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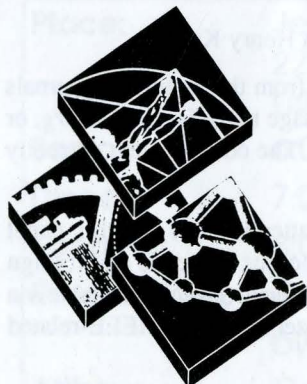
Official Publication of Chicago Section • Institute of Electrical & Electronics Engineers • FEBRUARY 1993

TIME SENSITIVE MATERIAL

CALENDAR OF EVENTS

For reservations please call IEEE Office at (708) 963-3828 before the stated deadline
The meeting details are stated in their relevant announcements inside
Copy Deadline for March SCANFAX is January 28, 1993

February 3 Wednesday	EMC Society	Conducted EMI, Common Mode VS Differential Mode	AT&T Bell Laboratories 2000 N. Naperville Rd. Naperville, Il.	Social: 7:15PM Meeting: 7:30PM
February 9 Tuesday	Chicago Section	Executive Committee	Motorola Center 1295 East Algonquin Rd. Schaumburg, Il.	Meeting: 7:15 PM
February 10 Wednesday	Power Engineering Society	Nuclear Plant Aging - Insights and Issues	Chicago Bar Association 321 S. Plymouth Ct. Chicago, Il.	Social: 11:30AM Lunch: 12:00noon Meeting: 12:30PM
February 10 Wednesday	Power Electronics Chapter	Proper Application of Uninterruptible Power Supplies	Motorola Center 1295 East Algonquin Rd. Schaumburg, Il.	Meeting: 7:00 PM
February 15 Monday	Antennas & Propagation/ Microwave Theory & Techniques Society	Millimeter - wave FM Radar Imaging to Detect Nonmetallic Weapons	Chinese Garden Restaurant 754 E. Schaumburg Rd. Schaumburg, Il.	Social: 6:00PM Dinner: 6:30PM Meeting: 7:30PM
February 23 Tuesday	Fox Valley Subsection	The Universe, and What we are doing about it	Jerry Sharko's Restaurant 2225 Ogden Ave. Lisle, Il.	Social: 6:00PM Dinner: 7:00PM Meeting: 8:00PM
February 25 Thursday	Computer/Reliability/SMC Societies/IAS/IES	Maintenance Software & Fiber Data Transfer in Facilities	Sharko's Restaurant 1 West Roosevelt Rd. Villa Park	Social: 5:45PM Dinner: 6:30PM Meeting: 7:30PM



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FOR ADDITIONAL INFORMATION CONTACT:

IEEE Public Relations, 1828 L Street, NW,
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202-785-0835.



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Washington, DC

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Send change of address to Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854-4150. Include your SCANFAX mailing label if possible or phone direct to: 1-800-678-4333. We cannot forward this information for you, so please do not sent it to the local office.

SCANFAX DEADLINES

ISSUE	COPY DUE	MAILED ON
MAR	JAN 28	FEB 15
APR	FEB 25	MAR 15
MAY	MAR 25	APR 15
JUNE	APR 28	MAY 15

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MORE SPECIAL EVENTS TO CELEBRATE THE CHICAGO SECTION'S 100TH ANNIVERSARY

Here's an overview of several Section-sponsored activities in February and later on (and some other IEEE news items):

- On Saturday, February 20th, IIT-West will host the annual Engineers Week event at its Rice Campus in Wheaton, with numerous presentations aimed at the local high school students (and their parents) which will persuade them to consider engineering, computer science, physics, chemistry, mathematics, and other scientific professional careers. Please make your student's reservations ASAP by calling (708) 562-6020 and tell your friends about this program. Be sure to find out about our Section's special Girl Scout project headed by Mary Hart.

We are proud to note that Dr. Martha Sloan, IEEE's 1993 President, is the National Chairman for Engineers Week; this year theme is *Turning Ideas into Reality*.

- The IEEE Board of Directors will be convening in Chicago and will include a special dinner meeting on Saturday, February 27th at the Sheraton Hotel and Towers downtown; personal invitations to our Section Officers and Committees will be sent directly from Headquarters. So be sure to respond promptly if you're invited and want to attend, but then don't be a "no show" for this precedent-setting event.
- Look for the poster describing our 1993 Recognition Dinner on April 24th. We plan to honor the newest IEEE Fellow in our Section, a series of hardworking Student Members and their Faculty Advisors, as well as some of our Section's old-timers and former Officers. Be sure to congratulate our newest IEEE Fellow, Dr. Miron Abramovici from Bell Labs in Naperville.

We would appreciate our current members' efforts in finding those still residing in the Chicago area, but have not remained in the IEEE.

We also plan to honor the memory of our late Past Section and Recognition Dinner Chairman Henry Korman.

- IEEE has started the Ask*IEEE document delivery service for getting fast delivery of articles from the Institute's journals magazines, and conference proceedings. Call 800-949-IEEE, or send an electronic mail message to askieee@ieee.org, or a FAX to 415-259-5040; you will need a credit card to use this really modern IEEE service. The cost per item currently is \$10 to members and \$12 to others; an extra charge will be added for overnight delivery.

If you have not found out about the ongoing IEEE electronic mail initiative, you should have attended last month's panel discussion on this topic. We want all of our members to consider the potential for reaching numerous domestic and foreign electronic literature resources, in addition to the many nontechnical and technical discussions (*netnews groups* available via the worldwide Internet and its other electronic networks linked to it. And usually, you can get faster answers to IEEE-related questions from Hq via electronic mail than by telephone or mail.

Joe Feitler — Associate Editor of SCANFAX

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS FOX VALLEY SUBSECTION



FEBRUARY MEETING ANNOUNCEMENT

THE UNIVERSE, AND WHAT WE ARE DOING ABOUT IT

Presented by
Dr. Chris Stoughton of Fermi National Accelerator Laboratory

Tuesday, February 23, 1993



Dr. Chris Stoughton

It is remarkable that we know so much about the construction of the Universe. In this lecture I hope to convey to you the excitement and wonder of observational cosmology. We understand the history of the Universe because of recent experiments that confirm the big bang theory of cosmology. I will describe the elegant measurements of three different phenomena. Their results are explained most simply by this theory, which is now the standard model of cosmology. These measurements -- the expansion of the Universe, the abundance of different atoms in stars and gas clouds, and the background of microwave radiation -- are easy to understand and give insights into the nature of the Universe.

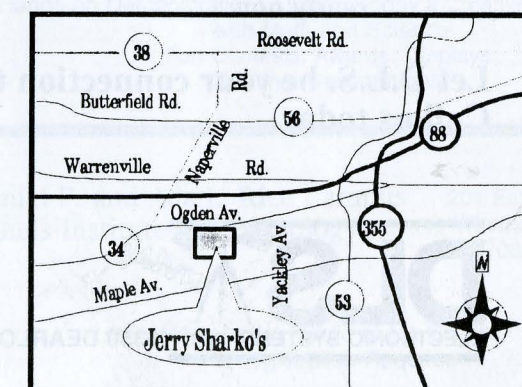
There are a few puzzles in this picture which current investigations aim to solve. We do not know the total mass of the Universe, which effects the future growth (or contraction) of the Universe. Dark matter (mass that does not shine) can be detected through several

ingenious methods, but we are far from a complete accounting of all mass. The distribution of galaxies and quasars in space offers intriguing clues about details of the big bang expansion. Ongoing developments in technology, such as the Hubble Space Telescope and large (ten Terabyte) databases, are routinely used by scientists who continue to pursue the study of the Universe.

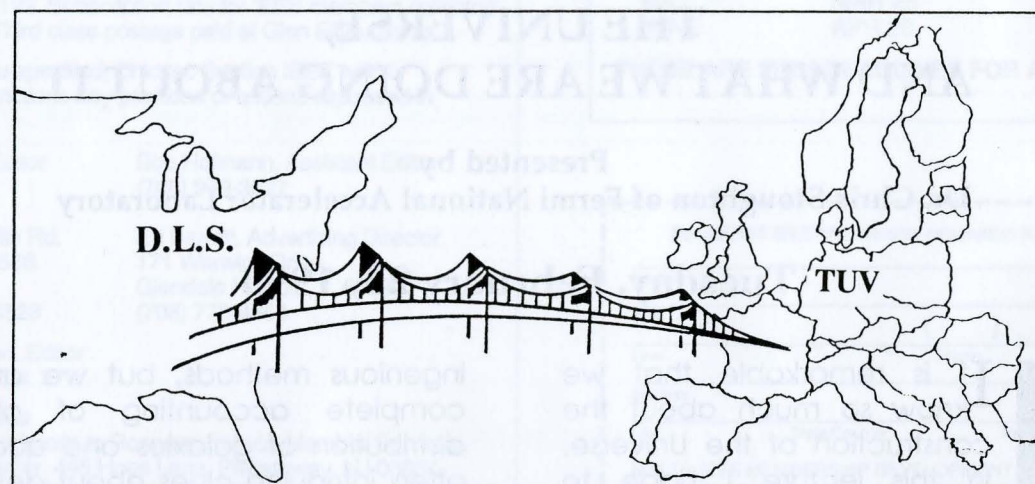
- Dr. Chris Stoughton

Dr. Stoughton received his undergraduate degree in physics at the University of Notre Dame and his Ph.D. in particle physics at Columbia University, where his research included a search for neutrino oscillations at Brookhaven National Laboratory. His postdoctoral work at Fermi National Accelerator Laboratory was studying the production of the charm quark via hadron interactions in atomic nuclei. Currently he is on the scientific staff at Fermilab, working on the Sloan Digital Sky Survey, which will produce a comprehensive "map" of the Universe around the north Galactic pole.

Place:	Jerry Sharko's 2225 Ogden Ave. Lisle, IL 60532
Social:	6:00 PM / Cash Bar
Dinner:	7:00 PM / \$13.00
Speaker:	8:00 PM / Free
Reservations:	Call (708) 963-3828 by Friday, Feb. 19th
Attire:	Casual



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CHICAGO CHAPTER - IEEE EMC SOCIETY

DATE: WEDNESDAY - FEBRUARY 3, 1993
Refreshments 7:15 P.M.
Meeting 7:30 P.M.

LOCATION: AT&T BELL LABORATORIES
2000 N. NAPERVILLE ROAD
NAPERVILLE, ILLINOIS

SPEAKER: RICH FREDERICK
INTEGRATED POWER COMPONENT INC.

TOPIC: CONDUCTED EMI, COMMON MODE VS DIFFERENTIAL MODE
This will be a presentation for analyzing conducted EMI and optimizing the circuit.

Rich has been involved in conducted EMI design for 20 years and holds numerous patents for improved EMI filter conducted components.

FOR RESERVATIONS & DIRECTIONS: CALL IEEE OFFICE 708-963-3828

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NINTH ANNUAL

DUPAGE AREA ENGINEERS' WEEK PROGRAM

Saturday, February 20, 1993
12:00 P.M. to 4:00 P.M.

FEATURING

Hands-on Demonstrations Linking Today's Creative Technology with Math and Science
Fun Contests, Awards, Displays
Exciting Presentations

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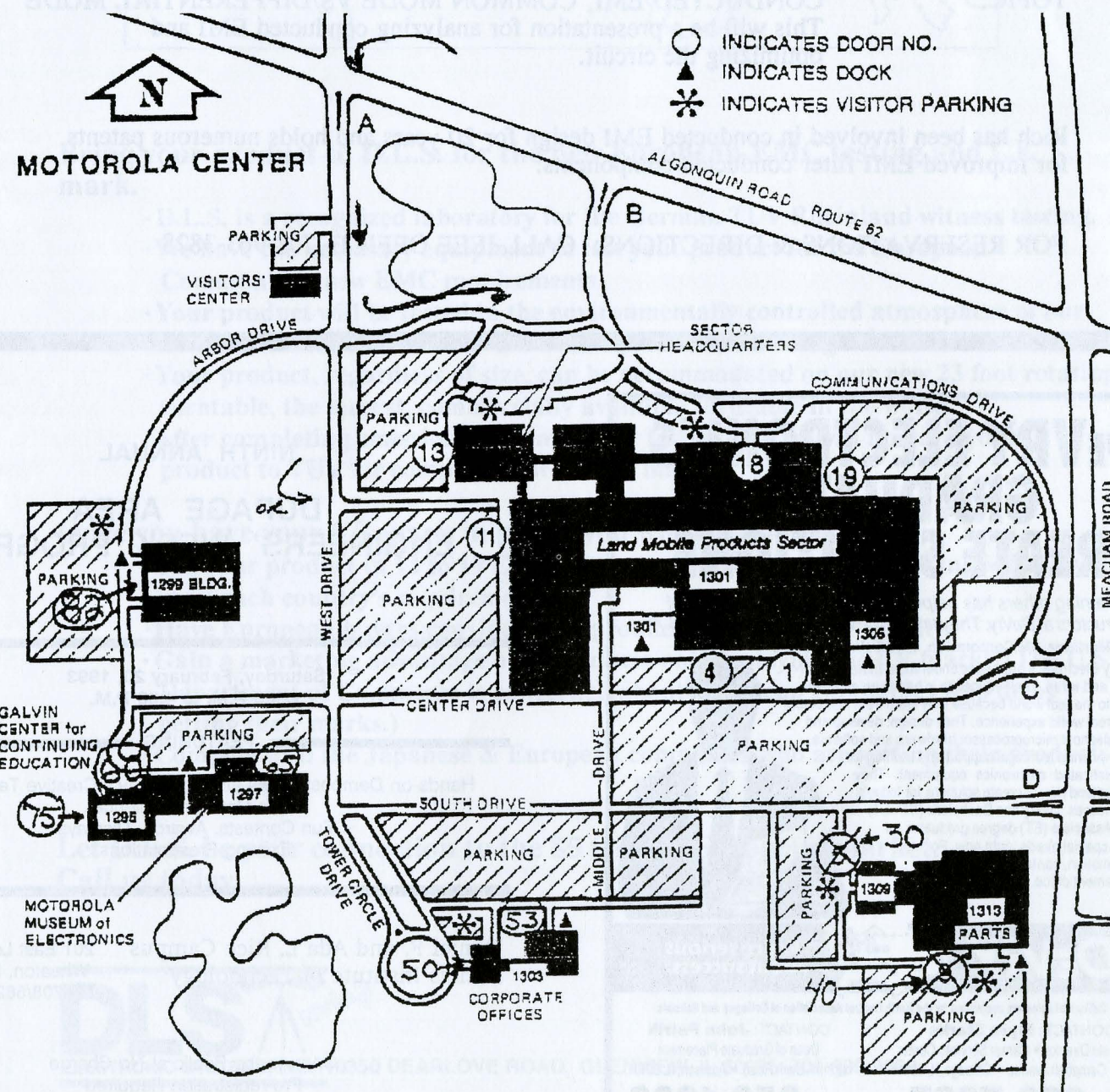
POWER ELECTRONICS CHAPTER

"Proper Application of Uninterruptible Power Supplies"

Topic A comparison of the advantages and disadvantages of the different UPS topologies and their important specifications

Speaker Dr Bruce Rhodes, Manager of New Product Development at Sola Electric

Meeting 7:00 PM, February 10th -- Motorola, Schaumburg Campus, Door #13 (see map) -- Dinner may be purchased in cafeteria before meeting if desired. -- Register by calling IEEE Message Center by noon, February 8th. (708) 963-3828 -- Call George Studtmann with any questions. (708) 392-7189



FUTURE 1993 IEEE VIDEOCONFERENCE SCHEDULE

DATE	TOPIC	KEY PRESENTER	AFFILIATION
March 25, 1993	Chaos and Fractals	Dr. Robert Devaney	Boston University
April 22, 1993	POSIX - Impact of New Standards	Jim Isaak	Digital Equipment Corporation
May 20, 1993	Delivering Product for Global Marketplace	Asmus Freytag	Microsoft Company
June 17, 1993	Maintaining the Technical Currency of our Workforce	to be announced	
September 30, 1993	Product Engineering as a Process	Marv Patterson	Hewlett-Packard Corporation
October 28, 1993	2020 Vision: The Future of Engineering Technology	Dr. Irwin Dorros	Bellcore
December 2, 1993	Engineering Applications for Monte Carlo Analysis	Dr. Sam Savage	Stanford University

Details to be announce in subsequent issues of SCANFAX by
Coordinator for Chicago Section: Jack Sherman, 708.576.8222, j.sherman@ieee.org

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CHICAGO SECTION - 1993 CENTENNIAL STARTER

MAINTENANCE SOFTWARE & FIBER DATA TRANSFER in FACILITIES

The meeting includes a presentation describing the computer software, sensors, peripheral devices and methods used to monitor and record the condition of capital equipment in facilities. In a complementary presentation, fiberoptic data links and cabling are explained including the minimization of down-time.

As the first 1993 centennial recognition, everyone is encouraged to come to this Multi-Society Event jointly sponsored with THE CHICAGO SECTION on February 25, 1993. The participating Society sponsors are:

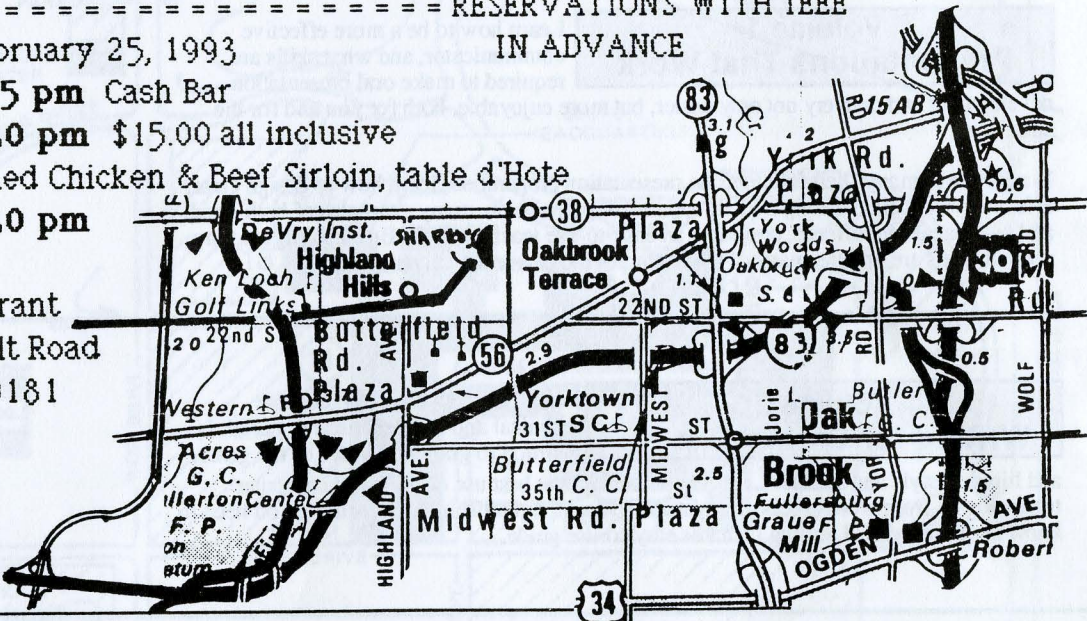
COMPUTER SOCIETY INDUSTRIAL APPLICATIONS/ELECTRONICS SOCIETIES
RELIABILITY SOCIETY SYSTEMS, MAN and CYBERNETICS SOCIETY

The use of Maintenance Diagnostics is fast becoming a necessity in industries using automatic equipment. Our speakers for the evening are Don Bronnenkant, Chief Executive, CK Systems, Ann Arbor, Michigan and Kevin O'Hara, President, Metropolitan Fiber Systems, Oakbrook, Illinois.

- ===== RESERVATIONS WITH IEEE
IN ADVANCE
- Thursday, February 25, 1993
 - Social 5:45 pm Cash Bar
 - Dinner 6:30 pm \$15.00 all inclusive
 - Entree Baked Chicken & Beef Sirloin, table d'Hote
 - Meeting ... 7:30 pm

Sharko's Restaurant
1 West Roosevelt Road
Villa Park, IL 60181

IEEE CHICAGO
SECTION OFFICE
708-963-3828



One of the meeting sponsors is the recently activated Systems, Man and Cybernetics Society (SMC). This group focuses on engineering, manufacturing and testing processes and systems including Human Factors and Man - Machine Relationships.

As announced in September SCANFAX, The Chicago Section is celebrating the 100th year of its founding in 1893 as the first section of the American Institute of Electrical Engineers (AIEE) outside New York headquarters. Contact the IEEE office regarding your interest in future events.

Program Committee

IEEE JOINT CHICAGO CHAPTER of the ANTENNAS AND PROPAGATION SOCIETY, and MICROWAVE THEORY AND TECHNIQUES SOCIETY

FEBRUARY 1993 MEETING NOTICE

Millimeter-wave FM Radar Imaging To Detect Nonmetallic Weapons

Presented by

JACK E. BRIDGES - INTERSTITIAL, INC.

Current methods to detect weapons being carried by passengers boarding an aircraft are ineffective if the weapons are largely nonmetallic. A 94 GHz millimeter-wave FM radar was developed to image both metallic and plastic weapons concealed by clothing worn by passengers. This system uses a frequency-modulated, 300 MHz bandwidth, millimeter-wave signal detection subsystem. The illuminating signal at 94 GHz is transmitted to the passenger via a focusing reflector and mechanical scanning subsystem. The 300 MHz bandwidth returns are compressed into a post detection bandwidth of about 0.1 MHz for subsequent processing to form a two-dimensional video display.

Resolution of better than one-half inch was achieved with this imaging system. Results from 3600 tests conducted using human subjects carrying concealed weapons demonstrated detection probabilities in excess of 96%. A false alarm rate of about 30% was due to spectral reflections from bones just below the skin, such as shoulder blades. This work was conducted for the FAA at IIT Research Institute.

Mr. Jack E. Bridges was with IIT Research Institute for 32 years and retired as a Senior Science Advisor in late 1992. He recently formed Interstitial to provide consulting services. His work at IITRI included development of many novel electromagnetic systems. Mr. Bridges is an IEEE Fellow. He received the 1956 Browder J. Thompson Memorial Prize, the 1981 Prize Paper Award from the Power Engineering Society [T & D], and the 1983 Distinguished Alumnus Award in R & D from the University of Colorado. He has published more than 92 journal articles, 5 texts, and holds 45 patents.

DATE:	Monday February 15, 1993	TIME: Social	6:00 PM
PLACE:	Chinese Garden Restaurant	Dinner	6:30 PM
	754 E. Schaumburg Rd.	Meeting	7:30 PM
	Schaumburg, IL		

From South: Exit Rt. 53 at Biesterfield. Left on Biesterfield to Meacham. Right on Meacham to Schaumburg Rd. Left on Schaumburg to Plum Grove Rd. From North: Exit Rt. 53 at Higgins. Right on Higgins to Meacham. Left on Meacham to Schaumburg Rd. Right on Schaumburg to Plum Grove Rd. Restaurant is on the NW corner at the intersection of Schaumburg and Plum Grove in Market Square Center.

Call the IEEE message center 708-963-3828 by noon on Wednesday February 10, 1993 to make your reservation. The dinner costs \$10.00 and is optional. A selection of 9 entrees will be available. Reservations are requested even if you attend the meeting only. Non-IEEE members are welcome.

Scanfax — February 1993 — page 11

• • PLEASE POST — INVITE YOUR FRIENDS AND BUSINESS ASSOCIATES • •

OUR IEEE CHICAGO SECTION'S 100TH ANNIVERSARY YEAR

IEEE RECOGNITION DINNER — 1993

DATE : SATURDAY, APRIL 24 1993
PLACE : AVALON BANQUETS
1905 EAST HIGGINS ROAD (AT BUSSE ROAD),
ELK GROVE VILLAGE, IL

TIME : 6:00 PM — COCKTAILS & HORS D'OEUVRES
7:00 PM — DINNER, FOLLOWED BY PROGRAM

TICKETS: DONATION — \$30.00 PER PERSON

PRESENTATION OF AWARDS BY THE CHICAGO SECTION

1993 IEEE Fellow Award

Dr. Miron Abramovici — AT&T Bell Laboratories

1993 Student Awards

1993 Student Advisor Awards

(Names to be announced)

1993 Section Awards to Industry

Elite Electronic Engineering Company
M. Gottlieb Associates, Inc.
Matsushita Television Company
Methode Electronics
Northrop Electronics Division

A Brief Tribute to our Late Recognition Dinner Chairman, Henry P. Korman

THE SOCIAL SCENE

ENTERTAINMENT Joel "JB" Brash — magic, comedy, fun, etc.

DANCING Frank "K" and Company — a tuneful orchestra, with
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1993 RECOGNITION DINNER COMMITTEE MEMBERS:

Chairman	— Henry P. Korman (May 11, 1924 – October 24, 1992)
Acting Chairman	— Frank Lakowski, United Chemi-Con Inc.
Secretary	— Norbert R. Orszula, PE
Treasurer	— John Waters, Waters Associates, Consultants
Arrangements	— Gene Golemo, Motorola, Inc.
Entertainment	— Ray Schulenberg, Motorola, Inc.
Tickets	— Joseph Feitler, Interactive Systems Corporation
Solicitations	— Sheldon Isenberg, Northrop Corporation, DSD (Chairman)
	— John Ellis, Motorola, Inc.

PLEASE ORDER YOUR TICKETS (at \$30 per person)

- by mail — Joe Feitler, Box 5072, River Forest, IL 60305 (no later than April 16, 1993)
- by phone — Joe Feitler at ISC: (708) 505-9100, x277 (no later than April 20, 1993)
- Please tell us about your groups — We will have tables seating 10 people
- You may request a fish or vegetarian dinner no later than April 16, 1993