



WAVELENGTHS

# IEEE/SEM Spring '99 Section Meeting Wednesday, March 24, 1999

Fairlane Training & Development Center  
19000 Hubbard Drive in Dearborn, Michigan

## Program

- 5:30 p.m. Registration & Check-In opens.
- 5:45 p.m. Concurrent technical meetings.
- 6:30 p.m. Social period with cash bar. University Showcases and Vendor Exhibits on display.
- 7:15 p.m. Check-In closes.
- 7:30 p.m. Dinner
- 8:00 p.m. Announcements of Awards.
- 8.05p.m. Featured speaker: Ross Witschonke.

*The meeting will end at approximately 9:00 p.m.*

***Send in your registration by March 12!***

The IEEE/SEM Spring '99 Section Meeting begins with seven parallel technical sessions starting at 5:45 p.m. These technical sessions are presented by the Chapters and are described on pages 4 through 6.

At 6:30 p.m., participants have the opportunity to view student branch, university showcase and vendor exhibits during a social period. Dinner at 7:15PM will be followed by recognition of section awardees and members elevated to fellow grade.

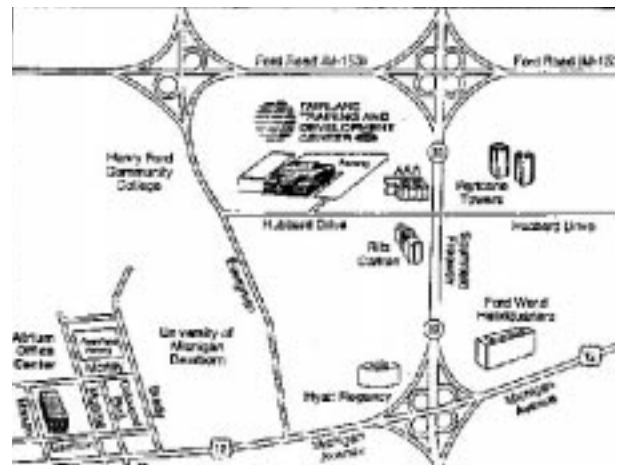
Following the award ceremony, there will be the featured presentation given by **Ross P. Witschonke** of Ford Motor Company and Ecostar Electric Drive Systems Company. The topic of his discussion will be:



**“Future Vehicles: Lean and Green”.**

A full description of this presentation is on page 2 along with more information about Ross Witschonke and how to register for the meeting. Registration form page 11.

## Directions to the Fairlane Training & Development Center



**From the north:** Exit the Southfield Freeway at Ford Road, Exit 7. Follow the Southfield Service Drive to Hubbard Drive and turn right. The Fairlane Training and Development Center is located on the north side of Hubbard.

**From the south:** Exit the Southfield Freeway at Michigan Avenue, Exit 6. Follow the Southfield Service Drive to Hubbard Drive and turn left. The Fairlane Training and Development Center is located on the north side of Hubbard.

**Parking:** Enter the Fairlane Training and Development Center and follow the IEEE signs to the north side of the building. Park and follow the IEEE signs to the north entrance. There is no parking fee.

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# Spring '99 Section Meeting Featured Presentation

“**Future Vehicles: Lean and Green**” will be the IEEE/SEM Spring Section Meeting featured presentation by **Ross P. Witschonke** of Ford Motor Company and Ecostar Electric Drive Systems Company. The auto industry has been devoting a significant portion of its total research and development effort toward the development of more fuel efficient and cleaner vehicles. The strategy for low emission vehicles at Ford Motor Company is to develop affordable, cost efficient technology to support high volume applications. Ford is taking a leadership position in both the development and application of safe, clean, and efficient vehicles that meet customer expectations for utility and performance. The P2000 project is underway to develop and demonstrate new low emission technology. P2000 is an aluminum intensive, lightweight platform being used to evaluate and demonstrate alternative powertrains including advanced internal combustion engines, hybrid-electric powertrains, and fuel cell systems. The Fuel Cell vehicle may be the ultimate solution because of its potential for higher thermal efficiency, low or zero emissions, and the potential to eliminate carbon fuel. Ford has joined in a number of technology partnerships to advance key technologies more quickly, and has joined with Daimler Chrysler and Ballard Power Systems to establish a Fuel Cell Alliance. The Alliance companies - Ballard Power Systems, dbb Fuel Cell Engine Company, and Ecostar Electric Drive Systems Company are jointly developing fuel cell electric drive vehicle systems. Many challenges are yet to be overcome as new technology is developed for safe, clean and efficient vehicles. One of the biggest challenges is affordability for the customer, a necessity for high volume application.

Mr. Ross Witschonke was appointed President of Ecostar, the new electric drive company established as a joint venture with Ford, Daimler Chrysler, and Ballard Power Systems in April, 1998. Mr. Ross has been involved in numerous domestic and worldwide car and truck product programs throughout his career at Ford Motor Company, including assignments as Program Manager for the Ranger,



Explorer and Taurus car lines. After returning from five years in Japan where he had been Senior Managing Director of Product and Technology Deployment with Mazda Motor Corporation, he managed Ford's participation in the Partnership for a New Generation of Vehicles Program, which is a government /industry research initiative. Mr. Ross is a graduate of the United States Military Academy at West Point and the University of Alabama. He holds a bachelor's degree in engineering and a masters degree in management.

## Section Meeting - How to Register:

Mail the registration form on page 11 by March 12<sup>th</sup>. Late registrations (full price) are accepted by phone through March 22<sup>nd</sup>. There is no fee for attending technical sessions only but pre-registration is requested to aid in room assignments. Dinner is not guaranteed to attendees registering after March 22<sup>nd</sup> as well as the night of the event. **See Page 11 for full registration information.**

## Student Registration:

Students must register through their student branch to receive discounted prices. Student branch signup procedures are posted on the section's web page.



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### IEEE/SEM Chapters

- I Circuits & Signal Processing:** Acoustics, Speech & Signal Processing (ASSP-01), Circuits & Systems (CAS-04), Information Theory (IT-12) and Control Systems (CS-23)
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- IV Trident:** Electron Devices (ED-15), Microwave Theory & Techniques (MTT-17) and Antennas & Propagation (AP-03)
- V Computer:** Computer (C-16)
- VI Geoscience & Remote Sensing:** Geoscience & Remote Sensing (GRS-29)
- VII Power Eng. & Ind. Apps.:** Power Engineering (PE-31) and Industrial Applications (IA-34)
- VIII EMC:** Electromagnetic Compatibility (EMC-27)
- IX Power & Ind. Electronics:** Power Electronics (PEL-35) and Industrial Electronics (IE-13)
- X Engineering Management:** Eng. Management (EM-14)

Wavelengths

### EDITORS

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### POSTAL INFORMATION NOTICE

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IEEE Region 4: [www.ieee.org/regional/r4/](http://www.ieee.org/regional/r4/)



## Calendar of Events

**Friday**      **Event:** Section Meeting Pre-Registration Deadline  
**March 12<sup>th</sup>**      **Contact:** Ece Yaprak, 313-577-8075,  
yaprak@eng.wayne.edu

**Monday**      **Event:** Deadline for Ballots  
**March 15<sup>th</sup>**      **Contact:** George Peters, 519-972-2727x4447  
GPeters@stclairc.on.ca

**Mon. & Tues.**      **Event:** HiTech Career Fair  
**March 15<sup>th</sup> & 16<sup>th</sup>**      **Time:** 3-8 p.m.  
Sponsor: The Lendman Group, Kaplan Career Services  
Location: Embassy Suites Hotel,  
19525 Victor Parkway, Livonia, MI 48152  
Contact: [www.lendman.com](http://www.lendman.com)

**Wednesday**      **Event:** 42<sup>nd</sup> Annual Science Fair  
**March 24<sup>th</sup>**      **Time:** 8AM-Noon  
Location: Wayne Hall, Concourse level,  
Cobo Hall, Detroit.  
Contact: Don Bramlett, 313-235-7549 (O)  
d.bramlett@ieee.org

**Wednesday**      **Event:** Spring Section Meeting  
**March 24<sup>th</sup>**      [Register by March 12<sup>th</sup>]  
Time: 5:45PM-9PM  
Location: FTDC, Ford Motor Company  
Contact: James Woodyard, 313-577-3758 (O)  
woodyard@eng.wayne.edu

**Monday**      **Event:** Executive Committee Meeting  
**April 5<sup>th</sup>**      Time: Dinner at 6:00PM, Meeting 6:30PM  
Location: Eaton Corp., 26201 Northwestern Highway, South field  
Contact: Kimball Williams, 248-354-2845

**Monday**      **Event:** Executive Committee Meeting  
**May 3<sup>rd</sup>**      Time: Dinner at 6:00PM, Meeting 6:30PM  
Location: Eaton Corp., 26201 Northwestern Highway, South field  
Contact: Kimball Williams, 248-354-2845

*Members are welcome to attend Executive Committee Meetings.  
Please inform Kimball Williams if you plan to attend.*

## Volunteer for Wavelengths

Great opportunity at your local IEEE/SEM section! Develop editing and layout skills while helping your IEEE section. Wavelengths is looking for a person to help with editing and layout of each issue. If interested please contact Anita Malhotra, (313)-845-2409, amalhot1@ford.com or Gianna Barberi, (248)-699-4253 x1826, gianna.barberi@gale.com for more information.

**Topic:** Smart Electronics

**Speaker:** Dr. Hardy J. Pottinger

**Affiliation:** Department of Electrical and Computer Engineering, University of Missouri, Rolla, MO

**Abstract:** The presentation will discuss several ongoing projects at the University of Missouri Rolla and the Intelligent Systems Center. The application of Mentor Graphic electronic design automation tools will be emphasized. The use of 'industrial strength' EDA tools in both education and research projects will be discussed. Specific projects will include our ongoing work in the use of FPGA's for control of smart structures and health monitoring, the use of FPGA's in an introductory logic design course, and hardware/software co-design in an undergraduate microcontroller laboratory.

**Biography of the speaker:**

Dr. Hardy J. Pottinger received B.S., M.S., and Ph.D. degrees in Electrical Engineering from the University of Missouri - Rolla in 1966, 1968, and 1973 respectively. He is a senior member of the IEEE, and a member of the IEEE Computer Society, ACM, Eta Kappa Nu, Tau Beta Pi, Sigma Xi, and University of Missouri-Rolla Graduate Faculty. Hardy has been the faculty advisor for the local student branch of IEEE since 1987 and is a past chair of the St. Louis Section of IEEE as well as chairman of the St. Louis chapter of the IEEE Computer Society. He is past president of the International Mentor Graphics Users Group. His current research interests include the application of field programmable gate arrays to reconfigurable computing hardware and distributed control of smart structures. He is the author of numerous technical publications and has been principal or co-investigator on a number of research projects including the establishment of a digital signal and image processing laboratory at UM-Rolla. Hardy is a leader in the application of industrial strength electronic design automation tools in the EE curriculum.



**Topic:** On-Board Diagnostics for Light and Medium Duty Trucks

**Speaker:** Dr. Ken Rao

**Affiliation:** International Business Engineering Services (IBES)

**Abstract:** The purpose of this talk is to present some of the On Board Diagnostic (OBD) rules and regulations enforced by the EPA to reduce vehicular emissions; their implications for the design, manufacture, operation and servicing functions will be considered. The approaches of powertrain and emission system design that contribute to combustion and reduced emissions will be discussed. The functional components of emission control and reduction systems will be reviewed. The major causes of emission system malfunctions and their implications for the design, manufacturing and service communities will be presented.

**Biography of the speaker:**

Dr. Kanaparty (Ken) N. Rao is currently working CEO of his own company International Business Engineering Services (IBES). He is former GM-Hughes employee with over 25 years of service upon retirement. Ken has extensive experience and expertise in electronics, computer engineering and VLSI design. He graduated from Southern Methodist University in 1974 with a Doctor of Electrical Engineering and Oakland University in 1995 with a Ph.D. in Systems Engineering.



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**Topic:** Cellemetry Communication for Control of Electric Systems

**Speaker:** Mr. Norm McCollough

**Affiliation:** Fisher Pierce, Boston, MA

**Abstract:**“Cellemetry”, a means of controlling electrical equipment by using the cell phone network will be introduced. Since the cell phone network is an existing system control using this system the initial cost is greatly reduced. The system also provides two way communication at a low cost. The following issues will be discussed: the one way vs two way messaging; the WYSIWYG factor; the wireless mosaic- a picture is worth 10 kilobytes; origins of cellemetry - this isn't your bag phone; data messaging format - the fix is in; and distribution automation application - where do we go from here?

**Biography of the speaker:**

Mr. Norm McCollough attended the University of Tennessee and then worked at Georgia Power Company in Industrial Sales. Norm worked at Mult-Amp Corp in Dallas Texas designing power test instrument. In 1995 he co-founded Powermetics Company in Knoxville Tennessee. He is now employed by Fisher Pierce in Boston, Massachusetts, as a Regional Manager for distribution automation products.



**For additional information about the IEEE/SEM Spring Section Meeting:**

General Contact: Jim Woodyard, 313-577-3758, woodyard@eng.wayne.edu

Student Brach Contact: Edzko Smid, 248-370-4633, smid@oakland.edu

Vendor Display Table and Company Sponsored Student Dinner Table Contact: Tarek Lahdhiri, tl1007@hotmail.com

Late Registrations: Ece Yaprak, 313-577-8075, yaprak@eng.wayne.edu

Updated information about the meeting is available at the section web site:

[www.ieee.org/regional/section/se\\_michigan](http://www.ieee.org/regional/section/se_michigan)

**Topic:** Development of Computer-Based Instruction in EE

**Speaker:** Dr. Nizar Al-Holou

**Affiliation:** University of Detroit Mercy, Detroit, MI

**Abstract:** The recent advances in computer technologies such as faster CPUs, less expensive RAM, CD-ROM delivery, international standards for still and moving pictures compressions, and full-motion digital video, have led educators to investigate alternative ways to attract and educate students. One alternative approach, known as Computer-Based Instruction (CBI), is being considered at different schools across the country. CBI includes computer-enabled combination of on-screen text and images with digitized sound, voice, photographs, and full-motion video. It is self-paced as well as interactive. Other features included in CBI are a logical, changeable presentation flow of information based on sound instructional theory, tracking of the student progress throughout the instructional program, and recording of test results. This powerful combination of functionality may, over time, replace some aspects of traditional classroom learning. CBI delivery reduces the interruption of work schedules for student from industry (eliminating the need to travel to school or training center sites) and also saves time for traditional students as well. Students can follow an instructional pace according to individual schedules and convenience.

**Biography of the speaker:**

Dr. Nizar Al-Holou is an Associate Professor of Computer Engineering at the University of Detroit Mercy, Detroit, Michigan. His research interests include Parallel and Distributed Processing, and Development of Multimedia. He has an extensive experience to Multimedia Curriculum in Electrical Engineering with support from NSF. He holds the Bachelor of Engineering Degree from Damascus University, the Master of Science from Ohio State University, Columbus, OH, and the Ph.D. Degree from the University of Dayton, all in Electrical Engineering. Dr. Al-Holou is a senior member of IEEE, a member of IASTED and the American Society of Engineering Education (ASEE).



**Topic:** Military vs Commercial Electromagnetic Compatibility Standards and Test Methods

**Speaker:** Mr. Dennis Barberi

**Affiliation:** General Dynamics, Warren, MI

**Abstract:** Due to tighter military budgets, the use of commercial products for military applications continues to grow. In addition, the trend is to use commercial vs military standards whenever possible. This brings up the issue of a comparison of commercial EMC standards with military EMC standards as to suitability, cost, and test impacts. Different levels, bandwidths, detection techniques and test set-ups can make a comparison challenging. The presentation will identify the differences and pros and cons of the different standards.

**Biography of the speaker:**

Mr. Dennis Barberi graduated from Lawrence Technological University in 1971 with a degree in electrical engineering. He received an M. A. in Business Administration from Central Michigan University in 1984 and is currently a NARTE certified EMC (Electromagnetic Compatibility) engineer. After working as a product design engineer for Chrysler Corporation at their Highland Park, Michigan headquarters, Dennis transferred to Chrysler Defense (now General Dynamics Land Systems Division) in 1980 to assist in the EMC design and test of the M1 main battle tank. He is currently Lead EMC Engineer for General Dynamics Land Systems Division and is responsible for all aspects of Electromagnetic Environmental Effects (E3) specification, design and test on all Land Systems Military vehicles.



**Biography of the speaker:**

Mr. Ken Krause is Director of Marketing Development, for Controlled Power Company, Troy, MI. He has over 25 year experience in power application related topics. Ken has an extensive list of hands-on, in the field credentials as well as background in communications, cryptography, celestial navigation. Today he provides his company with direction in product and market development.



**Topic:** Challenges in Managing Change

**Speaker:** Dr. Peter Banks

**Affiliation:** ERIM International Inc, Ann Arbor

**Abstract:** Two years ago this May ERIM, a not-for-profit research institute, became ERIM International Inc. A for-profit company. The challenges facing the organization and particularly the management is the subject of this talk.

**Biography of the speaker:** Peter M. Banks, has a dual assignment of both President and Chief Executive Officer of ERIM International, Inc. (EI), a subsidiary of the Environmental Research Institute of Michigan (ERIM). He joined ERIM in January 1995 as President and Chief Executive Officer and served in that capacity until the transition to EI in May 1997. From 1990 through 1994, Peter was Professor and Dean of the College of Engineering at the University of Michigan and is currently an Adjunct Professor with the College. Prior to 1990, he was on the faculties of Stanford University, Utah State University, and the University of California (San Diego). He received a M.S. degree in Electrical Engineering from Stanford University. Following a three-year tour of duty with the U.S. Navy, he earned a Ph.D. in Physics from Pennsylvania State University. Peter currently serves on the boards of Tecumseh Products Company and X-Rite Corporation. He also serves in an advisory capacity on the National Research Council Commission on Physical Sciences, Mathematics, and Applications.

**Topic:** UPS Topology

**Speaker:** Mr. Ken Krause

**Affiliation:** Controlled Power Company, Troy, MI

**Abstract:** The discussion will cover the major groups of UPS design topologies from standby through line interactive and double conversion-forward transfer systems. A summary of block functions, pro and cons, complexity and application fit will accompany each topology in the discussion.

**The technical sessions are held in parallel beginning at 5:45 p.m. Please indicate which technical session you plan to attend on your registration form - Page 11.**

# Executive Summary on Technological Literacy Counts (TLC) Workshop

by Kimball Williams, Eaton Corp.



With the growing influence of technology on everyday life, the general public must have a certain level of technological understanding to attain a reasonable quality of life. To achieve this goal, the Institute of Electrical and Electronics Engineers (IEEE) has had a precollege education initiative since 1984. It also has been leading other engineering professional societies in developing

strategies on how engineers and educators can best leverage each others' resources to this end, but technological change has picked up such momentum that organizations can no longer afford to work alone. They must align with each other and with the grass roots educators to effect significant change.

As a result, the TLC workshop was held on October 9 and 10 in Baltimore, Maryland, to help launch a collaborative effort to promote universal technological literacy. The workshop also addressed issues to ensure that teachers have the resources, knowledge and community support to empower our students to become productive citizens, consumers and employees in the next century.

The workshop attracted over 100 educators and engineers, who participated in hands-on type activities to propose specific strategies and develop action plans. The breakout groups comprised of equal numbers of engineers and educators so that the outcome of the discussions was a balanced one. Some of the major outcomes from the workshop are:

**Challenge facing us:** Workshop participants comprised of people from all parts of the world (e.g. India, United Kingdom and South Africa) and the US. They all agreed that communicating an appreciation and understanding of technology is a very challenging task, and that a multi-pronged approach is preferred.

Presentations by notables such as Dr. Joseph Bordogna, IEEE President, Dr. William Wulf, President, The National Academy of Engineers, and Dr. Eleanor Baum, President of the Accreditation Board of Engineering and Technology (ABET), demonstrated the necessity and support for engineering leadership. Attendees like Kendall Starkweather, Exec. Director, International Association of Technology Education, and Robert Gabrys, Chief Education Officer, NASA Goddard Space Flight Center, echoed the same sentiment.

**Strategies:** The attendees, though from two very diverse groups, quickly built rapport and united in their agreement that change is needed in several key areas. These are as listed below:

1. There is a need for professional development for both groups to maximize their collaborative efforts.
2. There is a need to increase public awareness of the challenge facing us.
3. Policy changes are necessary to enlist support of government and public leaders.
4. Support for educational reform/standards development should be promoted.
5. Develop and create metrics so that outcomes can be measured and assessed.

**Action Plan:** The workshop participants agreed that the momentum gained at the event should not be slowed or lost. A plan was created, which could be implemented as soon as the participants returned to their schools or companies. Some of the activities in the plan can be started immediately and others are long term, but all are aimed at collaborating and sharing responsibility and success.

The following activities will be initiated immediately:

1. A TLC Network will be formed – the entire group from the workshop will remain connected and will share ideas and plans, as well as spread the word to more educators and engineers.
2. A training program for engineers will be developed - to teach them more about curriculum development, educational standards, teaching methodology and how they can serve the educational community.
3. Committees were formed to link sub-groups for further activity planning.
4. A meeting of the deans of schools of engineering and school administrators (primary and secondary) is planned to open up channels of communication so that teacher training can better prepare educators to teach and promote technology at primary and secondary school level.
5. Collaborations between engineering societies is planned.
6. Spokespeople from the TLC Network will be provided with a speaker's kit to spread the word about TLC.
7. Engineers from TLC will present at national and state education conferences, the need for technological literacy and how to attain it.

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## MSPE Honors IEEE/SEM Section Advisor in 1999

The Michigan Society of Professional Engineers (MSPE) - Detroit Metro Chapter has honored Don C. Bramlett, PE as the *"Engineer of the Year"* for 1999.

Don was honored by the Detroit Metro Chapter of MSPE before the broad engineering and scientific community of metropolitan Detroit and southeastern Michigan at the Gold Award Banquet, hosted by the ESD Affiliate Council of ESD, The Engineering Society.

Don Bramlett is a Project Engineer in Power Generation at the Detroit Edison Company. For the last year and a half he has managed the scoping, engineering, design and procurement for capital construction projects at 4 of the 8 Detroit Edison fossil fuel power plants. Prior to that, Don served, in various positions of technical and supervisory authority during the construction and operation of the Fermi 2 Nuclear Power Plant from 1979 through mid 1997. Most recently he had been Lead Engineer in Engineering Support-Design in Nuclear Generation. Mr. Bramlett's career in the energy industry has included both the electric power and natural gas segments. He was also previously employed in technical positions with Michigan Consolidated Gas and Michigan Wisconsin Pipeline (now ANR Pipeline).



Mr. Bramlett has a B.S. degree in Electrical Engineering and a M.B.A. degree, both from the University of Detroit-Mercy. Don is a registered Professional Engineer in the state of Michigan. Throughout his career Don has received numerous awards and commendations from IEEE, MSPE, ESD and Detroit Edison.

Don is a Senior Member of IEEE and ISA. He is also a Member of AMA, NSPE, MSPE, and ESD. Don has served in several offices and roles in the IEEE/SEM Section, including Chair in the 1991-92 Section business year. He is presently the IEEE/SEM Section Advisor; and as such, represents IEEE with the ESD Affiliate Council, coordinates National Engineers Week activities, and organizes the Section special awards judging at the Michigan Regional Future City Competition and the Science and Engineering Fair of Metropolitan Detroit. Don is also the East Area Chair of Region 4 of IEEE. He also presently serves in offices or active roles with the ESD Affiliate Council, MSPE at the state level and the Detroit Metro Chapter of MSPE. He is a member of the Industrial Advisory Committee for the Electrical Engineering Department and the President's Cabinet at the University of Detroit-Mercy.

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For Technical Information : P(734) 513-0330 F(734) 513-0335



## IEEE/SEM Future City Award

The 6<sup>th</sup> Annual Michigan Regional Future City Competition was held on Thursday, January 21, 1999 at Henry Ford Museum in Dearborn. Teams of students from 31 middle schools in southeastern Michigan displayed their future city design projects at Henry Ford Museum this year. The Future City Competition (finals) will be held this year again in association with National Engineers Week (NEW). The winners from the regional competitions will participate in the competition, during the NEW week at the Building Museum in Washington D.C.

Judging of student projects was performed in the morning and early afternoon. This is the first year that the IEEE/SEM Section has provided a team of volunteer judges to specifically evaluate student projects for attributes associated with electrical, electronic and computer engineering related subjects. The Section sponsored the Electro-Technology Award, intended to recognize the design project that exhibited the best application of the theory and practice of electrical, electronics and computer engineering and related sciences to promote the sustainable development of the future city.



The Section wishes to thank the total of nine (9) IEEE members, and their companies/institutions, for taking the time to volunteer and help to make the Michigan Future City Competition a more pleasurable and meaningful experience for the middle school students who participated.

The IEEE/SEM judging team was composed of the following seven volunteers:

By Don C. Bramlett, PE, IEEE/SEM Section Advisor

### **Ford Motor Company**

Scott Amman Matt Boesch David Ashland (retired)

### **ABB Services, Inc.**

Wayne Atkinson

### **Applied Dynamics International**

Selim Aissi, Ph.D

### **Orbis Engineering**

Ed Schouten

### **Albert Kahn Associates, Inc.**

John Schuster, PE

Two IEEE/SEM volunteers served in other capacities:

### **Oakland University**

Mohammed Zohdy (Mentor for Derby Middle School)

### **Detroit Edison**

Don Bramlett, PE (Overall Competition Judge)

The judges had the opportunity to view and evaluate some outstanding futuristic design projects; in particular they viewed some very interesting applications of current and predicted technologies pertinent to IEEE-related fields. The judges and the students had the pleasure to interface and discuss in depth some of the design principles applied, problems encountered, and teamwork principles used.



IEEE/SEM team of judges awarded the Electro-Technology Award to **Scarlett Middle School in Ann Arbor**. Don Bramlett and Mohammed Zohdy presented the award to the team of three presenting students, teacher and engineer-mentor in the Henry Ford Museum Theater that afternoon.

## News Items From IEEE Educational Activities

### IEEE PAIRS UP WITH TEACHERS TO HELP K-12 STUDENTS LEARN TECHNOLOGY

Piscataway, NJ, 29 January, 1999 -- Fifteen members of the IEEE Pre-College Education Coordinating Committee (PECC), a cross-section of engineers and educators, recently developed a framework for an IEEE pre-college education initiative. The framework was developed after the committee brainstormed ways in which the IEEE and the engineering community can collaborate with teachers to foster innovative teaching strategies among K-12 science, math, and technology teachers.

Formed in October 1998 at the Technological Literacy Counts workshop in Baltimore, MD, the PECC is one of the few IEEE committees that actively recruits non-engineers. Pete Lewis, Educational Activities Staff Director, contends, "It's important that the IEEE take an active role in enhancing the technological literacy of K-12 students. We can only do so by listening to the educational needs of those on the front lines, the teachers themselves."

In a round-table discussion format, participants sought to answer the following questions:

· In this rapidly growing technology age, WHAT tools/resources do K-12 educators need in order to most effectively teach their students science, math, and technology subjects?

· As the world's largest technical professional society, HOW can the IEEE, and the engineering community at large, help teachers foster technological literacy among their students?

A participating and appreciative eighth-grade science teacher from Oklahoma said, "I am so glad the IEEE is breaking out of the 'box' and reaching out to teachers." In the coming months, the IEEE will form a specific action plan for its pre-college education initiative. For more information, contact Barbara Stoler, IEEE Educational Activities, 445 Hoes Lane, PO Box 1331, Piscataway, NJ, 08855-1331; e-mail: b.stoler@ieee.org.

### IEEE TEAMS UP WITH A UNIVERSITY FOR A PILOT PROGRAM TO OFFER A WEB-DELIVERED COURSE

PISCATAWAY, NJ, 28 January, 1999 - The IEEE has created an alliance with the Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign (UIUC), Urbana, IL, to offer a web-delivered course on antennas and propagation.

This four-week course, designed to serve as a refresher for practicing engineers, will be based entirely on the Internet. Classes run from 1 April, 1999 through 30 April. Registration ends 31 March, 1999. Course capacity is limited to 30 students.

The course will provide learners with an analytical and intuitive understanding of antenna physics, expose them to antenna computer-aided design software, and introduce them to a variety of antenna structures of practical interest. The course will also cover recent developments in the wireless and personal communication systems. Those intending to register are expected to have a basic knowledge of electromagnetic wave theory outlining the general plane wave solution of Maxwell's equations, phenomena involving reflection and transmission of plane waves, transmission lines, and impedance matching techniques. Students who successfully complete the course will be awarded 3.6 IEEE Continuing Education Units (CEUs).

Eric Michielssen, Ph.D. will be instructing the course. Dr. Michielssen received his Ph.D. from the University of Illinois at Urbana-Champaign in 1992. He is an assistant professor in the UIUC Department of Electrical and Computer Engineering, associate director for the Center of Computational Electromagnetics, and a part-time faculty member in the Beckman Institute Photonic Systems Group. His professional interests are computational electromagnetics, photonic systems, high-speed digital circuits, fast algorithms, and stochastic optimization.

For more information about the course contents and requirements, and to register for the course, go to: <http://www.ieee.org/organizations/eab/distance.htm>.

The tuition for this pilot offering of the course is: Member price, \$350. List price: \$400. For more information about this educational opportunity contact Peter Wiesner, IEEE Educational Activities, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331; Phone: 732.562.5500; Fax: 732.981.1686; e-mail: p.wiesner@ieee.org.

## **The Computer & Technology Showcase and Detroit Internet Expo Novi Expo Center · Novi, Michigan · May 18-19, 1999 · 10:00 a.m.-5:00 p.m**

***Free Registration · IEEE Members***

### **See the Largest Display of Computers, Internet, and Business Technology in the Region.**

You & your colleagues are invited as special guests of show management. Bypass registration lines. Avoid the \$15 admission. Just pick up your badge at the "Pre-Registered" table and see the shows. Computer Telephony, Internet Security, WANs/LANs, Enterprise Computing, Distance Learning, Document Imaging, Thin-Client/Server Computing, Data Warehousing, Interactive Media, Electronic Commerce, Y2K Testing, Document Mgmt., And More! More than 40 Free Seminars!

### **IT Professionals: Bring your resumes!**

Free cross-over registration to the Detroit HIGH TECH Career Fair which runs simultaneously.

**Register Free Online at [www.techshows.com](http://www.techshows.com) before March 11 or get details at IEEE/SEM web site.**

*No one under 18 admitted · No students admitted.*

## IEEE/SEM 1999 Spring Meeting Registration Form

Complete and mail form with an early registration fee of \$25 per person. The registration fee includes technical session attendance and dinner. If this form is for multiple people, you must provide full contact information for one person plus Name, Technical Session Preference, and Meal Selection for each additional registrant. Please make check payable to IEEE/SEM and forward along with a completed registration form to:

Ece Yaprak, Wayne State University, College of Engineering  
4855 Fourth Street, Rm. 1152, Detroit, MI 48202

*There will be express check in for pre-registered attendees.*

**Please type or print:**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/ZIP: \_\_\_\_\_

Phone Number: \_\_\_\_\_ [ ] H [ ] W

Tech. Session #: \_\_\_\_\_ (\* Select from list to right, 0 for none)

Meal Selection: [ ] None, [ ] Chicken, [ ] Vegetarian

**Total amount enclosed: \$\_\_\_\_\_ Registration (\$25 per person)**

Fees	Amount	Deadline
<b>Pre-Registration</b>	\$25 US	Received by mail before March 12, 1999.
<b>Late Registration</b>	\$30 US	Contact Ece Yaprak at 313-577-8075 or yaprak@eng.wayne.edu by 5 p.m. March 22, 1999.
<b>Student Branches</b>	\$12 US	Register & pay through student branch.

**Technical Sessions ( Indicate select by # ):**

1. **Chapter I: Circuits & Signal Processing**  
**Chapter IV: Trident**  
Smart Electronics
2. **Chapter II: Vehicular Technology**  
On-Board Diagnostics for Light & Medium Duty Trucks
3. **Chapter III: Comm. & Aero. Electronics**  
**Chapter VII: Power Eng. & Ind. Apps.**  
Cellemetry Communication for Control of Electric Systems
5. **Chapter V: Computer Student Track**  
Development of Computer-Based Instruction in EE
8. **Chapter VIII: EMC**  
Mil. vs Comm. EM Compatibility Standards & Test Methods
9. **Chapter IX: Power & Ind. Electronics**  
UPS Technology
10. **Chapter X: Engineering Management**  
Challenges in Managing Change

<i>Additional Registrants (Non-Students Only)</i> Name	Company	* Tech. Session #	Meal Selection (one only)			Fee \$25 Each
			None	Chicken	Vegetarian	

## The Importance and Value of IEEE Membership

By Maurice F. Snyder, Section Membership Director

The IEEE started as the merger in 1960 of two precursor organizations: the AIEE (American Institute of Electrical Engineers) and the IRE (Institute of Radio Engineers). The new IEEE became the premier electrical engineering organization in the world with over 20 percent of membership outside the U.S.



**IEEE's statement of Mission:**

The IEEE promotes the development of electrotechnology and allied sciences, the application of those technologies for the benefit of humanity, the advancement of the profession and the well-being of its members.

To anyone in the electrical engineering and related disciplines, IEEE membership gives access to a wide range of technical and professional services, some of which are described here.

### *IEEE Financial Advantage Program of Insurance and Other Programs*

As one of the largest technical professional organization in the world (330,000+), IEEE can negotiate the best insurance rates I have ever seen. This insurance is ideal for anyone, especially as additional insurance to your employer's insurance, for entrepreneurs, and self-employed. Individual, spouse and children coverage is offered. This insurance is employer-independent and follows you should you change jobs. Available insurance is Term Life, High-Limit Accident, Disability, Comprehensive Health Care and Excess Major Medical.

Additional programs available in the U.S. are Automobile financing and insurance, Dental plan, Professional liability insurance, Home mortgage, Mutual funds, Group insurance plans and many more. Visit the IEEE Financial Advantage Program Web Site ([www.ieee.org/ra/md](http://www.ieee.org/ra/md)) for details of the financial packages.

My future articles will cover additional IEEE services and benefits. Please access the newly revised IEEE web site as [www.ieee.org](http://www.ieee.org) for details of all IEEE services including an on-line Membership Application and on-line Senior Membership Application.





## Wayne State Student Branch Receives IEEE Center of Excellence Award

By Heather M. O'Neill, Student Branch Vice Chair

Right on the heels of the success with the Regional Exemplary Student Branch Award, the Wayne State University (WSU) IEEE Student Branch was awarded \$4750 for the development of an IEEE Center of Excellence (COE) by the IEEE Foundation. The COE is a state-of-the-art computer center that was proposed by student branch members Vikas Sinha and Kevin Arnold, and Professors Jim Woodyard and Loren Schwiebert, advisors to the student branch.

The award called for the student branch to raise 20% in matching funds. Professor Woodyard requested the matching funds from the Dean Chin Kuo, Dean of the WSU College of Engineering, who agreed to provide the required \$1500 matching funds. The proposal submitted to the IEEE Foundation called for two Pentium II level computers, a B&W printer, a color printer and a scanner to be placed in the WSU IEEE Student Branch Office and for WSU to provide Internet access.

The student branch with \$6250 in hand, searched for donations to augment the COE funds. It was fortunate to find an anonymous donor that provided state-of-the-art equipment valued at \$10,000. The equipment includes a scanner, B&W printer with a network adapter, 6 port hub, CD R-W, four sets of speakers, color printer and six complete Pentium II level computer systems. The WSU IEEE Student Branch would like to thank the anonymous donor! Another color printer was obtained through the surplus equipment program of WSU. The only task left for the student branch now is to spend the money from the COE award. After weeks of research and debate, the following software has been proposed for the COE; Office 97 PRO, Windows NT Workstation 4.0, Visio 5.0, Electronic Workbench academic copy, LabVIEW, Paint Shop Pro 5.0 with animation, Electronic Workbench academic copy, LabVIEW, Paint Shop Pro 5.0 with animation, Visual Basic 6.0, Visual J++ 6.0, Microsoft Publisher, Norton Anti virus, Norton Utilities V2.0 NT, MATLAB, P-Spice 6.3, Digital Works and Netscape communicator 4.5. The student branch also plans to purchase a server, "bubble" video camera, backup UPS, and some spare printer cartridges. The WSU IEEE Student Branch is very fortunate to have received this tremendous award. This Center of Excellence will most definitely benefit the IEEE Student Branch and the all of the students in the College of Engineering.

