

## EDITOR'S PROFILE of this issue

*from a historical perspective ...*

with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

May 1973:

Cover: This is an early cariac-assist device from a few years ago. The EMB chapter's meeting is on artificial hearts. Dr. Norm Shumway performed the first human heart transplant in 1968, at Stanford's hospital in Palo Alto; a good family friend was an operating room nurse for that (and subsequent) transplants. More on page 2.

p. 2: The IEEE Founders Medal is presented to Bill Hewlett and Dave Packard by the IEEE president, in recognition of outstanding leadership in the planning and administration of activities related to the profession of electrical and electronics engineering.



Archive of available SF Bay Area GRID Magazines is at this location:

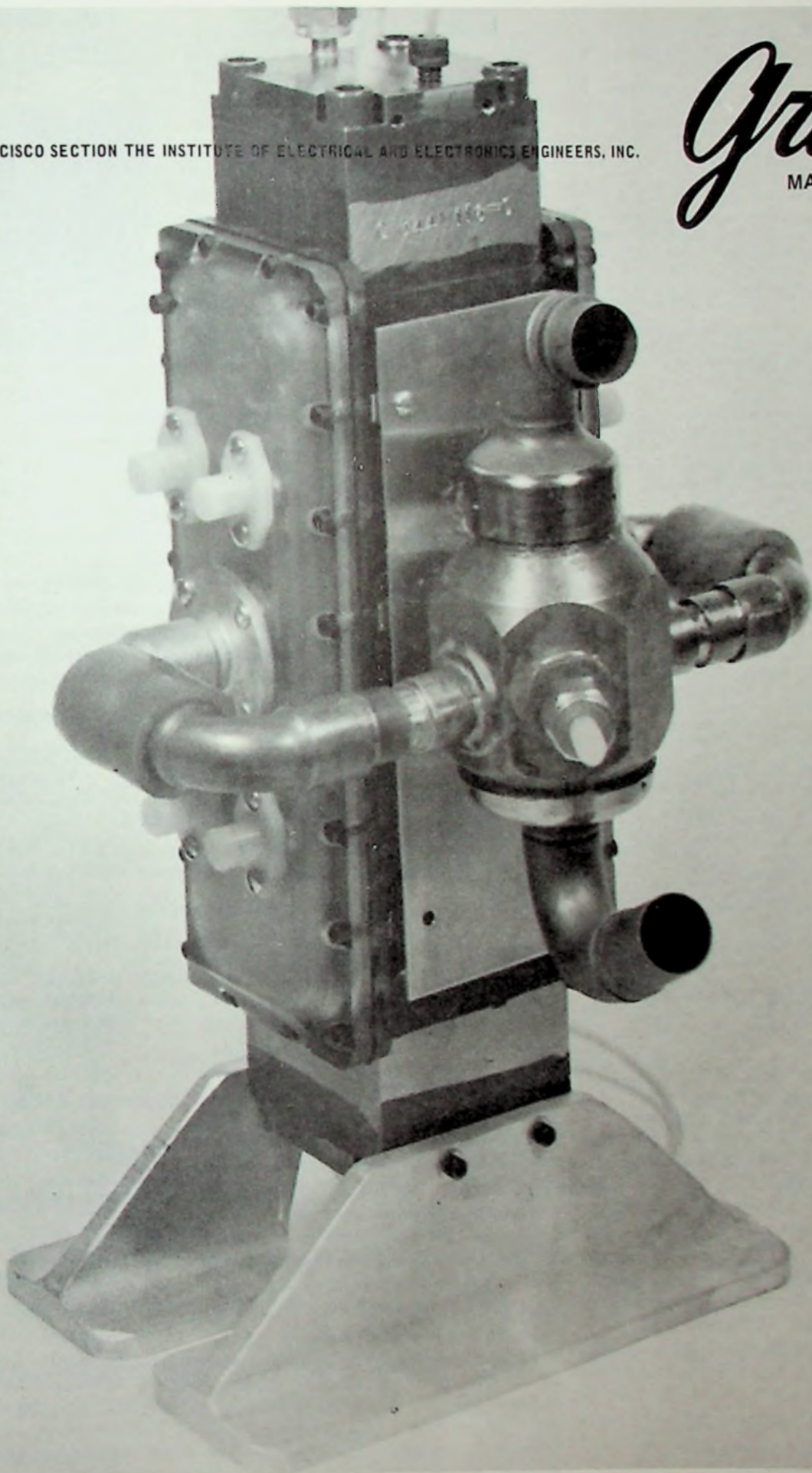
[https://ethw.org/IEEE\\_San\\_Francisco\\_Bay\\_Area\\_Council\\_History](https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History)

At time of scanning, the bound volumes are held by Paul Wesling. April, 2025 Contact p.wesling@ieee.org



SAN FRANCISCO SECTION THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

*Grid*  
MAY 1973



MAY 1973

Published monthly except June, July,  
August and December by San Francisco Section  
Institute of Electrical and Electronics Engineers

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Second Class postage paid at Palo Alto, California

### SUBSCRIPTIONS:

\$4.00 per annum



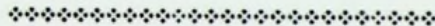
### SCVSS ELECTION OF OFFICERS

The Santa Clara Valley Subsection will have a breakfast meeting on Wednesday, May 23, from 7:00 a.m. to 8:00 a.m., at Howard Johnson's, 5405 Stevens Creek Blvd. (near the intersection of Highway 280, Lawrence Expwy and Stevens Creek Blvd.). The purpose of the meeting is to discuss 1973-1974 activities and elect officers for this period. (See the March GRID for the nominations.)

Reservations should be made by calling Ray Power at IBM, 408-227-7100, Ext. 6574, by May 18.

### THE COVER STORY – EARLY CARDIAC ASSIST DEVICE

This peculiar looking contraption is a bench model of a cardiac assist device developed circa 1967. For energy conversion, a piezzo-electric unit is employed. More sophisticated cardiac assist units will be included in the presentation given by Dr. Allen K. Ream, M.D., at the EMB meeting on May 8.



### EMB – ARTIFICIAL HEARTS REVISITED



A topic of considerable interest is the government relationship to funded biomedical research. Dr. Allen K. Ream, who spent three years with the Artificial Heart Program (National Heart and Lung Institute, N.I.H.) will discuss work supported by that program, including biomedical materials, blood-materials interactions, blood flow, oxygenator development, circulatory assist devices and their physiologic interactions, instrumentation, biological fuel cells, and implantable energy systems, and the related problem of adequate testing of such devices before release for clinical use.

We hope to give some feeling for the state of the art in these areas, and an account of some of the problems encountered by the NIH in increasing the amount of support provided through contracts, as opposed to grants.

### IEEE FOUNDERS MEDAL AWARDED TO MESSRS. HEWLETT AND PACKARD



William Hewlett accepts the IEEE Founders Medal on behalf of David Packard and himself. The Award, which consists of a gold medal and a certificate, is being presented by Harold Chestnut, President of the Institute of Electrical and Electronics Engineers (IEEE). This Award is presented to recognize outstanding leadership in the planning or the administration of activities related to the profession of electrical and electronics engineering.



### FUTURE MEETINGS OF INTEREST

- May 2-4, 1973  
IEEE Western Region Conference, Honolulu, Hawaii.
- June 4-6, 1973  
G-MTT International Microwave Symposium, Boulder, Colorado.
- July 15-20, 1973  
IEEE Power Engineering Society Summer Power Meeting and EHV/UHV Transmission Symposium, Vancouver, B.C.
- September 11-14, 1973  
WESCON, San Francisco.
- November 14-16, 1973  
Nuclear Science Symposium, San Francisco.
- November 14-16, 1973  
Nuclear Power Systems Symposium, San Francisco.
- April 21-24, 1974  
International Symposium on Circuits and Systems Theory, San Francisco.
- July 16-18, 1974  
International Symposium on Electromagnetic Compatibility, San Francisco.

# MEETING CALENDAR

## ANTENNAS & PROPAGATION MAY 16

Story on page 8

**A ONE DAY SYMPOSIUM.** 8 speakers. Northern California Symposium on Antennas and Propagation. Registration fee \$1.00.

MAY 16, Wednesday, 1:30 PM to 4:30 PM, Lockheed Research Lab Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. No dinner.

## AUDIO & ELECTROACOUSTICS MAY 10, Thursday

Joint meeting with the Audio Engineering Society. Details will be announced to members by mail. For further information call Dave Annett, Stanford University, 231-2300 x 4959, or the Section Office.

## COMMUNICATIONS SOCIETY MAY 22

Story on page 8

**SOUTHERN PACIFIC COMMUNICATIONS COMPANY AND THE SPECIALIZED COMMON CARRIERS.** John J. Geier, Marketing Mgr., Southern Pacific Communications, San Francisco.

MAY 22, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Dinner 6:30 PM. Reservations: Dick Sherman, (415) 326-4350 x 4104 by May 21st.

## COMPUTER SOCIETY MAY 22

Story on page 4

**COMPUTER SYSTEMS WITH SPECIALIZED PROCESSORS.** Dr. Mel Pirtle, Director of the Institute of Advanced Computation at NASA/Ames Research Center. **ELECTION MEETING.**

MAY 22, Tuesday, 8:00 PM, Skilling Auditorium, Stanford University. Dinner: 6:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Neil Sullivan, (408) 257-6550 by May 22nd.

## COMPUTER SOCIETY/DIV. OF CONTINUING EDUCATION. SANTA CLARA UNIVERSITY JUNE 2

Story on page 7

**MICRO PROCESSORS.** All leading manufacturers of micro processors will participate.

JUNE 2, Saturday, 9:00 AM to 4:00 PM, Daly Science Hall, Room 207, University of Santa Clara. Information: See story or call Peter Gise (408) 984-4482.

## CONTROL SYSTEMS SOCIETY MAY 7

Story on page 5

**STABILITY OF STOCHASTIC CONTROL SYSTEMS.** Dr. Richard R. Mitchell, Institute of Medical Sciences, San Francisco. **ELECTION MEETING.**

MAY 7, Monday, 8:00 PM, Basement Conference Room, Systems Control, 260 Sheridan Ave., Palo Alto. No dinner.

## EAST BAY SUBSECTION MAY 15

Story on page 8

**TOUR OF STANDARD OIL REFINERY IN RICHMOND.** **ELECTION MEETING.**

MAY 15, Tuesday, 6:00 PM, Holiday Inn, Cutting Blvd., Richmond. Dinner followed by tour. Further information and reservations: Jerry Parker, (415) 835-9500 x 327 by May 14th.

## ELECTROMAGNETIC COMPATIBILITY/AEROSPACE & ELECTRONIC SYSTEMS MAY 21

Story on page 6

**INTERCONNECTIONS FOR HIGH SPEED DIGITAL CIRCUITS.** Dr. Frank Greene, Stanford University. **EMC ELECTION MEETING, and AES ELECTION MEETING.**

MAY 21, Monday, 8:00 PM, Philco Ford Auditorium, 3939 Fabian Way, Palo Alto. Cocktails: 5:30 PM, dinner at 6:30 PM, Rickey's Hyatt House, 4219 El Camino Real, Palo Alto. Reservations: Sue Davis, (415) 493-3231 x 243 by May 18th.

## ELECTRON DEVICES MAY 23

**A PANEL DISCUSSION ON BIPOLAR TECHNOLOGIES BY REPRESENTATIVES FROM VARIOUS SEMICONDUCTOR COMPANIES.**

MAY 23, Wednesday, 8:00 PM, Rickey's Hyatt House, 4210 El Camino Real, Palo Alto Room. Cocktails: 6:00 PM, dinner 7:00 PM. Reservations: Section Office: (415) 327-6622.

## ENGINEERING MANAGEMENT MAY 15

Story on page 6

**THE STRESS OF SUCCESS.** Dr. Albert Porter, Professor of Business, California State University, San Jose.

MAY 15, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: 6:00 PM, dinner 6:30 PM. Reservations: Mrs. Scott, (408) 243-3600 x 365 by May 11th.

## ENGINEERING IN MEDICINE & BIOLOGY MAY 8

Story on page 2

**ARTIFICIAL HEARTS REVISITED.** Dr. Allen K. Ream, M.D., UC Medical Center, San Francisco.

MAY 8, Tuesday, 8:00 PM, Stanford Medical Center, Room M106. Dinner: 6:00 PM, Stanford View, 1921 El Camino Real, Palo Alto. Reservations: Mrs. A. L. Swenson (408) 291-4975 by May 7th AM.

## INDUSTRIAL ELECTRONICS & CONTROL

Story on page 6

**JOINT MEETING. INFRARED GAS ANALYSIS.** Dr. Julius Muray, FMC Corp., Central Engineering Laboratory.

## INSTRUMENTATION/INSTRUMENTATION MEASUREMENT MAY 16

MAY 16, Wednesday, 8:00 PM, Rickey's Hyatt House, University Room, 4219 El Camino Real. No host cocktails at 6:00 PM; dinner at 6:45 PM. Reservations: Nancy Lee, (408) 289-2216 by May 15th.

## INFORMATION THEORY MAY 21

Story on page 4

**DESCRIPTION OF CURRENT RESEARCH.** Experiments to determine a distortion measure for Image Transmission. Prof. Dave Sakrison, Electrical Engineering, UC Berkeley.

MAY 21, Monday, 8:30 PM, SRI Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, Tia Maria, 4470 El Camino Real, Los Altos. Reservations: Mrs. Kay Eberwine, (415) 321-2300 x 4539 by May 19th.

## MAGNETICS MAY 17

Story on page 8

**PANEL DISCUSSION: REVIEW OF THE 1973 INTERNATIONAL MAGNETICS CONFERENCE.** **ELECTION MEETING.** John Newman, Moderator.

MAY 17, Thursday, 8:00 PM, Hewlett-Packard Co., 5301 Stevens Creek Blvd., Santa Clara. No dinner.

## NUCLEAR & PLASMA SCIENCES SOCIETY JUNE 1

Story on page 6

**FIELD MEASUREMENTS OF RADIO-NUCLIDES IN THE ENVIRONMENT: THE REACTOR SAFETY PROBLEM.** Dr. Lynn Anspaugh, Lawrence Livermore Lab. Annual Meeting & Banquet.

JUNE 1, Friday, 8:30 PM, Golden Pavilion Restaurant, 4320 El Camino, Los Altos. Cocktails at 6:30 PM; dinner at 7:30 PM, Banquet by A. K. Chang of SLAC. Price \$6.75 including tax and tip. Reservations: Lou Burch, (415) 854-3300 x 2401 by May 25th.

## POWER ENGINEERING SOCIETY MAY 8

Story on page 7

**AN ELECTRICAL ENGINEER VIEWS HIGH ENERGY PHYSICS AT SLAC.** Alexander A. Tseng, Stanford Linear Accelerator Center.

MAY 8, Tuesday, 7:30 PM, Engineers Club, 160 Sansome St., San Francisco. Cocktail hour 5:30 PM, dinner 6:30 PM. For dinner reservations call the Engineers Club (415) 421-3184.

## SANTA CLARA VALLEY SUBSECTION MAY 23

Story on page 2

**SANTA CLARA VALLEY SUBSECTION ELECTION OF OFFICERS.** This meeting is to discuss 1973-74 activities and elect officers for this period.

MAY 23, Wednesday, 7:00 AM - **BREAKFAST MEETING** at Howard Johnson's, 5405 Stevens Creek Blvd. Reservations: Ray Power (408) 227-7100 x 6574 by May 18th.

## SYSTEMS, MAN & CYBERNETICS MAY 14

Story on page 4

**THE BERKELEY ROBOT PROJECT.** Michael Smith, UC Berkeley.

MAY 14, Monday, 8:00 PM, Cory Hall, Room 277, UC Berkeley. Dinner 6:00 PM, Yen Ching Mandarin Restaurant, 2017 Shattuck Ave., Berkeley (near West gate of campus). Reservations: Section Office (415) 327-6622 by May 11th.

## VEHICULAR TECHNOLOGY MAY 21

Story on page 5

**900 MHz MOBILE COMMUNICATION SYSTEMS.** William M. Borman, Motorola, Illinois.

MAY 21, Monday, 8:00 PM, Holiday Inn, Belmont. Take Marine World Parkway exit off Bayshore. Cocktails: 6:00 PM; dinner 7:00 PM. Reservations: Pauline Hawkins (408) 277-4000 x 4533 by May 18th.

## VEHICULAR TECHNOLOGY JUNE 18

**TOUR OF THE ALMADEN AIR FORCE RADAR STATION.** Ladies invited. Meet at the New Almaden Food & Beverage Co.

JUNE 18, Monday, 7:30 PM, New Almaden Food & Beverage Co., New Almaden. Cocktails: 6:00 PM; dinner: 6:30 PM. Reservations: Pauline Hawkins (408) 277-4000 x 4533 by June 15th.

**SECTION ANNUAL DINNER DANCE . . .** This year the Section will hold its Annual Meeting at the Elks Club, 229 West 20th Ave., San Mateo, on Friday, June 8, 1973. As is the custom, this meeting will feature the presentation of Fellow Certificates to our newly elected Fellows, and the introduction of the Section Officers for 1973-74. This is our "fun" meeting, so plan to attend and have a good time with old and new friends. No-host cocktails beginning 6:30 PM; dinner at 7:30 and dancing till midnight. Call the Section office (415) 327-6622 for reservations, no later than June 4th.

**IT – EXPERIMENTS DETERMINE  
DISTORTION MEASURE  
FOR IMAGE TRANSMISSION**

Shannon's rate distortion theory was developed to provide a theoretical basis for exactly such problems as the efficient encoding of images. To date, this theory has not been applicable to the simplest problem – that of encoding monochrome still images. There are two reasons for this, the major one being the lack of a distortion measure between source image and encoded image which is in good correspondence with the judgment of a human user. Two types of experiments have been (are being) used at Berkeley to determine such a distortion measure. The first considers only distortion measures from a given class. The optimum encoding of an image is simulated under different distortion measures in the class at fixed rate and the encoded images ranked by observers. The second approach is, pseudo-random distortions of differing statistical properties are superimposed on an image and the relative sensitivity to a human observer is determined by psychophysical experiments.

The speaker, Professor David Sakrison, is on sabbatical leave from Cambridge, England.



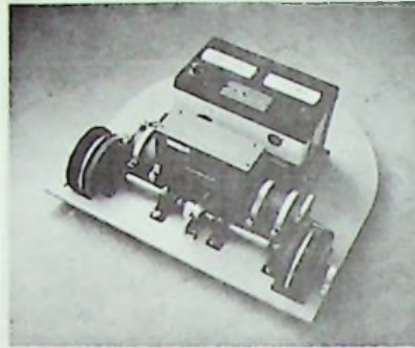
**CALL FOR PAPERS  
INTERNATIONAL SYMPOSIUM  
ON CIRCUIT THEORY**

Sir Francis Drake Hotel, San Francisco – April 21–24, 1974.

Authors are invited to submit original contributions either in regular or short paper form. Three copies of all papers should be submitted by October 15, 1973 to the Chairman of the Technical Program Committee:

Dr. L. O. Chua  
Department of Electrical Engineering and Computer Science  
University of California  
Berkeley, Calif. 94720

**SMC – THE BERKELEY  
ROBOT PROJECT**



While most of us are acquainted with the Stanford and SRI robot projects, it might come as a surprise that the University of California at Berkeley also has such a project. Jason, the Berkeley robot, is an inexpensive, but versatile, experimental, computer controlled robot, suitable for use in a research or educational setting.

Mr. Michael Smith will introduce us to Jason on Monday, May 14. (Please note the change in day and location. We especially hope that our East Bay members will plan to attend. See Calendar for details.) If all goes well a demonstration is planned.

Mr. Smith is currently a graduate student in the Department of Electrical Engineering and Computer Science at the University of California at Berkeley. As an undergraduate at Berkeley, he wrote an ACM award-winning paper on a computer program to play dominoes. This domino program has defeated two human champion players. Mr. Smith will be working at JPL this summer on a Mars vehicle for the Viking Project.

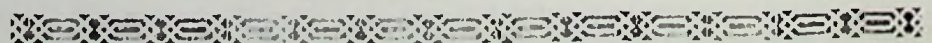


**CALL FOR PAPERS  
NUCLEAR SCIENCE SYMPOSIUM**

Sheraton Palace Hotel, San Francisco – Nov. 14–16, 1973.

Authors should submit by June 15 ten copies each of a 50 word abstract and 500 word summary to:

P. L. Phelps, Program Chairman  
L-523 Lawrence Livermore Laboratory, Box 808, Livermore, Calif. 94550. Telephone: (415) 447-1100, ext. 8311.



**C – COMPUTER SYSTEMS WITH  
SPECIALIZED PROCESSORS**

Large general purpose computer systems perform many functions, some related to user programs and some to system management. Frequently, it is advantageous to perform several of these functions simultaneously. This can be accomplished by utilizing several specialized processors to perform required computations in a simultaneous manner. Design considerations of such systems utilizing several types of individual processors will be presented with specific examples from the BCC 500 at the University of Hawaii and the ILLIAC IV at Ames Research Center.

Dr. Mel Pirtle received his BS, MS, and Ph.D. degrees in Electrical Engineering from UC Berkeley. He participated in Project GENIE in 1963. It was this project which developed one of the early time-sharing systems, marketed as the XDS 940. At the time Dr. Pirtle left the University in 1969, he was Principal Investigator of Project GENIE and Associate Professor of Electrical Engineering and Computer Science.

In 1969 Dr. Pirtle and several others founded Berkeley Computer Corporation. He now is Director of the Institute of Advanced Computation at NASA/Ames Research Center.



**CALL FOR PAPERS  
ELECTRON DEVICES GROUP  
11TH MODULATOR SYMPOSIUM**

Belmont Plaza Hotel, New York City – September 18–19, 1973.

Deadline June 22, 1973 for abstracts. Send original and ten copies of 200 word abstracts to:

Program Chairman, Sol Schneider  
Electronics Technology and Devices Laboratory  
Ft. Monmouth, N. J. 07703

## 1973 INTERNATIONAL SYMPOSIUM ON FAULT TOLERANT COMPUTING

June 20-22, 1973

Rickeys Hyatt House  
Palo Alto, California

A major forum for the presentation of research results and current practice in computer reliability.

Over the two and a half days of the conference, sessions will deal with such areas as: Fault Tolerant Systems, Network Testing, Design and Modeling of Redundant Systems, Fault-Tolerant Techniques for Memory and Arithmetic, Machine and System Testing.

A panel discussion, "Needs and Capabilities: Research in Fault-Tolerance" will be included. Time will be made available on Friday afternoon for those in attendance to make brief statements about current work.

To receive a complete registration packet, write to Conference Chairman:  
Professor E. J. McCluskey  
Digital Systems Laboratory  
Stanford University  
Stanford, Calif. 94305

Reduced-rate pre-registration closes May 25. Sponsored by the Technical Committee on Fault-Tolerant Computing of the IEEE Computer Society, in cooperation with the Stanford University Digital Systems Laboratory.

## VT - 900 MHz MOBILE COMMUNICATION SYSTEMS



The 900 MHz band characteristics and uses will be described, in terms of types of users and communication requirements. Several basic radio systems will be described, designed to match the efficient use of the 900 MHz spectrum. Timetables for system types will be given.

The speaker, William M. Borman, is Manager of Spectrum Resources for Motorola C and E, Inc., Schaumburg, Illinois. He is responsible for the planning and coordination of new products, systems, and spectrum uses. Prior to this, he was manager of Command and Control Systems development and design. Mr. Borman received his BSEE degree from Fournier Institute of Technology, and an MSEE from the University of Illinois. Before joining Motorola, Mr. Borman was with Illinois Institute of Technology Research Institute.

## CSS - STABILITY OF STOCHASTIC CONTROL SYSTEMS

The problem of stability of stochastic control systems arises immediately with random time varying parameters, e.g., time varying feedback gains. Four examples which illustrate some new results will be presented. The mean square and sample solution stability boundaries will be compared with sample solutions obtained by computer simulation. Finally, a simple procedure for computing the sample stability boundaries of higher order linear systems will be shown.

Dr. Mitchell is at the Institute of Medical Sciences, Pacific Medical Center in San Francisco on a Special Fellowship from the National Institutes of Health, studying the respiratory control system of post cardiac surgery patients. He received his PhD in Engineering Science from Purdue in 1970.

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## EUROCON 74 - AMSTERDAM APRIL 22-26, 1974 CALL FOR PAPERS

The European Conference on Electro-techniques, EUROCON '74 theme is: "The Engineer and Society". Papers desired on the following subjects:

- Controlling the Future - (power sources and environment)
  - Instrumentation Electronics
  - Communications for the 1980's -
    - Local cable networks, CATV, etc.
    - Long distance transmission
    - Terrestrial and satellite radio communication
    - Mobile communications-Navigation
    - Processors in communications
    - New services (Videophone, etc.)
  - The Computerized Society
  - Biomedical Engineering
  - Education (Adequacy for future)
- Deadline for abstracts Oct. 15, 1973.  
Official language - English.  
Those interested in submitting papers contact IEEE office in Palo Alto for more complete details.

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## G-EMB DRESDEN CONFERENCE SPECIAL CHARTER FLIGHT

Tenth International Conference, Dresden, East Germany, Aug. 13-17. G-EMB members and families only are eligible for special round trip fare of \$172.50 including airport taxes. Arrangements available for 20 day post-conference tour of Germany, Austria and Yugoslavia. For further information contact:

IEEE GEMB Travel Coordinator  
K. V. Amatneek  
Hahnemann Medical College  
BSB - 4604, Philadelphia 19102  
Tele. (215) 448-8640

## CALL FOR PAPERS G-MTT SPECIAL ISSUE OF TRANSACTIONS MARCH 1974

Papers reporting new and significant developments in COMP are solicited. Papers to conform to "Information for Authors" published in Transactions. Three copies of each complete manuscript should be submitted for review not later than July 2, 1973 to:

Guest Editor Dr. J. W. Bandler  
Dept. of Electrical Engineering  
McNaster University  
Hamilton, Ontario, Canada

## EM – THE STRESS OF SUCCESS

"The Stress of Success: Executive Health In An Air Of Anxiety" will be the subject of a presentation by Dr. Albert Porter.

Managers commonly exhibit a behavior pattern of such all-out commitment to work and career-oriented extra-curricular activities as to result in virtual exclusion of family, non-career hobbies and leisure.

Dr. Porter is currently conducting a large-scale field research investigation of how people in organizations perceive and respond to stress. He expects to include a playing of taped interviews from his research during the evening's presentation.

Dr. Porter is a Professor of Business at California State University, San Jose. He has earned MBA and PhD degrees from Stanford University, and has instructed at the college level for a number of years subsequent to his business experience with Equitable Life Assurance Society of the U.S. Spouses and guests are welcome.

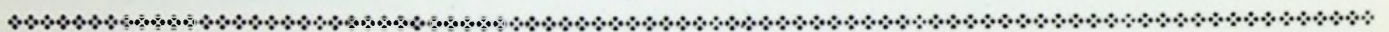
## EMC – AES JOINT MEETING INTERCONNECTIONS FOR HIGH SPEED DIGITAL CIRCUITS



Dr. Frank Greene, Assistant Chairman and Lecturer in the EE Department at Stanford University will speak on Interconnections for High Speed Digital Circuits at a joint meeting of the EMC and Aerospace & Electronics Systems Groups on May 21, 1973.

Dr. Greene is President of Technology Learning Corporation which is an educational technology company that develops technical instructions for industry, universities and government agencies. From September 1965 to May 1971 as a member of the technical staff at Fairchild Memory Systems in Palo Alto, he participated in the design and development of the ILLIAC IV memory system and related test equipment.

Interconnection and signal distribution considerations for high speed digital circuits will be described. Packaging and digital circuit layout techniques for minimum cross talk and noise generation will be discussed. Examples of some specific problems and solutions will be illustrated from the development of large integrated circuits memory systems.



## IM – IECI – JOINT MEETING INFRARED GAS ANALYSIS

Gas analysis is important in medicine, chemical engineering of plants, atmospheric pollution monitoring and monitoring car exhausts. Infrared absorption techniques offer the advantage of high-speed continuous read-out of changing concentrations, and are in wide industrial use.

Directed to electronics engineers, the talk reviews the different techniques (dispersive, non-dispersive, Fourier, Hadamard) used, and the different instruments available including performance data. Specific areas of product improvement that are probable within the next few years will be discussed.

Julius Muray, Manager of Physical-Electronics at Central Engineering Laboratories of FMC Corp. received a Ph.D. in Physics from U.C. Berkeley in 1961. He has been employed at Stanford University, Hewlett-Packard and Cintra. He has published papers in optics, optical instrumentation and electron physics.

## G-EMC SYMPOSIUM IN 1974 FOR SAN FRANCISCO

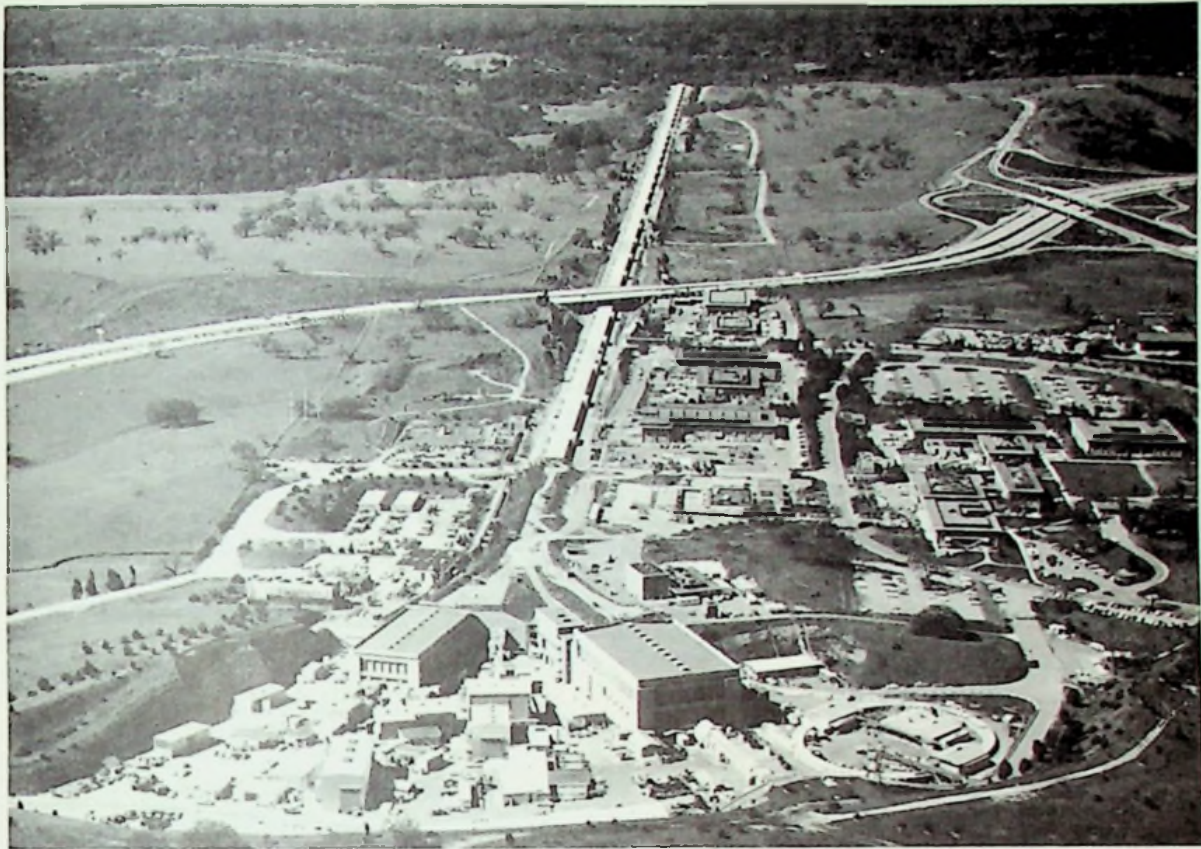
Next year, the San Francisco G-EMC Chapter is hosting the 1974 International Symposium on Electromagnetic Compatibility at the San Francisco Hilton and Tower, from July 16-18, 1974. This three-day conference will have technical sessions on EMC measurement and testing, noise immunity considerations in digital systems design, interference control in data transmission, radio-frequency spectrum usage and compatibility, EMC standards and specifications, r.f. biological hazards effects and controls (e.g. microwave ovens) and other related subjects. Exhibits of equipment used in this work will be on display as a part of the symposium. Participation of interested SF Section members in committee effort will be welcomed whether members of G-27 or not. Contact Al Hart at Singer Instrumentation, 3176 Porter Drive, Palo Alto 94304, or Vic Siegfried, 1 Tallwood Court, Menlo Park 94025.

## NPSS – MEASUREMENT OF RADIO-NUCLIDES IN THE ENVIRONMENT

Interest in evaluating the ultimate impact on man of the release of radionuclides to the environment has accelerated greatly with the impending use of large numbers of nuclear reactors to produce electrical energy.

Current and proposed regulations present difficult challenges in the detection of man-made radionuclides in environmental samples. A promising new technique is field spectrometry using a portable "jelly" detector. A discussion of the technique and its application to a wide variety of radio-ecological studies, in particular reactor safety, will be discussed.

Lynn Anspaugh has been with the Biomedical Division at Lawrence Livermore Laboratory since receiving his Ph.D. in Biomedicine at U.C. Berkeley in 1963, specializing in radio-ecological studies. His current research interests include the study of wind-driven re-suspension of Pu-239 from soil surfaces, and new ecological applications of field spectrometry techniques.



## PES – HIGH ENERGY PHYSICS AT SLAC

At the May meeting of the Power Engineering Society, Alexander A. Tseng will discuss the past operating and research experience of the Stanford Linear Accelerator Center. He will also discuss the present status and the future plans for this 2-mile long accelerator. At present the peak load for the accelerator is approximately 60 MW. This is only 20% of the ultimate peak of 300 MW which is planned.

Mr. Tseng was born in Peking, China and has received degrees from China's National Central University, Illinois Institute of Technology and Stanford. He is currently Chief Electrical Engineer for SLAC. He has also worked for the North China Power System, Stone and Webster and Bechtel Corporation.

This meeting will be our annual PES Ladies Night. Plan to attend and hear Mr. Tseng's interesting discussion. See the Grid Calendar for time and reservation details.

## C – ONE DAY SHORT COURSE ON MICROCOMPUTERS

A one day tutorial sponsored by the computer society. To be held at the University of Santa Clara on Saturday June 2, 1973.

The development of the microprocessor (computer on a chip, or otherwise referred to as micro-computer) during the last year or two, is the single most important development in the computer technology since integrated circuits. Microprocessors are now becoming available in quantities and at reasonable prices. They are viewed by many experts as the component that will revolutionize the computer industry in the next few years and be the main characteristic of fourth generation machines.

This one day tutorial session will present the state of the art from the system standpoint, and will be oriented toward user applications with emphasis on "how to use." The course will be taught by lecturers from all leading microcomputer manufacturers, such as Intel, Fairchild, AMI, National Semi-Conductor and Rockwell.

Application information will be provided, and attendees are invited to

discuss microprocessor requirements. This is the fourth in a series of one day short courses to be presented in 1972-1973.

Fees: IEEE or ACM members \$20.00, non-members \$25.00. Fees include notes and luncheon on campus. Student members or unemployed members \$4.00 without lunch, or \$6.00 with lunch.

IEEE Computer Society  
June 2, 1973 – One Day Short Course on "Microcomputers"

(If possible, mail before May 28)

Enclosed is check (Payable to University of Santa Clara) in amount of \$ \_\_\_\_\_

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Santa Clara, California 95053

## ANTENNAS & PROPAGATION SYMPOSIUM – MAY 16, 1973

Northern California Symposium on Antennas and Propagation, Wednesday, May 16, 1973, 1:30 p.m. to 4:30 p.m. at Lockheed Research Laboratory Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Featuring papers as follows:

- A Limited-scan Phased Array For Use with a Clutter Mapping Radar System – R. I. Presnell, SRI.
  - Gain Paradox in Array Antennas – A. E. Smoll, Philco-Ford, WDL.
  - Application of Toeplitz Matrix to the Problem of A Dipole in a Warm Plasma – R. J. Lytle and D. L. Lager, Lawrence Livermore Lab.
  - Observations Concerning the Relative Surface Wave Efficiency of Sources in Proximity to Ground – R. J. Lytle, E. K. Miller, E. J. Deadrick and D. J. Lager, Lawrence Livermore Laboratory.
  - Problems Associated With Spiral Antennas Operating at a Close Distance Over a Ground Plane and Possible Solution – G. N. Voronoff, Dalmo Victor Co.
  - Don't Believe That Slow-wave Techniques Extend the Low Frequency Cut-off of Spiral Antennas, Proper Termination Does – G. N. Voronoff, Dalmo Victor Co.
  - A Broadband Sector Qualification Antenna – S. Kuo, GTE Sylvania, Inc.
  - Numerical Results of Transient Analysis of Antennas – J. A. Landt, Lawrence Livermore Lab.
- Registration fee for the Symposium one dollar.



## COM – SOUTHERN PACIFIC COMMUNICATIONS COMPANY AND THE SPECIALIZED COMMON CARRIERS

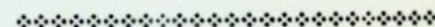


The May meeting of the Communications Society will feature Mr. John Geier, Marketing Manager of Southern Pacific Communications Company who will describe the construction status and planned cutover dates for Southern Pacific's 11-state common carrier microwave network. He will discuss the full range of specialized voice and data communications services the new communications company intends to provide for private line customers in business and industry. The talk will be illustrated with slides and the discussion will also cover the status of all the other specialized common carriers as well as illustrations of the domestic satellite systems that are expected to be in operation by the middle of next year.

Mr. Geier is an officer of the Southern Pacific Communications Company, a wholly-owned subsidiary of Southern Pacific. He has held a number of positions in the communications and computer industries prior to assuming the post of Marketing Manager at Southern Pacific Communications. He spent 12 years with New Jersey Bell in various Marketing and Public Relations staff and line assignments, and at Univac Division of Sperry Rand, he was responsible for Univac's Marketing Program to the Bell System.

## MAG – REPORT ON INTERNATIONAL CONFERENCE

The technical papers presented at the International Magnetics Conference in Washington, D.C., April 24-27, 1973, will be reviewed on May 17 at the Magnetics Chapter meeting to be held at Hewlett-Packard Co. in Santa Clara. The review panel will be composed of members of the SF Section Magnetics Chapter who attended the conference. John Newman, Memorex Co., will be the moderator. Subjects of interest will include permanent magnets, magnetic recording techniques and theory, unconventional recording and materials, progress in magnetic bubble memories, magneto-optics, and memory systems. Election of Chapter officers will also be held. See Calendar for details of meeting.



## EBSS – TOUR OF STANDARD OIL REFINERY

On May 15 the East Bay Subsection will sponsor a tour of the Standard Oil Refinery at Richmond. The tour will begin at the large wharf delivery point and proceed through the various operating areas, emphasizing air and water control equipment.

Following the tour Standard Oil will host a buffet dinner to include a question and answer period conducted by Mr. R. F. Williams, an engineer with the company.

The tour group will assemble at the Holiday Inn at Cutting Blvd. in Richmond at 5:45 p.m., and will be limited to forty persons. Please call Jerry Parker 835-8500 x327 for reservations.