

SCANFAX

September 2003

Volume 55, Issue 7

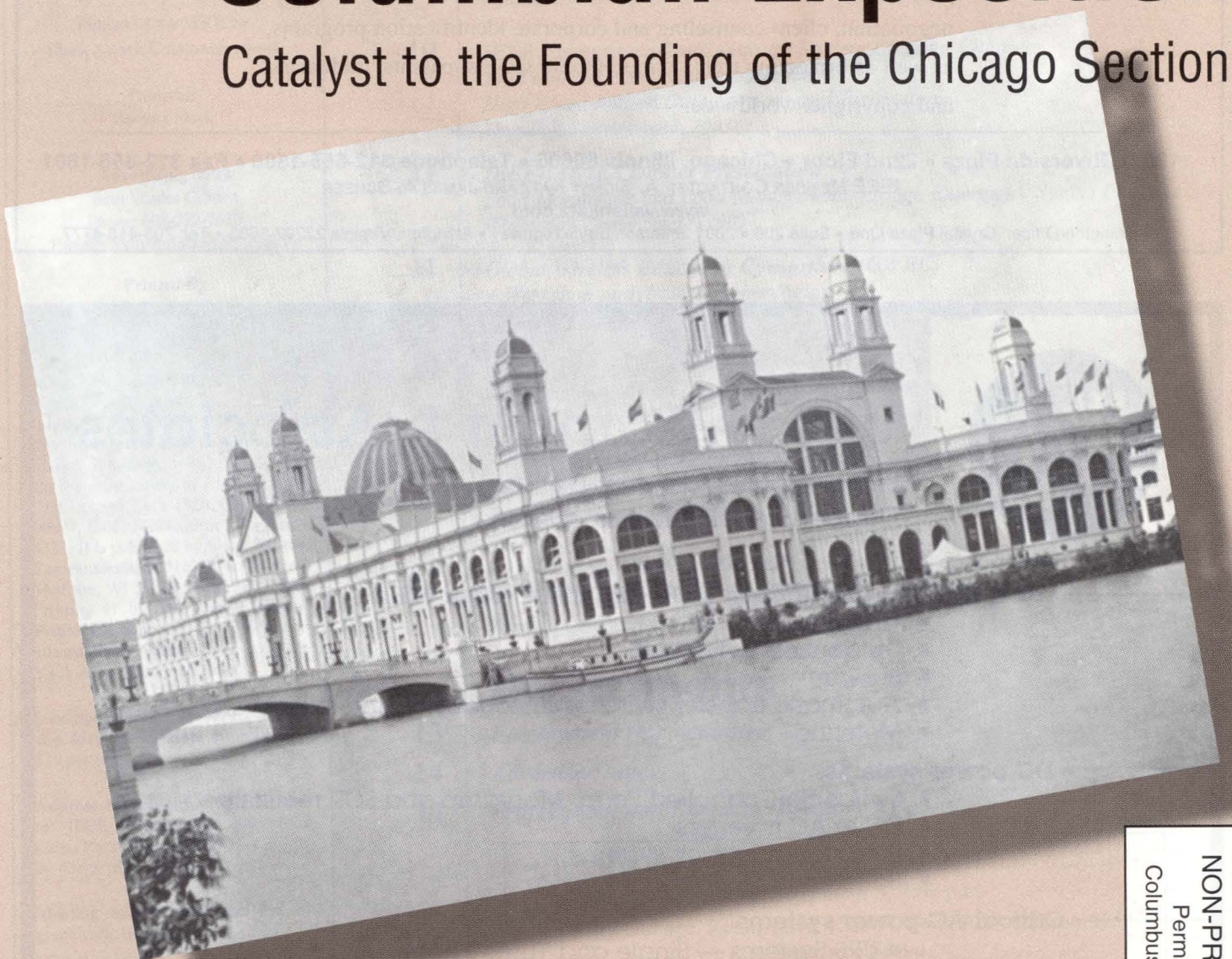


Chicago Section Website:
www.ewh.ieee.org/r4/chicago

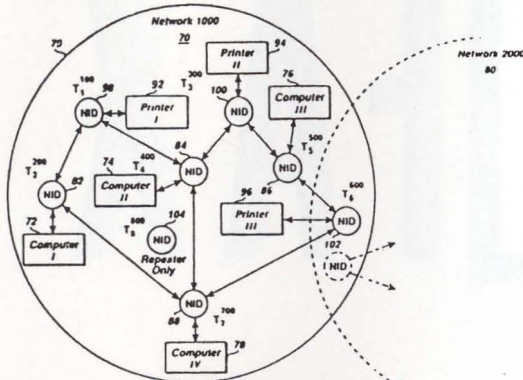
A publication of the
Institute of Electrical & Electronics Engineers
— Chicago Section —

The World's Columbian Exposition

Catalyst to the Founding of the Chicago Section



U.S. POSTAGE PAID
NON-PROFIT ORG
Permit No. 53
Columbus, Wisconsin



Masters of the Intellectual Property Maze®

Attorneys experienced in virtually every scientific and engineering discipline and concentrating in all facets of intellectual property law including

litigation, licensing, **WELSH & KATZ, LTD.**
negotiation, client counseling and corporate identification programs,
as well as protecting rights through trade secrets, patents, trademarks
and copyrights worldwide.

120 S. Riverside Plaza • 22nd Floor • Chicago, Illinois 60606 • Telephone 312-655-1500 • Fax 312-655-1501

IEEE MEMBER CONTACTS: A. SIDNEY KATZ AND JAMES A. SCHEER

www.welshkatz.com

Washington Office: Crystal Plaza One • Suite 206 • 2001 Jefferson Davis Highway • Arlington, Virginia 22202-3603 • Tel: 703-415-4777



Weldy/Lamont & Associates

Manufacturers Representative
Engineered Products and Services

AC distribution equipment 600V thru 35KV (50 or 60Hz)

- Transformers
- Distribution switchgear
- Busway
- Automatic transfer switches (mechanical and static)
- Metering

DC power systems

- Switching Controlled Ferro, Mag-amp and SCR rectifiers
- DC to AC inverters
- Free standing rack systems
- Batteries

Critical AC power systems

- UPS Systems — Single and Three Phase
- Power Distribution Units
- Static Switches
- Generator Paralleling Switchgear

Weldy/Lamont Assoc., Inc. / 1008 East Northwest Hwy, Mount Prospect, IL 60056 / 847-398-4510



Chicago Section:
www.ewh.ieee.org/r4/chicago

A publication of the
Institute of Electrical & Electronics Engineers
— Chicago Section —

Chairman

Angeline Schaefer
Phone: 312-960-8329
Fax: 312-827-8329
E-mail: aschaefer@owpp.com

Editor

Gerry Ryan
Phone: 708-445-7537
Fax: 708-445-7538
E-mail: gerryr_idcs@ameritech.net

Published for IEEE by
Slack Attack Communications

Publisher

Barbara Slack

Advertising Sales

Beth Vander Grinten
Phone: 608-222-7630
E-mail: bethv@slackattack.com

Printed By

Town & Country Printers
Columbus, WI

SCANFAX (ISSN #0018-1297) is a monthly publication (except June, July and August) of the Chicago Section Institute of Electrical and Electronics Engineers, Business Office, c/o Western Society of Engineers, 28 East Jackson, Suite 1320, Chicago, IL 60604, (800) 898-4333 or (312) 253-4333. It is published by **Slack Attack Communications**, 5113 Monona Drive, Madison, WI 53716, (608) 222-7630. Printing is by **Town & Country Printers**, Columbus, WI 53925. For advertising information, contact Slack Attack Communications.

Subscriptions included in IEEE membership dues; non-member subscriptions: \$25 per year.

Address corrections should be sent to: IEEE Membership, 440 Hoes Lane, Piscataway, NJ 08854-1331 or by phone (800) 678-4333.

Meeting notices should be sent to graphics@slackattack.com

©Copyright 2003 by the Chicago Section Institute of Electrical and Electronics Engineers. Permission to reprint must be secured in advance of publication and credit given to author and SCANFAX.

SCANFAX

September 2003

Volume 55, Issue 7

Features

- 4 The World's Columbian Exposition
Catalyst to the Founding of the Chicago Section
- 9 Supporting IEEE's Effort to Create a
Jobs Website for its Members

Upcoming Events

- 10 **IEEE Fox Valley Subsection and IIT-Rice Campus**
"Beam Me Up Scotty," Fact or Fiction?
Wednesday, September 17, 2003
- 10 **IEEE Communication/Computer Society Chicago Chapters**
Joint with IEEE Fox Valley Subsection
High Speed Mobile Data Services and Technology
Thursday, September 18, 2003
- 11 **IEEE-IAS/IES Dinner Presentation**
Load Monitoring and Load Management through Emergency System Interface
Wednesday, September 17, 2003
- 11 **Global Wireless Education Consortium (GWEC)**
A Workshop on Wireless Technologies
Friday, September 19, 2003
- 12 **Chicago/Rockford IEEE Consultants' Network**
The Consultant as an Expert Witness
Monday, September 29, 2003
- 12 **IEEE Fox Valley Subsection and IIT-Rice Campus**
Fermilab Accelerators: Past, Present and Future
Wednesday, October 15, 2003
- 13 **SAE Chicago Chapter/IEEE EMC Society Chicago Chapter**
42Vdc-The Next Generation Automotive Battery System
Tuesday, October 14, 2003

Departments

- 13 **Employment Opportunities**
- 14 **Advertiser Index**
- 14 **Professional and Business Directory**

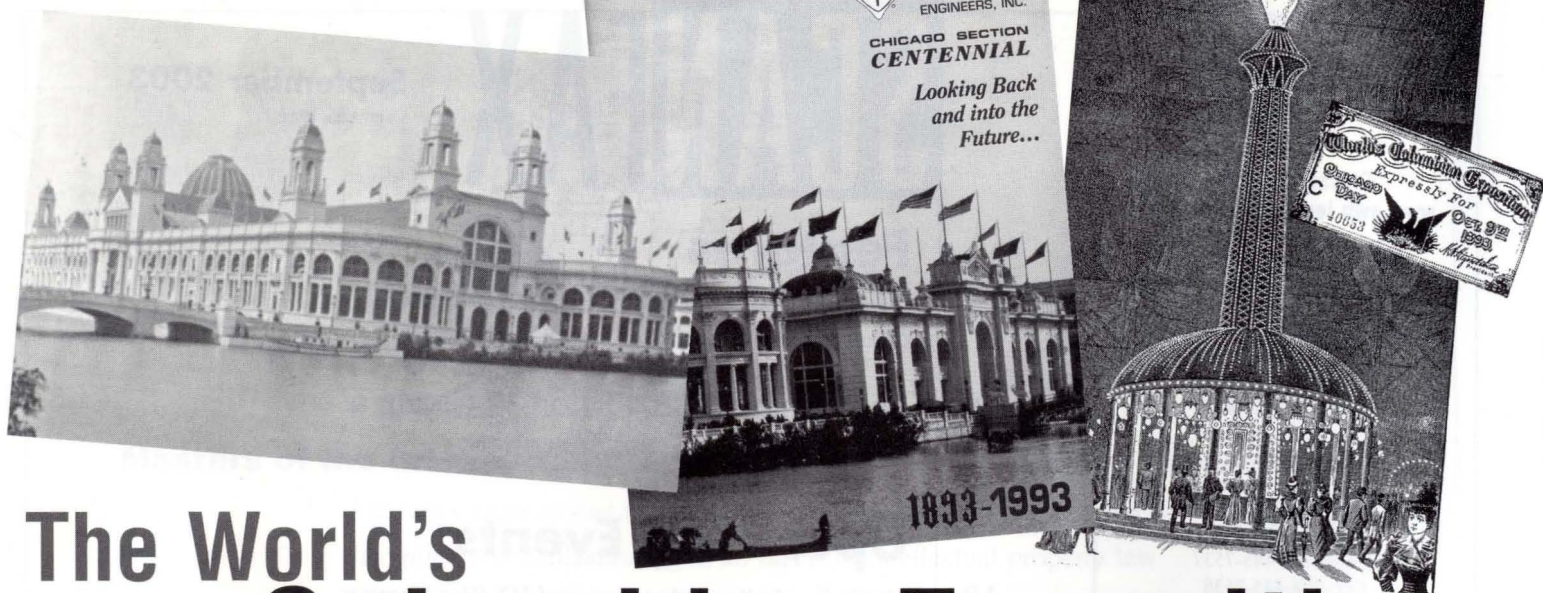
CHICAGO SECTION EXECUTIVE COMMITTEE MEETING

Tuesday, September 9, 7:00 p.m.

DeVry DuPage, Room TBA, 1221 N. Swift Rd., Addison, IL

No Registration Needed

Statements or opinions expressed herein are those of the author's and not necessarily those of the IEEE Chicago Section, its members, officers, or staff, or the editors of this publication. Readers using any information or materials described in this publication do so at their own risk. In no event will IEEE Chicago Section, its members, officers, or staff be liable for any damages resulting from use of this material and hereby expressly disclaim such liability. The publication of any advertisement is not to be construed as an endorsement of the product or service offered unless the advertisement specifically states that there is such an endorsement or approval by the organization.



The World's Columbian Exposition

Catalyst to the Founding of the Chicago Section

By George M. Thomas, IEEE Chicago Section, History Committee Chairman

The year was 1893 and it was an exciting time to be living in Chicago. The city was hosting the World's Columbian Exposition honoring 400 years since the discovery of America. The fact that the event was one year late did not upset attendees as people flocked to Jackson Park on May 1 to witness the President of the United States, Grover Cleveland, open the Fair. This was also a great time to be an electrical engineer or electrician since developments in electrical technology were moving rapidly and the Fair would showcase much of this development in the last decade.

This was also a defining time for our own Chicago Section of the American Institute of Electrical Engineers because the section claims the title as the first local section created by the AIEE. We can thank the leadership of a few Chicago members who demanded more from their Institute membership besides traveling to New York to participate in the discussion of presented papers.

The "Institute" was established in 1884 in New York. At that time there was no American national scientific society representing the rapidly growing art of

producing and utilizing electricity. Further, the International Electrical Exhibition (IEE) was to be held in Philadelphia in the fall and no American electrical society existed to receive the foreign visitors with proper honors. Of the elected and appointed vice-presidents, managers and directors of the new AIEE, there were several prominent names from the industry including Alexander Graham Bell, Thomas A. Edison, Prof. Edwin J. Houston and our own Prof. Elisha Gray from Chicago. These men who formed the AIEE were not just engineers but electricians, former telegraphers, manufacturers, academics and businessmen. Electricians lacked formal education in electricity and usually came from the telegraph industry but they were no less interested in electricity.

The first AIEE meeting was held at the Franklin Institute during the IEE and annual meetings were held thereafter. Chicago was selected as the site in 1892. During the year, the Institute would hold monthly meetings in New York, reading papers submitted by members and discussing the topics addressed in the papers. These papers would receive peer

review before being printed in the Transactions of the AIEE.

The big issue at that time was not the telegraph but the distribution and use of electrical power for lighting and electrical railways. Edison backed the DC approach with incandescent lighting, DC transmission lines and DC motors. He said AC was unsafe. George Westinghouse proposed AC and had the able-Croatian Nikola Tesla working for him on polyphase motor design. With AC you could operate at higher voltages and use transformers to step-down the voltage at the user premise. Edison's system suffered higher line losses by operating at lower voltages resulting in reduced distribution distances and poor regulation. It was Westinghouse's company that won the lighting contract at the World's Columbian Exposition, and it fulfilled the contract by providing 12 1000-hp two-phase alternators. Two single-phase alternators were coupled on a common shaft with field windings displaced at 90°.

Providing magnificent illumination of the grounds, buildings, fountains, waterways and the sky search-lights meant that

electricity had indeed arrived challenging the need for natural gas. It was not only lighting that was being powered, but an elevated railway operating within the fairgrounds. Electricity was not just being demonstrated but was being used to power all aspects of the Fair including the exhibits and even the launches on the lagoon with batteries below deck.

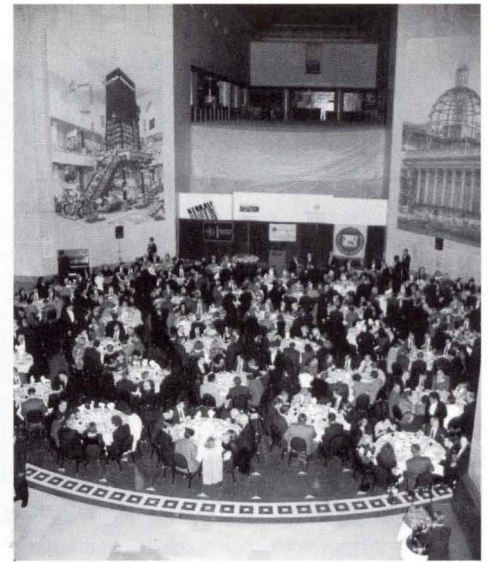
The Fair was referred to as the White City, where artists, architects, engineers, sculptors, painters, and landscape architects joined forces to create a single work - an ideal model city. The Exposition's main buildings, designed in an ornate, neoclassical style, were constructed under the direction of Daniel Burnham. Intended as temporary structures, the buildings were created from staff, a mixture of plaster of Paris and hemp, that was polished until it gleamed like marble. The White City influenced architecture across the country for years to come. Following the Fair, hundreds of towns built city halls, libraries and other buildings with tall columns and high narrow windows.

Inside the Electricity Building visitors could find all the competing firms. The General Electric Company with Edison's tower of light, dynamos, lamps and even electric toys were shown. The Thomson-Houston Company displayed their arc-lighting apparatus (both Thomson and Houston were original AIEE members). Not to be undone, the Westinghouse Electric and Manufacturing Company was demonstrating one of Tesla's 500 horse-power generators along with the complete power plant located in Machinery Hall which powered the Fair. The Western Electric Company of Chicago demonstrated how their products such as telephones, wire, fire alarms and other apparatus were manufactured. Lightning bolts would bring attention to an Egyptian temple and on the temple walls would be native figures processing the company's products in front of a queen. Next to this display was that of the American Telephone Company that maintained a constant telephone connection to New York for all to witness. It was not only American companies present but English, French and German companies as well. Even Japan had an exhibit. Electricity was certainly making a big impression at the Fair as was the

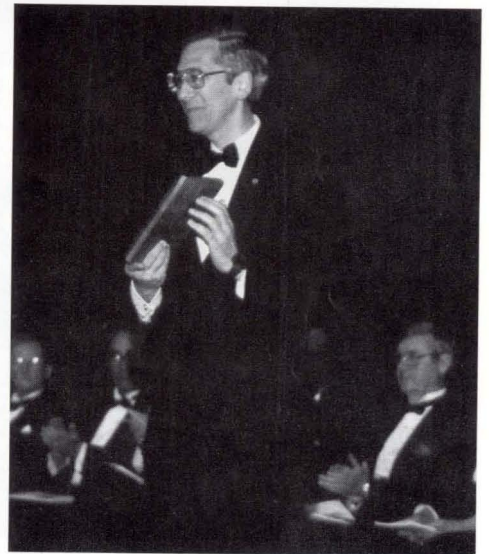
great mid-western city - Chicago.

The issue of sanctioning local branch meetings of the AIEE was not a new one since it was brought up at Institute meetings before. If the local entities wanted to meet on a social basis there should be no harm. However, if they wanted to be autonomous entities it could weaken the Institute. The main concern voiced was to discourage the local publishing of papers. Technical papers were approved by the Committee on Papers and with only 700 potential authors of papers, it was difficult to obtain the desired quality. I can see this being the case when you had to compete with the likes of Charles Steinmetz who was a frequent contributor. The fear was that a local chapter with only 20 to 30 members would be attempting to publish in the Transactions a paper of dubious quality submitted on the basis of a favorite son. However, if a branch was prohibited from publishing a paper of good quality, it might then submit the paper to a local competing association and, thereby, weaken the Institute. One thing that the Institute was clear on was that it wanted to control the publishing of papers in the Transactions. Local chapters could discuss a paper already appearing in the Transactions or even discuss the same paper as it was being read in New York. This appeared to be an acceptable compromise.

Another issue was related to a turf war. If Chicago was to be designated a local chapter, what does that make of New York? New York definitely had more members but membership to the Institute was not restricted to just the United States. There were Canadian members as well and other cities were seeking the status of a local chapter. Even with New York's relatively large membership, they were still only drawing 30 to 35 people at their monthly meetings. Chicago was capable of drawing 20 to 25 by itself. Still, New York considered



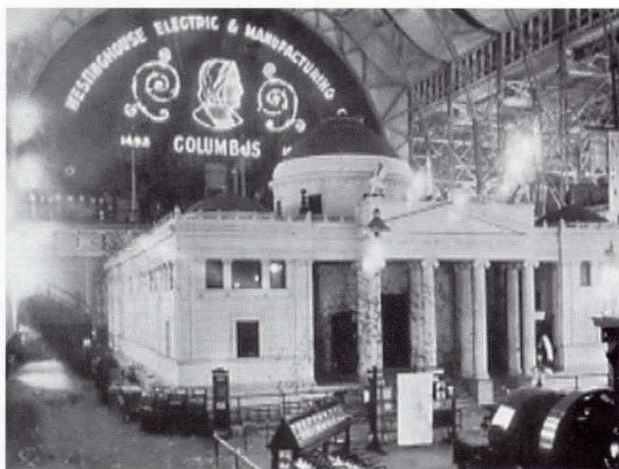
Over 400 members and guests attended the Centennial Celebration and dined in the rotunda of the Museum of Science and Industry.



Barry Brusso, chairman of the Chicago Section, shows off a plaque given by IEEE President Martha Sloan recognizing a Century of Achievement.



The IEEE Regional activities Board recognizes the Chicago section as being 100 years old. Chicago Section members Ed Capouch, holding banner on the left, Howard Wolfman on the far right and Len Cohen third from the right accept the recognition.



The Westinghouse exhibit in the Electricity Building at the World's Fair. The company received the contract for powering the fair.



Interior views of Electricity Building, World's Columbian Exposition, 1893.

itself the "Institute" and was not about to take a lesser role in the local meetings issue.

What helped the Chicago group was the fact that the World's Columbian Exposition was being held in Chicago and, more importantly, the International Electrical Congress was to hold its meeting during this time. As with the International Electrical Exposition of 1884, the AIEE wanted to be a significant contributor to this interna-

tional event that was defining and naming the units and measures of electrical properties for use worldwide. The AIEE had five delegates at the Paris meeting in 1889 and the Frankfurt meeting in 1891 and now it formed a committee two years in advance of the meeting in Chicago since it felt it so important. Because of these two events, many prominent national and international figures from the electrical industry were traveling to Chicago that summer.

The Institute was given meeting rooms in the Electricity Building and an informal meeting was held by Chicago members on a Saturday night, September 2. Guests invited included the president of the Institution of Electrical Engineers, W. H. Preece (to travel from London, England to the World's Fair took almost ten days and many Europeans made the trip). Also in attendance were Institute members from San Francisco and New York. The Institute secretary, Ralph W. Pope, called the meeting to order and stated that the purpose of the meeting was to determine if local Institute members would have an interest in holding occasional local meetings in order to enjoy the benefits of Institute membership. The annual Institute dues were \$10 per year and a trip to New York to hear a paper was quite a commitment. Pope was given authority by the Institute's President Houston, of Thomson-Houston fame, to hold this meeting and to learn about the wishes of the local members. As Dr. Keith of San Francisco pointed out, San Francisco had a local organization of over 100 members who would prefer to align with a national association like the Institute if they were welcomed. It should be remembered that since 1869 Chicago had the Western Society of Engi-

neers. Although not strictly an electrical association, it still represented potential local competition. It should have been obvious to the Institute leadership that by making some kind of deal with the local groups, the Institute could grow enormously outside of New York. In fact that is what Mr. Preece suggested based upon his own experiences in England.

Mr. Pope continued the meeting and mentioned that the Armour Institute had offered the use of its rooms for the purposes of conducting local meetings. One of the rooms could hold over 2,000 people. Professor Wilbur Stine had shown the facilities to one of the delegates and found them to be quite impressive. What was interesting was that Armour Institute had yet to open its doors to its first student. That would not occur until September 14 when inaugural classes began.

Alumni of the Illinois Institute of Technology know the story of the "million dollar sermon" delivered by Chicago minister Dr. Frank Gunsaulus who said that with a million dollars he would build a school where students of all backgrounds could prepare for meaningful roles in a changing industrial society. Philip Danforth Armour, the Chicago meat packer and grain merchant, heard Gunsaulus' sermon and came to share the minister's vision. He agreed to finance the endeavor with the stipulation that Gunsaulus become the first president of Armour Institute and that he remain for five years. He stayed for 30. That sermon was in 1890, but by 1893 the Armour Institute was attracting over 400 students in the fields of mechanical, electrical and mining engineering. In 1895 Lewis Institute was founded and in 1940 the two schools merged to form the Illinois Institute of Technology (IIT). Therefore IIT has the claim of holding the first Chicago Section meeting. In 1906, the Armour Institute, then called the Armour Institute of Technology, formed an AIEE student section with Lewis Institute following suit in 1908.

Now with adequate facilities it was only necessary to canvass the membership to determine if the Chicago AIEE members indeed wanted to hold local meetings. A committee was formed for this purpose.

The next regular meeting of the Institute was on September 20 where incoming AIEE President Edwin Houston gave

his inaugural address. He, like others, attended the World's Fair and the International Electrical Congress (IEC) and wanted to share what he witnessed. He had high praise for Chicago and the Great White City but he was most impressed by the progress made in the electrical field since the Philadelphia International Exhibition of 1884 when the AIEE was founded. Through the American Bell Telephone Company he was able to have an extended conversation between Chicago and New York. He was able to view countless new inventions and improvements to apparatus and distribution of power. He was especially proud of the fact that of the 30 papers presented at the IEC, no less than half were authored by AIEE members. He was pleased that the IEC had designated the Henry as the unit of measurement for self and mutual inductance in honor of American Professor Joseph Henry. He was not happy that the meetings were held at the Art Institute instead of the fairgrounds. The site was noisy and not conducive to the work at hand. It should be remembered at that time our beautiful lakefront was actually a railroad yard. Houston concluded by saying that much of the success of the IEC could be contributed to the efforts of the AIEE.

Later that evening, Charles Steinmetz re-introduced the issue of authorizing local meetings. He, however, was not proposing Chicago but Lynn, Massachusetts! It seems that Lynn had a local organization called the Thomson Scientific Club of Lynn and they wanted to retain their local group but become members of the AIEE. The AIEE was rapidly gaining national prestige but the desire to retain local governance remained strong. Steinmetz added one other condition and that was to allow a member, who had a paper approved, the option of presenting the paper at the local branch instead of before the general organization. No action was taken but the Institute secretary suggested that local organizations should propose their intentions to the Institute. In other words, the Institute was not going to act unless it was presented with a concrete proposal.



Samuel Insull was one of the original signers of the petition for local meetings in Chicago. He was a significant contributor to the growth of Commonwealth Edison.

Samuel Insull

Signer of the Petition

One of the more colorful of the 21 signers of the petition to have local meetings in Chicago was Samuel Insull of the Chicago Edison Company. Samuel Insull was born in London, England in 1859. In 1879, he became a secretary for George A. Gouraud, one of Thomas Edison's agents in England. He came to America in 1881 at age 22 to be Edison's personal secretary. In 1886, Insull became an associate member of the AIEE although he was not trained as an engineer. The AIEE membership requirements were quite open but the grade of member was usually reserved for professional engineers.

Edison recognized his astute business skills and he became general manager of the Edison General Electric Company in Schenectady, N.Y. in 1889. When the Edison General Electric Company merged with Thomson-Houston Company to become the new General Electric Company in 1892, Insull left to become President of the struggling Chicago Edison Company.

Insull was knowledgeable about power generating equipment and was a believer in the economy of large centralized distribution systems. Under Insull's direction, Chicago Edison bought out all of its competitors and then constructed a large central power plant along the Chicago River at Harrison Street. By 1907, all of Chicago's electricity was being generated by Insull's company, a tribute to his economic management. In that year, the company became the Commonwealth Edison Company.

A potentially big customer for electricity was the elevated trains and Insull was interested in discouraging them from producing their own electricity. Thus began a long relationship with electric railways and Commonwealth Edison. Insull was active in consolidating the separate elevateds and became part of management of a holding company for the elevateds at the same time being their supplier. Insull's holdings and wealth increased as he acquired more transportation properties creating a utilities and transportation empire.

The Great Depression collapsed the Insull empire and its highly leverage holding company. He was badly overextended and so when his companies went bankrupt one by one, so did he. He ended up living out his years on a small pension from his business interests. His problems were not over. When his holding company went into receivership, many lost their life savings and he became a hated man. He decided to return to Europe but in the US he was indicted on charges of bankruptcy, embezzlement, and using the mails to defraud investors. He was extradited back to the US to face trial but was acquitted on all counts. Some felt he had been made the scapegoat for the stock market crash and the excesses of the times. He returned to Europe where in 1938 he died of a heart attack in a Paris subway.

References: Chicago-I.org and "Engineers & Electrons," IEEE Press

At the very next meeting of the Institute on October 18, Secretary Pope, with the thoroughness of an engineer, presented a very detailed paper on the "Monthly Meetings of the Institute." The Institute followed closely the rules of the American Institute of Mining Engineers that called for one annual meeting and two regular meetings. However, special meetings could be called whenever the Council saw fit and the secretary shall call a special meeting on a requisition signed by fifteen or more members. So to have a local meeting was to simply call a special meeting. However, not everyone saw the issue that way and there was much discussion including a proposal from Dr. Emery. The issue was not resolved that night so the president appointed a committee to propose a solution to the local meeting question.

At the very next meeting on November 15, the five committee members submitted their Report on Local Meetings which reflected much of the feelings expressed at the meeting before. They said it was desirable to have local meetings for the reading and discussion of papers accepted by the Institute as long as 20 members requested for this to occur. An Honorary Secretary, from the local group, would be appointed by the Institute to serve as a communication channel between the local group and the Institute. The local group could appoint their own chairman and the group would need to bear any expenses related to holding the meetings. The submission and publishing of papers would still be controlled by the Institute. The Honorary Secretary would report on the discussions occurring at the local meet-

ings or any comments on the papers. The committee did not endorse the establishment of autonomous sections or branches. That would come in later years. For now, local meetings were strictly limited to the reading and discussing of papers being presented in New York. The report was thoroughly debated but was accepted by the Institute. However, the Institute bylaws were not changed since this was going to be an experimental policy. Some members said they would be surprised if anything came of the policy change.

In February 1894, Mr. Edward Caldwell of Chicago sent a petition signed by 21 AIEE members to the Institute requesting that local meetings be held in Chicago. The signers requested that Mr. Caldwell become the Honorary Secretary and the Institute complied.

On March 21, 1894, the first local meeting was held at Armour Institute, simultaneously with a meeting in New York. Mr. Hibbard of the Chicago Telephone Company was elected Chairman for this meeting and approximately 45 members and guests heard Mr. D. C. Jackson read a paper by Professor W. A. Anthony entitled, "On the Effect of Heavy Gases in the Chamber of an Incandescent Lamp." Mr. Hibbard had arranged a telephone hookup with New York creating what would appear as a joint meeting. Additional meetings were held in April, May and September and continued in future years until 1902 when a more formal arrangement of local sections was organized by the AIEE. However, Chicago was still recognized as the first local section with an establishment date of 1893.

Fast forward to 1993 for it was a time to

celebrate the Chicago Section's 100 years of existence by having a Centennial Celebration. On February 27, 1993, the IEEE Honors Ceremony was held in Chicago and Barry Brusso, Chicago Section chairman accepted a "Century of Achievement" plaque from President Martha Sloan. The Regional Activities Board presented the section with a Centennial Banner.

The Chicago Section created a Centennial Committee that decided to hold its celebration at the Museum of Science and Industry. This was only fitting since this building is the only one remaining from the World's Columbian Exposition having served as the Palace of Fine Arts. The date was October 9, 1993. Exactly 100 years before it was Chicago Day at the Fair when a record 700,000 people passed through the gates. However, at the Centennial Celebration, 400 members and guests had the run of the museum that had its own exciting exhibits in recognition of its history at the World's Fair.

There were hors d'oeuvres and music and dinner was served in the museum's rotunda that was decorated with historical posters identifying key developments in electricity and electronics over the last 100 years. There was an active display of World War II communications equipment allowing members to reminisce about their signal corps days. Merrill Buckley, past president of the IEEE and board member, expressed his best wishes and congratulations to the section. Len Cohen, current section chairman, received a plaque from John Powers, IEEE general manager. Len had in his possession an original Chicago Day ticket to the Fair.

The keynote speaker at the event was John Hogan of the Commonwealth Edison Company who spoke on the 100-year history of the company and the contributions made by founder Samuel Insull who was one of the original petitioners for local meetings in Chicago. After the dinner, the presentations and the speeches, people were free to wander the museum halls and marvel at the contributions made to mankind through technology and the advancements made in electricity since 21 AIEE members petitioned New York to hold local meetings in the city that created the Great White City. ■

Missing SCANFAX Issues

The history committee would like to complete its collection of past Scanfax issues and much work is needed. For those of you who throw out nothing and need more room or for those looking for a loving home for your IEEE archives, please pass them on to the committee. In terms of Scanfax issues here is what is currently missing:

All issues before 1970

1971 - Jan., Feb., Apr., June, Dec.

1981 - Nov.

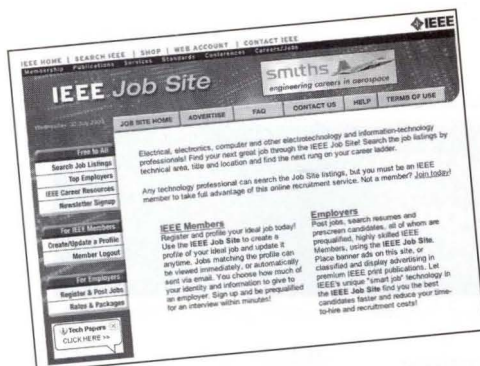
1970 - Feb., Mar., Apr., May, June

1972 - Jan., Feb., June

1997 - Dec.

Any help would be appreciated.

George Thomas
gthomas@ieee.org



Supporting IEEE's Effort to Create a Jobs Website for its Members

By John Zulaski

Looking for Work

Those of you who have had the misfortune of being unemployed in the last year or two are keenly aware of the daunting task of finding a comparable position that meets your needs. The staff of IEEE has recently introduced a jobs search web-site to try to make the job hunting process a little easier. The web-site went on-line in June of 2001 and though in the startup mode, has shown rapidly increasing activity. So far over 2700 employers have posted job openings and 25,000 IEEE members have posted their resumes. This activity level is expected to continue at a strong pace this year.

IEEE Job Site

You will find the web-site at <http://www.ieee.org/> by clicking on services, then clicking on the IEEE Job Site. Once on the site you can view the currently available positions and search them based on location, company, expertise, etc. You will be disappointed at the lack of job postings for the Chicago area. There are several reasons for this. The slow economic situation, of course, doesn't help. The real reason is that IEEE staff has been focusing on a small number of pilot programs to work out the bugs that could be expected to occur with any large project. The changes needed to cure problems encountered have now been implemented and an effort to significantly expand usage of the web-site is now underway.

Using the Web-site

In order to create your "ideal job" profile on the Jobs Site, you must be an IEEE member. Once your profile is posted by clicking on "IEEE Members" and filling out the registration form, you will have the ability to make changes to your profile at any time. More importantly, you will be notified when there is a match between posted jobs and your profile. There is no charge for a member's use of this site. Now there's a bargain that's hard to beat. The web-site also offers the capability to search existing job postings by technical areas of expertise, job title, and location.

Companies can find the best candidates faster and with reduced hiring costs. Once registered, posted jobs are matched to the candidates profile. Since these profiles are exclusively IEEE members, the quality of the matches is superb. The cost of posting job openings is quite low compared to other avenues, particularly when you consider that the pool of candidates is pre-qualified by the fact that they are IEEE members.

Chicago Section Participation

The Executive Committee of the Chicago Section has been asked and has agreed to participate in the promotion of the IEEE Jobs web-site. The primary venue will be through advertisements and articles in Scanfax to make it's 6000 Chicago-area members aware of this exclusive web-site and its benefits. As an inducement, the Job Site is offering to share the revenue associated with the job postings of local companies with the Chicago Section. But the biggest inducement is the benefit that our members can derive from a truly effective jobs-search aid.

Can you help?

The web-site will be of little value if no one uses it. At the present time, the number of job postings for the Chicago-area is much too low. The Job Site staff has done their job of offering a potentially significant service. We need your help in making this service known to organizations that hire electrical, electronic, computer, and other electro-technology and information - technology professionals. Contact your Human Resources professionals and others with hiring responsibility, to make them aware of this web-site. Then, please fill out the form at <http://www.spectrum.ieee.org/jobsite/hrmanagerform/> including the name of your recruitment manager and indicating the IEEE Chicago Section and click send. You will be doing your organization, yourself and your fellow Chicago section members a big favor. ■

Partners in U.S. Safety

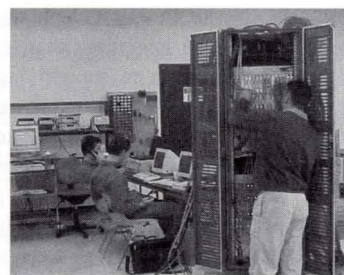


*Faster, less expensive
U.S. safety certification
in Chicagoland*

D.L.S. Electronic Systems, Inc., a Wheeling, IL facility, has expanded its CSA services to include CSANRTL for the United States. Their new streamlined program provides U.S. Safety Compliance equivalent to UL and other NRTL safety marks, in addition to the Canadian Safety Compliance CSA has long been noted for.

CSA Safety Certification through D.L.S. offers you certified testing much faster than you ever imagined, at significantly less cost, with our "quality comes first" approach. Our full-time engineering staff is ready to step in with problem solving experience, when needed, implementing practical solutions.

Isn't it time you switched your NRTL requirements to an organization dedicated to you, the customer? There is no need for you to pay more while settling for less than the best. Make D.L.S. and CSA your partners in Safety.



For more information check out our web site at www.dlsemc.com and click on the bright red CSA Banner.



EVENING MEETING

IEEE Fox Valley Subsection and IIT-Rice Campus "Beam Me Up Scotty," Fact or Fiction? Wednesday, September 17, 2003

Prem Kumar, IEEE Fellow

About the Topic:

I am sure anyone watching an episode of Star Trek wonders whether the Transporter is for real or not. Advances in quantum communication, cryptography, and computing are clearing up some of the fog that surrounds fact from fiction. In this talk, we will boldly go where no one has gone before, culminating with a discussion of some of the contributions that the Northwestern team is making to this field.

About the Speaker:

Prem Kumar is Professor of Electrical and Computer Engineering, Professor of Physics and Astronomy, and Director of the Center for Photonic Communication and Computing at Northwestern University. He joined Northwestern in 1986 after spending five years at MIT as a research scientist. He received a Ph.D. in Physics from SUNY/Buffalo in 1980. His research focuses on the development of novel fiber-optic

devices for ultrahigh-speed optical and quantum communication networks. His current research is funded by the National Science Foundation, the Defense Advanced Research Projects Agency, the Army Research Office, and the Office of Naval Research. His professional services have included: Panel Reviewer, National Science Foundation, Topical Editor, Optics Letters; Member, OSA Publications Council; Editorial Board Member, Journal of the European Optical Society B - Quantum and Semiclassical Optics; Principal Organizer, 4th International Conference on Quantum Communication, Measurement, and Computing, Northwestern University, 1998; Chair and Member of several program committees for national and international conferences sponsored by the OSA, APS, and the IEEE; Vice Chairman, LEOS/IEEE Chicago Chapter, 1990/91. He is an Advisory Board Member for Baird Venture Partners in Chicago, IL and serves as a Scientific Advisor to Santel Networks, a startup in Newark, CA.

Location:

IIT's Rice Campus, 201 East Loop Road, Wheaton. Take Rt.56/Butterfield Rd. to first stoplight east of intersection of Butterfield & Naperville roads. Turn north onto East Loop Road (Grady's Restaurant and Phillip's 66 Gas Station on the corners); the campus will be on the right about a block north of Butterfield Road. More detailed directions and a map are available at <http://www.rice.iit.edu/directions.html>

Sponsorship:

IEEE's Fox Valley Subsection and Illinois Institute of Technology's Center for Professional Development (Rice Campus).

Time:

6:00 PM Networking Time
7:00 PM Presentation

Reservations:

Reservations are not required.

EVENING MEETING

IEEE Communication/Computer Society Chicago Chapters (Joint with IEEE Fox Valley Subsection) High Speed Mobile Data Services and Technology Thursday, September 18, 2003

Jack Kozik

About the Topic:

Across the world, mobile telephone service providers have been upgrading their radio and switching infrastructure to support high speed mobile data services. As consumers we see this marketed to us with service names like "Sprint Vision" or "Verizon Wireless Express" or "AT&T Wireless mLife." This talk gives an overview of the technology, discusses interoperability with WiFi and HotSpots, and a survey of the applications, focusing on the technical, economic and market challenges that engineers face.

About the Speaker:

Jack Kozik is Director of the Network Services Architecture Department in the Mobility Solutions Group of Lucent Technologies in Naperville, IL, USA. His organization is responsible for planning the evolution of Lucent's Mobile Network Services products. Recent areas of focus include interoperating

network services with IP services and the evolution of prepaid services. He holds three patents in the areas of mobile network security and Internet telephony. Jack received his BS degree in Computer Science ('79) and an MS ('81) in Electrical Engineering, both from Purdue University in West Lafayette, IN, USA.

Location:

IIT Rice Campus, Room 166

Directions:

The IIT Rice campus is on the northeast corner of the junction of East Loop Road at Butterfield Rd. The intersection is about 3 miles west of IL 355 and IL 53

Map: <http://www.rice.iit.edu/directions.html>

Time:

6:30 PM Social (Free Snack and Beverages)
7:00 PM Presentation

Sponsorship:

IEEE Communication Society Chicago Chapter, Computer Society Chicago Chapter and IEEE Fox Valley Subsection

Cost:

There is no charge for attending the seminar.

Reservations:

Reservations are not required, but registering your intent of attendance at ieeeci@iit.edu is very appreciated.

For More Information:

Visit IEEE Chicago Section website at: <http://www.ewh.ieee.org/r4/chicago/>, or contact: Jack Sherman j.sherman@ieee.org; Yigang Cai ycai@ieee.org; Jerry Kattke g.kattke@ieee.org; or Joe Weesner joe.weesner@ieee.org

ALL-DAY EVENT

Global Wireless Education Consortium (GWEC) A Workshop on Wireless Technologies Friday, September 19, 2003

Satyajit Doctor, President, Award Solutions, Inc.

Workshop Highlights

SESSION I - 8:30 AM - 12:00 PM

Introduction to Wireless LAN (Wi-Fi)

Wireless LANs (802.11b/WiFi) have taken the residential and enterprise markets by storm. Wireless Internet Service Providers (WISPs) have sprung up all over the world, offering WLAN access in public places to the increasing population of WLAN users. Now some of the world's most powerful Mobile Wireless Operations have entered the market with a much more powerful value proposition: broadband WiFi access in hot spots combined with their existing 2.5G/3G data services. This seminar presents a technical overview of the IEEE 802.11 and 802.11b (WiFi) Wireless LAN technologies, their evolutions and how WLANs would work with 2.5G/3G wireless networks.

SESSION 2 - 1:00 PM - 4:30 PM

3G: Beyond 1x and GPRS

1x and GPRS networks have been successfully deployed by operators in the last 1-2 years. Even UMTS deployments have started in Europe and Asia. As operators start offering new packet data services over these networks, the wireless industry is looking beyond these networks to support even higher speeds and high-end multimedia services. This seminar presents a technical overview of evolution for current networks, which includes 1xEV-DO, 1xEV-DV, HSDPA and ALL-IP IMS networks. The seminar will present the network architecture, important features, data rates and benefits of these networks. It will also include an overview of services possible over these networks.

Location:

Motorola Museum of Electronics Auditorium, Door 65, 1297 East Algonquin Rd, Schaumburg, IL; Enter Motorola using Gate A, the far west gate from Meacham Rd.

Time:

Check-in and refreshments at 8:00 AM

Reservations:

Register now at www.gwec.org/events.cfm
Fee: \$99 one session, \$159 both sessions.
Full-time students: \$30 one session, \$49 both sessions. Credit card, purchase orders, invoices and checks accepted.
For more info: www.gwec.org; Susan Busch, DeVry University, 630-706-3550; GWEC, 703-351-6982.

Sponsors: Motorola, Award Solutions, DeVry University, DePaul University, Rose-Hulman.

EVENING MEETING

IEEE-IAS/IES Dinner Presentation Load Monitoring and Load Management through Emergency System Interface Wednesday, September 24, 2003

Tom Palmer, Inland Detroit Diesel

About the Topic:

Mr. Palmer is going to give a presentation pertaining to the monitoring of critical loads and management of critical loads. He will talk about strategic load application and load shedding through the use of monitoring locations and utilizing electrically operated breakers and transfer switches in conjunction with PLC logic, software and communication interfaces.

About the Speaker:

Mr. Palmer is the Vice President of Inland Detroit Diesel. He has over 25 years of generator set application experience in several states including Illinois. He currently lives and works in Chicago and has extensive experience with Midwestern code applications and the City of Chicago Emer-

gency Code. He is a member of the Electrical Generators System Association (EGSA), has sat on the EGSA Board of Directors and also on the Standards and Technical Committee.

Location:

Costa's (Greektown)
340 S. Halsted St.
Chicago, IL 60661

Costa's is located in Greektown on the corner of Van Buren and Halsted. For detailed directions and a map, see www.iaschicago.com.

Time:

5:30 PM Social
6:00 PM Dinner
7:00 PM Presentation

Cost:

Your cost includes the presentation and a four-course dinner with a choice of the main entrée Roast lamb, Chicken, or Fish. (Vegetarian or special dietary meals available upon request). Cost is \$25 IEEE Member and \$30 non-member. Valet parking is included with your meal.

Reservations:

Call IEEE at (800) 898-IEEE or (630) 493-4333 with your reservation. Note any special meal requests at that time. You can also make your reservations on line at www.iaschicago.com.

Note: P.E. licenses that require continuing education for renewal, attendance at IEEE Technical Meetings is acceptable as one Professional Development Hour per meeting.

EVENING MEETING

Chicago/Rockford IEEE Consultants' Network The Consultant as an Expert Witness Monday, September 29, 2003

Benjamin D. Miller, PE, President and Owner B. Miller Engineering

About the Topic:

Mr. Miller will provide an overview of expert witness work. He will discuss what is involved in testifying as an expert, how to get started, and some of the legal and ethical responsibilities for experts. He will also provide examples of cases from his own practice.

About the Speaker:

Ben Miller is president & owner of B. MILLER ENGINEERING, and the Chair of the Chicago/Rockford Consultants' Network. He specializes in industrial controls, machine safety, power systems, electrical accident and fire investigation, and electrical safety training. He is on the adjunct faculty at Oakton Community College, where he teaches several technical classes.

Meeting Location:

Palatine Public Library
700 North Court
Palatine, IL 60067
847-358-1216

Dinner Location:

Bakers Square
270 E. Northwest Highway
(at the corner of North Court St.
just south of the library).

Time:

6:15 PM Optional Group Dinner at Bakers
Square (Order off of the menu,
reservations are not required).
7:30 PM Meeting
9:00 PM Adjourn

Information:

Visit our website:
<http://www.drblank.com/coaction.htm>

See you on September 29, and bring consultants and those who aspire to be consultants for a pleasant and informative evening of networking. Don't forget to bring business cards.

Meetings are generally held on the last Monday of odd-numbered months.

EVENING MEETING

IEEE Fox Valley Subsection and IIT-Rice Campus Fermilab Accelerators: Past, Present and Future Wednesday, October 15, 2003

Dr. G. William Foster, Fermilab

About the Topic:

Thirty-five years ago Fermi National Accelerator Laboratory - the highest energy Particle Physics laboratory in the world - constructed the world's most powerful subatomic particle accelerator.

Twenty years ago Fermilab reinvented itself as an antimatter-matter collider. Accelerators were reborn using superconducting magnets.

Today competitors are copying Fermilab's technology to produce larger and more powerful accelerators, and Fermilab is expected to lose its status as the world's highest energy accelerator. Fortunately, particle accelerator physicists are never short of new ideas. Three leading contenders for Fermilab's next project are described, as well as the ways that they might fit on (or off) of the Fermilab site.

About the Speaker:

Born in Madison, Wisc., Bill Foster and his younger brother founded Electronic Theatre Controls in 1974, now the largest manufacturer of theater lighting equipment worldwide. In 1979 he returned to physics, getting his Ph.D. from Harvard looking for Proton Decay. Instead the experiment found a burst of Neutrinos from Supernova 1987a, for which Foster was the co-recipient of the 1989 Rossi Prize in cosmic ray physics. At Fermilab he built electronics for the CDF detectors, was a co-author on the CDF Top Quark discovery paper, designed integrated circuits for the Supercollider, designed and built over 500 accelerator magnets in use at Fermilab, and developed experimental superconducting magnets. In 1998 he was awarded the IEEE Prize for Accelerator Technology.

Location:

IIT's Rice Campus, 201 East Loop Road, Wheaton, IL. More directions and a map are available at:
<http://www.rice.iit.edu/directions.html>

Sponsorship:

IEEE's Fox Valley Subsection and Illinois Institute of Technology's Center for Professional Development (Rice Campus).

Time:

6:00 PM Networking Time
7:00 PM Presentation

Reservations:

Reservations are not required.
The Fox Valley subsection web page is at:
www.ieee.org/foxvalley/

SAE Chicago Chapter/IEEE EMC Society Chicago Chapter **42Vdc-The Next Generation Automotive Battery System** Tuesday, October 14, 2003

Norman Traub, Director of Electrical Initiatives, SAE International

About the Topic:

All vehicle manufacturers are faced with the challenge of providing more electrical power to offer increasingly fuel efficient and safer vehicles with additional customer features. This can best be accomplished by raising the system voltage provided by the on-vehicle "utility company."

For approximately the last nine years, vehicle manufacturers and their suppliers have been discussing the most cost effective way to provide the higher amounts of energy being forecasted. All are in agreement that global cooperation and standardization will be needed. This presentation will outline efforts by the automotive community to provide a degree of standardization to the process and will define some of the technical challenges facing implementation in

production vehicles including the impact of 42V on electrical arcing of contacts.

About the Speaker:

Norman L. Traub is the SAE Director of Electrical Initiatives, including the 42V Initiative. Traub has lectured extensively on 42V electrical systems, including the SAE World Congress, International Power Electronics Conference, International Society of Automotive Transportation and Technology. He is a member of the MIT/Industry Consortium on Advanced Automotive Electrical/Electronic Components and Systems (50 multi-national companies). He is also the chairman of the SAE 42V Advisory Committee. Traub received holds a MSEE from Michigan State University.

Meeting Location:

To Be Determined

Time:

6:30 PM Social Hour
7:00 PM Meeting Start

Reservations:

Steve Laya (Elite Electronic Engineering)
Phone: 630-495-9770

Information:

IEEE EMC Society:
www.ewh.ieee.org/soc/emcs/chicago/
SAE: www.chicagosae.org/events.html

EMPLOYMENT OPPORTUNITIES

Continued on page 15

Director of Engineering

Our client, a well-established original equipment manufacturer (OEM) of high-quality, custom electrical distribution equipment is seeking a Director of Engineering for its Chicago facility. The company is privately owned and has a progressive management style which relies on its highly skilled and knowledgeable workforce to continue to drive innovation.

The Director of Engineering will sell, design, develop, test and supervise the manufacture of custom assembled, high-quality electrical power distribution equipment. Background and knowledge in the design and manufacture of switchboards, panelboards, and controls required. Knowledge of ANSI, NEMA and UL standards also required. Medium-voltage experience strongly preferred. The Director of Engineering will provide team leadership, facilitate market expansion and help determine the future direction of the company. Electrical Engineering degree and manufacturing management experience required. PE would be a plus.

Company offers attractive compensation package including competitive salary, health care benefits and outstanding retirement program as well as a pleasant, employee-centered corporate culture.

Interested candidates should forward their resumes to:

Capstone Consulting, Inc.

Attn: Mark Ormond or Lori Pedelty
723 S. Dearborn Street, Chicago, IL 60605
Phone: 312.922.9556 • Fax: 312.922.9558
Email: info@capstoneconsulting

EOE

M/F/D/V

Program Coordinator for Professional Master's Degree Program in Computer Science

ILLINOIS INSTITUTE OF TECHNOLOGY

The Department of Computer Science at the Illinois Institute of Technology invites applications for a Program Coordinator for its Professional Master's degree program in Computer Science. The department offers Ph.D., M.S., and B.S. programs. For more information about the department and its programs, visit <http://www.cs.iit.edu/>. The duties of the Program Coordinator will include promoting the departmental programs, recruiting professional master's degree students, interacting with current students, graduate admission staff, and faculty advisors, attending meetings, and coordinating other activities related to the professional degree programs. The position, to begin immediately, carries a competitive salary and benefits. Candidates with a Ph.D. or Master's degree in computer science, teaching and education management experience, and excellent communication and interpersonal skills are encouraged to apply with a letter of application, a current resume or curriculum vitae, and names and addresses of three to four references to:

Professor Bogdan Korel, Associate Chair, Department of Computer Science, Illinois Institute of Technology,
10 W. 31st Street, Chicago, IL 60616.

IIT is an Equal Opportunity/Affirmative Action Employer.

PROFESSIONAL AND BUSINESS DIRECTORY

Transportation Engineering • Water Resources Engineering



ENGINEERS

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

303 East Wacker Drive, Suite 600, Chicago, Illinois 60601

(312) 938-0300

www.cte-eng.com

ELECTRONIC INSTRUMENT ASSOCIATES

Chicago 630-924-1600 • Milwaukee 262-677-1600

Manufacturer's Representative info@electronicinstrument.com

Electromagnetic Compatibility Test Equipment

Power Amplifiers, Transient Generation Equipment, Shielded Rooms, Anechoic Chambers, EMC Antennas, Turntables, Field Probes, etc.

Electrical Parameter Measurement Instrumentation

AC & DC Current, Voltage, Watt, VAR Transducers, Sensors, Signal Conditioning, Energy Monitoring Instruments, Demand / Submetering



Gus Berthold Electric Co.

1900 W. Carroll Ave., Chicago, IL 60612

Switchboards

Panelboards

Motor Controls

Ph: (312) 243-5767

Fax: (312) 243-5811

sales@bertholdelectric.com



LEE BUTTER & ASSOCIATES

ELECTRICAL MANUFACTURERS REPRESENTATIVES

1125 W. LUNT AVE.
ELK GROVE, IL 60007
847/437-7600

(800) 323-1802
FAX (847) 437-7609
lee_butter@msn.com

LEHMAN COMPANY

Electrical Manufacturers Representative

PHONE: 630-942-1900

FAX: 630-942-1955



Automation and Controls

www.panatrol.com
info@panatrol.com

7481 S. Sayre Ave. • Bedford Park, Illinois
Phone: (708) 496-3080 • Fax: (708) 496-2770

- PLC and Computer Programming
- Electrical Design and Drawings
- Engineered Factory Automation
- Custom Control Panels
- Motor Controls

U/L Listed
CSA Certified

Joseph L. Bolsinger
Territory Manager



S&C ELECTRIC COMPANY

Specialists in Electric Power Switching and Protection

Chicago Sales Office
(630) 516-9076
Fax: (773) 381-4849
E-mail: jlbolsinger@sandc.com
Web: www.sandc.com

S&C Inside Sales
6601 North Ridge Boulevard
Chicago, Illinois 60626-3997
(888) 762-7700
Fax: (773) 381-4893

T&D Products, Inc.

Manufacturers Representatives - Transmission & Distribution Electrical Equipment

650 East Diehl Road, Suite 107

Naperville, IL 60563

Web: www.tdproducts.com

Phone: (630) 245-9130

Fax: (630) 245-9135

email: info@tdproducts.com

ABB Inc., Atkinson/EPRI, Calvert, Carter & Crawley, Central Electric, CGIT, Cyberex, Hamby Young, IPC Resistors, MTI Technologies, Shallbetter, Tierney Electrical

Transformers, Switchgear, Breakers, Relays, Capacitors, Harmonic Filters, Electrical Buildings, Power Resistors, Synchronizing Switchgear, Non-Seg Bus, Iso Phase Bus, Batteries, UPS Systems, Chargers, Substation Design and Supply.



Your Future At Your Fingertips

<http://online.engr.uiuc.edu/scan>

Online Graduate Programs in CS, ECE, & ME

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

**Support all of these
fine businesses that
support SCANFAX.**

Advertise in

SCANFAX

RESERVE YOUR ADVERTISING SPACE TODAY!

Contact:

Beth Vander Grinten
Slack Attack Communications

5113 Monona Drive • Madison WI 53716

Phone: 608-222-7630 • Fax: 608-222-0658

Email: bethv@slackattack.com

ADVERTISER INDEX

DLS Electronic Systems, Inc. 9

Elite Electronic Engineering IBC

Illinois Institute of Technology . . . BC

Weldy/Lamont & Associates IFC

Welsh & Katz, Ltd. IFC

EMPLOYMENT OPPORTUNITIES

Nationwide engineering firm is expanding its Chicago office. We are seeking both entry level and experienced **ELECTRICAL ENGINEERS** to assist us in our growth. Must have BSEE and excellent communication skills. PE or EI would be a plus.

Experienced Electrical Engineer position requires background in 480-volt power distribution for motors, equipment, and lighting systems integral to water, wastewater, commercial, and transportation projects. Experience in SCADA controls and instrumentation systems is helpful.

We offer an attractive salary, professional growth potential, immediate ESOP eligibility, no-interest computer loans, and other outstanding benefits.

If you are interested in working with a dynamic, professional team, send your resume to:

Consoer Townsend Envirodyne Engineers, Inc.

303 E. Wacker Drive, Ste. 600 Chicago, IL 60601,

Attn: Human Resources, Dept. S.A.

Or fax to: (312) 938-1109

EOE

M/F/D/V

Little Price Big Reward.

Call today to reserve
your advertising space.

608-222-7630

Beth Vander Grinten
Slack Attack Communications
bethv@slackattack.com

Elite Capabilities.

New and different products demand new and different testing capabilities—and Elite has them.

- Enhanced High-Intensity RF (HIRF) testing
600V/m-CW/AM and +2500V/m pulsed RF
- HALT/HASS accelerated life testing via rapid thermal cycling and six-axis vibration
- Computer simulation of EMI using software modeling consulting services

Visit www.elitetest.com to see how our constantly improving capabilities can meet your constantly changing testing needs.

Elite Electronic Engineering Inc.

AzLA Accredited
NVLAP Accredited
ANSI Accredited
DESC Approved
NARTE Certified Engineers

1516 CENTRE CIRCLE, DOWNERS GROVE, IL 60515

1-800-ELITE-11 [1-800-354-8311]

www.elitetest.com

FC Canada CE

Our Constantly Improving EMC Test Capabilities

• EMC Testing Services

MILITARY AND COMMERCIAL AVIATION

600V/m-CW/AM and +2500V/m pulsed RF,
Lightning Testing, Large system capabilities

AUTOMOTIVE

DaimlerChrysler and Ford Approved,
GM Correlated, Nissan, Toyota, BMW, others

Whole Vehicle EMC Test Facility;
Truck and Ag Equipment Specialists

European Union "e-Mark" Testing for
ESA's & Whole Vehicle

FCC, CE MARK, TELECOM

Regulatory Experts; Test Experts;
EMC Design Experts

FCC Telecommunication Certification
Body (TCB)

European Union Conformity Assessment
Body for CE Mark Approvals

• Environmental Stress Testing and Electrical Safety Services

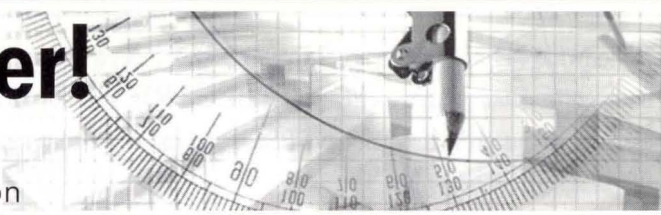
Full Environmental Stress Test Laboratory;
Temp, Humidity, Vibe, Shock, Rain, Dust,
Salt Fog, and many others

• Engineering Design Consulting Services

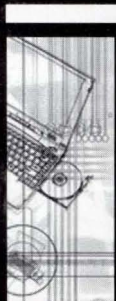
FCC/CE Mark Regulatory Experts,
EMC Design Analysis and EMI Suppression,
EMI Simulation and Circuit Modeling Services

Engineer Your Career!

At the Illinois Institute of Technology
Center for Professional Development, Wheaton



Degree Programs



**Information Technology
and Management**
**Manufacturing Technology
and Management**
Electrical and Computer Engineering
Computer Science
And Many More Areas of Study!

1-3 Day Short Courses

Engineering | Manufacturing

Finite Element Method (FEM): An Introduction	Sep 3-5	\$995
Advanced Techniques for Monitoring of Batch Processing	Sep 29-30	\$795
Modeling and Simulation for Signal Integrity and EMI	Oct 8-10	\$595
Seismic Design in Earthquake Engineering of Structure	Oct 14-17	\$995
* \$395 for any one day, \$595 for any two days		

Technical Management

Balanced Scorecard: Firm Knowledge Base*	Sep 8 - a.m.	\$150
Balanced Scorecard: Process Mapping and Re-engineering*	Sep 8 - p.m.	\$150
Balanced Scorecard: Customer-centric Marketing and Management*	Sep 22 - a.m.	\$150
Balanced Scorecard: Financial Management*	Sep 22 - p.m.	\$150
Strategy for Supply Chain Metrics	Sep 23	\$250
Forecasting & Inventory Replenishment	Oct 29	\$350
* course available individually or all four for \$495		

Computing | Internet | Telecommunications

Wireless Internet & Mobile Business	Sep 19	\$350
3G UMTS Standards: Introduction	Sep 25-26	\$695
Internet Protocol Fundamentals	Oct 2-3	\$695
Advanced Concepts in Java: Using Java in the Client/Server Environment	Oct 14-15	\$695
Wireless Internet Enterprise Applications	Oct 16-17	\$695
3G UMTS Architecture: Introduction	Nov 13-14	\$695
Voice Over Internet Protocol (VoIP)	Nov 20-21	\$695

Information Technology | Computing Tools

XML for Programmers	Sep 15-17	\$295
Programming ASP.NET with C#*	Sep 15-19	\$1,200
Internetworking with Switches and Routers*	Sep 22-26	\$1,200
Java Programming Fundamentals	Sep 29-Oct 1	\$595
Exchange 2003 Administration*	Oct 6-10	\$1,200
Linux Server Installation and Configuration*	Oct 20-24	\$1,200
.NET & C#: the Fast Track	Oct 21-23	\$295
Dreamweaver for Web Publishing	Oct 24-25	\$495
UML: Achieving Software Productivity	Nov 3-4	\$695
XML Database Strategies	Nov 10	\$295
Access XP Databases	Nov 18-19	\$495

* \$995 each if registering for two or more classes

Leadership | Management

Knowledge Management: From Assessment to Implementation	Sep 9-11	\$995
Entrepreneurial Management: Global Best Practices	Sep 15	\$295
Strategic Negotiation & Smart Decision-Making	Sep 18	\$295
Asset and Liability Protection with Trusts and Business Organizations	Sep 25	\$250
Effective Workplace Presentations	Sep 26	\$250
Developing Leadership & Management Skills	Oct 7-9	\$995
Raising Money for Your Business: Legal and Practical Issues	Oct 20	\$250
Business Process Management	Oct 25-26	\$595
Project Management with MS Project	Nov 11-12	\$695

**ILLINOIS INSTITUTE
OF TECHNOLOGY**

Center for Professional Development www.cpd.iit.edu

For More Information:

www.cpd.iit.edu

Or 630.682.6000