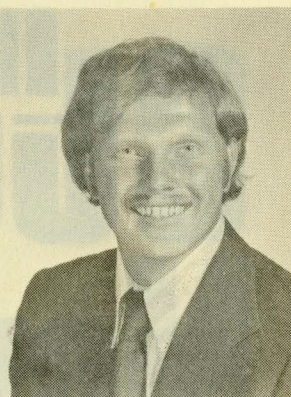
The IEEE Student Activities Committee, of which I am a member, has already begun work on a project of "Career and Life Planning for Students." As conceived, the resources made available will assist individual students with articulating their life goals and objectives, assessing their own personal needs and abilities, and addressing ways through the IEEE organization that they can be met. The Institute, of course, already offers resources that can be invaluable.

able aids to understanding different aspects of career planning. "Career Management: A Guide to Combating Obsolescence" a recent issue of IEEE PRESS available paperbound for \$8.95, addresses various techniques of career management. In a series of carefully selected papers, experts in such fields as management, continuing education, psychology, and personnel present their latest thinking and guidance. Another publication, "The E/E at Mid-Career - Prospects and Problems" sheds light on a number of the key issues that engineers must deal with concerning career growth. Although addressing the latter-age problem of "mid-career", it can provide you with valuable advanced knowledge concerning needs of your own career planning. It is available in a full 298-page version for \$15.00 or a condensed Student Review version of 40 pages for \$1.85 or \$1.00 each in quantities of 10 or more. Two other resources currently available "Your Job in E/E Engineering", and "Career Outlook in Engineering" will enable you to better appraise your future in engineering, make knowledgeable decisions about technical specialties, and gain insight into which qualities are required for a successful career. Both are priced at \$15.00 each and are also available in the Student Review version at the reduced prices previously indicated.

Few people, I would guess, receive a single flash of insight leading them down a particular career path. Your career plans, like mine and those of most others, are the result of a sequence of decisions, experiences and contacts made over a long period of time. Each decision leads in a continuing progression to another. It is to the credit and benefit of an individual to recognize and take advantage of all opportunities, resources, contacts, and experiences available. And IEEE provides many such opportunities ...

If you are still confronted with the question, "Why am I a member of IEEE," then maybe I can offer an answer. You have recognized a need to plan and enhance your career and life plans. You recognize the opportunities available to do so through a professional organization, and you have chosen IEEE and its many resources to help you achieve your personal and professional needs. To get the most out of the Institute's services, benefits, and activities, it is now up to you. You've answered the question, now you can make IEEE much more valuable to you.

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Steve received a BSEE degree at Colorado State University. He is currently a Master's candidate at Colorado and Region 5 Student Representative to the IEEE Student Activities Committee.

## The Art of Effective Communication

An engineer's career constantly demands communicating ideas to others. Whatever practice you can gain now can have immediate and measurable impact on your first job and throughout your engineering career. The IEEE Student Paper Contest offers you, as an undergraduate Student member, the opportunity to exercise and improve your written and oral communication skills. Don't be misled by false assumptions of the need for technical sophistication. Papers are judged overwhelmingly on the basis of how well you communicate your ideas, not on their technical content. By researching, writing and presenting a paper, you gain early experience in and exposure to the art of effective communication.

Where are contests held? Your Student Branch should sponsor a contest in the early spring as a forerunner of a Section, Area or Regional Contest. Each of IEEE's ten Regions is sponsoring a Contest with top awards of \$200, \$100 and \$50 provided by the Institute's Life Member Fund. Your paper will also be published in "IEEE 1976 STUDENT PAPERS" with world-wide distribution, and possibly one of the 30 Group and Society Newsletters or Transactions. Ask your Counselor or Student Branch Chairman for more details on entering the Contest. Your Regional Student Activities Committee Chairman can provide details on the date and location of the Regional Contest.

What does a good Student-authored paper look like? Every IEEE Student Branch submitting a request has received a copy of "IEEE 1975 STUDENT PAPERS"--a 352 page book of the top Student-authored papers in 1975--for its Branch library and the library on campus. Look through the copy on your campus, or order your own for excellent references of the best Student-authored papers in the Institute. "IEEE 1975 STUDENT PAPERS" is now available for only \$8.00. (See order coupon in this issue.)

## White House Conference Youth in Science and Technology

It was a "Tuesday at the White House" meeting and 50 of us had gathered in the cold morning's chill outside the East gate anxiously awaiting admittance. FASST, the Forum for the Advancement of Students in Science and Technology, had organized the "Youth in Science and Technology" Conference for about 25 of its members and an equal number of representatives from other organizations. As IEEE Manager of Member Services, I attended as a representative of our 20,000 Student Members.

The program was designed to give college students, representing a broad cross-section of disciplines, an opportunity to discuss the development of science and technology policy with key administration and agency officials. And that it did very successfully! Dr. Guyford Stever, Director of the National Science Foundation, discussed "The Role and Status of NSF in Science Policy Advice to the President." He commented on the currently pending legislation to establish a White House Office of Science and Technology Policy. Once approved by Congress, he noted, the Office will advise the President on: 1) scientific and technological aspects of major national policies, programs and issues; 2) the adequacy and effectiveness of Federal scientific and technological policies, programs, and plans for meeting National goals; 3) the utilization of new ideas and discoveries in science and technology in addressing important National problems, and 4) the coordination of scientific and technical activities of the Federal Government. Dr. Stever was also asked about the nature of Student involvement in a new NSF program called "Science for Citizens." Goals of the new program include: improving public understanding of public policy issues in Science and Technology and increasing participation of experienced scientists, engineers, as well as graduate and undergraduate students in resolving public policy issues having significant scientific and technological aspects. Commenting that the program was in the hearing stage, Dr. Stever invited the participants to make their recommendations known to NSF. (Editor's Note: An intersociety endorsed proposal has been developed and submitted to NSF on the "Science for Citizens" program by the student program Directors of a number of engineering and scientific societies.)

Ideas on how you or your Student Branch could become involved (or are involved) in contributing to the resolution of public policy issues dealing with science and technology, should be submitted to Bob Asdal, Manager, Member Services, at IEEE Headquarters.

Other speakers at the White House Conference included John Yardley, from NASA, who provided an overview on "Space Activities Until the Shuttle," and Donald S. Frederickson, Director of the National Institute of Health, who discussed the far-reaching social, economic and technical aspects of "Medical and Health Research Policy." An afternoon panel discussion allowed students to interact with representatives of the Federal Energy Administration, Environmental Protection Agency, Council of Economic Advisors and American Gas Association to better understand the development of energy policy in the United States. The Conference was best summarized by Al Ladwig, President of FASST, who pointed out the "contributions that students can make in the areas we discussed today are enormous. We've begun an important dialogue that can be extremely beneficial to a student's educational and professional development ... while at the same time assisting various agencies and organizations in the development of important public policy issues."

Students who wish to participate in future White House Conferences should read the article on "Youth Commission on the Third Century" in this issue and submit your name to Bob Asdal at IEEE Headquarters. For more information on FASST activities, membership, or a complete summary of the White House Conference, write to Al Ladwig, President FASST, 1785 Massachusetts Avenue, N.W., #110, Washington, D.C. 20036. Say you say it in the IEEE STUDENT NEWSLETTER.

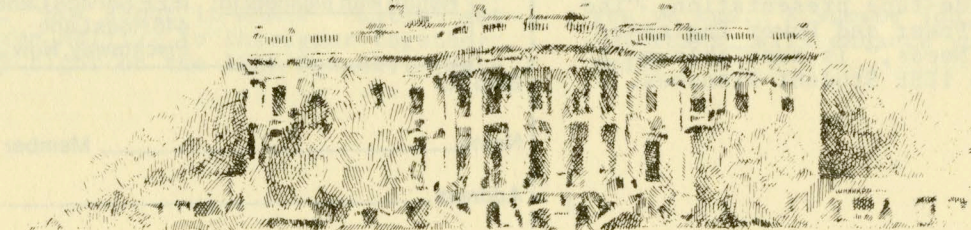
## Youth Commission on the Third Century—An Interim White House Conference on Youth

Five IEEE Student members will be invited to attend a White House Conference on Youth to be held March 28 - April 1, 1976. The Conference will provide an opportunity for young adult leaders between the ages of 16 and 23 to meet together to: 1) discuss the needs and opportunities of the future; 2) develop a broad spectrum of questions, opinions, and recommendations on the future; and 3) develop an awareness of each other which will provide a medium for future interaction. Conference participants will develop a White Paper concerning questions, problems, needs and opportunities which they think will have to be faced by Americans during the next hundred years.

If you are interested in participating in the "Youth Commission on the Third Century," send your name, address, phone number, and birthdate to Robert K. Asdal, IEEE Manager Member Services, 345 East 47th Street, New York, New York, 10017. Full details on eligibility requirements will be sent to interested Students when they become available.

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Application to mail Second class postage rates is pending at New York, New York and at additional mailing offices.



It may be worthwhile to pose a few questions raised by Albert Teich, editor of "Technology and Man's Future," St. Martin's Press, 175 Fifth Avenue, New York, 1972. Pointing out how today's college-aged youth have matured in "an environment characterized by unprecedented material affluence," he cites our need and ability to reach beyond material wants and ask critical questions of our ultimate purpose: "Is material progress an end in itself, or is it, more properly, a means to some higher end? Is the development of technology leading toward a more desirable state of human affairs, or is it actually producing a decline in the quality of life? Is technology a tool that man is capable of using as he chooses, or is it, in a very basic sense, a system gone out of control?" "Technology and Man's Future" is provocative reading that stimulates more questions than answers ... but addresses many important issues which will be discussed at the forthcoming Youth Commission on the Third Century.

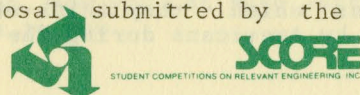
### Electrifying Competition

In October, we announced the winners of SCORE's first intercollegiate Energy Resource Alternatives Competition. SCORE, a student-run association of U.S. and Canadian Universities, stands for Student Competitions on Relevant Engineering.

SCORE recently announced its Energy Resource Alternatives II for 1975-1976. ERA II picks up where ERA I left off. Engineering students are again challenged to develop practical means of using alternative sources of energy. Electrical power production can be accomplished through any conversion process using non-petroleum energy sources such as solar, wind, coal or biologically-produced methane.

You are challenged to design and build prototype hardware to generate electrical power for residential or small industrial applications. Undergraduate and graduate students throughout the United States and Canada are invited to participate in ERA II.

Teams of students, with a faculty advisor, are eligible for financial "seed money" grants to support their projects. SCORE development grants are awarded based on an evaluation of the design proposal submitted by the student team.



For more information on this extremely worthwhile competition, contact your IEEE Counselor or Student Branch Chairman, or write to: SCORE, Energy Resource Alternatives II, MIT Room 5-336, Cambridge, Massachusetts 02139.

### Free for the Asking

A 20-minute slide-tape presentation, "The Roles of Electric Power and Power Engineers in Meeting Energy Needs," is available on a free-loan basis to IEEE Student Branches.

Based on a talk given by Dr. Thomas H. Lee, President of the IEEE Power Engineering Society, it is a timely and authoritative view of the U.S. energy picture. The presentation was developed to assist Student Branches and Power Engineering Society Chapters in becoming more directly involved in the dialogue between informed and responsible engineers and the public.

Another offering, a 16mm film entitled "The Slide Talk," covers the classical blunders to which many well-intentioned speakers subject their audiences...and some tried and proven remedies to make technical presentations more effective. Students preparing to enter a Student Paper Contest will find some of the tips in this amusing 20 minute film helpful.

Both offerings and copies of the Educational Resources Catalog with many more free offerings were produced by the C.R.E.W. Subcommittee of the Chapters Department of the Power Engineering Society. They are available free of charge to any Student Branch. Give at least one month's prior notice before the date of intended use and two alternative dates. To order: Contact Mr. John C. Lang, Chairman, Chapter Relations and Continuing Education Working Group, Room 1220, Baltimore Gas and Electric Company, Lexington and Liberty Streets, Baltimore, Maryland 21203. Telephone: 301-234-5717.

### Student Papers Available

"IEEE 1975 STUDENT PAPERS" is now available. A total of 352 pages, it contains the best Student-authored papers presented in IEEE's 1975 Student Paper Contest.

Among the 27 papers: "Design and Construction of a Wow and Flutter Meter," "Improved Design and Development of an Arc Plasma Scalpel and Support System," "Digital Communications Multiplexors and Data Concentrators," "Modeling the Flow of Energy Through a Salt Marsh Ecosystem," "Thermodynamic Analysis of Steam-Electric Power Plants," "A Digital Memory Scope for Logic System Analysis," and "A High Voltage Solar Cell." Covering a broad scope of topics, the papers prove exiting reading.

Send for your copy of "IEEE 1975 STUDENT PAPERS" today. Use the convenient order form below.

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### Congressional Internships

House resolution 420, which took effect on January 1, 1974, established the Lyndon Baines Johnson Congressional Intern Program. Each Member of, Delegate to, and Resident Commissioner in the House of Representatives may hire for two months in any one year a student or recent graduate from a college, university or similar institution of higher learning to serve as a Congressional Intern. You can earn up to \$500 a month or \$1000 for the two month period while working in Washington and gaining invaluable experience and insight into the public policy making process. Contact your local Representative about this job opportunity --point out how your experience as an engineering student could be a real asset during your term of employment.

Most of the 535 Congressmen serving "on the Hill" in Washington have a legal background. Surprisingly few have an engineering or scientific background and experience. Yet, of the thousands of bills that pass across their desks each year, the great majority concern technical matters that require the guidance of sound, impartial technical opinion. The need for more involvement by engineers is clear. Most Congressmen welcome the expert help and assistance that the technical community can provide. IEEE's very successful "Congressional Fellow" program attests to that fact. What better time to assist your Congressman, learn the inner workings of our public policy making machinery, and gain immeasurable experience and exposure than this coming summer? Why leave all those good jobs to the poli sci folks?

Let the STUDENT NEWSLETTER know if you meet with success--we'd like to hear from an IEEE "Student representative in Washington."

### HAM Net Jammed?

Not being a HAM, at least not a licensed one, your Editor is puzzled about the famous IEEE Ham Net which was set up three years ago for Students and Student Branches. Some months back we heard reports from our University of Arkansas Branch and other reports from one or two of our Canadian Branches but since then all input on the Net, and of the contacts that are being made, has gone 60dB down well into the noise level. Is our HAM Net jammed or is it alive and well?

For the uninitiated, the IEEE HAM Net operates every Monday night on both the 20 and 80 meter bands. On 20 meters: 14,325 ± 5 KHz for one hour starting at 3:00 pm CT (US) and on 80 meters: 3,985 ± 5 KHz for one hour starting at 9:00 pm CT (US). Greenwich (Z) times will shift one hour (i.e. 2100 Z hours to 2000 Z hours for 20 meter band) to accommodate U.S. daylight time which returns on February 29th. How about it HAMS? Let's get Students from Halifax to Kharagpur together next Monday night on the IEEE Ham Net. Make

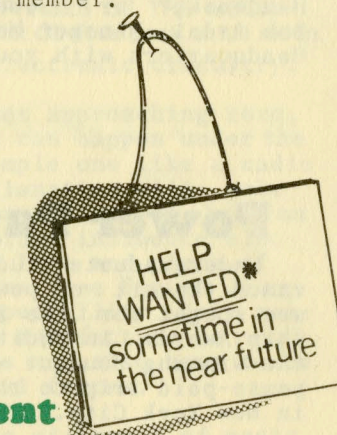
it a New Year's resolution and let us hear of your success.

For a free copy of the 1975 Directory of the IEEE Student HAMS write to Bob Asdal, Manager, Member Services at IEEE Headquarters. To list your name in the 1976 Directory QSL us at the above address.

### "Human Race" Nears End

Somewhat tongue-in-cheek, the IEEE Student Services Department recently announced the forthcoming end of the "Human Race." Fear not...humanity lives on. It is only the IEEE Student membership contest approaching its end on December 31, 1975. Our 450 Student Branches in 33 countries around the world have been competing in a membership contest which recognizes the top ten Branches in the Institute that have the largest absolute and relative increase in membership. Cash awards of \$200, \$100, and \$50 are being given to the top three Branches in each category and each of the top five Branches will receive a complete set of IEEE PRESS books, valued at more than \$300.

Results of the membership contest, not yet available, will be published in the February STUDENT NEWSLETTER. Thanks to our Student Branch officers and faculty Counselors, IEEE is seeing one of its best Student membership years. So far in 1975, a total of 12,557 new Student members have joined the Institute, surpassing the total number of new elections in all of the previous eight years. Hats off to our Branches and a warm welcome to each and every new IEEE Student member!



### Summer Employment

The heat is on when few summer jobs are available. If you're freezing now, come summer you're sure to be hot under the collar if you can't find a good summer job.

Now is the time to start looking. Competition for meaningful jobs is due to be keen. As your graduation date nears and you begin looking for full time employment, prospective employers will ask about relevant experience you've had. A summer job, related to your interests, will enhance your chances for success.

A good place to begin your search is your college placement office. Available summer jobs are frequently listed there and resources like the College Placement Annual, Engineering Opportunities, the Occupational Outlook Handbook, Summer Employment Guide, Summer Job Directory, and The World-Wide Summer Placement Directory should be investigated for possibilities.

Don't forget to keep your name in circulation: Remind your friends and family, professors, IEEE members in your Section of your interest in a summer job. Attend local Section meetings and make your interest known to the engineers and prospective employers you meet. Letter writing and door knocking campaigns are invaluable. Check into local businesses. Finding meaningful summer work isn't much different from finding full time jobs and may well prove useful as a practice ground for the full time push ahead.

Remember, IEEE has published a series of three Student Employment Workshop guides which present many techniques on how to effectively "sell yourself." They are structured as a self-help program where groups of six to eight Students teach themselves letter and resume writing, and the development of effective interviewing techniques by sharing ideas and experiences under the guidance of a group leader. Student Branches generally organize such programs for their members.

If your Branch is interested in organizing an Employment Workshop program or you would simply like a copy of "How to Organize a Student Employment Workshop," the "Instructor Handbook," or "Student Handbook," write to Bob Asdal, Manager Member Services, at IEEE Headquarters with your request.

## Power Papers: \$1,000

Undergraduate Student papers, which advance the art of power system engineering, are sought for the 1976 Hickernell Scholarship Award. In addition to the \$1,000 Award, the winning Student will also receive an expense-paid trip to the Winter Power Meeting in New York City.

Latimer Farrington Hickernell was Vice President and Chief Engineer of the Anaconda Wire and Cable Company. He served the Institute in various capacities, including the Presidency. Because of "Hick's" outstanding contribution to power engineering and the Institute, this Award is presented in his honor. The Award is sponsored and administered by the Power Engineering Education Committee of IEEE.

Papers will be accepted until June 15. Complete details are available from your IEEE

Counselor or Student Branch Chairman, the Hickernell Award Committee of the Power Engineering Society at IEEE Headquarters, or from Professor William F. Kersting, Electrical Utility Management Program, Box 3-0, Las Cruces, New Mexico 88003.

## Bendix Winners— Alberta Does it Again!

Congratulations are in order to 6 Branches who have recently been granted a total of \$2493.50 in Bendix Awards to fund imaginative Student Branch projects. The IEEE Student Activities Committee appointed a judging committee whose members John Gordon, Larry Dwon, and Steve Malvuszko made the Award determinations. Incredibly, for the ninth year in a row, the University of Alberta Student Branch has won a grant in the Bendix Award competition. Awards were based on 6-page project proposals submitted to IEEE Headquarters prior to November 15. The Contest is supported by the Bendix Corporation. Winning Student Branches, their proposal titles, and award amounts are listed below:

University of Alberta "Grain Moisture Analyser"	\$318.50
Valparaiso University "Video Graphic Display System"	\$325.00
Trenton State College "Versatile Telephone Communicator for the Deaf"	\$450.00
Clemson University "A Satellite-Tracking System"	\$400.00
Prairie View A&M University "Amateur Radio Station"	\$500.00
Wilkes College "Lite-Sign"	\$500.00

## Branch Y/E Reports Due

All Student Branches have recently been sent Annual Report and Financial Statement forms, which are to be completed and returned to Headquarters by February 1. Reports reflect Branch program and activities for the entire Calendar year 1975. They list the most outstanding speakers and tours of the Branch for publication in the IEEE Speakers, Tours and Film Directory. Reports are also used to cull the best program ideas and send them back to all Branches. Copies of the Annual Report and Financial Statement should be sent to your Section and Region Student Activities Committee Chairman and another copy maintained in the permanent files of the Branch. Year-end rebates of \$1.00 for each Student member of the Branch will be issued to Branches on receipt of the Annual Report and Financial Statement at Headquarters.

## Metaphysical Electronics

A Unified Theory of Electronic Phenomena with Special Emphasis on Unexplained Occurrences

Greg J. Cosimini

University of Minnesota--IEEE Student member

The vast scope of my theory demands that I first give you some special background information. All data herein disclosed has been gathered in St. Paul-Minneapolis, an apparently representative portion of the universe. My theory, still far from being fully developed, will require at least \$1,000,000 in grants to inspire me to begin research in earnest.

A great many problems occur in electronics which appear to escape logical explanation. Two identical circuits, for example, have different operating characteristics; foolproof devices functioning well within safety margins self-destruct; nothing ever works properly during demonstration, ad infinitum.

One of the most commonly accepted explanations of strange occurrences is "Murphy's Law" and its multitude of corollaries. Simply stated: "If anything can go wrong.. it will." But this is no explanation. A law doesn't make something happen. We still must seek the fundamental principles on which the law is based.

Many people prefer to use various technical sounding excuses to explain otherwise unexplained occurrences. Some of the classics are: "It has to warm up." It's amazing but this is often applied to solid state devices as well as to vacuum tubes. "There must be a bad solder joint," is a very useful explanation for intermittent problems. One of my favorite excuses is "Sunspot activity." Although first applied only to radio problems, this celestial explanation is gaining popular acceptance in other fields. But none of these explanations are acceptable.

Discounting Murphy's Law and all the legions of technical excuses imaginable, my Unified Theory of Electronic Phenomena nicely explains unexplained occurrences: "There may yet be an undiscovered force in the universe - called Magic - which effects all matter and energy to a slight degree." Magic, I surmise, may be influenced by, or be a by-product of slight variations in electric, magnetic, and gravitational fields, including the weak electric (extremely weak in some cases) fields of the human mind. The combined effect of brain waves from many people gathered to view a demonstration, for example, ( see Figure 1) may play particular havoc with electronic circuitry.

We know that strange things happen at relativistic velocities, temperatures approaching zero, and under extremes of gravity, and pressure. Perhaps equally strange things can happen under the influence of magic. How often have you been faced with a circuit, even a simple one like a radio or power supply, which is beyond anyone's ability to repair? Finding an explanation will make electronic life easier. Many problems will be solved if we prove the incompatibility of electronic parts, for example. As the signs of the Zodiac influence people, so may they influence electronic components. Horoscopes may have to be developed for all components. Time and place of manufacture, attitudes of machine operators, and even the position of the moon (see Figure 2) may influence operating characteristics and compatibility. Only compatible components will then be used in the manufacture or repair of a piece of equipment. Special shieldings may also have to be developed to protect against unwanted magical forces.

My research will positively establish the existence of magic, study its properties and learn methods by which it can be controlled. Gremlins, Elves, and Glitches, I may discover are no more than personifications of the good and bad effects of Magic. Of course, something like Maxwell's Demons may also exist, explaining the unexpected, sudden and often catastrophic heating of components. I am really looking forward to pursuing this investigation in earnest. Preliminary studies show the best results are attainable if research is carried out in the winter months, in a warm place like Acapulco. Supporting grants are solicited. It should prove a demanding schedule but nevertheless, between contemplative sojourns to the beach, I will attempt to keep you informed of further research. Maybe, if you're interested in pursuing this research, I'll see you in Acapulco, too. How would that be for magic?

STRANGE MALFUNCTIONS

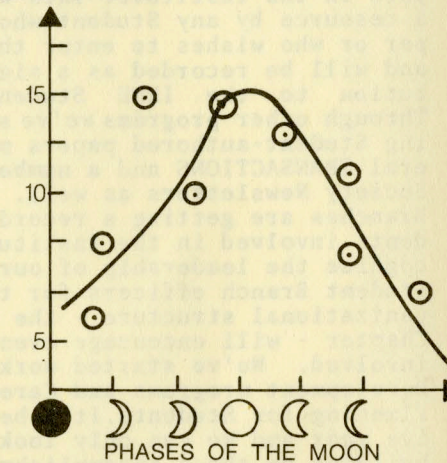


FIGURE I. Note: Obvious peak at full moon.

STRANGE MALFUNCTIONS

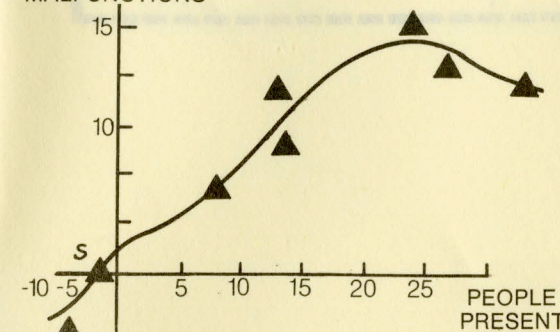


FIGURE II. Note: Negative malfunctions means things went better than they should have. Negative people means those planning to come didn't.

## SAC Meets— New Initiatives Cited

Students, faculty, and industrial representatives met together for two days on November 7 and 8 in Atlanta, Georgia to discuss programs, policy, and the direction of the IEEE Student program. Its second and final meeting for 1975, the Student Activities Committee, broadly represented by Regional Student Representatives, Regional Student Activities Committee Chairmen, and industrial members, focused its attention on accomplishments during 1975 and new initiatives for the future.

Chairman Byron E. Thinger, from San Francisco State University, citing 1975 accomplishments noted: "I am gratified by the progress we have made. This year we've published in book form the best Student-authored papers in the Institute. This will be used as a resource by any Student who must write a paper or who wishes to enter the Paper Contest and will be recorded as a significant contribution to the IEEE Student Paper Contest. Through other programs we've succeeded in having Student-authored papers published in several TRANSACTIONS and a number of Group and Society Newsletters as well. Our Student Branches are getting a record number of Students involved in the Institute, and we recognize the leadership of our Counselors and Student Branch officers for this. A new organizational structure - the Student Branch Chapter - will encourage even more to become involved. We've started work on Leadership Development programs and Career and Life Planning for Students. It's been a progressive year and we can only look forward to building on these accomplishments in the years ahead."

## SPECTRUM Highlights

Technology '76 is the theme of SPECTRUM's January issue. Devoted to a review of today's technology, emphasis is placed on existing hardware and "hard" software, highlighting developments that are on the cutting edge of today's technology. SPECTRUM's January issue deals in a major way with the big electronics picture...where we are now and where, in 1976, we can expect to be.

Special Reports to look forward to cover the areas of Computer hardware/data, Communications and microwaves, Components and devices, Biomedical electronics, and Industrial and Consumer electronics. As in every issue, SPECTRUM announces a number of new product applications (you can send for free literature) and reviews the latest offerings in TRANSACTIONS, IEEE Press, Conference Records, and Educational Aids.

## Name the T-Shirt Contest

Our first T-Shirt has been so well received we're already pondering Model II for 1976.

Here's your chance to gain world renown as a fashion designer...by coming up with a clever slogan/design for the next IEEE T-Shirt.

Submit your entry, by March 1, with name, address and Branch affiliation to Bob Asdal, IEEE Manager of Member Services, 345 East 47 Street, New York, New York 10017. The lucky winner will receive a T-Shirt autographed by the entire Student Activities Committee. Of course, the lucky winner may also elect to simply receive a free T-Shirt. We will publish all reproducible entries received by March 1 in the April 1976 Newsletter. Rush your entry in today.

Going fast, T-Shirts are still available for you and your other half...in a full range of sizes from XS (boy's large) to XL (man's 48). Use the convenient order form below:

T-SHIRT ORDER FORM		Send to IEEE Service Center,	SN/L
		445 Hoes, Lane	
		Piscataway, NJ 08854	
Specify Quantity Each Size:		<b>SHIP TO:</b>	
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\$3.00 each		Address	
6 or More Quantities:		City	
\$2.25 each		State/Country	
<input type="checkbox"/>	<input type="checkbox"/>	Zip	
XS	S		
	<input type="checkbox"/>		
	L		
	<input type="checkbox"/>		
	XL		
Quantity Ordered _____			
Amount Enclosed _____			
<small>Make Checks Payable to IEEE New Jersey Residents Add 5% Sales Tax ALLOW 4 WEEKS DELIVERY</small>			