



WAVELENGTHS

## The Past Year in Retrospect

by Dave Horvath, Section Chair

As my year as Section Chair draws to a close, this is a good time to reflect on our section's accomplishments as well as progress achieved in meeting the goals that were established almost a year ago. In many ways we end the year with the section much improved from a year ago thanks to the proficient efforts of your dedicated Executive Committee (EC) members. I am particularly pleased at achievements in seven areas: section meetings, *Wavelengths*, student branch relationships, national conference support, awards and recognition, section functional operation, and Region 4 interface.



Our section meetings have become true mini-conferences with 7-10 technical sessions and consistently 100 plus attendees. We have continued to improve the organization and format of our semi-annual "get-together" as a section

by utilizing additional volunteers on the program committee, offering incentives for early registration, creating and implementing the concept of sponsoring student tables, and by inviting companies and organizations (such as area university graduate schools) of interest to members to attend. (Thanks especially to George Peters, Don Silversmith, Mark Hunter, Sandy Hunter, Christin Clayborn and too many others to list.)

Our section's newsletter, *Wavelengths*, has improved notably in its quality and presentation of information, cost effectiveness, usefulness to its readership, use of action oriented photos, and detailed minutes of the Executive Committee's monthly meetings. [Kudos to Mark Hunter, Sandy Hunter, and K.C. Liu.]

*(Continued on Page 6)*

### Chapter V: Computer

## Upcoming Real-time Simulation Talk

by Nizar Al-Holou, Chapter Chair

The Computer Chapter is tentatively planning to have a presentation by Maurice Snyder, Director of Asia Marketing for Applied Dynamics International, Inc. His presentation will be:

**"Recent Advances in Real-time Simulation with HIL Used in Dynamic System Design."**

**Monday, June 16, 5 p.m. at University of Detroit Mercy, Engineering Building, Room E 320**

The address is 4001 W. McNichols Road, Detroit (near 6 Mile & Livernois Road)

Real-time simulation with hardware-in-the-loop (HIL) has been used for at least 35 years for dynamic system design. Originally, analog computers and later hybrid computers were used for real-time systems design, but these had disadvantages of patch panels, limited program documentation and fixed point programming. In 1975, all digital real-time systems replaced the analog technology, but they required proprietary hardware and software. Today, real-time HIL systems are open in both software and hardware, supporting industry standard VME bus and popular RISC processors as well as standard C, FORTRAN and widely used MATLAB, MATRIXx, ACSL, and EASY5. On-line interactive debugging tools are available between the user and the simulation math models.

Applications include laboratory design, testing, and rapid prototyping of electronic controllers (ECUs) prior to field testing. The goal of HIL design and testing is connection of a prototype ECU to a real-time simulation of the plant such that it appears to the ECU that it is connected to the real plant. This imposes severe constraints on the speed and determinism of the compute processor and the speed of analog and digital interface between the simulation computer and ECU. Typical automotive applications include design of ECUs for engines, transmissions, active and semi-active suspensions, anti-lock brakes and traction controls. Aerospace and defense applications include satellite control systems, missile guidance and seeker design and aircraft control systems.

Contact Dr. Nizar Al-Holou at 313-993-3384 or [alholoun@udmercy.edu](mailto:alholoun@udmercy.edu) for more information.

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## IEEE Southeastern Michigan Section Executive Committee

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Treasurer	James Woodyard	313-577-3758

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- 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-16)
- X Engineering Management:** Eng. Management (EM-14)

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### POSTAL INFORMATION NOTICE

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## Visit the following IEEE World Wide Web sites:

- Section: [www.ieee.org/regional/section/se\\_michigan](http://www.ieee.org/regional/section/se_michigan)
- Computer Chapter: [www.egr.msu.edu/ieeesem/chapv/](http://www.egr.msu.edu/ieeesem/chapv/)
- IEEE: [www.ieee.org](http://www.ieee.org)
- IEEE Region 4: [www.ieee.org/regional/r4/](http://www.ieee.org/regional/r4/)



## Calendar of Events

- |                                      |   |  |
|--------------------------------------|---|--|
| Saturday - Monday<br>May 31 - June 2 | Event:<br>Location:<br>Sponsor:<br>Contact:<br>Comment: | <b>1997 International Ground Robotics Competition</b><br>Oakland University, Rochester, Michigan<br>Association for Unmanned Vehicle Systems International (AUVSI)<br>Candy McLellan, 810-370-2233, <a href="mailto:mclellan@oakland.edu">mclellan@oakland.edu</a><br>This is a student competition. Details can be found at:<br><a href="http://www.secs.oakland.edu/SECS_prof_orgs/PROF_AUVSI/index.html">www.secs.oakland.edu/SECS_prof_orgs/PROF_AUVSI/index.html</a>    |
| Sunday<br>June 1                     | Event:<br>Sponsor:<br>Contact:                          | <b>Deadline for submitting VLSI simulation papers</b><br>Society for Computer Simulation International<br>Professor Hoda S. Abdel-Aty-Zohdy, Oakland University, phone: 248-370-2243, fax: 248-370-4261, e-mail: <a href="mailto:zohdyhsa@oakland.edu">zohdyhsa@oakland.edu</a><br>SIMULATION, the Society for Computer Simulation International's monthly journal, is planning a special issue on the role of simulation in design automation of VLSI circuits and systems. |
| Monday<br>June 16                    | Title:<br>Speaker:<br>Time:<br>Location:                | <b>Recent Advances in Real-time Simulation with HIL Used in Dynamic System Design</b><br>Maurice Snyder, Director of Asia Marketing for Applied Dynamics International, Inc.<br>5 p.m.<br>Room E 320, in the Engineering Building, University of Detroit Mercy, 4001 W. McNichols Road, near 6 Mile & Livernois Road   |
|                                      | Sponsor:<br>Contact:                                    | Chapter V<br>Dr. Nizar Al-Holou, 313-993-3384, <a href="mailto:alholoun@udmercy.edu">alholoun@udmercy.edu</a>  |
| TBD<br>June                          | Meeting:<br>Time:<br>Location:<br>Sponsor:<br>Contact:  | <b>Executive Committee</b><br>Dinner at 6:00 p.m., meeting 6:30 p.m.<br>Windsor, Ontario<br>IEEE/SEM<br>George Peters, 519-966-1656 x4445#, <a href="mailto:GPeters@stclairc.on.ca">GPeters@stclairc.on.ca</a>   |
| TBD<br>June                          | Event:<br>Sponsor:<br>Contact:                          | <b>Tour at TACOM</b><br>Chapter X: Engineering Management<br>Prakash Shrivastava,<br><a href="mailto:lnustc1.lz1nyj@gmeds.com">lnustc1.lz1nyj@gmeds.com</a>  |
| Mon.-Wed.<br>September 15-17         | Event:<br>Location:<br>Sponsor:<br>Contact:             | <b>17<sup>th</sup> Conference on Advanced Research in VLSI</b><br>University of Michigan North Campus, Ann Arbor, Michigan<br>IEEE Electron Device Society<br>To be placed on the conference mailing list, contact:<br><a href="mailto:arvlsi@eecs.umich.edu">arvlsi@eecs.umich.edu</a>  |
|                                      | Comment:  | Registration and information will be continuously updated at <a href="http://www.eecs.umich.edu/arvlsi">www.eecs.umich.edu/arvlsi</a>  |
| TBD<br>September                     | Meeting:<br>Time:<br>Location:<br>Sponsor:<br>Contact:  | <b>Technical Meeting</b><br>TBD<br>Ann Arbor<br>Chapter X: Engineering Management<br>Prakash Shrivastava, <a href="mailto:lnustc1.lz1nyj@gmeds.com">lnustc1.lz1nyj@gmeds.com</a>   |

**17th Conference on Advanced Research in VLSI**  
September 15-17, 1997

Southeastern Michigan (University of Michigan North Campus, Ann Arbor, Michigan) will be the site of the 17th Conference on Advanced Research in Very Large Scale Integration (VLSI) and this year is co-sponsored by IEEE's Electron Device Society. This series of conferences originated at Caltech in 1979. Since its inception, the conference has been a forum for interdisciplinary research involving VLSI circuits, systems, CAD, and theory, with an emphasis on novel ideas at an early stage of development. The Conference on Advanced Research in VLSI complements conferences such as ISSCC, ISCA, and ICCAD that focus on a single discipline and emphasize ideas further along in their development. Papers will describe all aspects of VLSI circuits, systems, methods, and tools including:

**VLSI Design:** Trends in VLSI technology and methods, clock synchronization and distribution, asynchronous system design, and advanced packaging technology.

**Circuits:** High-speed logic circuits, low-power techniques, logic styles, analog and neural circuits, conversion circuits, communication circuits, high-speed drivers and receivers.

**VLSI Systems:** VLSI chips or systems for graphics, signal processing, compression, encryption, search, etc.; integrated micromechanical, optical, chemical, and other non-electronic sensors and systems.

**VLSI Architecture:** Processor architecture, parallel computer architecture, novel memory organizations, I/O and secondary storage systems, field programmable VLSI components and systems.

**Computer-Aided Design:** Novel design methods and approaches, architectural design aids, architectural verification, logic and circuit synthesis, hardware/software co-design, circuit and logic analysis and simulation, physical design synthesis and verification, design frameworks, CAD for special purpose applications and exotic technologies.

**Theory:** Formal results relevant to VLSI and parallel computing systems: implementation complexity, partitioning/embedding, formal models, algorithms suited to VLSI implementation.

**Program Chair:** Richard B. Brown, brown@engin.umich.edu  
University of Michigan, 2403 EECS - 1301 Beal Ave.,  
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**Treasurer:** Marios Papaefthymiou, marios@eecs.umich.edu

To be placed on the conference mailing list, contact:

arvlsi@eecs.umich.edu.

Registration and other information will be continuously updated at:

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# To Inform and To Be Informed

by Diane T. Rover, Technical Activities Director

The IEEE's technical objectives center on advancing the theory and practice of electrical, electronics, and computer engineering and computer science. To meet these objectives, the IEEE sponsors conferences and meetings and publishes a wide range of professional papers, among other activities. Technically speaking, today the IEEE is a leading authority in areas ranging from aerospace, automotive, computers and communications to biomedical technology, electric power and consumer electronics. Indeed, it is a transnational organization with over 300,000 members in about 137 countries, which makes it the world's largest engineering society.

Several layers deep within the global organization of IEEE is the southeastern Michigan section (IEEE/SEM), with its approximately 4,000 members and ten chapters, spanning a breadth of technical areas. It is only natural to ask how the technical activities of our section relate to the organization as a whole. One answer to this may be inferred by navigating the IEEE Home Page on the World Wide Web by following the links through any of Technical Activities, Technical Societies (Technical Activities Guide), and Local Activities. From more than one direction, one reaches a global map of the ten Regions of the IEEE. Click on any region and you're off exploring further details. The IEEE is built upon its members, organized into societies, sections, chapters, etc., and it functions due to our efforts.

The IEEE Technical Activities Board (TAB) is attempting to use the web to more effectively disseminate information to members and share information among sections. For example, the *Sharing Activity Letter* is accessible from the TAB Home Page, <http://www.ieee.org/tab/>. It gives us "the opportunity to shout about accomplishments, lament in disappointments, call for help from peers around the world and read about the activities of IEEE in local and remote locations." In the December 1996 letter, sections or chapters in Egypt, India, Newfoundland, Taipei, and France, as well as from the North Jersey, Chicago, Beaumont, and Boston sections in the United States offer highlights and suggestions. The TAB wants our letters to keep pouring in. If you would like to provide information for the *Sharing Activity Letter*, let me know, or contact TAB directly: Jayne F. Cerone, IEEE Technical Activities, 445 Hoes Lane, Piscataway, NJ 08855-1331, phone 908-562-3908, fax 908-981-1769, email [j.cerone@ieee.org](mailto:j.cerone@ieee.org).

The *Technical Activities Guide* is another example of information available on-line. It includes listings of past, present, and future conferences sponsored or co-sponsored by IEEE, indexed by region and society. The current listing for Region 4 shows two conferences scheduled during June 1997, both in the Chicago area and sponsored by societies. The final entry in the listing is a conference in St. Paul in May 1998, sponsored in part by a society and the Twin Cities section. Thus, the on-line *Guide* is a resource about conferences, regionally as well as topically. It is surprising to see that only a relatively small number of conferences cite section co-sponsorship; sponsorship by society is the norm. Jim Woodyard, IEEE/SEM Treasurer, commented in his March 1997 *Wavelengths* article that revenues received from sponsorship of IEEE conferences have provided operational funds for the IEEE/SEM Section in past years. The section's most recent official sponsorship of a conference was the May 1996 National Radar Conference in Ann Arbor. The section is providing publicity in *Wavelengths* for the upcoming 17th Conference on Advanced Research in VLSI (September 1997, Ann Arbor), however the conference has technical co-sponsorship by the IEEE Electron Devices Society.

Another answer on how the technical activities of a section relate to the organization as a whole is implicit in the link from the IEEE/SEM Home Page back to the IEEE page. In fact, every section home page on the web points to the IEEE page (well, not every page was checked, but it's a good bet). In other words, with a click of the mouse, we step from our local activities in southeastern Michigan to the global presence of IEEE. One result of this has already been presented: we see the technical activities of our section in the context of the broader organization and, in particular, in contrast to other local activities. However, given its global perspective, the IEEE also provides guidance. One example is its portfolio of emerging technologies, accessible from the TAB Home Page. Many of the societies have filed reports on-line about key technological directions in their areas. Another example is the synopsis of technical "grand challenges" as perceived by IEEE: allow easy access to knowledge and information; provide ready access to improved health; simplify the transactions of daily life; and allow mankind to live in dignity and comfort. Local activities may be developed and evaluated according to the global directions.

In short, we, as a section, contribute to the technical objectives of the organization as a whole; as with any complex, distributed system, the collective actions of its members define its behavior. By disseminating and sharing local activities, the IEEE recognizes its members' efforts and lets sections and chapters lead by example. By promoting technical activities, the IEEE helps guide and coordinate local activities. The IEEE/SEM Section brings this process to the local level in southeastern Michigan. The technical vitality of our section is defined by the activities of each of the chapters. Furthermore, the *Wavelengths* newsletter and the IEEE/SEM Home Page serve to inform the membership. However, we have additional opportunities now more than ever both *to inform* and *to be informed*. We can continue to take advantage of the web to highlight current activities throughout the section, so that members come to use the section page as a resource and access it frequently enough that information is widely distributed in a timely fashion. This would support, for example, sharing notes on successful chapter meetings or planning joint meetings among chapters on topics of mutual interest. Beyond our section membership, we should let others know what's happening technically in southeastern Michigan in as many ways as possible; the *Sharing Letter* is only one example. Of course, we may also benefit by being aware of what's happening in other sections. Also, as Jim Woodyard noted, members can be proactive in attracting IEEE technical conferences to the area. Even without official section sponsorship and its financial benefits, the section membership prospers.

With today's technology, the IEEE is supporting local technical activities, in part, by providing access to information – information by and about sections. The IEEE/SEM Section provides similar support, facilitating and publicizing chapter activities. Already, information flows electronically through the organization, top to bottom and vice versa. So, the question is not whether *to inform and be informed*, but rather how to do so *effectively and efficiently* to meet the IEEE's technical objectives at the sectional level. Your comments are welcome.



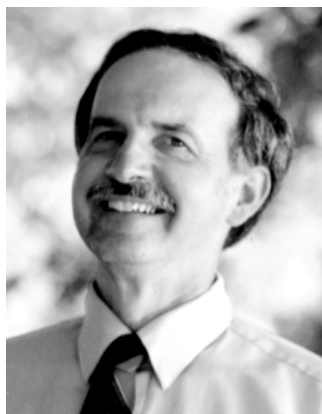
## EMC Update

by Dennis Barberi, Chapter Chair

Greetings from the IEEE/SEM Electromagnetic Compatibility Chapter. I am Dennis Barberi, Chapter Chair for the 1996-97 program year. With the help of Vice Chair Scott Lytle and Secretary Kimball Williams, the EMC chapter provides a forum for educating engineers about the impact of EMC related problems and their solutions. In addition to this educational role, the EMC chapter, through local meetings and presentations, provides an opportunity for engineers and students from various disciplines, organizations, and backgrounds to meet, compare problem solving techniques, discuss common organizational issues and network in general.

During the past year, we have hosted speakers from the IEEE EMC Society Distinguished Lecturer Program, universities, and local companies to speak on a variety of subjects including: electromagnetic modeling software, automotive alternator transient simulators, expert systems for applying EMC design rules in the product design process, electrostatic discharge, lightning protection, and printed circuit board EMC design techniques.

As you can see from the various topics, electromagnetic compatibility affects the design and performance of much of the electronic equipment on which we have become dependent in today's high tech society. (Electromagnetic compatibility is defined as a condition that allows electronic equipment and systems to operate in close proximity without a degradation in performance due to electromagnetic coupling.) I am sure we all have experienced incidences of interference in portable telephones, television sets, audio equipment, and computers where mysterious "glitches" cause video distortion, audio noise and loss of data. As we increase our use of electronic equipment, these problems can become even more severe if proper design techniques are not used to minimize them.



I hope the topics presented at the meetings will help increase awareness of these EMC issues. I particularly would like to see more joint chapter meetings to allow the members to further expand their interaction with other engineering disciplines. Any suggestions on joint presentations with other chapters or topics of interest are welcome.

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## PC Board Layout Report

by Kimball Williams, Secretary



On March 24, the IEEE Southeastern Michigan EMC Chapter presented a discussion of the subject of PC Board Layout for Electromagnetic Compatibility by Dr. Tom Van Doren of the electrical engineering department at the University of Missouri-Rolla. Dr. Van Doren explored the basics of emissions and immunity for PC boards on a fundamental physical level and extended the discussion to include practical applications such as:

- How should power be distributed in a complex mix of analog, digital and power semiconductors?
- What effect does the placement of by-pass capacitors have on PC board performance?
- What is the path of current loops that must pass between PC board layers by way of vias?
- Is the placement of connectors on the PC board of significance to overall EMC performance?

Dr. Van Doren has 28 years of teaching and industrial experience in the areas of electronic data acquisition, microwave, communications systems, semiconductor processing and electronic circuit design. He has received two outstanding teacher awards from the University of Missouri-Rolla, is an experienced short course director and instructor, and has the ability to lead participants in informative discussions. Over the past 12 years, Dr. Van Doren has taught more than 260 courses related to electrical noise reduction. More than 8000 engineers and technicians have attended his courses.

The meeting took place at the Eaton Engineering and Research center in Southfield, Michigan in the main conference rooms. Refreshments were served before the presentation, and twenty-seven members of the EMC Chapter attended Dr. Van Doren's lecture. After the formal presentation, Dr. Van Doren discussed conceptual and practical problems with those who remained.

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## The Past Year in Retrospect

by Dave Horvath, Section Chair

(Continued from Page 1)

We successfully met one of my personal goals by making great strides in improving our relationships with the ten student branches in our section's geographical area. Numerous articles in *Wavelengths* documented the impressive activities of our student branches. We organized and held our first student branch leadership workshop [thanks to Jim Woodyard and Vikas Sinha]. We increased student attendance and participation at our section meetings and also had section officers (such as Mo Zohdy, Kimball Williams, and myself) attend various student branch meetings. We were pleased to have 20 students from the University of Windsor travel to Ann Arbor on a school night to attend an Aerospace Electronics Chapter meeting in Ann Arbor. Deciding which school was most deserving of our Outstanding Student Branch Award was particularly difficult this year. [But well-deserved congratulations go to St. Clair College and faculty advisor George Peters!]



*St. Clair College Student Branch members, recipients of the IEEE/SEM Student Branch Involvement Award*

During the past year we have actively sponsored national IEEE conferences in our area. Last year, several Executive Committee members (Bob Desoff, Val Liepa, Kamal Sarabandi, and myself) helped organize the 1996 National Radar Conference, and this year we are providing publicity support to the Advanced Research VLSI Conference coming up in September 1997.

We continued our time honored spring meeting tradition of recognizing efforts of our section's members through our awards program. We recognized two IEEE Fellows at the meeting, and we endorsed the

nominations for two 1998 fellow candidates. We also recognized numerous other individuals as described in the April *Wavelengths*. [Thanks to Dave McKendry.]

- We improved the function and operation of our section in many ways [responsible individual in brackets]:
- Started up the tenth chapter, Engineering Management, for the section. [Prakash Shrivastava]
- Implemented more rigorous budgeting and control of section funds. [Jim Woodyard]
- Successfully submitted our meeting report summaries and Treasurer's report on time to IEEE Headquarters. [KC Liu and Jim Woodyard]
- Planned an EC meeting in Windsor to more actively involve our Windsor members. [Tarek Lahdhiri and George Peters]
- Held first new officer orientation and training session since 1994. [Don Bramlett, Sandy and Mark Hunter, Jim Woodyard, and Dave McKendry]
- Initiated graduates of the last decade (GOLD) program in our section [Mark and Sandy Hunter]
- Sent section representatives to IEEE's Section Congress in Colorado as well as to the Professional Activities Conference (PACE) in Arizona. [George Peters, Mark and Sandy Hunter]
- Improved use of e-mail for EC communications (essentially 100% of EC members have an e-mail address). All EC meeting notices, agendas, and minutes were transmitted via e-mail.
- Enhanced the section's web site format to more effectively meet its objective of keeping the members up to date on the latest activities. [Mark Hunter and Chuck Severance].

*George Peters is the incoming Section Chair. Dave Horvath will maintain an active role as Past Section Chair during the upcoming year.*

During my attendance at the January 1997 Region 4 meeting in Chicago as our section's representative, I noted that our approaches, accomplishments, and other activities as a section placed us at or near the top of the best sections in the region. In addition, we are fortunate to have two Southeastern Michigan Section members (Don Bramlett as East Area Chair and Shiv Bajpayee as Chair of Technical Activities) on the Region 4 Executive Committee. Also, we arranged for Madelyn Harwood, Region 4 Chair of Awards and Educational Activities, to speak at a recent SEM Executive Committee meeting on pre-college education and Region 4 awards. I conclude that our interface with Region 4 has improved considerably during the past year, which was a personal goal of mine.

In summary, I am quite pleased with the section's progress and achievements during the past year. It is not feasible to identify and discuss all the contributions of all the section's dedicated, hard working individuals (for example, all chapter officers and unmentioned section officers) working behind the scenes to make this past year successful. However, I will conclude this article with well deserved thanks to all those who actively supported my efforts and objectives during this past year.

### Graduates Of the Last Decade

If you graduated in the last ten years (or so), then you are already a GOLD member, and we are planning some fun events as well as some informative sessions for you.

Send your name, address, phone, e-mail address to:

IEEE/SEM GOLD

Mark A. Hunter

412 Edmund Ave.

Royal Oak, MI 48073-2626

or e-mail [m.hunter@ieee.org](mailto:m.hunter@ieee.org)

*If you have any questions, call*

*Mark Hunter at (248) 588-0355.*

We are currently trying to set a date for a meeting this fall covering **Early Career Financial Planning**. The speaker will be a financial planner from American Express Financial Planners. (No sales pitch)

# Serving ALL of our Section Members

by Mark A. Hunter, Membership Director

When I volunteered to help maintain the local membership database for the *Wavelengths* mailing list several years ago, I had no idea it would lead to my current roles of *Wavelengths* Co-Editor and Section Membership Director. Through these positions I have had the opportunity to serve the local membership and even become involved in a number IEEE activities outside of our section. One of my greatest challenges as a section officer continues to be how to serve all of the section members, even those who are not active locally.

Being a member of IEEE means very different things to different members. Our student members are generally very active in their student branches. Some of our members participate regularly in chapter and section activities while others take on roles at the regional or even international level. The majority of our members, however, rarely participate in any IEEE activities. Many members do not pay much attention to the local section at all.

## Goals as Membership Director

There is no well defined list of things to do to be a successful Membership Director and even fewer ways to know if the membership is actually being served. Some of my goals continue to be:

- Make sure that we have correct contact information for all of our members.
- Improve communications with our members.
- Promote a more active local membership.

One of my primary initiatives has been to try to improve our local membership database. I have worked with IEEE Headquarters extensively during the past few years in this area as well as created custom local programs. We must have an accurate local database to enable chapters, branches & officers to contact members and achieve successful activities. One of my goals for the upcoming year is to identify all of the questionable addresses in our database and utilize volunteers to personally contact these members to make sure they are receiving our mailings. We can't serve our members if we can't contact them, and members are not receiving the full value of their membership if they are not receiving our communications.

Another initiative has been to improve our communications with members. Jim Woodyard did a superb job with *Wavelengths* for many years, and I hope that we have been

able to continue his on-going improvements. I am also working with Charles Severance to improve the section's web page. Our officers should be able to rely on these forms of communications for distributing up to date information to the members.

The hardest area to address as Membership Director is promoting IEEE and a more active local section. One new program from IEEE Headquarters is the Graduates Of the Last Decade (GOLD) program.

## What is GOLD?

GOLD is a program for IEEE members who have graduated in the last 10 years. The GOLD program provides social and professional activities for young engineers. These activities are organized by fellow GOLD members. The activities are not predefined sessions mandated by IEEE headquarters; they are developed from ideas and interests of our local GOLD members. GOLD is what our members make it!

## Why do we need GOLD?

IEEE student members interact with other IEEE members every day and have regular IEEE meetings and activities. For student branches, IEEE provides access to technical information and activities as well as a way to socialize with other people that share similar interests.

After graduation, many members find that IEEE becomes just an organization that sends you magazines with little or no interaction with other engineers. It's no surprise that a large percentage of recent graduates let their membership lapse.

That's what GOLD addresses. We want to keep recent graduates active and make the IEEE more than just a pile of magazines for all members. GOLD isn't meant to compete with chapter or section activities; it is meant to strengthen the section and improve involvement in all activities. We want the enthusiasm of our student branches to infect the entire section.

## How does GOLD help the section?

We want to keep engineers active and use their enthusiasm to make a more active local section. GOLD activities are not limited to just GOLD members. GOLD may host activities for the whole section. GOLD members will get the chance to socialize with one another and with other members to share ideas and plan even more great activities. We hope that GOLD members will become active

in chapter and section activities also. So not only does GOLD keep members in IEEE, but it is also a way to help create a stronger section.

## What activities does GOLD have?

The GOLD program and activities by defined by members. The members decide what they would like to do (with some guidance from more senior members). GOLD is meant to provide both professional and social activities.

### Professional activities might include:

- Help on finding a job
- Planning for your financial future
- Finding a mentor
- Dealing with performance reviews
- Business lunch etiquette
- How to organize an event
- Helping Student Branches

### Social activities might include:

- Going to a museum
- A family picnic at the Zoo
- A one day canoe trip
- A night at a comedy club
- Sporting events
- Crashing a SciFi convention
- Helping Student Branches

There is no set of required activities. If a few engineers have a common interest, get together and do something!

## FREE GOLD for section members

To become a GOLD member, all you have to do is graduate. There are no additional fees or societies to join. We also don't bar you from GOLD activities at exactly 10 years after graduating with your first degree. Activities will generally be open to all members, but they are organized and run by GOLD members.

## More Information on the Web and in Future Issues of *Wavelengths*

Be sure to check out the section web pages and articles in *Wavelengths* this fall on how you can make sure that you are providing IEEE with a proper address, obtaining reduced membership fees for recent graduates and other upcoming membership programs. Suggestions as well as requests for information are always welcome.

## Contact Information:

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412 Edmund Ave., Royal Oak, MI 48073-2626

### Spring Section Meeting Report

by George Peters, Section Vice Chair

The IEEE/SEM Spring Section Meeting took place on April 14 at the Fairlane Development and Training Center and the Fairlane Club in Dearborn, Michigan. The final count indicated that there were 110 attendees. Thirty of these attendees were students from the various universities and colleges located in the Southeastern Michigan Section. Once again, there was respectable representation from Windsor.

Nine well attended, concurrent technical sessions took place in the breakout rooms of the training facility. The Circuits and Signal Processing, Vehicular Technology, Communications and Aerospace Electronics, Trident, Computer, Power Engineering and Industrial Applications, EMC, and Power and Industrial Electronics Chapters all sponsored technical sessions. Additionally, the student track session explored the challenges of engineering the car of tomorrow.

Immediately following the technical sessions, section members converged at the Fairlane Club to socialize and visit vendor and display tables. Over the last several meetings, members have been finding these information and display tables of great interest and value.



Past Chair Dave McKendry welcomes 1997-98 Section Chair George Peters

Dinner and the awards ceremony took place in the club's elegant ballroom. The awards ceremony recognized the efforts and achievements of some of the key members in the Southeastern Michigan

Section. The awards included two IEEE Fellows, Outstanding Section Involvement, Outstanding Chapter Involvement, Outstanding Student Branch, and a recognition from the Computer Society.

The featured presenter, Dr. Leo E. Hanifin, delivered a compelling presentation titled "Academia's Response to Industry Needs." The presentation included various demonstrations of learner-centered curriculum development, including a graphical interactive software package which steps the students through well-organized lesson plans.

The IEEE/SEM Spring Section Meeting was a great success. The scheduled events took place in a timely manner, the facilities were exquisite, and overall, the members enjoyed an informative and social evening. The section would like to express their appreciation for all the efforts put forth by the Ford Motor Company in providing the use of the state-of-the-art facilities of the Development and Training Center. Such support is key in maintaining the interests and involvement of the membership.



Some of the 30 students attending the Spring Section Meeting enjoyed dinner at tables sponsored by local companies.



Dave Horvath speaking at the Spring Section Meeting



## Spring Meeting Report

by Brian Harrington, Chapter VII Chair

The Chapter VII speaker at the Spring Section Meeting was Mr. Brian Cooper from the Lansing Board of Water & Light. Mr. Cooper spoke on utility deregulation from a municipal utility's perspective. Mr. Cooper explained the history of utility regulation in Michigan, how a series of laws dating back to the early 1900's control the utility's ability to serve customers in Michigan. He explained that the Federal Government is now pushing for open access to these customers, which causes many conflicts with existing laws. Mr. Cooper's presentation was open to discussion of these current issues, many of which have not been resolved. Chapter VII thanks Mr. Cooper for taking time to make this presentation to our members.



*George Peters recognizes the technical session speakers*



*Dave McKendry presents the Outstanding Student Branch Award to St. Clair College Officers*

## New IEEE Fellows

### Joseph M. Giachino

For contributions to micromechanical and microelectro-mechanical control systems.

### Jessy W. Grizzle

For contributions to the theory and practice of nonlinear control system design.

### Pierre Tshimanga Kabamba

For contributions to the development of sampled-data hold function control of dynamic systems.

### Bruno Patrice Bernard Lequesne

For contributions to the development of

electromechanical actuators for automotive applications.

### Dennis Paul Nyquist

For contributions to the theory of open-boundary waveguides and wide band radar.

### Gabriel M. Rebeiz

For the development of novel microwave and millimeter-wave antennas, receivers and circuits using micromachining techniques.

### Stanley Russell Robinson

For leadership in advancing the field of electro-optic and radar remote sensing.



# National Job Listing Service

Travel the Information Superhighway to Your Next Job!

IEEE-USA has developed an electronic job-listing service that gives IEEE members free information on job openings in every region of the country.

To obtain current job listings, set your web browser to URL [www.ieee.org/jobs.html](http://www.ieee.org/jobs.html) or send a message to any of the following e-mail addresses (no subject line or text message is needed):

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- Region 2: [info.ieeeusa.jobs.r2@ieee.org](mailto:info.ieeeusa.jobs.r2@ieee.org)
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# Science Fair Award Winners

This is the third year that IEEE/SEM has participated in the Science and Engineering Fair of Metropolitan Detroit. The section provided a dedicated team of judges who selected projects related to electrical, electronics and computer engineering for awards. Judging for the 40th Annual Science Fair was conducted on Wednesday, April 16. The following four section members volunteered to be judges and performed an admirable and difficult service, especially given the number of very good projects reviewed this year. Thanks also to the engineers' companies for supporting the involvement of these section members at the science fair.

Detroit Edison: Sat Basu & Don Bramlett  
Ford Motor Company: Michael Blommer  
Kansei Engineering/NVH Technologies: Scott Amman

The two IEEE First Place Grand Award recipients were each presented with a formal certificate and a cash prize. The students receiving this honor were:

Gregory L. Charvat, a junior at Grosse Pointe South High School in Grosse Pointe, for his project "Identifying and Reducing Radio Frequency Interference Through Spectrum Analysis."

Joseph P. Heremans, a freshman at Detroit Country Day Upper School in Beverly Hills, for his project "Thermoacoustic Refrigerator."

by Don Bramlett, IEEE/SEM Section Advisor

IEEE/SEM also presented Honorable Mention Recognition Certificates to three other students for their notable projects. These certificates were presented to:

Zachary D. Williams, a junior at Cass Technical High School in Detroit, for his project entitled, "Optimizing Optical Fibers."

Asha M. Maxey, in the 8th Grade at Benjamin Sherman Middle School in Holly, for his project entitled, "Does the Number of Magnets in a DC Motor Affect It's Speed?"

Christopher R. Dye, in the 8th Grade at Meads Mill Junior High School in Northville, for his project entitled, "Solar Power."

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## Student Branch

# Lawrence Technological University Student Branch

The Lawrence Technological University Student Branch of the IEEE strives to inform our peers, especially freshmen and sophomores, of the fantastic career shaping benefits within the IEEE.

In the spring '97 term, the chapter offered a seminar on the Future-car competition. Professor Brancik, the head electrical engineer supervisor for the project, described the general operation of the vehicle, competition requirements, and detailed functions of the electrical system.

The LTU chapter is planning to sell student protoboards as a chapter fund-raiser. This project will be in full swing in the fall. If the project does well, the chapter plans to sell other EE student equipment.

The chapter participated in the LTU Admissions Phone-A-Thon. This project is designed to answer questions for potential students, give positive feedback about Lawrence Tech. to spur interest, and to encourage participation in student run organizations, such as the IEEE.

Our university's motto is theory and practice. Accordingly, the Lawrence Technological University student branch of the IEEE will continue to provide events and seminars that support the motto and further contribute to the IEEE's desire to provide its members with the foremost in technical information and resources.



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## IEEE/SEM Executive Committee Meeting Reports

by K. C. Liu, IEEE/SEM Secretary

**April:** The ninth IEEE/SEM Executive Committee meeting for the 1996-97 year was held on Monday, April 7, at the Eaton Corporate Research & Development facility in Southfield, Michigan. Twenty one people attended the meeting, presided over by Section Chair David Horvath.

**May:** The tenth IEEE/SEM Executive Committee meeting for the 1996-97 year was held on Monday, May 5, at the Eaton Corporate Research & Development facility in Southfield, Michigan. Twenty one people attended the meeting, presided over by Section Chair David Horvath. The main purpose of the meeting was orientation for new officers.

- A representative from American Express, Margaret Cull, presented materials for early financial planning and pre-retirement financial programs.
- IEEE Region 4 officer Madelyn Harwood described individual & section awards offered by Region 4 as well as some offered by IEEE USA. She also presented the programs undertaken by IEEE headquarters in pre-college education.
- T. Lahdhari reported on the prospect of holding the June Executive Committee meeting in Windsor. He reported the University of Windsor may offer the meeting facility free of charge. However, no meal will be provided at this point. The motion was made and approved to have the subcommittee for meeting in Windsor look into the issue and make a recommendation to the Executive Committee.
- D. McKendry reported that the section has lost track of the perpetual plaque for the Outstanding Student Branch Award. He asked that previous student branch winners look for the plaque and turn it in.
- J. Woodyard briefed the Executive Committee on the Student Leadership Workshop held on April 5 at Wayne State University. The turn-out was lower than expected, but the feedback from participants was positive.
- G. Peters reported that there are 55 pre-registrations for the Spring Section Meeting. D. Silversmith reported on displays and corporate table sponsors.
- M. and S. Hunter reviewed the annual plan for *Wavelengths*. They also distributed *Wavelengths* survey forms.
- E. Strangas reported for Chapter II that GM had agreed to finance the expense entailed by the speaker of the chapter for the Spring Section Meeting.
- R. Desoff reported that Chapter III sponsored a talk at Wayne State University on March 19 and is all set for the coming Spring Section Meeting.
- N. Al-Holou reported that Chapter V had a meeting in March at Michigan State University. He also mentioned that he is the Chair of the American Society for Engineering Education-North Central Section (ASEC-NC) and inquired about the section's interest in financial and administrative support for its conference to be held this year.
- B. Harrington reported that his email address has changed and has communicated the change to several section officers. He also reported that Chapter VII is all set for the Spring Section Meeting.
- D. Barberi reported that Chapter VIII had a technical meeting on March 27 on EMC issues in PCB layout. In addition to the Spring Section Meeting, the chapter has planned for another technical meeting on May 27 and one in September.
- J. Miller mentioned the parking lot at the Fairlane Club is under construction. The affect on the Spring Section Meeting is being examined.
- D. Silversmith reported that the Lendman Group had held a job fair in March for which Wayne State University students provided support. Another job fair is scheduled in July, which may be difficult to staff with students.
- M. Hunter reported that despite lower than expected turn-out for the first G.O.L.D. meeting on March 22, more meetings will be scheduled.
- D. Bramlett reported that the Science and Engineering Fair would take place the following Wednesday, April 16. There are two new award categories this year. He also made a correction that the year of the IEEE Board of Directors' meeting in Dearborn is 1998, rather than 1997 as reported in March.
- J. Woodyard presented the treasurer's report for the month of March. He also reported that IEEE Headquarters has investment programs in which the section can participate. He noted some changes in item names in treasurer's report. The changes are expected to help the treasurer in preparation of the annual financial reports for IEEE Headquarters.

- D. Bramlett gave a presentation on IEEE's corporate objectives, education activities, resource sharing, professional and societal programs, geographical and administrative organizations, membership grades and awards, and introduced the on-line information kit: ROOT '96.
- D. Horvath gave a summary of the resource guide available from IEEE Headquarters. He also briefly described the responsibilities and functions of section officers.
- M. and S. Hunter presented information about *Wavelengths* and keys to success with *Wavelengths*. Announcements for chapter activities will be updated promptly on the section's web page. They also revealed the deadlines for future issues of *Wavelengths* and urged the new officers to send in their photos for the September yearbook issue by July 15.
- J. Woodyard presented the section budget and finances, procedures and requirements for receiving the section rebate from IEEE Headquarters, and budget and reimbursement policies.
- D. McKendry presented success factors for chapter activities along with examples from his experience in running the Computer Chapter.
- D. Horvath described how the section e-mail alias is set up and the use and request of the e-mail aliases from IEEE Headquarters. He also distributed materials for IEEE Information Files and RAB Facts Line which is a fax-on-demand system.
- G. Peters reported the estimated attendance and revenue figures for the Spring Section Meeting. The status of preparation for Fall Section meeting was presented for which both the keynote speaker and the facility are in good order. The Executive Committee expressed gratitude toward Sylvia Karmanoff for reserving the GM Management Center for the Fall Section Meeting.
- J. Woodyard presented the April Treasurer's report. He reported IEEE/SEM Section rebate has been received and that payment was received from ERIM for ads in *Wavelengths*.

Due to conflicts with a few officers' schedules, the June Executive Committee meeting that was planned for June 2 in Windsor was on hold. The meeting date will be worked out and announced later by the Windsor meeting committee.

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Note: These meeting reports had not been approved by the IEEE/SEM Section Executive Committee at the time they were submitted to *Wavelengths*.

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Chapter I: Circuits & Signal Processing

## Call for VLSI Simulation Papers

SIMULATION, the Society for Computer Simulation International's monthly journal, is planning a special issue on the role of simulation in design automation of VLSI circuits and systems. The guest editor for the issue is Professor Hoda S. Abdel-Aty-Zohdy of the Microelectronics System Design Laboratory at Oakland University.

High performance and very large scale integrated (VLSI) electronic systems designs are necessary for successful and globally competitive modern engineering applications. Electronic design automation (EDA) tools are rapidly growing and address aspects of synthesis, design, testing, and packaging. Simulation and functional verification at various levels of design hierarchy play a major role in the effective implementation of integrated circuits and systems.

Currently, a mix of full-custom and semi-custom designed components are required, as well as a hybrid of analog and digital elements particularly with novel integrated systems. These encompass monolithic integrated circuits, Multi-Chip-Modules, Flat-Panel-Display technologies, or Micro-Electro-Mechanical-Systems.

by Hoda S. Abdel-Aty-Zohdy, Chapter I Vice Chair

Integrated microelectronic systems design and design automation involve comprehensive simulations at the behavioral-level, logic-level, and switch-level in addition to circuit-level, device-level and process-level simulations for novel device structures.

The aim of this special issue is to contribute to recent results of ongoing research and development of EDA tools for VLSI microelectronic systems. These include: newly developed analysis and simulation tools; multi-technology integration; incremental designs and re-use of developed design components; documentation and validation; design for testability; complete systems design; integrating design automation tools in engineering curriculum and practical applications; models and parameter extraction tools; and interactive simulation tools.

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### Important dates:

Paper submission due: June 30, 1997  
Review results: August 1, 1997  
Final manuscript due: September 1, 1997  
Expected date of publication: October 1997

### Please send manuscripts to:

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