



IEEE/SEM Spring '00 Section Meeting

Wednesday, March 29, 1999

University of Michigan North Campus

Ann Arbor, Michigan

- 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, Dinner opens
- 7:55 p.m. Featured speaker: Dr. Marcy
Rosenkrantz.
- 9:15 p.m. The meeting will concluded.

Directions to University of Michigan (North Campus, Ann Arbor)



Send in your registration by March 15th!

Dr. Marcy Rosenkrantz to be Keynote Speaker at Spring Section Meeting

by John M. Miller, IEEE/SEM Vice Chair



The IEEE/SEM Section Spring 2000 Meeting will be held the evening of March 29th at the University of Michigan, North Campus, Art & Architecture building. Parking is available to registrants in the parking lot

adjacent to Pierpont Commons only a short walk from the Art & Architecture building. We are planning several technical sessions plus a student tract session for this meeting. You can get further details on the technical sessions in this issue (pages 4-8). As always, advance registration is highly encouraged and to make this process easier for our membership this year we will offer registration by major credit card. Please see page 11 for registration details.

Continued on page 2

From the north: Exit US 23 South at Plymouth Road, follow Plymouth Rd to the right (West) to Murfin. Make a left turn onto Murfin at the stoplight. Follow Murfin past Pierpont Commons and make a right turn onto Bonisteel Blvd. Turn left onto Fuller/Glazier Rd. The parking lot and access to the Art & Architecture Bldg. are on the left about 500 feet from the intersection.

From the East or West: Enter onto US 23 northbound and follow the directions below.

From the south: Exit US 23 to the right at Geddes Rd. Turn left on Geddes Rd, heading west. After crossing Huron Parkway, Geddes changes to Fuller, continue on Fuller Rd. until you reach Glazier. Merge left as Fuller becomes Glazier. Watch for University of Michigan Art & Architecture Building sign on right side of road. Parking lot is on the next to the sign.

TABLE OF CONTENTS

Spring Section Speaker	1,2,	Meeting Registration Form	11	Past Chair Report	10
Calendar of Events	3	Speaking to Students	9,11	IEEE/SEM Educational Activities	12
Spring Technical Sessions	4-8				

**Place
03-00 DETCI
IEEE Wave.pdf**

**Border
may be
removed**

Following the concurrent technical sessions hosted by the various chapters, attendees will have an opportunity to visit several University showcase booths, vendor displays and student branch exhibits. All displays and exhibits will be set up in the Art & Architecture building. This is also the location of the social gathering and registration desk. A social break is planned and this year we will offer Hor D'oeuvres (fruit and cheese) and cash bar (your choice, but tickets must be purchased in the registration area). At the door registration will close immediately after the social break. Please register to obtain entrance to the dining room for dinner and the keynote speaker presentation.

The featured speaker this year is Dr. Marcy Rosenkrantz, director of the information institute at the USAF research laboratory. Dr. Rosenkrantz will be speaking on "Collaboration in the AFRL Information Directorate." A recent study of the workforce in the AF Research Laboratory suggested the development of a Government Operated Collaboratively Assisted (GOCA) workforce. In this talk, she will discuss the Information Institute's role in developing strong research collaborations in the Information Directorate and its vision for a GOCA research center. Also, she will discuss the role of technology in supporting research collaborations.

Dr. Marcy E. Rosenkrantz earned a Ph.D. in Theoretical Chemistry from the State University of New York at Binghamton and has performed basic research on the electronic structure of small molecules at the Harvard-Smithsonian Center for Astrophysics, the US Army Ballistic Research Laboratory and the Air Force Phillips Laboratory. She was the Associate Director for Supercomputing Technologies at the Cornell Theory Center and is currently the Director of the AFRL Information Directorate's Information Institute.

Please help us manage this meeting more effectively by registering early. You may contact John M. Miller jmille24@ford.com, 313 322-7486, for further relevant information, to volunteer, or to communicate suggestions.

Get on track with Lawrence Tech's graduate engineering programs!

Lawrence Tech's Masters of Automotive Engineering, Engineering in Manufacturing Systems, Civil Engineering and Computer Engineering programs emphasize the vital interplay between manufacturing, engineering, research, suppliers and management. Most feature cross-disciplinary programs for mechanical, electrical and civil engineers, part of the University's commitment to enhance the growth of today's working profession

Evening classes designed for practicing engineers

*Outstanding faculty with top academic credentials
and professional experience*

Classes begin May, August and January

Graduate in two years attending classes twice per week

Full service campus



21000 West Ten Mile Road
Southfield, MI 48075-1058
1-800-CALL-LTU, ext. 1
TDD (248) 204-4117
<http://www.ltu.edu>



IEEE Southeastern Michigan Section Executive Committee

Officers

Chair	James Woodyard	313-577-3758
Vice Chair	John Miller	313-322-7486
Secretary	Donald Silversmith	313-577-0248
Treasurer	Mohamed Zohdy	248-370-2234

Administrative Activities

Past Chair	Sandy Hunter	248-524-0645
Section Advisor	Don Bramlett	313-235-7549
Student Activities	Edzko Smid	248-370-2082
Professional Activities	Tarek Lahdhiri	248-685-5634
Technical Activities	Anthony Will	810-986-9557
Educational Activities	Ece Yaprak	313-577-8075
Membership	Maurice Snyder	734-973-1300

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)
- II Vehicular Technology:** Vehicular Technology (VT-06)
- III Comm. & Aero. Electronics:** Aerospace & Electronics Systems (AES-10) and Communications (COM-19)
- 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)

EDITORS

Anita Malhotra O: 313-845-2409 H: 810-268-0249
amalhot1@ford.com
Lubna Khaled O: 248-340-8629 H: 248-370-2056
lkhaled@Oakland.edu
Cindy Witkor O: 734-930-7500 H: 734-513-7390
cjw@adventengineering.com

PRINTER

Progressive Printing
1326 Goldsmith
Plymouth, Michigan 48170
734-459-2960



COPY DEADLINE: News items are due the first day of the month for the following month's issue, e.g. April 1 is the deadline for the May issue.

ADVERTISING RATES CIRCULATION OVER 4000

Ad Size	Annual Rate (8 issues)	Single Issue Rate
1/8 page	\$525	\$85
1/4 page	\$1000	\$160
1/2 page	\$1900	\$300
1 page	\$4000	\$650

(Second color, other sizes & special placement quotes available upon request)

POSTMASTER Send address changes to:

IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854.
Phone: 732-981-0060 x150. USPS 878-660

POSTAL INFORMATION NOTICE

The newsletter of the Southeastern Michigan Section of IEEE, "Wavelengths", (USPS 878-660), is published monthly 8 times per year except June, July, August & December by the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 345 East 47th Street, New York, NY 10017-2394. \$1.00 per member, per year (included in annual dues) is designated for each member of the Southeastern Michigan Section.
Periodicals Postage Paid at New York, NY and at additional mailing offices.

Visit the following IEEE World Wide Web sites:

Section: www.ieee.org/regional/section/se_michigan

IEEE: www.ieee.org

IEEE Region 4: www.ieee.org/regional/r4/



Calendar of Events

- | | | |
|------------------------------------|--|---|
| Monday
April 3 rd | Event:
Time:
Location:
Contact: | Executive Committee Meeting
Dinner at 6:00 pm, Meeting 6:30 pm
Eaton Corp., 26201 Northwestern Highway, Southfield
Kimball Williams, 248-354-2845 |
| Saturday
April 15 th | Event:
Time:
Location:
Contact: | Lawrence Technological University Lego Robotics Festival
1:00 pm to 6:00 pm
Lawrence Technological University, Southfield, Michigan
Professor ChanJin Chung, 248-204-3504 (O), or email at |
| | Add'l Info: | Rules, registration, etc.: |
| May 7-12 th | Event:
Time:
Location:
Contact: | International Science and Engineering Fair 2000 (ISEF 2000)
Judging on Tuesday afternoon and all day Wed., May 9 & 10
Public Viewing on Thurs., May 11 from 9:00 am to 9:00 pm
Public Viewing on Friday, May 12 from 9:00 am to 5:00 pm
At Cobo Hall in Detroit
Don Bramlett 313-235-7549 (O), 313-525-5422 (H) or email at |
| Monday
May 8 th | Event:
Time:
Location:
Contact: | Executive Committee Meeting
Dinner at 6:00 pm, Meeting 6:30 pm
Eaton Corp., 26201 Northwestern Highway, Southfield
Kimball Williams, 248-354-2845 |
| Tuesday
May 9 th | Event:
Time:
Location:
Speakers:
Colloquium:
Topic of Talk:
Sponsor:
Contact: | EMC Fest 2000
7:30 am to 6:30 pm
Dearborn Inn, 20301 Oakwood Boulevard, Dearborn,
Henry Ott & Doug Smith
Low Cost, Easy to EMC Test Techniques
Bench top EMC measurements & Diagnostic Techniques, Using RF Current probes for Bench Top measurements and High Frequency Measurements.
IEEE EMC-Society - SEMI Chapter
SEMI Chapter VIII - EMC
Kimball Williams 248-354-2845 (O) or email at |
| August 8-11 th | Event:
Location:
Sponsor:
Contact: | 2000 43rd Midwest Symposium on Circuits and Systems (Meeting # 7368)
Lansing Center, Lansing, Michigan
Chapter I Circuits and Systems
Dr. Fathi Salam, 517-355-7695 (O), or email at |
| Sept. 6-8 th | Event:
Location:
Sponsors:
Cosponsors:
Contact: | PCM' 2000 - the Sixth Annual International Pacific Conference on Manufacturing
The Westin, 1500 Town Center, Southfield.
Pacific Congress on Manufacturing and Management PCMM and Lawrence Technological University.
Institute of Industrial Engineers, Japan Industrial Management Association, American Society for Metals, Society of Manufacturing Engineers
Lisa A. Anneberg ; Lawrence Technical University ; or email at |

Chapter I: Circuits & Signal Processing

Title: Knowledge Support for Cooperative Design
Speaker: Professor Fatma Mili
Affiliation: Computer Science & Eng. Dept. School of Engineering & Computer Science, Oakland University, Rochester, MI

Abstract: Expectations from Computer Aided Design systems have been on the rise in the past decade. It is no longer deemed sufficient for CAD systems to support the purely mechanical and routine aspects of design. Technological advances and research results are opening the possibility for CAD systems to support the intellectual aspects of quality control and quality assessment, the cooperative aspects of coordination and negotiation, and the creative aspects of learning and discovery. Design, as a result, has been at the crossroads of research from different areas. In this talk, we discuss a selection of research issues and results from the different communities.



Biography of the speaker: Dr. Fatma Mili is an Associate Professor of Computer at Oakland University. Her research interests are in decision support systems, database systems, and formal methods. Her research has been funded by NSF, Michigan Research Excellence Fund, Oakland University, and DaimlerChrysler Corporation. Dr. Mili can be contacted at mili@oakland.edu or 248-370-2246.

Chapter II: Vehicular Technology

Title: Electric Drive Development for Hybrid Vehicles
Speaker: Mr. Allen R. Gale
Affiliation: Vehicle Electronic Systems Dept., Ford-Research, Ford Motor Company

Abstract: PNGV is a collaborative program between government and the automotive companies focused on the development of high mileage vehicles. Teams of engineers and scientist have been working together on technologies necessary to meet the program goal. One of these teams is the Electrical and Electronics team. Goals and status of their effort will be discussed. In addition the Ford Motor Company effort as well as the effort to develop the starter/alternator (CAS) for the Ford Prodigy vehicle will be described.

The discussion will include slides of the assembly, performance and a summary of the issues and challenges associated with the development of the CAS and the subsequent integration of the assembly into the vehicle.



Biography of the speaker: Mr. Gale joined Ford Motor Co. in 1988 and is currently a Technical Specialist in the Vehicle Electronic Systems department of Ford-Research. He has worked in the automotive field for 20 years. His past design and development experience includes projects in electric steering, dc electric vehicles, ac electric vehicles, new traction motor/electrical drive development, and electro-mechanical transmission controls.

Mr. Gale is now leading the Ford-DOE hybrid electric vehicle drives effort. The effort includes the development and evaluation of low and high power drives for both series and parallel configured vehicles. The Ford-DOE effort is set to supply hybrid electric vehicles to DOE in 1999. He is also leading the power electronics effort as part of PNGV with the key emphasis on developing cost effective inverters for electric vehicle applications. He is a member of IEEE and



32540 Schoolcraft Road, #130 Livonia, MI 48150

For Technical Information:
 (P) 734/513-0330 (F) 734/513-0335
 e-mail: ekco@compuserve.com

Power Equipment Sales for the following Products:
C&D Stationary Batteries, DELTA-UNIBUS Isophase Bus, DOBLE Test Equipment, ELECTRIMOLD Box Pads & Utility Boxes, FISHER-PIERCE Photo Electric Controls, MEHTA-TECH Fault Recorders, GE MULTILIN Protective Relays, JOSLYN HV Vacuum Switches, OLSUN Cast Coil & Dry Transformers, PAUWELS Liquid Filled Transformers, POWELL Switchgear, PRINGLE High Current Switches, SANTANA Insulators, SOLIDSTATE CONTROLS UPS Systems, SOUTHERN STATES HV Switches, STERLING STEEL STRUCTURES Steel Structures, UNIBUS Bus Duct Systems.



the MIT/Industry Consortium on Advanced Automotive Electrical/Electronic Components and Systems. Within the consortium, he is actively working as a member of the starter/alternator subcommittee developing new starter/alternator topologies

Mr. Gale has received degrees in Electrical Engineering from Lawrence Institute of Technology (BSEE, 1981) and the University of Michigan (MSEE, 1988).

Chapter IV: Trident

Title: Microwave & Millimeter Wave Radios

Speaker: Prof. Dennis Mitchell

Affiliation: OMRON Corporation

Abstract: This is a hands on demo of microwave and millimeter wave radios as used in modern data communications with an overview of the marketplace and various company offerings including 2.4 GHz Direct Sequence Spread Spectrum and OC-3 to 60 GHz Millimeter Wave radios.

Biography of the speaker: Mr. Dennis Mitchell has 30 years of experience in microwave communications in the Boston area. He has worked as a design engineer at Raytheon Company in the RADAR Receiver Wayland, Massachusetts design lab. He has also worked at Microwave Associates designing point-to-point microwave communication systems, Alpha Industries on their first GaAs FET design team, and founded Microwave Research & Mfg., a sub-systems house in Hopkinton, Massachusetts. He is currently Vice-President of Millimeter-Wave products for OMRON Corporation. He is from Michigan, attended Eastern Michigan University, is a ham radio operator (K8UR), a commercial pilot and IEEE member.

Chapter V: Computer

Title: Embedded System Design - Past, Present & Future

Speaker: Prof. Richard E. Haskell

Affiliation: Computer Science & Eng. Dept. School of Engineering & Computer Science, Oakland University, Rochester, MI

Abstract: The design of embedded systems began with

the appearance of the first microprocessor in 1971. Over the past three decades single-chip microcontrollers have been introduced with ever increasing levels of integration. This talk will review this development with an emphasis on how the Forth programming language has been used to program these microcontrollers. A new variant of Forth, called WHYP, which can be used to program the Motorola 68HC12 microcontroller, will be described. How the use of FPGAs might radically change the design of embedded systems in the future will be explored.



Biography of the speaker: Dr. Richard E. Haskell is a professor of engineering in the Department of Computer Science and Engineering in Oakland University's School of

Engineering and Computer Science. He received his Ph.D. from Rensselaer Polytechnic Institute in 1963 and has been on the faculty at Oakland University since 1966. He has worked for General Electric in Schenectady, New York, KMS Industries in Ann Arbor and Industrial Holographics Inc. in Auburn Hills. He has also worked in government laboratories at the Air Force Cambridge Research Laboratories and at the Johnson Spacecraft Center. His research interests have included plasma physics, holography and coherent optics, pattern recognition and image processing, computer learning, soft computing and embedded systems. He has written numerous research papers, holds 6 patents, and is the author of 15 books. More information is on his web site www.secs.oakland.edu/~haskell. You can contact Dr. Haskell at haskell@oakland.edu or 248-370-2861.

Chapter VII: Power Eng. & Ind. Apps.

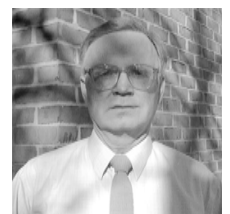
Title: Generators, Switchgears and Y2K

Preparation

Speaker: Mr. Tom Ritter

Affiliation: McNamee, Porter & Seeley, Inc.

Abstract: The City of Detroit Water & Sewerage Department (DWSD) project consisted of a design-build contract to furnish and install power generators and all necessary ancillary facilities and equipment to provide



Continued on page 6

Chapter VII: *continued*

emergency power backup and peak-shaving at thirteen of their facilities. The thirteen facilities comprise three water treatment plants, five water booster pumping stations, and five stormwater sanitary pumping stations located throughout Wayne, Oakland, and St. Clair counties. A total of 44 2,000-kilowatt generators were designed, fabricated and installed within these 13 facilities over an unprecedented seven month period.

Biography of the speaker: Mr. Tom Ritter is Vice President at McNamee and is manager of the Systems Integration Group. He is responsible for the design and specifications of both municipal and industrial water and wastewater treatment facilities. He joined McNamee, Porter & Seeley, Inc. in 1977 as a project electrical engineer. He designed numerous electrical and instrumentation systems for treatment facilities throughout Michigan and in North Tonawanda, New York. As a project manager he has been responsible for several plant automation projects which featured increased process efficiencies, automated reporting, and control and monitoring of remote facilities. Mr. Ritter served as the Project Manager for McNamee on the Detroit Generator Design/Build Project. In this role he was responsible for the conceptual and detailed design of the project. In this design he developed a unique approach to electrically connect the generators to existing plant facilities which reduced costs, saved construction time, and enhanced value to the owner.

Mr. Ritter is 1970 BSEE graduate from Michigan State University and a 1984 MBA graduate from Eastern Michigan University. He is a registered Professional Engineer in Michigan and Ohio.

Chapter VIII: EMC

Title: Antenna Calibrations
Speaker: Mr. Graeme Rogerson
Affiliation: Defiance Testing & Engineering Services, Inc.
Abstract: With the increasing costs of EMC equipment, automation is essential. Reducing lab time not only increases the efficiency of testing, but also

allows an increase in reliability of the results obtained by reducing human error.

This presentation will review the research done on a thesis for a MSc. in radio systems engineering. This includes antenna calibration methods, software architecture for the automation process of the calibration procedure, anomalies of the common site method of calibration and the effects of fiberglass structures.

Finally, the period required for the calibration of antennas will be reviewed.

Biography of the speaker: Mr. Graeme Rogerson studied physics at Newcastle University from 1990 - 1993. After graduating with honors he specialized in military communication systems with the Royal Corps of Signals. While serving in the military, he successfully completed a masters degree in radio systems engineering at Hull University. Currently, he is studying for his second Masters, a M.DIV at Ashland Theological Seminary, Detroit. He is a Chartered Engineer with the IEE and a member of the IEEE.



He has worked at Defiance Testing and Engineering Services Inc. (formerly known as MIRA North America) for over 3 years and MIRA UK for over 1 year. He has successfully supported the development of the approvals department and Defiance's new EMC facility in Plymouth, Michigan. Graeme has previously presented 2 papers for the SAE and one for the IEEE - all of them were on EMC. He is currently serving as Vice Chair of Presentations on the IEEE EME Society organizational committee.

Chapter IX: Power & Ind. Electronics

Title: Hybrid EV Application: Electronic Traction Systems
Speaker: Ms. Margaret Palardy & Mr. Ed Rapa
Affiliation: GM Advanced Technology Vehicles, Troy MI
Abstract: The purpose of the presentation is to provide a technical overview of the power electronics and electrical machines used in GM's Partnership for a New Generation Vehicle (PNGV) program. The PNGV program objectives



are to produce an 80 mpg mid-sized vehicle. These objectives were realized at GM with a hybrid electric traction system in a vehicle named "Precept" which was on display at the 2000 NaiAS. The presentation will include a physical display of power electronics and electric machine

hardware as well as technical specifications and performance achieved.

Biography of the speaker: Mr. Edward Rapa Jr. is a graduate of the University of Michigan. He began his career with General Motors in the spring of 1990 and has spent most of his career working on electric and hybrid vehicles. He is a Senior Project Engineer responsible for the release of the power inverter modules and electric machines in the Precept. The responsibilities entail all mechanical interfaces and packaging constraints. He has worked diligently to reduce mechanical losses in the electric machine application for the hybrid vehicle.

Ms. Margaret Palardy is a staff engineer at GM Advanced Technology Vehicles. While employed by GM over the past 19 years she has experienced varied fields of work including the design of assembly plant automation control systems as well as the EV1 thermal system. She is currently responsible for the front electric traction system and motor generator system controls development for the Precept. She is a graduate of GMI Engineering & Management Institute (BSEE, 1986) and Stanford University (MSMSE, 1991).



Chapter X: Engineering Management

Title: The Impact of the Digital Automobile

Speaker: Mr. Michael C. Dudzik

Affiliation: Automotive & Transportation Center, ERIM International, Inc.

Biography of the speaker: Mr. Michael C. Dudzik is the Director, Automotive and Transportation Center (ATC) for ERIM International, Inc., a research and development organization located in Ann Arbor. In this position he is responsible for leading the development and integration of



advanced technologies into vehicle and infrastructure systems in support of commercial automotive and truck platforms, tier subsystems, Department of Defense vehicle platforms, and Department of Transportation Intelligent Transportation Systems.

Mr. Dudzik is a leader in the development of collaborative research and development programs between international commercial industries, research universities, and government organizations in response to the fundamental forces of change impacting the product technology acquisition and product development process. His current focus is on spiral technology management and systems engineering strategies within the automotive and transportation industry.

Mr. Dudzik began his professional career as a research physicist in the areas of optical and nuclear sciences. His experience includes simulation and modeling, advanced technology and product development, as well as corporate business unit management. Prior to his current position, Mr. Dudzik was the manager of the Electro-Optics Systems Laboratory at

Continued on page 8

Electromagnetic Test, Analysis & Consulting

The Eaton Detroit Center provides OEMs and suppliers worldwide with full-service test and analysis capability in more than 50 vehicle technologies, including the following electromagnetic test, analysis and consulting services:

- New Product Test, Evaluation, Problem Resolution, Validation, and Standards Certification
- Evaluation of Materials Shielding
- Customer-Site Problem Analysis and Resolution
- In-Plant Power Quality Analysis
- NVLAP/NARTE Certified
- Consulting on EMC and Power Quality Issues
 - New Product Concepts
 - Existing Product
 - Specifications
 - Revisions
 - Test Plans
 - Re-Designs

Eaton has earned more customer quality awards than any peer, and the first-ever *SAE Henry Ford II Distinguished Award For Excellence In Engineering ...* Find out why! For more information on laboratory hours and how we can support your test and developments programs, call **Scott Lytle at (800) 341-4892**.

Eaton Corporation
Corporate Research & Development
26201 Northwestern Highway
Southfield, MI 48037



Chapter X: *continued*

ERIM. Prior to 1992, he was the manager of the Advanced Optical Systems Group at Texas Instruments and served in several technical and program management positions within that firm.

Mr. Dudzik serves on numerous special committees and advisory boards. These include the University of Detroit-Mercy, College of Engineering Advisory Board; MERRA Board of Directors, an economic and technical development organization within the State of Michigan; IRIS panel for Sensor/Data Fusion; and National Defense Industrial Association National Advisory Council. He is also active in several technical societies, including the Society of Automotive Engineers (SAE) and IEEE.

Mr. Dudzik graduated from the University of Detroit-Mercy (BS Physics); Ohio State University (MS Engineering); and the University of Dallas (MBA). He is the author/editor of *Electro-Optical Systems Design* and a contributing author on two books on advanced optics. He has published 12 articles on technical subjects and holds two U.S. patents.

Student Track

Title: Emerging Technologies in Army Vehicles Development

Speaker: James L. Overholt, Ph.D

Affiliation: National Automotive Center U.S. Army TACOM, AMSTA-TR-N/289 Warren, MI

Abstract: With the initiation of the US-Army Defense Program “21st Century Truck”, the Department of Defense has appropriated resources for the modernization of the Medium Tactical Truck platform. This program will establish working relationships between various government, academic and commercial institutions. The major objectives focus on the development and application of new technologies for performance, efficiency and manufacturing. The talk will highlight the current status of the program and some of the technologies that will be employed for this program.

Biography of the speaker: Jim is the TARDEC Technical Manager for the Automotive Research Center (ARC). He has been with TACOM for nearly 15 years, and has worked in the area of dynamics and controls for the past 20 years. He led the TARDEC Vehicle Dynamics and Controls Research Program from 1993-1997. He joined the National Automotive Center (NAC) in 1997 as the Leader of the Simulation Technologies Team where he acts as a technical liaison between the NAC and various academic institutions (such as the ARC). Dr. Overholt also serves on several Army boards as a subject matter expert in the areas of intelligent control and high-resolution multi-body dynamics.

Besides being actively involved with many of the quad projects of the ARC, Dr. Overholt is currently pursuing research in Intelligent Systems Design and Analysis with an emphasis on Neural-Fuzzy Systems and Genetic Learning Algorithms. This research has immediate applications to Active Safety for Intelligent Vehicle Systems, Autonomous Robotics and Vehicle Design Optimization. This research is also applicable for data mining techniques and for improving web-based search engines.

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.

Volunteers Needed!!

The 6th Annual Computer & Technology Showcase / Internet Expo will be held this May 16-17, 2000 at the Novi Expo Center in Novi. IEEE Southeastern Michigan Section will have a booth at the show to promote services and benefits of IEEE membership. Several persons are needed to participate in the booth with ½ day needed per person.

IEEE booth personnel will have free access to the show as well as to all the exhibits. To participate with our IEEE booth, please contact Maurice Snyder at email snyder@adi.com or telephone 734-973-1300.

Speaking to Students

by Kimball Williams, Chapter VIII Secretary



One of the continuing issues turns up in discussions among chapter and section officers is the question of how to maintain the interest of students in the IEEE. One solution, which may also provide benefits to the chapter and section as well, is to arrange with the Section Student Activities Chair help in providing speakers for Student Chapter meetings from the section members at large and from each chapter in particular.

Over the last few years I have managed to speak to student chapters and student groups at a dozen different colleges and universities. In all cases, the students were eager to hear from a working engineer. They have spent a lot of time learning skills they hope to put to use in the workplace, and they appreciate the view of someone who is actually 'in the field' using the tools they are honing.

Section Student Activities At the Section level, the Student Activities Chairman might start the process by looking through the current, and past listing of officers for the individual society chapters within his section. The idea is that each one of these officers could (or should) be a potential speaker for every Student Chapter within the section. Indeed, any engineer who has been working for more than three months has work experiences, opinions, war stories and suggestions that will probably keep a group of students spell bound for one half to three quarters of an hour talk. On one occasion I simply described what my technical specialty is about, and something of my work and started answering questions. The questions went on for an hour and a half!

Talking to Students At what level should you address a group of students? Use the same level of approach that you would use with any group of diverse engineers. The only difference will be the level of experience, which range from none to possibly more experience than you may have for students who are cross training or taking continuing education classes. In all cases, the approach to a student group is the same as you would have to any other group of professionals.

What topics would interest students? Use the same things you would present to a group of other engineers. It is beneficial to keep in mind that the audience, (students), are already thinking like engineers. There is no need to coddle, or 'talk down' to a group of IEEE Students. By the same token, there is no need to 'snow' them with technical jargon. Talk about what you know, about your specialty, about your experiences. Treat a student presentation in the same way you would treat a presentation for any non-EMC group of engineers and you should not go wrong.

What do students want to hear that would be different from an audience of general engineers? There are a few additional topics that might interest students that differ from a homogeneous group of engineers. When I give a talk to students, I try to give them some feel for the employment opportunities in the field, and how my particular specialty differs from, or is the same as other forms of electrical engineering. I also try to open their eyes to the importance of standards in the workplace as both a help to the definition of a new design and a guide to what a 'real world' environment will be for the product.

In addition, I make a point to emphasize how their association with the IEEE can benefit their work on a technical level. I point out how a short series of phone calls can put them in touch with the technical expert in any electrical or electronic discipline, anywhere in the world. Or, if they find a standard confusing or difficult to interpret, an e-mail message can usually get clarification of the documents' content directly from the author or industry group.

Continued on page 11

EMCFest '2000

A Colloquium and Exhibition on

LOW COST, EASY TO USE, EMC TEST TECHNIQUES FOR PRODUCT DEVELOPMENT

Wednesday, May 10, 2000

(Hotel to be announced)

Livonia, MI 12345

7:30 am-8: 30 am Registration &

Continental Breakfast

8:30 am-5: 00 pm Technical Sessions

5:00 pm-7: 30 pm Reception, Exhibits
& Demonstrations

Featuring

Industry renowned speakers:

Henry Ott & Frank Smith

The focus of this colloquium will be simple instruments and techniques to provide the development engineer with appropriate tools for early product EMC evaluation.

Registration Fees

\$100 prior to March 1

\$150 prior to April 1

\$175 after April 1 and at the door

Non-IEEE attendees, add \$25

ATTENDANCE IS LIMITED

***** Register early *****

Fees include one copy of the colloquium record, continental breakfast, a 'networking' lunch and a "Happy Hour" reception immediately following the Technical Sessions.

Hands on participation during the demos
Vendor tabletop exhibits of the latest EMC related products and services.

For further information:

Kimball Williams: Co-Chair Technical Program Ph: 248-354-2845

email: k.Williams@ieeed.org

Janet O'Neil Co-Chair Exhibits

Ph: 425-868-2558 email:j.n.oneil@ieeed.org

Home page: <http://emc.eaton.com/emcfest2000.htm>

Sponsored by the Southeastern Michigan Chapter of the IEEE Electromagnetic Compatibility (EMC) Society.

Past Chair Report

by Sandy Hunter, Junior Past Chair

This article reports on the activities of the section's Awards and Elections Committees. As Past Chair, I have had the privilege of serving as chair of these vital committees.

The Awards Committee has the responsibility of recognizing the achievements of section members through administering the section's awards program and by recommending members for other IEEE awards. Mark Krage, who served as Section Chair in 1993-4, and Kimball Williams, the current EMC Chapter Secretary, applied their knowledge and experience to the Awards Committee duties this year. In a normal year, the committee obtains and reviews nominations for the section's Outstanding Engineer, Outstanding Section Involvement, Outstanding Chapter Involvement, and the Outstanding Student Branch Involvement Award. It also coordinates articles for *Wavelengths* about the award recipients and new IEEE Fellows in the section. Committee members also notify the recipients and invite them to attend the award ceremony at the Spring Section Meeting. The committee's work still is not done since it still must nominate people for Region 4 awards and possibly other IEEE awards.

This year was not normal! IEEE announced special Millennium Medal awards last summer in order to recognize significant volunteer service to IEEE sections, chapters, societies, and other entities. IEEE/SEM was asked to nominate members for the seventeen Millennium Medals allocated to the section by October 1, 1999. The Awards Committee labored for several weeks in September to identify section members with notable service to the section. The committee spoke to a number of long-time section officers and volunteers to identify deserving section members. We also made a concerted effort to identify past volunteers by reviewing several years' worth of *Wavelengths* issues. The IEEE Millennium Medal Committee recently notified the section of its seventeen Millennium Medal recipients. These notable volunteers will be announced in a future issue of *Wavelengths* and honored at the section's Spring Section Meeting.

The Awards Committee also took on the task of converting the section's awards criteria into nomination forms. This was done to make it easier for nominators to describe the essential contributions of award nominees. The forms are designed to encourage clear, brief, and specific descriptions of nominees' service. We found that the nominations received this year using the forms painted compelling pictures of the nominees. The nominations forms for all of the awards except the Student Branch Award were posted on the section's web site to make the forms accessible for download.

One last note about awards can never be stated enough. Please take the time to nominate deserving section members and student branches for the section's awards! Awards are a great way to publicly recognize special people. With over 3,800 members in the section, the awards committee and

current officers cannot know all of the people who deserve kudos. The Awards Committee needs your help in nominating people for awards.



While the Awards Committee recognizes members for past achievements, the Elections Committee provides many people the opportunity to serve the section or a chapter. David Horvath, the Section Chair in 1996-7, joined me on the Elections Committee. David's vast network of IEEE members in the section was tremendously helpful in identifying nominees for section officer, section director, and chapter officer positions. I learned that a number of members are willing to become active volunteers in the section if someone simply asks them. This year's ballot in the February *Wavelengths* has 38 officer nominees. About ten of the nominees will be first-time officers if they are elected, which will provide fresh ideas to the section and its chapters.

I must also thank Randy Nunez, the section's web master for his assistance in developing a web form for officer nominations. Randy's work made it possible for members to list their contact information and select the officer position for which they wanted to nominate themselves. People who used the form reported that filling it out took less than a minute and was easier than making a phone call. The Elections Committee benefited by receiving more complete contact information for nominees.

I am beginning to organize my notes, lessons learned, and recommendations for next year's Awards and Election Committees. Jim Woodyard will chair the committees for the 2000-1 year. If you have any suggestions for the committees, please let me know so that I can add them to the documentation. You can contact me at 248-524-0645 or s.e.hunter@ieee.org.

MIRA
NORTH AMERICA

47523 Clipper Street
Plymouth MI 48170
Tel: 734-455-8200

Our latest EMC test laboratory offers the following automotive engineering services:

- European road vehicle type approval - 'e' and 'E' marking
- European EMC Directive certification - 'CE' marking
- Component and system testing to Ford, GM, and Daimler-Chrysler requirements.
- EMC testing for suppliers of components and systems to car, truck, bus, agricultural, forestry, construction, industrial vehicles and related industries.
- Radio interference suppression (audio systems development).
- World-wide radio approval testing and certification.

Backed up by over 200 man years of automotive electrical engineering experience and EMC expertise. If you sell your products into Europe we have the specialist knowledge you need. Visit our Web Page:

www.MIRANorthAmerica.com

Contact: Tim Droege, Account Manager, MIRA North America.

IEEE/SEM 2000 Spring Meeting Registration Form

Complete and mail form with an early registration fee of \$30 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:

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

Fees:	Amount	Deadline
Pre-registration	\$30 US	Received by mail before March 15 th
Late registration	\$35 US	Contact Ece Yaprak at 313 577 8075 or yaprak@eng.wayne.edu by 5:00pm March 27, 2000
Student branch	\$15 US	Register and pay through student branch. Contact: Edzko Smid at 248 370-2082 or email: smid@oakland.edu by Mar. 15, 2000

Technical Sessions Indicate session you wish to attend:

1. **Chapter I Circuits & Signal Processing**
"Knowledge Support for Cooperative Design" Dr Fatma Mili, Oakland Univ.
2. **Chapter II Vehicular Technology**
"Power Electronics for Hybrid Electric Vehicles" Allen R. Gale, Vehicle Electronic Systems, Dept., Ford-Research, Ford Motor Company
3. **Chapter IV Trident**
"Microwave & Millimeter Wave Radios" Prof. Dennis Mitchel, OMRON Corp.
4. **Chapter V Computers**
"Embedded System Software", Dr Richard Haskell, Oakland Univ.
5. **Chapter VII Power Eng/Industrial Applications**
"Generators, Switchgear, and Year 2000" Mr Tom Ritter, McNamee, Porter
6. **Chapter VIII EMC**
"Antenna Calibrations", Mr Graeme Rogerson, MIRA-North America
7. **Chapter IX Power & Ind. Electronics**
"Hybrid EV Application: Electric Traction Systems", Ms Margaret Palardy Mr. Ed. Rapa, GM - Advanced Technology Vehicles
8. **Chapter X Engineering Management**
"The Impact of the Digital Automobile" Mr. Michael C. Dudzik, ERIM International, Inc.
9. **Student Track**
"Emerging Technologies in Army Vehicles Development" James L. Overholt, Ph.D, National Automotive Center U.S. Army Tacom

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

Please type or print:

Name: _____
 Company: _____
 Address: _____
 City/State/Zip: _____
 Phone Number: _____ [] H [] W
 Technical Session # _____ (* Select from list at right, 0 for none)
 Meal Selection: [] None, [] Taste of Italy, [] Vegetarian

Total amount enclosed: \$_____ Registration (\$30 per person)

[] Check enclosed [] Visa [] Master Card
 US dollars
 Credit Card Number _____
 Expiration Date _____
 Signature _____

Credit card registrations are non-refundable after Mar.27

Additional Registrants (Non-Students Only) Name	Company	* Tech. Session #	Meal Selection (one only)			Fee \$30 Each
			None	Taste/Italy	Vegetarian	

Speaking to Students

Continued from page 9

How do I initiate a Program? First, decide on what topic you would like to speak. Make it something that you are excited about and you know well. Work up an outline of the areas that you would like to cover. Based on your outline, look for material that would make good overheads or 35mm slides. For this you will probably want to seek out pictures, figures, diagrams or drawings that get the point across. Remember, 1 picture = 1000 words.

Flesh out the visual aids with word slides to emphasize the points you want to speak about. The words should be close to your outline form; bullet statements instead of phrases. Remember this is not to be what you are going to say, but only the essence of what you are driving at. One general rule is to have no more than nine words on a single slide.

Put it all together and try it out. Give the talk to your bathroom mirror, then to your dog. Finally, try it on your spouse or significant other. If you can stand to look at the material and your delivery in the mirror, if your dog will listen to you all the way through and if your spouse doesn't fall asleep or turn on the TV, you are ready to try it out on your co-workers. Notice that this part of the exercise isn't about content, but delivery. The best topic and supporting graphics will bore anyone if presented poorly. If you can maintain the interest in what you are saying with an effective style then, and only then, are you ready to have your colleges listen to the technical side of your presentation.

Finding your audience Last of all, contact your Section Student Activities Chair. It is part of his business to maintain contacts with all the university Student Chapters in the section. Let him know you are ready, willing and able to provide talks to the IEEE Student Chapters and ask him for assistance in making arrangements with the Student Chapter Officers. Chances are he has been looking for you!

Visit the newly revised IEEE
web site at www.ieee.org

PERIODICAL POSTAGE PAID
AT PLYMOUTH, MICHIGAN



IEEE/SEM Educational Activities

by Ece Yaprak, Director of



The growing influence of technology is making it more and more necessary for everyone to have technical skills and knowledge to maintain current in their profession. IEEE programs are an ideal way for members to keep up on current technical topics. The largest educational activity is the IEEE/SEM semi-annual meetings, which are held every spring and fall.

These meetings have a number of speakers covering a wide area of topics. The program committee for each of these meetings put in long hours in order to serve you better. The attendance at these meetings is improving. Each one of you can help in many ways by attending, encouraging your colleagues to attend, and volunteering. If you think you can volunteer for any of these activities, you can contact one of the executive committee members.

I am happy to announce the following activities for the coming months as part of the IEEE/SEM Educational Activities: The first one is on February 18th by Gary Shields, President Strategic Ventures. He will talk about Entrepreneurship. The second one is on March

3rd by John Artz, Jr., Patent Attorney Lyon & Artz, PLC. His topic is intellectual property. The third one is on March 10th by Dr. Mulchand Rathod, Head of Division of Engineering Technology at College of Engineering at Wayne State University. He will talk about the professional registration and graduate studies. All these talks will be held at Wayne State University, Engineering Technology Building Room 2028 starting at 5:00 P.M. In case anyone needs directions or has questions, my e-mail address is: . As always we are seeking for volunteers for speakers as well as interesting topic ideas for educational activities.

Educational products and services provided by IEEE Educational Activities include: career development, curriculum for continued professional development, and global comparability of credentials and electronic delivery of educational materials. More information can be found on the IEEE web address:

Additional information on these activities may be obtained by contacting Ece Yaprak at 313-577-8075 or by e-mail: