

SCANFAX

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IEEE

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

LOOKING AT TECHNOLOGY THROUGH A NEW LENS

ENGINEERS ATTEND GRADUATE COURSES
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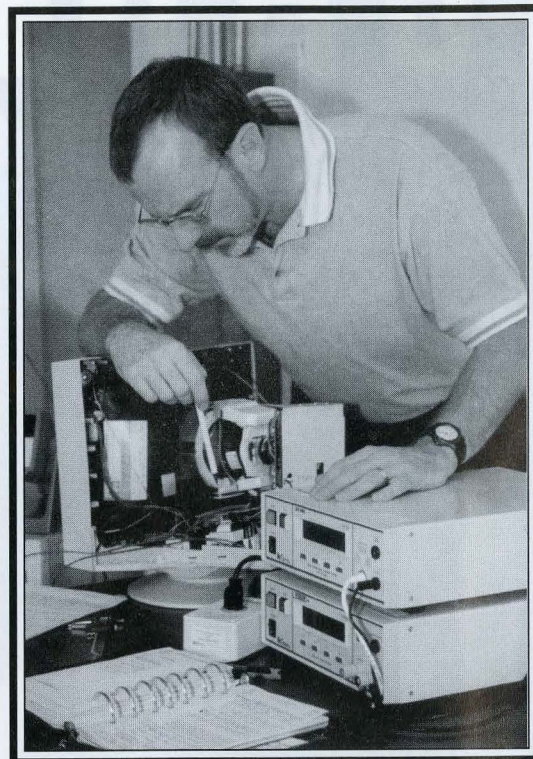


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Chairman

Pat Murphy, E.E., P.E.
Phone 312-733-7000 ext. 6805
Fax 312-432-7118
E-mail patmurphy@IEEE.org

Editor

Gerry Ryan
Phone 773-380-7955
Fax 773-380-7979
gryan@hdrinc.com

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Barbara Slack

Art Director

Amy Pierquet

Advertising Sales

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

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CHICAGO SECTION EXECUTIVE COMMITTEE MEETING

Tuesday, June 12, 6:30 pm

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

No Registration Needed.

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Engineers are finding new ways to look at the mechanics and engineering of how something works through various graduate programs geared to address increasing job responsibilities relating to business finance, marketing and management.

"One person who spoke at a recent open house is an engineer by training but through the business courses he has taken, he looks at things differently now," said Carol Henes of Northwestern University of Chicago." He said he used to look in terms of the mechanics and engineering of how something works. Now when looking at technology, he is also thinking from a business point of view and is able to see how technology fits into a company's business plan and long-range aspects of the business.

Henes said bridging the gap between technical staff and management is in the forefront of engineering today since management generally needs to rely on technical staff to make decisions.

Prior to entering Northwestern's Master of Information Technology program, Fred St. Amour held a BS in Physics,

AT TECHNOLOGY THROUGH A NEW LENS

ENGINEERS ATTEND GRADUATE COURSES GEARED TO PROVIDE ADDITIONAL BUSINESS AND TECHNOLOGY MANAGEMENT SKILLS

BY SANDY RYAN

a MBA and completed the MIT program in June of 2000. St. Amour works for Parametric Technology Corporation (PTC) of Chicago.

"We provide solutions and experience that help manufacturers get better products to market, faster, and more profitably," St. Amour said. "I provide support to major entertainment, pharmaceutical, and communications clients. In this role I advise my clients on issues spanning multiple information technologies, and ranging from detailed financial analysis of the value of new solutions, the management of multiple databases, hardware, and service provisioning to the integration and interoperability of software (CAD, CAM, CRM, ERP, SCM)."

St. Amour said, as with all other aspects of business, knowledge effectively applied equals advantage.

"The vast majority of all companies today are in some measure subject to the influences of information technology, whether or not they know or acknowledge that fact," St. Amour said. "If one is to lead these companies well, one must see that understanding 'information technology' is a critical prerequisite to effective business decision making, whether establishing corporate strategy or executing a software implementation. As innovation accelerates and decision cycles compress under pressure from market forces, the competitive advantage will go to the business executive who possesses and effectively applies 'information technology' and to the technology executive who likewise can appropriately place technology in business context. We are closing on the point in time where the successful executive will have as good a grip on 'technology' as they will on strategy and finance."

St. Amour decided to attend the program because it offered the opportunity to reinforce his ability to anticipate and understand how existing and emerging IT effect client's businesses he said by doing so, the skills allowed him to become "indispensable to clients and therefore to my company."

"I specifically wanted a technical program that would help me refine my understanding of the practical business potential of technologies applications to business," St. Amour said. "I believe that the most successful executives possess a keen understanding of technology, and can, therefore, better assess how it fits (or fails to fit) a given situation, tactic, or strategy. Based on this understanding, they can more

effectively direct strategy formulation, and participate in the development and deployment of revenue-generating, cost-cutting, or image-enhancing initiatives, both inside and outside their company. I needed a greater technical understanding as well as a more refined perspective on these technological challenges."

David Nicosia, director of IT for Eziaz, Incorporated of Chicago, is six weeks away from completing Northwestern's MIT program. Nicosia's background is in business management and he returned to school to learn more about the technology his company uses on a daily basis.

"For myself and my career I wasn't looking to become a specialist, but wanted to understand technology," Nicosia said.

"The program has allowed me to meet other people, network with others in the course and use them to sound out ideas. We had a variety of industry speakers who talked about topics ranging from presenting technology to how to negotiate a better salary. The instructors are top rate and having access to them really does give you some insight for use within your career."

Graduate programs are offered by many area colleges through campus, online and distance learning courses. The following are examples of area programs.

The University of Illinois—Urbana-Champaign (UIUC) offers three online degree programs including Computer Science and Electrical and Computer Engineering.

Linda Krute said another industry dilemma has presented itself to working professionals and prospective students. Krute is UIUC's associate director of the engineering administration department.

"We are seeing today when layoffs occur, people with masters degrees are generally the first to be laid off because of higher salaries," Krute said. "We are looking to help them by bringing some of our programs from the College of Commerce courses into our degree programs to help bridge this gap."

"We moved to the online format due to the complexity of trying to serve practicing engineers who are world wide, travel and cannot take off during the day to attend an on site or on campus class," Krute said. "The program offers one way someone can get a masters degree from an outstanding college of engineering without having to leave families or jobs. We really think engineers who are busy in their current jobs but want to continue their education can complete the

program during evenings or on weekends."

The programs have the same admission and completion requirements as on campus degrees. Schedules are offered on an asynchronous schedule for flexibility and require no travel or residency requirements. Streaming technology can bring classroom lectures to the work place or home.

Students do not have to be admitted to the graduate college to register for an online course. Three completed units can be applied toward a graduate degree if a Masters is pursued at a later date. In order to enter the Masters programs, students must apply for admission to the graduate college, are required to hold a bachelor's degree in engineering or computer science and all exams are proctored.

Keller Graduate School of Management has offered online courses to working professionals since 1978. Six masters degrees are offered, including Business Administration, Human Resource Management, Project Management, Information Systems, Telecommunications and Accounting and Financial Management.

Courses are available both on line and on campus in five ten-week course blocks per year. Jonelle Niffenegger of Keller said the program is based on a practitioner-oriented approach.

"We are focused on having instructors teach who are people actually working in the field," Niffenegger said. "It emphasizes the approach of teaching what they do every day."

Keller's Master of Information Systems Management (MISM) program requires completion of 15 courses, includes five courses in management foundations, four in IS applications, two in IS tools and three in project management.

Keller's Master of Project Management Program requires completion of 14 courses, completion of five management core and six program-specific courses. Students must also complete three elective courses. Required courses include Managing Organizational Change, Marketing Management, Project Management Systems and Contract Procurement.

Students wishing to specialize in certain areas pertaining to Keller's Master programs can earn a certificate by completing a schedule of required courses. Certain courses may be offered through an accelerated five-week schedule at various locations.

Northwestern University's Master of Information Technology (MIT) is one of

LOOKING AT TECHNOLOGY

five professional masters offered by the McCormick School of Engineering and Applied Science. The program is classified as an executive masters program and is geared to reach working professionals in the Chicago area. Courses are held on Saturdays and the program takes 2 years to complete.

"The program is designed for people who are or want to be in the position to make strategic IT decisions," said Carol Henes, associate director of the MIT program. "Our graduates can manage the technology to

meet business goals or select the appropriate technology for a particular business need."

MIT curriculum is divided into three parts, telecommunications and networks, computer systems technologies and business strategies.

Students travel through the program together, taking the same classes throughout. Henes said this allows students to get to know each other very well and encourages business networking.

Henes said the program is not theoretical but teaches the principles and how to apply the technology through business examples.

"Our faculty is a combination of tenured professors from NWU and professors from

business and industry," Henes said. "We draw from professors from local schools including the engineering school and the Keller School of Management. The people we bring in from the industry are senior level people who have teaching experience. Because they are applying what they know in a business environment, they are teaching from the business perspective."

Stuart Graduate School of Business concentrates on graduate level business education, offering a Master in Business Administration, Environmental Management and E-Commerce. In addition, Stuart's engineering departments offer short courses designed for working professionals and master degree students each semester.

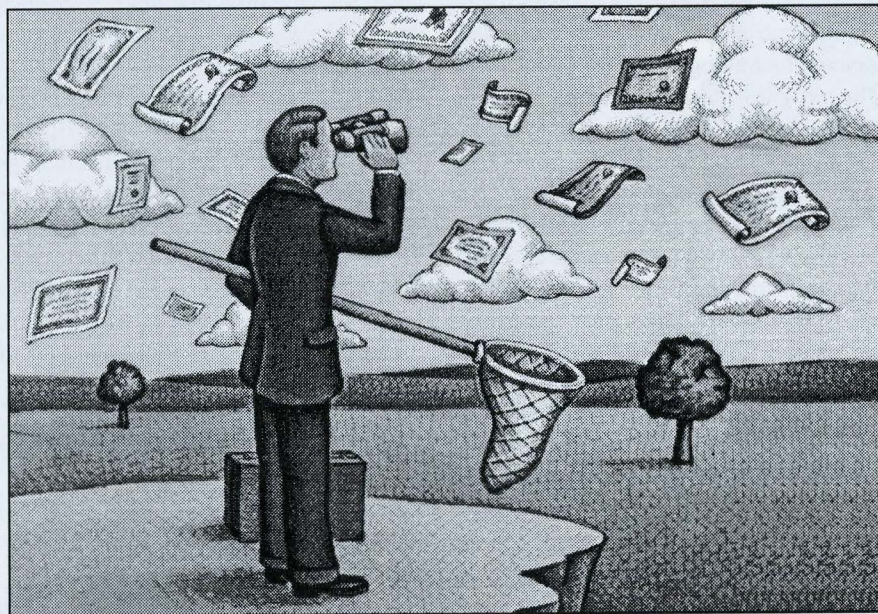
The E-Commerce curriculum focuses on teaching students to develop and manage e-commerce business processes and developing and managing entrepreneurial ventures from ideas to implementation. The course includes concept development, research, feasibility, final business plan and financing.

The degree also covers legal aspects of electronic trade and commerce and understanding of e-commerce technologies. The course helps students assess strengths and limitations of leading e-commerce software while gaining practical experience with the software applications.

Stuart's Environmental Management degree offers students an integrated program including law, science and business for understanding of today's environmental issues. The program allows students to gain necessary knowledge and skills to plan, manage and communicate environmental control and waste reduction strategies. It also includes curriculum regarding evaluating competing technical, economic, legal and regulatory interests.

The program also addresses the new concepts of "industrial ecology," "design for environment" and the energy-environment-economics paradigm while preparing students for management-level positions in the environmental field at manufacturing and service companies, environmental service companies, consulting firms, not-for-profit organizations and government agencies.

The University of Illinois-Chicago offers a Masters of Engineering (MEng) program designed to provide engineering degrees to students anywhere in the world. All courses are presented in a semester format. Online students follow the same schedule as the rest of the university and midterm and final exams are taken synchronously with the rest of the class.



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"In the case of students who do not live nearby to our campus in Chicago, arrangements will be made for a proctored exam at a site near the student," said Carolyn Williams, UIC's program director.

"Most students are working professionals, and therefore take only one or two courses at a time. Most of our courses are 4 credit hours, and the number of credit hours required to graduate ranges between 36 to 43 credit hours, depending upon your area of interest."

Williams said the program is still evolving and now includes 16 classes and currently three students in Canada and one in Hong Kong are in the program.

The emphasis of the program is on Internet courses but students also have the possibility of obtaining a MEng degree through traditional learning methods such as live teaching, videocassette courses, or audio/video conferencing.

The main objectives of the MEng program include providing graduate training controlled by the employer's needs and interdisciplinary technical upgrading to engineers in small and medium-sized industries. The degree is a professional degree based exclusively on course work with no research component or departmental affiliation. The program is adminis-

tered by the UIC College of Engineering.

Bradley University of Peoria, Illinois offers a Master of Science in Electrical Engineering through its Department of Electrical and Engineering. Curriculum is structured to give the program graduate technical background in core areas of modern electrical engineering and advanced design via a thesis or a project.

Brian Huggins, chairman of electrical engineering department, said Bradley's continuing education programs allow students flexibility to continue working and traveling while earning a degree.

"Since Bradley's program is based on video tape, students can have the videos delivered to them or take it home and pop it in the VCR and listen to the lecture in their own homes or work places," Huggins said. "Some students are not necessarily degree seeking, they may just want to take that particular course. You can take the course as long as you have the prerequisites."

The program can be tailored to suit the student's background and interests. Approved technical electives are chosen from graduate courses offered by departments other than electrical engineering, such as computer science, math, physics, or mechanical engineering

Course sequences include design projects and research is available through Applied Electromagnetics, Communication Theory, Control Theory, Digital Systems and Computers, Electronics and Microprocessor Applications, Power Systems, and Signal Processing.

Applicants from non-ABET-accredited schools of engineering are required to take the general test of the GRE. All students must complete either a thesis or design project and complete 33 semester hours to earn the MEE degree. Generally an undergraduate electrical engineering degree is required for admission, however, study plans are available for non-electrical engineering or non-engineering undergraduate degrees.

"Every year I see one of my ex-students walking through the building," Huggins said. "They often they start out on the engineering level and go on to earn an MBA. Among others, marketing has become a duty asked of engineers today. A career will not advance unless people are constantly learning whether it is through internal training, working on new projects, working with associates or attending graduate courses." ■

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Chicago Chapter of the IEEE Power Engineering Society Workshop to Develop New National PE Exam Friday & Saturday, June 8-9, 2001

About the Topic:

The format of the electrical PE exam will change with the April 2002 exam. The new format will be all multiple choice questions - with a 4-hour "breadth module," that all electrical and computer engineers will take, plus a 4-hour "depth module" in one of three areas: power; computers; and electronics, communications, and controls. The name of the exam will be changed to "Electrical & Computer Engineering."

Licensed Chicagoland electrical PEs are invited to volunteer their time to review the first exam that has been developed by the National Council of Examiners for Engineering and Surveying (NCEES) and make any suggestions. This is the only such work-

shop that will be held, so Illinois engineers will be playing an important role in guiding the development of this new national exam.

Sponsors:

- IEEE/PES Chicago Chapter
- Illinois PE Licensing Board
- Illinois Society of Professional Engineers
- Illinois Institute of Technology - Rice Campus
- NCEES

Location:

IIT - Rice Campus, Wheaton

Time:

8:30 a.m. - 4:30 p.m.
June 8-9, 2001 (both days req'd)

Lunch: provided

Who Should Attend?:

Licensed engineers practicing in any of the following areas: power, computers, communications, electronics, and controls.

Professional Development Hours:

Written confirmation of PDHs, required for some state licensing renewals, will be awarded to participants. Also, employers of participants will be sent a thank-you letter.

Reservations:

Doug Criner, IEEE/PES Chicago Chapter (630-986-9424, dcriner@ieee.org)
Tom King, NCEES (864-654-6824, tom@ncees.org)

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EVENING MEETING

ED/CAS/SSC (Electron Devices/Circuits and Systems/Solid State Circuits) Cable Modem: Technology & Application - Part 2 Thursday, June 14, 2001

Venkata Majeti, Cadant

About the Topic:

This presentation is a continuation of the May 22nd lecture and is Part-2 of a two-part presentation. The first part focused on cable modem technology - PHY and MAC layers, data encapsulation, signaling & control, and related standards. The second part will cover applications, end-to-end network architecture, cacheing, product and system level design issues.

Technical and Market discussions of cable modems often focus on high-speed data services. However, current mass-market application of cable modem technology is in the digital set top box application. The applications for cable modem technology include digital video, data, POTS, streaming audio/video and VoIP services. An attempt is made to review the

cable and HFC network using principles of top-down system architecture. This presentation will cover the following:

- Overview of cable and HFC networks
- Cable as a (broadband) Content Delivery Network
- National & Inter-Regional Network Arch.
- Regional Network Architecture
- Cable Headend - Product and System Overview
- Delivering (analog) Video Services
- Delivering Digital Video Services
- Cable Data Network Architecture
- Cable Telephony Network Architecture
- PacketCable & "VoIP over Cable" Arch.
- System & Product Requirements
- Convergence
- Summary & Conclusions

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Location:

Motorola Schaumburg Campus
1301 Algonquin Road
Enter Campus using Gate A, westmost gate off Algonquin Road, west of Meacham. Door 13 is under Motorola sign on west face of six story building. Preregistration is required.

Reservations:

Please call the IEEE Message Center at (800)898-4333 or (630)724-0200 by 1PM Wednesday, June 13th. For information, call Norm Phoenix at (847)523-1078.

Time:

6:30 PM Social (Free Sandwiches, Snacks, and Beverages)
7:00 PM Presentation

About the Speaker:

Venkata C. Majeti is Founder and Chairman of Cadant, an early stage company offering DOCSIS standard based Cable Modem Termination System products. He holds a PhD from the Indian Institute of Technology

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The 2001 IEEE-Industrial Application Society's Annual Meeting and Exposition is being held in Chicago this year. This conference will be held at the Hyatt Regency Hotel in downtown Chicago, from September 30 through October 4, 2001.

This conference will share the latest information in the areas of:

ELECTRICAL MACHINES * INDUSTRIAL DRIVES
POWER CONVERSION* POWER DISTRIBUTION
POWER ELECTRONICS

The exhibit area offers you an opportunity to view products and services of Local and National electrical equipment and service vendors. The IEEE is looking for Sponsors and Contributors and Vendors for this event if you are interested in participating, please contact Irwin Smiley at CTE Engineers (312) 938-0300 or email irwin.smiley@cte-eng.com.

Please reserve the dates on your calendar and plan on attending. More information will be available as the date approaches.

www.ieee.org/ias2001

IEEE Communications Society - Chicago Chapter The 17th International Conference on Advanced Science and Technology-ICAST 2001/Call for Papers Saturday, October 6, 2001

The 17th International Conference on Advanced Science and Technology Mid-America Chinese American Professionals Association, USA Illinois Institute of Technology, Chicago, Illinois, USA Feng-Chia University, Tai-Chung, Taiwan, ROC IEEE Communication Society—Chicago Chapter, Illinois, USA Lucent Technologies, Naperville, Illinois, USA Motorola, Schaumburg, Illinois, USA.

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Information Science and Technology

The theme of the conference is Information Science and Technology. It emphasizes on the most recent advances in the areas of computer, telecommunication, as well as their applications. In order to encourage closer interaction between the industrial and academic communities, we solicit both research papers and industrial contributions which address the practical issues in the real products. The objective of this conference is to provide a forum for promoting and sharing the evolutionary and revolutionary solutions to problems facing us in the information age. The possible topics include but not limited to:

(A) Computer Science and Technologies

Multimedia Technologies
Object Oriented Computing
Database Theory and Systems
Knowledge Based Systems
Software Engineering and Quality
Human-Computer Interface
Parallel Processing and
Distributed Systems
Software Visualization
Information Compression
Space Information Processing

(B) Telecommunications

Internet Technologies
Network Security
Broadband Access and Transmission
Switching System Architecture
Wireless 3G and 4G
Intelligent Network
Communication Software and Tools
Communication Protocols
Network Planning and Management
Modeling and Simulation

(C) Applications of Information Technologies

E-Commerce and M-Commerce
Entertainment
Construction and Technology
Business
Bio/Genetic Applications
Humanities and Social Studies

Remote Sensing and GIS
Manufacturing
Government Service
Health Science

Panel Discussion:

Panel sessions on important topics will be held in parallel with the paper sessions. Topics may include but not limited to: Network Security, E-Commerce and Next Generation Communication Networks. Organizers please submit panel proposals, including the title, a 150-word scope statement, proposed chair and participants, and the organizer contact details.

Information for Authors:

The conference language is English and all papers must be written in English. Authors are requested to submit an extended abstract which should be informative, containing (a) a title with names and affiliations of the authors, (b) specific objectives of the study; (c) approaches and methods; (d) a summary of the results; (e) the conclusions. Survey, implementation and experimental research papers are also welcomed. A submission letter must accompany the extended abstract, containing (a) the conference tracks relevant to your paper, (b) mail/e-mail addresses and telephone number of the principal author. Abstracts must be received by **June 15, 2001** Principal authors will be notified of acceptance by **July 15, 2001** and will be given instructions for paper format. Final camera-ready papers must be received by **August 30, 2001** for inclusion in the ICAST Proceedings.

Please submit your electronic or hardcopy abstract to Technical Program Chairs:

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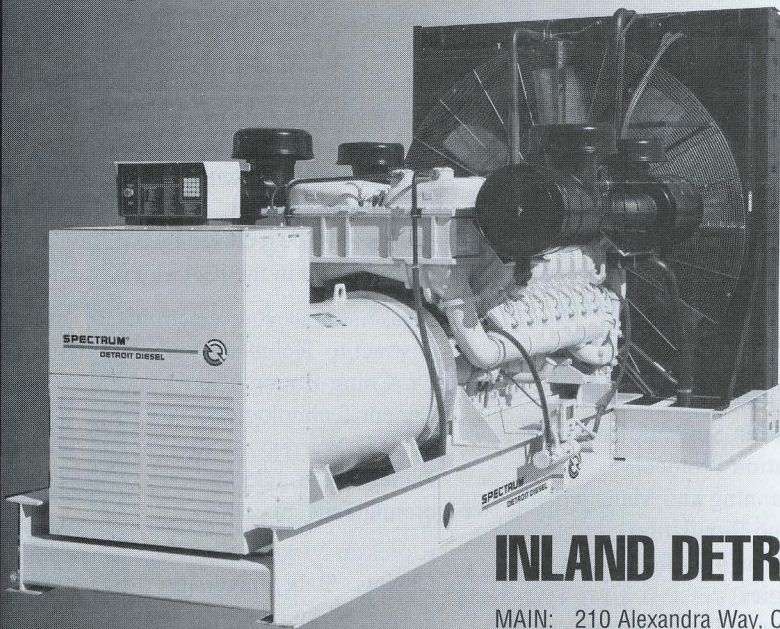
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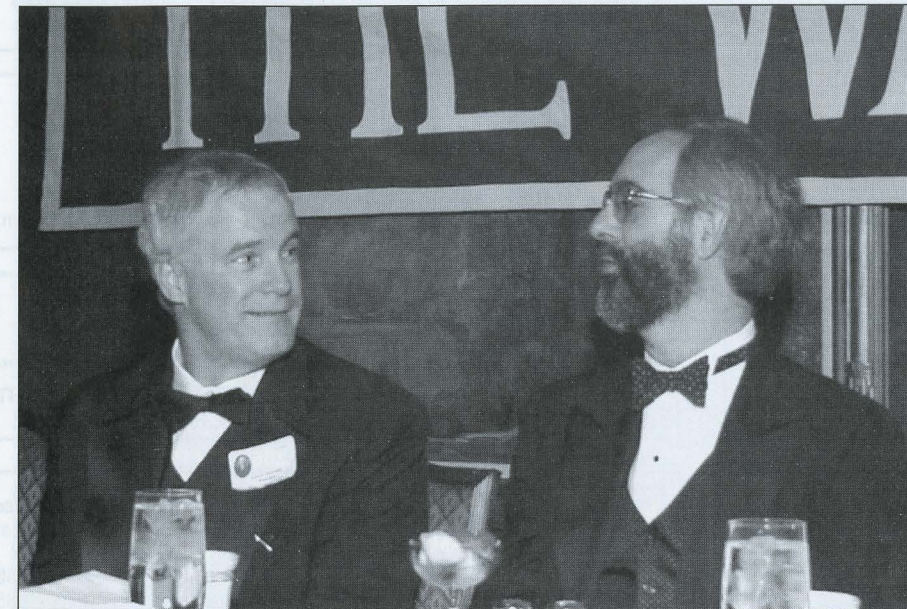
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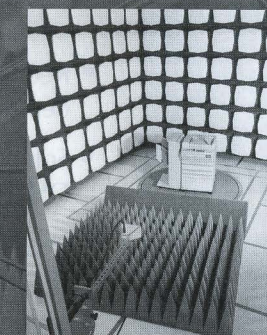
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