

Scanfax

POSTMASTER:
SECOND CLASS POSTAGE
paid at Chicago, Illinois

(Publication number)
(ISSN 0018-9227)

SCANFAX, 125 S. CLARK ST., CHICAGO, IL 60603

Official Publication of the Chicago Section • Institute of Electrical & Electronics Engineers • *December* November 1982

C A L E N D A R O F E V E N T S

For reservations call the IEEE office at 236-4609

(unless otherwise indicated)

COPY DEADLINE: FIRST WEEK OF MONTH PRIOR TO PUBN.

DEC.	1	Seminar - "Start. & Main. A Consult.Practice"	Communications Soc.	Wilton Manor Geneva & Main Sts. Wheaton	(Registration, Daryl Eigen, 979-5353)
	4	Seminar - "Comms. - A Listen. & Speaking Primer"	Industry Appls./ Industrial Elec- tronics Soc.	Central Lab Auditorium Fermi Natl.Acceler.Lab. Batavia	(Registration, Edward Barrett, 963-7070)
	8	"Multiplexing"	Power Engrng. Soc.	Carson Pirie Scott Wabash & Monroe Sts. Highland Rm., 8th Fl.	Social 11:30 AM Lunch 12:00 PM Meeting 12:30 PM
	14	Monthly Meeting ALL WELCOME	IEEE Executive Cte.	Brown & Root Offices 701 E. 22nd St. Lombard	Meeting 7:30 PM
'983 JAN.	11	Monthly Meeting ALL WELCOME	IEEE Executive Cte.	Brown & Root Offices 701 E. 22nd St. Lombard	Meeting 7:30 PM
	12	"Personal Computers"	Power Engrng. Soc.	Carson Pirie Scott Wabash & Monroe Sts. Highland Rm., 8th Fl.	Social 11:30 AM Lunch 12:00 PM Meeting 12:30 PM
	12	"Comparis.of Digi. & Analog Instru.in Industl. Appls."	Industry Appls./ Industrial Elec- tronics Soc.	Nielsen's Village 7330 W. North Ave. Elmwood Park	Social 5:30 PM Dinner 6:30 PM Meeting 7:30 PM
	19	"Desktop Computers & Computer Networking"	Northwest Sub.	Mr. Peter's Banquets 1018 Mt.Prospect Plaza Rand & Central Rds.	Social 6:00 PM Dinner 7:00 PM Meeting 8:00 PM
	26	"Uninterruptible Power Supplies"	Fox Valley Sub. (j/w Power Engrng. & Communica. Socs.)	Wilton Manor Geneva & Main Sts. Wheaton	Social 6:00 PM Dinner 7:00 PM Meeting 8:00 PM



AND BEST WISHES FOR A HAPPY NEW YEAR

APPOINTED EXECUTIVE BOARD MEMBERS - Two positions on the Chicago Section Executive Board are vacant due to resignations.

The **STUDENT ACTIVITIES CHAIRMAN** works with Student Chapters and Faculty Advisors at U of I (Circle Campus), IIT, Northwestern and DeVry to promote Chapter activities, membership and coordinate the Section's scholarship program. The **CONFERENCE CHAIRMAN** works with local Chapters and national Societies to coordinate Section involvement with conferences, seminars and courses.

For further information on either of these positions, contact Howard Wolfman, 679-8100, ext. 277.

"DESKTOP COMPUTERS AND COMPUTER NETWORKING" - The Northwest Subsection will present "Desktop Computers and Computer Networking" on January 19, 1983.

Sandy Perlman, Applications Engineer with Hewlett Packard will speak on the use of new hardware and software developments and why it is now practical for several computer workstations to share a centralized mass storage system. This makes it easier to share software and data throughout an organization. Also to be discussed will be how the desktop computer can be an effective engineering tool.

SCANFAX. (Publication number) (ISSN 0018-9227). December 1982 Volume 35, Number 4. SCANFAX is published monthly, except July and August by the Chicago Section, Institute of Electrical and Electronics Engineers for the information of its members. Business Office is at 125 S. Clark St., Chicago, Illinois 60603, telephone number (312) 236-4609. Subscription rate for IEEE members collected in dues, \$1.50; for others, \$3.00 per year. Second-class postage paid at Chicago, Illinois.

Unless otherwise specified, Chicago Section IEEE neither endorses nor sanctions any positions or actions espoused in SCANFAX.

John Tyner, Editor
Transmission & Distribution
(312) 469-5534

Tom Traub, Managing Editor
Commonwealth Edison Company
(312) 294-2703

Eleanore Burda, Copy Manager
IEEE Office
(312) 236-4609

Change of Address

A change of address form is included in each issue of SPECTRUM. Your local post office will also supply you with cards; mail to Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

"POSTMASTER: send address changes to: Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854."

DAVID GRIFFITH FOX VALLEY SPEAKER - A timely subject for both EDP and Process Industry computer users will be presented by the Fox Valley Subsection. With the increased dependence on timely data, power interruption and harmonic distortion causing increasing problems with computers and solid state controls, Mr. Griffith will discuss basic "Uninterruptible Power System" and what the engineer should know to specify and purchase a UPS. His talk will include an overview of available line conditioning equipment and latest state-of-art advancements in UPS.

David C. Griffith is founding partner and Vice President of Cyberex Inc. He is a Registered Professional Engineer, an IEEE member, serves on various national technical committees related to power systems, has authored many papers on UPS and holds both a BSEE and MSEE degree. The joint meeting with the Power Engineering and Communications Societies will be held on January 26, 1983.

INACTIVE CHAPTERS

180	70	309	255	99	139	31	43	221	22	66	109	60	79	39	59	82	56	84
ACOUSTICS, SPEECH AND SIGNAL PROCESSING	AEROSPACE AND ELECTRONIC SYSTEMS	BROADCAST, CABLE AND CONSUMER ELECTRONICS	CIRCUITS AND SYSTEMS	COMPONENTS, HYBRIDS AND MANUFACTURING TECHNOLOGY	CONTROL SYSTEMS	EDUCATION	ELECTRICAL INSULATION	ENGINEERING MANAGEMENT	GEOSCIENCE AND REMOTE SENSING	INFORMATION THEORY	INSTRUMENTATION AND MEASUREMENT	MAGNETICS	NUCLEAR AND PLASMA SCIENCES	PROFESSIONAL COMMUNICATION	QUANTUM ELECTRONICS AND APPLICATIONS	SOCIAL IMPLICATIONS OF TECHNOLOGY	SONICS AND ULTRASONICS	SYSTEMS, MAN AND CYBERNETICS

The Societies listed above do not now have an active Chapter within the Chicago Section (the numbers indicate members within the Section). I am sure that many of you are members of at least one of these Societies and most of you are also members of a Society which does have an active Chapter within our Section.

The Section now has ten active chapters ranging in size from Electromagnetic Compatibility with 42 members to the Computer Society with 1,135 members. Among the ten chapters are two joint chapters: Antennas and Propagation/Microwave Theory and Techniques, and Industry Applications/Industrial Electronics.

On an international basis each of the various Institute Societies is intended to serve different disciplines and needs. On a local basis, however, it is apparent that many of you who are not benefiting from the technical and social interaction with your fellow Society members that a local Chapter organization can provide.

Local chapters for any of these Societies can be formed in one of three ways:

- Form a separate local Chapter
- Form a Joint Chapter with another Society that is currently inactive
- Combine with an existing Chapter of another Society to form a Joint Chapter.

To more fully realize the benefits of your IEEE membership, it is important that you participate in activities of a local Chapter of your chosen Society. Volunteer NOW! Call:

Bill Everson (312) 450-5207

for information on starting a Chapter for YOUR Society. Your Section and Chapter officers are eager to help.

Introducing the HP 16-Bit Technical Computer For Your Personal Use



The HP Series 200, Model 16

The new HP Model 16, based on the Motorola MC68000 Microprocessor, offers computer-aided engineering tools plus practical business aids all in one compact, complete, personal computing system.

Features include:

- enhanced BASIC and Pascal languages
- 128K up to 768K byte memory
- built-in RS-232-C, HP-IB interfaces
- 300 x 400 dot graphics

Solutions cover:

- mathematics
- financial and statistical analyses
- visual aids
- terminal emulation

Peripherals include:

- 3 1/2-in. flexible disc
- color graphics plotter
- dot matrix printer



FARNSWORTH COMPUTER CENTER
Universal Constant, Inc.
1891 N. Farnsworth Ave.
(Immediately S. of EW Tollway)
Aurora, IL (312) 851-3888

383 E. North Ave.
(1 block W. of Rt. 83)
Villa Park, IL (312) 833-7100
Weekdays 10-8 Sat 10-5

UPDATE

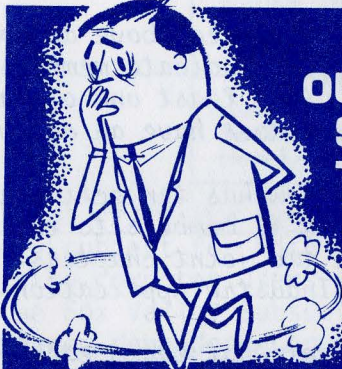
ENGINEERING & SCIENCE MANPOWER BILL CLEARS HOUSE COMMITTEE - The "crisis" in science education and the sectional shortages in technical manpower and engineers brought forth many legislative proposals in the 97th Congress. Many of the bills proposed increased Federal aid through appropriations matching grants or other formulas at a time when the Administration is cutting back on research and training and reducing the Federal role in education (by eliminating the Education Department and cutting back on NSF's science education programs). Nevertheless, science-minded legislators are continuing to press for Federal recognition of the science education/manpower problems and for some form of assistance and will undoubtedly re-introduce their bills in the 98th Congress. Main sponsors include Sens. John Glenn, Gary Hart and Jack Schmitt, and Reps. Walgren, Hechler, Fugua, McCurdy and Perkins.

One bill dealing with engineering and science manpower cleared the first hurdle - Committee approval - recently. On September 23, the House Science Committee approved a bill that has been under consideration for many months. The vehicle adopted was a clean bill (H.R. 7130) that provides a Federal response to the shortage of trained engineers, scientists and technical personnel by several initiatives. They include: establishment by the President of a seven-member Coordinating Council on Engineering and Science Manpower "to provide a focal point for policy on engineering, science and technical manpower problems;" creation of a special matching fund in NSF for engineering and scientific manpower; and establishment of four new programs in NSF (modernization of instrumentation; technician training at community colleges; young faculty research awards; and precollege math and science teacher training).

H.R. 7130 provides, in addition, for a continuing national policy "to maintain an adequate supply of technical, engineering and scientific personnel to insure the technological strength and security of the Nation." The report observed that although the organic acts for the Office of Science & Technology Policy and the National Science Foundation refer to Federal responsibility for science education and "national science and technology policy," they have never advanced a step toward implementation. Dr. Eugene Zwayer testified in support of the bill on behalf of AAES in April 1982.

Twelve of the Republicans on the Committee, led by Rep. Larry Winn, agreed on the severity of the problem but called the Committee recommendations too expensive. "With the science education problem defined as well as it is, another Federal council with a \$180 million slush fund, as set up in H.R. 7130, is the last thing this country needs," the GOP minority said. They advocated the approach taken by their colleague, Rep. Margaret Heckler (in H.R. 6930) and Sen. Schmitt's companion bill. The Heckler bill, they said, "embodies the greatest economy in a period of large Federal deficits and at the same time outlines specific programs with assured productivity."

Some of the science education bills were reviewed at hearings held the end of September by the House Education & Labor Committee but little more was accomplished than spade work.



OUR JOB IS TO SOLVE YOUR TEMPORARY MANPOWER PROBLEMS

BECO can supply you with temporary technical personnel in all facets of Engineering, Design, Drafting and Lab Work. Immediate highly qualified manpower to solve your toughest problems.

CONTRACT ELECTRONIC & ELECTRICAL MANPOWER

- Technicians
- Troubleshooters
- Analyzers
- Testers
- Assemblers
- Hardware/Software Specialists
- Electro Mechanical
- Engineers
- Designers
- Drafters
- Technical Writers
- Technical Illustrators
- Inkers
- PCB Designers/Tapers

We can assign personnel to your department on an immediate basis.

BECO INC.

TEMPORARY ELECTRONIC & ELECTRICAL MANPOWER
5611 Gage St. 312-671-7200 Rosemont, IL 60018

—Adv—

SIGN UP A PROSPECTIVE MEMBER NOW!

The Chicago Section has received a supply of IEEE 1983 Membership Information/Application booklets from headquarters for distribution. The booklet contains information about the many and varied activities of the IEEE.

Founded in 1884, The Institute of Electrical and Electronics Engineers, Inc. is the world's **largest** professional engineering society. It strives to enhance the quality of life for all people throughout the world through the constructive application of technology in its field of competence. It endeavors to promote understanding of the influence of such technology on the public welfare.

IEEE is a transnational organization of individuals dedicated to improving the understanding of electrical and electronics engineering today and its applications to the needs of society. IEEE is not for everyone; it is for those who qualify (there are several membership grades).

If you know of someone interested in the professional and personal advantages of membership, call Eleanore Burda at the Chicago Section office on 236-4611. She will eagerly mail a copy of the booklet to the interested party, which invites them to join 230,000 members worldwide.

IEEE 1983

MEMBERSHIP INFORMATION

& APPLICATION



Carry the OSBORNE computer to work with you, for only \$1795

See how the new Osborne can solve your business problems. Two disk drives, monitor and keyboard fold into a compact 24-lb. unit that fits under an airplane seat. Complete with Word Star, the powerful word processor, and SuperCalc. Let Data Domain show you why the Osborne is a tremendous value for your business. Osborne Computers are great; they're better at Data Domain.

DATA DOMAIN
1612 E. Algonquin Road
Schaumburg, IL 60195
Ph: 312-397-8700

Hours:
Monday through Friday — noon-9 p.m.
Saturday — 10-5 p.m.
Closed Sundays



OSBORNE
COMPUTER CORPORATION

—Adv—

MANAGEMENT GROUP ASSOCIATES

A select group of highly skilled electronics engineering, marketing and operations personnel with extensive experience in medical, scientific, and process instrumentation; industrial controls and communication systems.

COST EFFECT AND CREATIVE PROBLEM SOLVING IN:

Technical

- Electronic & Software Design
- Regulatory & Safety Reviews
- Value Engineering, MRP and Productivity Enhancements

Management

- Product Research & Development
- Long Range & Market Planning
- Turnaround Management, Acquisitions

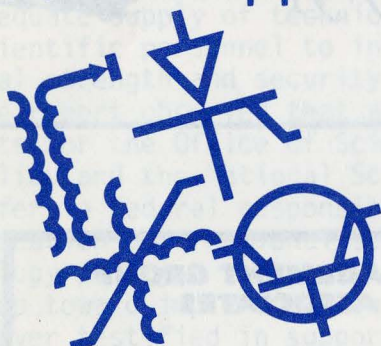
Management Group Associates, Inc.
PO Box 293 Deerfield, IL 60015
312/769-8084 or 312/948-9213

—Adv—

BOOKS PUBLISHED BY IEEE — The following books should be ordered postpaid from the IEEE Service Center, 445 Hoes Lane, Piscataway, New Jersey 08854: • "Applications of Computers in Medicine" is priced at \$18.00 for members and \$24.00 for non-members. This 200-page volume is a collection of original papers by the Engineering in Medicine & Biology Society. It was edited by Morton D. Schwartz, Department of Electrical Engineering, California State University, Long Beach. • "A Guide for Writing Better Technical Papers," priced at \$11.45 for the paperbound member edition. A clothbound edition is available to non-members for \$22.95 (discounted to \$17.20 for members). This is a book of selected reprints, 228 pages and is sponsored by the IEEE Professional Communications Society. It was edited by Craig Harkins of IBM, San Jose (CA) and Daniel J. Plung of Exxon Nuclear Idaho Company. • "Low-Noise Microwave Transistors & Amplifiers" is a book of selected reprints and is priced at \$16.95 for the paperbound edition. A clothbound edition is available to non-members for \$33.95 (discounted to \$25.45 for members). This 472-page volume is sponsored by the Microwave Theory & Techniques Society and was edited by H. Fukui of Bell Laboratories.

IEEE MEMBERSHIP GROWS DESPITE DUES INCREASE — For the first time in Institute history, there has been a significant growth in the membership rolls during a dues increase year. At the end of last year, the IEEE had a total membership of 221,747 members worldwide. This figure represents an increase of 7,935 members; or, a 3.7% increase over last year's figures. The membership of the technical societies of the IEEE increased to nearly a quarter million.

CHRISTIE High Current DC Power Supplies



Symbolic of time-tested reliability.

- DC current from 40 to 1500 amps
 - Voltages to 280 VDC
- Write for latest detailed catalog or call toll free for application assistance.

SINCE 1929
CHRISTIE
ELECTRIC CORP.

20665 MANHATTAN PLACE
TORRANCE, CALIFORNIA 90501
(213) 320-0808
TWX 910-349-6260
(800) 421-2955

1929
1982
53
YEARS
THE SOURCE

—Adv—

U.S. POSTAL SERVICE STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (ACT OF AUGUST 12, 1970: SECTION 3685, TITLE 39, UNITED STATES CODE)

1. Title of Publication: Scanfax
2. Date of filing: September 24, 1982
3. Frequency of issue: Monthly, except July and August. Subscription payment \$1.50 members; \$3.00 non-members.
4. Location of known office of publication: 125 S. Clark St., Room 1545, Chicago, Ill. 60603.
5. Location of the Headquarters or general business offices of the publishers: 125 S. Clark St., Room 1545, Chicago, Ill. 60603.
6. Names and addresses of publisher, editor, and managing editor, Publisher, Institute of Electrical and Electronics Engineers; 125 S. Clark St., Room 1545, Chicago, IL 60603; Editor John Tyner, Managing Editor, T. P. Traub, 125 S. Clark St., Room 1545, Chicago, IL 60603.
7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the

name and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.) Institute of Electrical & Electronics Engineers, Inc. — Chicago Section, 125 S. Clark St., Room 1545, Chicago, Ill. 60603.

8. Known bondholders, mortgages, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None.

9. For optional completion by publishers mailing at the regular rates (Section 132.121, Postal Service Manual).

10. For completion by nonprofit organizations authorized to mail at special rates (Section 132.122, Postal Manual). The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes have not changed during preceding 12 months.

11. Extent and nature of circulation

	Average No. Copies Each Issue During Preceding 12 Months	Actual No. of Copies of Single Issue Published Nearest to Filing Date
A. Total number copies printed (net press run)	5,495	5,400
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	0	0
2. Mail subscriptions	5,332	5,317
C. Total paid circulation	5,332	5,317
D. Free distribution by mail, carrier or other means. Samples, complimentary, and other free copies	7	7
E. Total distribution (sum of C and D)	5,339	5,324
F. Copies not distributed		
1. Office use, left-over, unaccounted, spoiled after printing	156	76
2. Returns from news agents	0	0
G. Total (Sum of E & F — should equal net press run shown in A)	5,495	5,400