EDITOR'S PROFILE of this issue

from a historical perspective …

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

February, 1974:

Cover: 12 new IEEE Fellows were elected from the SF Section (out of a total of 116 world-wide). Profiles on pages 4-5.

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

Grid

FEBRUARY 1974

FELLOWS ELECTED 1974

THE COVER STORY

Twelve Senior Members of the San Francisco Section were elected to the grade of Fellow for 1974. This constitutes 10.3% of the total of 116 Fellows elected.

LEON O. CHUA
For contributions to nonlinear network theory.

ADAM LENDER
For contributions to data communications.

THOMAS M. COVER
For contributions to pattern recognition, learning theory, and information theory.

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For contributions to the theory of imaging.

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For contributions to the design of atomic frequency standards and to the theory and measurement of frequency stability.

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For contributions to active network theory and to engineering education.

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For contributions to solid-state physics and the development of computer-controlled robots.

DAVID J. SAKRISON
For contributions in research and teaching in communication theory and its applications.

THOMAS A. LONGO
For development of transistor-transistor-logic integrated circuits, and other contributions to semiconductor technology.

O. THOMAS PURL
For contributions to high-power traveling-wave tubes, and for leadership of microwave electron device engineering.

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Jean Helmke, Office Manager

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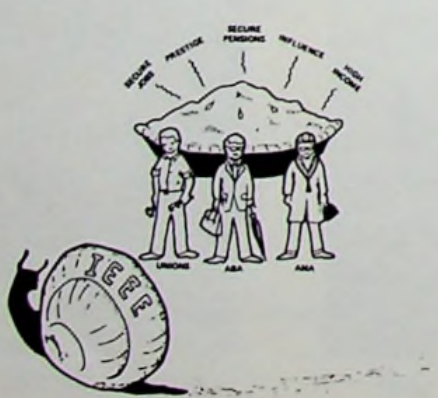
IEEE MOVES TOWARD PROFESSIONALISM



PAC SURVEY OF BAY-AREA YOUNG ENGINEERS

The Professional Activities Committee (PAC), San Francisco Section, has just become a standing committee as reported in last month's GRID. Recently, this committee completed a survey of young engineers in the Bay Area. The survey was directed at the age group of 30 years and under. The goal was to elicit the general attitudes and feelings of this important section of the IEEE membership toward the Institute. The effort was made as part of a larger effort at the national level and the results will be included in the result of the national survey. A summary of the survey is presented below.

A total of 109 young engineers were interviewed, in 23 interview sessions. The method of interviewing consisted of meeting with a group of from three to ten people. Intentionally, there was no fixed structure to the sessions and the discussions took place in a "rap session" atmosphere.

Statistically, the 109 engineers interviewed represent 20% of the 540 eligible to participate in the 8400-member San Francisco Section.

The following is a summary of the committee's findings:

- Dues - Reduce for first 5 years. Improve account and budget credibility.
- Publications - More tutorial material. Increase timeliness. Publish student/Y.E. Journal.
- Continuing Education -
  Committee - Improve visibility. Increase scope.
  Technical - More tutorial material and tutorial sessions. Two level offerings.
  Non-Technical - Enter field of government and social interaction.
- Meetings - Orient to practicing engineer. Improve appeal.
- Image - Improve public image of engineering and engineers. Use public-information specialists.
- Voice - Speak out. Hire public-information specialists.
- Government Relations - Lobby. Encourage membership interface. Work with legislators and government officials.
- Surveys - Determine member opinion and gather professional data through regular surveys.
- Employer Ratings - Establish a system of rating employers and publish ratings.
- Certification - Establish a system of EE certification.
- Technology and Engineering-Man-Power-Requirements Forecasting - Help our country, profession, and members through forecasting.
- Interaction with Students - Change traditional methods that tend to isolate student from non-academic engineers.
- Career Information - Publish career-related information on a timely basis.
- Employer/Engineer Relations - Provide members effective help.
- Organization of IEEE - Make more visible and democratic.
- Publicize Programs - Let the benefits of membership be better known.
- Pensions - Secure portable pensions and early vesting.
- Insurance - Continue excellent programs.
- Other Benefits - Strive for portability of all benefits.

The above listing does not attempt to rank the individual items except that the subject of cost was the single, most frequent topic of discussion. The thrust of the remarks was that most young engineers do not think that they are getting their money's worth. A typical comment was, "a $35 magazine subscription is a little too much." The young engineers all can come up with $35 but need to be convinced that what they get is worth it.

The survey results clearly indicate that the young engineers would like the Institute to provide a lot of services and benefits that presently do not exist. Creation of these programs and benefits will require some rearranging of established priorties as well as a concentrated effort by the IEEE membership in the form of active participation in IEEE affairs. The creation of PAC as a standing Section Committee provides an excellent opportunity for members to contribute to the cause of professionalism by becoming active participants. Members who would like to join the PAC roster or would like to contribute to the Committee's efforts can contact Hermann F. Schmid, telephone (415) 364-6756.

MEETING CALENDAR

AEROSPACE & ELECTRONIC SYSTEMS
FEB. 21

Story on Page 8

BROADCAST SATELLITE SYSTEMS. Dr. C.C. Han, Philco-Ford, WDL, Palo Alto.

FEB. 21, Thrusday, 8:00 PM, Philco-Ford Auditorium, Bldg. 3, 3825 Fabian Way, Palo Alto. Dinner: 6:30 PM, Rickey's Hyatt House, 4219 El Camino, Palo Alto. Reservations: (415) 326-4350 x 4769 or x 5087 by Feb. 20th.

ANTENNAS & PROPAGATION
FEB. 9

Story on page 7

REFLECTOR ANTENNAS: TUTORIAL LECTURE SERIES. (See story and Jan. Grid for details.)

FEB. 9, Saturday, 8:30 AM to 4:00 PM, Philco-Ford Auditorium, Bldg. 3, 3825 Fabian Way, Palo Alto. Registration: $15. Further information: Dr. Anthony Jennetti (408) 734-2244.

COMMUNICATIONS SOCIETY
FEB. 12

Story on page 7

SINGLE-SIDEBAND MICRO-WAVE RADIO. Maury Harp, GTE Lenkurt.

FEB. 12, Tuesday, 8:00 PM, University Room, Rickey's Hyatt House, 4219 El Camino, Palo Alto. Dinner: 6:30 PM. Reservations: Lee Stephens, (415) 961-1000 x 213 by Feb. 11th.

COMPUTER SOCIETY
FEB. 20

HAND HELD CALCULATORS: PRESENT AND FUTURE. Chung tung, Hewlett-Packard, Cupertino.

FEB. 20, Wednesday, 8:00 PM, University of Santa Clara, Daly Science Hall, Room 207. Dinner: 6:15 PM, University Faculty Club on Campus. Reservations: Pat Rubin, (415) 965-6349 by noon Feb. 20th.

EAST BAY SUBSECTION
FEB. 25

Story on page 7

WHAT HAPPENS WHEN THE LIGHTS GO OFF? Orville Hill, PG&E and R.H. Hayes, PT&T.

FEB. 25, Monday 7:30 PM, PG&E Service Center, 1030 Detroit Ave., Concord. No reservations required.

ELECTRON DEVICES
FEB. 19

Story on page 8

INTEGRATED INJECTION LOGIC - PRESENT AND FUTURE. N.C. deTroye, Philips Research Labs, Eindhoven, Netherlands.

FEB. 19, Tuesday, 8:00 PM, Bold Knight, 769 N. Matilda, Sunnyvale. Dinner: 7:00 PM, Bold Knight. Cocktails at 6:00 PM. Reservations: Section office (415) 327-6622.

ENGINEERING IN MEDICINE & BIOLOGY
FEB. 12

To be announced.

FEB. 12, Tuesday, 8:00 PM, 134 McCullough Bldg., Stanford University. Dinner: Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Information: Huey Lee (408) 739-8880 x 251 or Section office (415) 327-6622.

GOLDEN GATE SS/POWER ENGINEERING and INDUSTRY APPLICATIONS SOCIETIES
FEB. 12

Story on page 6

JOINT MEETING. SOLID STATE PROTECTIVE RELAY PRACTICE IN EUROPE. Ian Macmichael, The English Electric Corp., Elmsford, New York.

FEB. 12, Tuesday, 7:00 PM, PG&E Co., 77 Beale St., San Francssco, 3rd floor Cafeteria, Room 301/305. Dinner: 6:00 PM. Reservations: Art Wells (415) 467-1880 or Molly Milan (415) 445-2227.

INFORMATION THEORY
FEB. 25

Story on Page 5

WIDEBAND SIGNAL SET DESIGN. Dr. R.A. Scholtz, Associate Professor of EE, USC, Berkeley.

FEB. 25, Monday, 8:30 PM, Stanford Research Institute, Conference Room B, 333 Ravenswood Ave., Menlo Park. Dinner: 6:30 PM, Velvet Turtle, 325 Sharon Park Drive, Menlo Park. Reservations: D. Wilson (415) 966-2595 or Mrs J. Brewer (415) 966-3286 by Feb. 25th.

MAGNETICS/MICRO-WAVE THEORY & TECHNIQUES
FEB. 28

Story on page 7

THIN FILM MICROWAVE MAGNETICS. Panel discussion. Wayne Bonjianni, Rockwell International.

FEB. 28, Thursday, 8:00 PM, Hewlett-Packard Co. main auditorium, 5301 Stephens Creek Blvd., Santa Clara. No dinner.

SANTA CLARA VALLEY SS/ENGINEERING MANAGEMENT SOCIETY
FEB. 22

Story on page 8

1974 ENGINEERS' WEEK DINNER. The Honorable Bill Greene, Assemblyman from the 53rd District will speak on ENGINEERING MANPOWER DEVELOPMENT

FEB. 22, Friday, 8:00 PM, San Jose Hyatt House, 1740 N. First St.. Social Hour - 6:00 PM; dinner - 7:00 PM. Cost of dinner $8.00. Entree will be roast sirloin of beef. Reservations - before Feb. 20th - Gerri Embray (408) 291-5380 or Eve Bullerdick (408) 291-2129.

SYSTEMS, MAN & CYBERNETICS
FEB. 13

Story on page 6

OPTIONS AND CONSTRAINTS IN BUYING, GENERATING AND DISTRIBUTING ENERGY. Mike Mertz of PG&E.

FEB. 13, Wednesday, 8:00 PM, Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner 6:15 PM, Red Cottage, 1706 El Camino, Menlo Park. Reservations: (415) 327-6622. Dinner $6.00 per person.

VEHICULAR TECHNOLOGY
FEB. 11

Story on page 5

THE ENERGY CRISIS. William Roper, Standard Oil Co. Western Operations, Inc.

FEB. 11, Monday, 8:00 PM, Holiday Inn, Belmont. Take Marine World Parkway exit off Bayshore. Cocktails at 6:30 PM; dinner 7:00 PM. Reservations: Bonnie or Karen (415) 349-3111 x 222 by Feb. 8th.

SAN FRANCISCO BAY AREA ENGINEERS' WEEK - February 17 - 23, 1974. Banquet: Thursday, Feb. 21 at Goodman Hall, Jack London Square, Oakland. Speaker: Dr. Stanley E. McCaffrey, President, University of Pacific at Stockton.

FOURTH ANNUAL INSTITUTE IN COMPUTER SCIENCE. Ten intensive computer short courses will be given this summer under the sponsorship of University Extension. William McKeeman, Associate Prof. of Information Sciences at UCSC and technical coordinator of the program. Courses will be held between June 24 and August 23, 1974. Additional information is available from Bill McKeeman or Deborah Gordon, University of California Extension, Santa Cruz 95064. (408) 429-2821.

CALIFORNIA POLYTECHNIC STATE UNIVERSITY at San Luis Obispo is sponsoring a workshop on Nuclear Power March 7, 8 and 9, 1974. Further information: Dr. Saul Goldberg, Electric Power Institute, Calif. Polytechnic State University, San Luis Obispo 93407 (805) 546-2315. - - - The CPSU is also sponsoring "1974 FRONTIERS IN EDUCATION", a Conference to be held in London, July 15-19, 1974. For travel and other information: Dr. E.R. Owen, EE Dept., Calif. Polytechnic State University, San Luis Obispo (805) 546-2781. Travel arrangements must be firmed up soon. Any IEEE or ASEE member is eligible to participate in these arrangements.

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(continued)

ENGINEERS' WEEK

February 17-23, 1974

San Francisco Bay Area Engineering Council

invites you to attend . . .

THE BANQUET

Wives and Friends Invited

Date: Thursday, February 21, 1974

Place: Goodman's Hall
10 Jack London Square, Oakland

Time: 5:30 p.m. No Host Cocktails
7:00 p.m. Banquet

Program: Award of scholarships to students from all parts of the Bay Area

Speaker: Dr. Stanley E. McCaffrey
President
University of The Pacific

Ticket order for Banquet

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Mr. Lorne E. Swanson
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Lafayette, CA 94549

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Business Phone: _____

Reserve ____ places, if practicable

at table with _____
(SOCIETY OR FIRM NAME)

_____
SIGNATURE

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(continued)

1974 Winter Convention on Aerospace and Electronic System, Marriott Hotel, Los Angeles, California • March 12—14

PLAN NOW ON ATTENDING!

ORDER FORMS ON REVERSE SIDE

WINCON 74

Aerospace & Electronic Systems Society
Institute of Electrical & Electronic Engineers, Inc.
Los Angeles Council, IEEE

Theme: "Future Requirements and Opportunities in Aerospace and Electronics Systems." The new priorities — in lasers, satellites and aerospace defense systems — an indepth analysis by the nation's leading authorities on what to expect from the *customer* in 1974 and beyond.

Sponsored by the Los Angeles Council of the Institute of Electrical and Electronic Engineers, Inc., and (the Aerospace and Electronics Systems Society), with support and participation by the Department of Defense, the U.S. Army, Navy and Air Force.

IEEE sessions at the new Los Angeles Marriott Hotel.
Classified sessions at The Aerospace Corporation.

TUESDAY, MARCH 12	WEDNESDAY, MARCH 13	THURSDAY, MARCH 14
Unclassified Chairman: Prof. A. Hertzberg Univ. of Washington Aerospace Research Lab.	Unclassified Chairman: Sidney Metzger Asst. V.P. & Chief Scientist COMSAT Corporation	Classified Chairman: Dr. I. J. Gabelman Chief Scientist USAF/RADC
LASERS	**SATELLITES**	**AEROSPACE DEFENSE**
LUNCHEON Speaker not confirmed Marriott Hotel	OPEN LUNCH	LUNCHEON Gen. Samuel C. Phillips Commander, AFSC Marriott Hotel
Classified Chairman: Dr. R. Cooper Asst. Deputy DDR&E	Classified Chairman: M. Gen. H. A. Lyon Vice Commander, SAMSO	Classified Chairman: M. Gen. J. E. Paschall DCS, USAF/ADC
LASERS	**SATELLITES**	**AEROSPACE DEFENSE**

BANQUET

Honoring Senator Barry M. Goldwater
Marriott Hotel

Presented by Lt. Gen. James H. Doolittle, USAF (Ret.)

WINCON '74

"ADVANCED REQUIREMENTS AND OPPORTUNITIES IN AEROSPACE AND ELECTRONIC SYSTEMS"

LASERS — Tuesday, March 3

Unclassified — Marriott Hotel

Chairman: Professor Abe Hertzberg,
University of Washington, Aerospace Research Lab

8:15 am — Welcome to WINCON '74 — David N. Ferguson, Vice President and General Manager, Northrop Corporation, Electronics Division

8:30 am — **LASER FUSION**

Speaker: John L. Emmet, Lawrence Radiation Labs.

(Abstract not available at this time.)

9:00 am — **LASER FUSION**

Speaker: Peter Rose, Mathematical Science Northwest, Inc.

An alternate scheme for the use of high power lasers for generating controlled thermonuclear reactions has been suggested by Dawson, et al. Combining the best features of magnetic containment and laser technology, the laser heated fast solenoid concept can be developed without straining either the physics or technology. Recent experimental evidence will be presented validating the principle of laser plasma heating and beam trapping, the two key physical principles demanded by this concept. A series of experiments will be presented suggesting that scientific feasibility of this concept can be established in a two step, 5-year program. Estimates of the demands of this concept as both a fusion reactor and a hybrid fission-fusion reactor will be presented.

9:30 am — Coffee Break

10:00 am — **HIGH POWER LASER TOOLS**

Speaker: Edward Locke, AVCO Everett Research Lab.

(Abstract not available at this time.)

10:30 am — **LASER TECHNOLOGY**

Speaker: Dr. Walter Sooy, Naval Research Lab.

(Abstract not available at this time.)

11:00 - 11:30 am — Open

11:30 - 1:15 pm — Lunch
Speaker: (To be confirmed)
Place: Marriott Hotel

1:30 pm — Bus to The Aerospace Corporation

Classified Session II — The Aerospace Corporation

Chairman: Dr. Robert Cooper, Assistant Director
Space and Advanced Systems, DDR&E

2:00 pm — **HIGH POWER LASER DEVICE TECHNOLOGY —**

Speaker: Dr. Edward Gerry, Assistant Director for Technology, Strategic Technology Office ARPA

A brief historical review of developments in high power/energy laser devices technology will be presented. The current status of thermally, chemically, and electrically pumped device technology will be discussed in the light of considerations for selection of devices for applications. Promising new device approaches will be identified.

2:30 pm — **LASER DAMAGE EFFECTS —**

Speaker: Colonel Donald Lamberson, Chief, Advanced Radiation Technology Office, AFWL

(Abstract not available at this time.)

3:00 pm — Coffee Break

3:30 pm — **LASER POINTING AND TRACKING TECHNOLOGY —**

Speaker: Dr. Warren Mathews, Hughes Aircraft

The concept of a high power laser system that can deliver concentrated energy to a distant object has resulted in development of a sophisticated pointing and tracking technology. For the laser system to be effective, the transmitted beam must not jitter or wander about the selected aimpoint to an extent that significantly increases the effective size of the focused spot on the object. Since the angular dimensions of the focused spot are typically in the microradian range, the stabilization and tracking accuracy required by a high energy laser system is dramatically more stringent than the accuracies usually associated with radar systems and electro-optical imaging systems.

While precision stabilization and tracking capability is a paramount requirement, the pointing and tracking equipment involves many other unique areas of technology as well. For example, the optical systems must exhibit high quality performance in the presence of high incident flux densities, and maintain precise alignment in a dynamic environment. The tracker must be able to image the object for selection of an aimpoint. Also, the system must track objects with large angular rates, necessitating computer rate-aided tracking.

11:45 am Lunch

Speaker: General S. C. Phillips, Commander, USAF/AFSC

Place: Marriott Hotel

2:00 pm Bus to The Aerospace Corporation

Classified Session VI — The Aerospace Corporation

Chairman: Dr. Irving J. Gabelman, Chief Scientist, RADC/USAF

2:30 pm **SAM-D TECHOLOGY —**

Speaker: Brig. General Charles F. Means, SAM-D Program Director Redstone Arsenal

Surface to Air Missile Development represents multiple technology advances. Achieving a self-contained "air-tight" defense system requires improvements in reaction time, guidance and control electronics and multiple target engagement capabilities.

2:50 pm **ABM TECHNOLOGY —**

Speaker: Dr. J. R. Fisher, Radar Div. Project Manager, USA SAFEGUARD Systems Command, Redstone Arsenal

The technology furor that accompanied the SAFEGUARD deployment decision pointed up the challenges remaining in ABM development. Major among these are improving the capability to counter penetration aids or saturation attacks against ABM radars.

3:10 pm Coffee Break

3:40 pm **ATTACK ASSESSMENT —**

Speaker: Col. Douglas T. Carmichael, Director, Attack Assessment System Program, SAMSO

The Air Force has embarked on a long term project to provide the NCA with comprehensive pre-impact attack assessment information. The first phase of this program, scheduled for implementation at the end of 1974, will provide common software modules and identical displays at the NMCC, ANMCC, SAC, and NORAD for association and correlation of all warning systems data to improve warning credibility and impact prediction accuracy.

4:10 pm **FUTURE REQUIREMENTS —**

Speaker: Brig. General Timothy I. Ahern, Asst. DCS, Programs and Requirements, Aerospace Defense Command.

The systems proposed for evolutionary improvement of aerospace defense in the 1970's are budgetarily constrained to operational application of demonstrated technology. Long range needs, however, require continued technology development in propulsion, airframes, sensors, guidance, and communications.

4:40 pm Adjourn

WINCON 74

WINCON '74 REGISTRATION FEE SCHEDULE

		IEEE MEMBER	NON-MEMBER	MILITARY	STUDENT
A.	FULL REGISTRATION: (Admission to all sessions, to both luncheons and to the banquet.)	$60.00	$65.00	$45.00	—
B.	WINCON TECHNICAL SESSIONS:				
	Single Days	$10.00	$12.50	—	—
	All Sessions	$20.00	$25.00	$ 5.00	—
	Both Unclassified Sessions, Only	$ 7.50	$10.00	—	$ 1.50
C.	LUNCHEONS & BANQUET (Per Person)				
	Single Luncheon	$ 8.50	$ 8.50	$ 8.50	$ 8.50
	Banquet	$25.00	$25.00	$25.00	$25.00

GENERAL INFORMATION

1. Shuttle buses will be provided for transportation between the Marriott Hotel and The Aerospace Corporation.
2. Registration for technical sessions includes admission to both classified and IEEE sessions.
3. No convention record or proceedings will be published.
4. Participation is not to be construed as endorsement by the Department of Defense of any of the information presented during these sessions.
5. Lodging will be available at the Los Angeles Marriott Hotel; reservations should be made by individuals in advance.

REQUEST FOR FORMS

Please forward WINCON '74 registration and security clearance forms to:

NAME: _____

ADDRESS: _____
P.O. Box or Street Address

_____
City State Zip

Please indicate your preference below:

- ☐ full registration, including all technical sessions, both luncheons and the banquet.
- ☐ all technical sessions, only.
- ☐ IEEE sessions, only.
- ☐ other (please state): _____

_____

MAIL TO:

G. W. Little
Northrop Corporation
One Research Park
Palos Verdes Peninsula, CA 90274

THOMAS A. LONGO

Dr. Thomas A. Longo is vice president and goup general manager, Digital Products Group of Fairchild Camera & Instrument Corporation. His responsibilities include MOS, Bipolar logic, memory and CCD. He joined Fairchild in March 1970 as a vice president and group director of bipolar integrated circuits.

Before coming to Fairchild, he served in research, engineering and management positions with General Telephone and Electronics Corporation, including a post as director of research and engineering for the company's Sylvania Semiconductor Division, where he was responsible for the development of TTL integrated circuits. Dr. Longo subsequently was vice president and general manager of semiconductor operations for the Transitron Electronic Corporation.

Dr. Longo received bachelor's and master's degrees in physics from Purdue University in 1947 and 1953, and received his doctorate in semiconductor physics from Purdue in 1957. He served as an officer in the U.S. Navy from 1947 to 1950. Dr. Longo carried our pioneering work in the effects of nuclear radiation on silicon, in tunnel diode research and in bipolar memories and high input impedance operational amplifiers. He also was responsible for the elimination of the "purple plague" phenomenon through the introduction of aluminum-to-aluminum wire bonding systems in transistors and integrated circuits.

THOMAS M. COVER

Thomas M. Cover was born in San Bernardino, California in 1938. He received the BS degree in Physics from M.I.T. in 1960, and the MS and PhD degrees Electrical Engineering from Stanford University in 1961 and 1964.

He is a Professor in the Departments of Electrical Engineering and Statistics at Stanford University, where he teaches and does research in the areas of machine learning, communication and information theory, and pattern recognition. He has served as a consultant to Stanford Research Institute, Bell Labs, and Sylvania and on the Visiting Lecturer Program in Statistics for the past two years. In 1971-72, he was a Visiting Associate Professor in Electrical Engineering at M.I.T., and a Vinton Hayes Research Fellow at Havard.

His paper "Broadcast Channels" won the IEEE IT Best Paper Awarad for 1971-72. In 1972, he was the President of the IEEE Information Theory Group and is currently finishing his first term on the Information Theory Board of Governors. He is past Book Review Editor for the IEEE Transactions on Information Theory. He is currently Associate Editor for Pattern Recognition Hypothesis Testing and Learning of the IEEE Transactions on Information Theory. Dr. Cover is a member of IMS, IEEE, AMS, the New York Academy of Sciences, and Sigma Xi.

VT - THE ENERGY CRISIS

Due to the rapidly shifting nature of our present energy shortage, few people know precisely where we stand. Mr William Roper, Public Affairs Manager for Standard Oil Company of California, Western Operations, Inc., will discuss petroleum sources, shortages, and allocations as they affect the west coast market area and the U.S. as a whole.

Mr. Roper received his B.A. degree from Western Washington State College in 1958, and then spent nine years in Standard Oil's Marketing Department. For the last six years, he has been in the Public Relations Department and was appointed to his present position in 1972.

VICTOR R. WITT

Victor R. Witt received his BS Degree in E.E. from New York University in 1950, after service in the United States Navy as Instructor, Advanced Radio School. Following employment with Western Electric Company and Sperry Gyroscope Company, he joined the IBM Corporation in 1951. During subsequent years he did investigations and development work leading to the use of oxide coated tape, now an industry standard, and invented the two-gap recording head with read-back check-while-writing. He managed the development of the core memory, and had executive responsibility for the development of IBM's random access storage devices, including the IBM Types 1301, 2311, 2314 and 3330.

Mr. Witt is the holder of five U.S. Patents, and is the recipient of the IBM Invention Achievement Award and the IBM Outstanding Invention Award. He has been twice recognized by "Product Engineering" with Master Design Awards.

SECTION OFFICERS NOMINATED FOR 1974 - 1975

The following nominees have agreed to be candidates for Section officers for 1974-'75.

Chairman: Ed Jackson, Pacific Telephone, San Jose.

Vice Chairman: Dr. Ronald Whittier, Intel Corp., Santa Clara

Secretary: Richard Anderson, Hewlitt-Packard, Sunnyvale

Treasurer: Bryan Baarts, Pacific Gas & Electric, San Francisco

Director: Dr. John Damonte, Lockheed Missle & Space Corp. Sunnyvale

The nominating committee included Chas. A. Eldon, Chm., Jack Melchor and Stan Kaisel. Photographs and biographies will appear in the March GRID.

IT - WIDEBAND SIGNAL SET DESIGN

New results on the design of sequences having impulse-like autocorrelation and low cross-correlation will be presented:

- Lower bounds on the crosscorrelation between sequences and out-of-phase autocorrelation.
- The properties of generalized residue sequences, indicating that the sequences come close to realizing the known lower bounds on correlation.

Dr. Robert A. Scholtz, Senior Staff Engineer, Hughes Aircraft Co., presently is Assoc. Prof. of Electrical Engineering, Univ. of Southern California. He received a PhD from Stanford University in 1964.

See CALENDAR for Program Arrangements

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COMPCON 74

Febr. 26 - 28, 1974
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"Computer Peripherals - Benefactor or Bottleneck?"

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MATERIALS SCIENCE OF SEMICONDUCTORS - I

Processes and Technology

San Jose State University - San Jose Thursdays, Feb. 14 thru May 30, 7-10 p.m. The problems of materials technology is of prime importance both to the manufacturer and user of electronic materials. The Dept. of Materials Science at San Jose State University has brought together an outstanding group of scientists and instructors in a series of three courses of importance to the semiconductor industry. Subsequent courses to the above will concentrate on "Devices and Material Problems" and "Thin Film Technology".

Prerequisites: Basic chemistry and physics courses, or on approval of the instructor.

Fee: $78. 3 semester units credit
Information: Carole L. LaCombe, Continuing Education Coordinator. (408) 277-2182 or Dr. K.S. Sree Harsha (408) 277-2446, or Dr. R.A. Rao, Dept. of Elec. Engineering.

GGSS - IAS - PES JOINT MEETING SOLID STATE PROTECTIVE RELAY PRACTICE IN EUROPE

Mr. Ian Macmichael, manager of the Measurements Division, English Electric Company, Elmsford, New York, will discuss protective relay practice in Europe. He has had an extensive background of experience in protective relay applications, particulary in solid state relays.

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Apr 22-26	Eurocon '74	Amsterdam
Apr 23-25	Communications Satellite Sys. Conference	Los Angeles
Apr 23-27	Nat. Computer Conference	Chicago
June 16-19	Int'n'l. Conf. on Communications	Minneapolis
July 16-19	EMC International	San Francisco
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Maury C. Harp, Senior Staff Engineer, has been with GTE Lenkurt, San Carlos, since 1951. During this period, he worked on development of numerous microwave products.

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March 7-9, '74 San Luis Obispo

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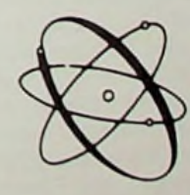

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The Editor

DR. ARTHUR SCHAWLOW NAMED PRESIDENT ELECT OF OPTICAL SOCIETY OF AMERICA

Dr. Arthur L. Schawlow, co-inventor of the laser and a Stanford professor of physics since 1961, has been named president-elect of the Optical Society of America (OPA). In addition the Stanford physicist will serve as chairman of the American Physical Society (APS) Division of Electron and Atomic Physics during 1974. Earlier this year he shared the $5,000 California Scientist of the Year Award with a physics colleague, Prof. Theodor W. Hansch.

Schawlow is best known as co-author of a 1958 scientific paper which spelled out the theory for building a laser. The other author was Prof. Charles H. Townes of UC Berkeley, who earlier had invented the radio "maser" and shared the 1964 Nobel Prize for his work. One of Stanford's most popular teachers, Schawlow is also one of its busiest with a large number of doctoral students under his guidance. He is a Fellow of the APS, OPA, and the Institute of Electrical and Electronic Engineers, as well as a member of the American Academy of Arts and Sciences and the National Academy of Sciences.

E.G. CRISTAL NOMINATED AS FIRST RECIPIENT - MICROWAVE APPLICATION AWARD

Edward G. Cristal (S'58 - M'61 - SM'66) was nominated as first recipient of the Microwave Application Award, which is made to an individual for an outstanding application of microwave theory and techniques. He received B.S. and A.B. degrees in 1957 in electrical engineering and mathematics, respectively, and the M.S. degree in 1958 in electrical engineering from Washington University (St. Louis). In 1961 he received the Ph.D. degree in electrical engineering from the University of Wisconsin. From March 1961 to January 1972 he was with the Electromagnetic Techniques Laboratory of the Stanford Research Institute (SRI), Menlo Park, California. At SRI he participated in programs of applied research and development of microwave and UHF components, including filters, multiplexers, directional couplers, impedance matching networks, equalizers and multipliers. From January 1972 to June 1973 he was Associate Professor of Electrical Engineering at McMaster University, Hamilton, Ontario. He joined the Hewlett-Packard Laboratories in June 1973 where he is currently working in the area of telecommunications.

ERA PRESIDENT TRINKLE NAMED TO IEEE CONFERENCE BOARD

Robert C. Trinkle has been named to fulfill a two-year term as a member of the IEEE Conference Board of Directors, it was announced by Carroll G. Killen Jr., chairman. Trinkle is president of Trinkle Sales Co. of Cherry Hill, New Jersey, and current national president of the Electronic Representatives Association.

As the principal spokesman for more than 1900 sales representative firms, he brings a clear overview of the distribution process, and he will add real strength and direction to all our activities.

The Conference Board has principal responsibility for IEEE Intercon, the Institute's international convention and exposition. IEEE Intercon/74 will be held in New York City March 26-29, at the Coliseum and Statler Hilton Hotel.

Conference Board members serve three-year voluntary terms in office. Trinkle replaces R.M. Janowiak, Rockwell Graphics Systems, Chicago, who resigned due to the press of business.

Conference Board members include Killen, who is vice president for marketing, Sprague Electric Company; Franklin H. Blecher, Bell Laboratories; Frederick T. Van Veen, Teradyne Inc.; Theodore S. Saad, Sage Laboratories; and Clarence J. Baldwin, Westinghouse.

AES - BROADCAST SATELLITE SYSTEMS

The technical and economic aspects of broadcast satellite systems are analyzed on the basis of a decision analysis model. Signal quality resulting from minimizing cost and optimizing performance is discussed in terms of system operating cost, satellite transmitter power and ground terminal figure-of-merit. A working model ground station operated in the 12 GHz will also be presented.

Dr. Han received his Ph.D. degree from Stanford University. At Philco-Ford, he is now a technical leader on the NATO Phase III Communication Satellite Program. He has wide interests in the field of microwave components, antennas, satellite communication systems, jungle communication systems and millimeter wave atmosphere propogation. He is also a member of the Technical Review and Planning Committee on Satellite Communication Systems, Aerospace and Electronics Society of the IEEE.

ENGINEER'S WEEK SCVSS/EM JOINT MEETING "EFFECTIVE UTILIZATION OF ENGINEERING MANPOWER"

The Santa Clara Valley Subsection and Engineering Management Society are jointly cosponsoring the 1974 Engineer's Week Dinner with ASME, CSPE, SWE, SME, Engineer's Club of San Jose and AIAA in San Jose on February 22nd. The Honorable Bill Greene, Assemblyman from the 53rd District, will speak on Engineering Manpower Development. Mr. Greene believes that the skills possessed by scientists and engineers are some of California's most valuable assets; however, as a result of cutbacks in Federal Aerospace spending, thousands of these people are either unemployed or underemployed.

Bill Greene's goal is to utilize this talent to help solve the State's domestic problems. Legislation to fund and implement such a program has already been passed by the Assembly (AB1740) and has much support in the Senate. Mr. Greene will discuss this far reaching legislative action plus other functions of the Manpower Development Committee to show their pertinence to the whole Engineering Community.

Assemblyman Greene has represented the 53rd District in Los Angeles since 1966. A native of Kansas City, he attended the University of Michigan. After service in the Airforce, he settled in Los Angeles where he has been active in numerous Civic, Political and Social action groups. In the State Assembly, he serves on the Education, Revenue and Taxation and Urban Development and Housing Committees, is Vice Chairman of the Welfare Committee and is Chairman of the Select Committee on Manpower Development.

ED - INTEGRATED INJECTION LOGIC PRESENT AND FUTURE

N.C. deTroye of Philips Research Laboratories will discuss a new approach to LSI. Integrated injection logic offers the potential for high packing densities (400 equivalent gates/mm^2) and very significant speed-power products. The discussion of this important technology will relate the use of lateral PNP transistor current sources and multicollector NPN transistor as inverters. A comparison of integrated injection and MOS logic will be offered with projections for their relative importance in future applications.