



WAVELENGTHS

### 1999 Fall Section Meeting

by John M. Miller, IEEE/SEM Vice Chair



The IEEE/SEM Fall Meeting was held on Wednesday, Oct. 27<sup>th</sup> at the Fairlane Training & Development Center in Dearborn. This event was co-sponsored by IEEE/SEM and Ford Motor Co., Vehicle Electronic Systems Department. On behalf of IEEE/SEM executive committee we extend our appreciation to Ford for co-sponsoring this event.

The program committee consisted of several individuals who collectively put in many long hours of preparation to make this meeting a success. The fact that none of this would happen were it not for the generous volunteer activities of so many of our

members attests to their dedication to IEEE and to their profession. I would like to extend my sincere thanks to all who contributed, in particular: Dr. Anthony Will from GM NAO, Prof. Ece Yaprak from WSU, Dr. Tarek Lahdhiri from the University of Windsor and Mr. G.



Attendees enjoying dinner and conversation

*continued on page 4*

### IEEE 1999 Region IV Recognizes Two SEM Section Members

IEEE Region IV recently recognized two SEM Section Members as part of its annual awards program: **Dave McKendry**, **Dave Horvath**. These awards were presented at the SEM Fall Section Meeting, IEEE, which has close to 300 local sections, is organized into regions to administrate and facilitate services to its members. Within the US, there are six Regions and the Southeastern Michigan (SEM) Section is one of 30 sections belonging to Region IV. Region IV encompasses 10 states of the Midwest including Ohio, Michigan, Indiana, Illinois, Wisconsin, Iowa, Minnesota, North Dakota, South Dakota, and Nebraska. The SEM Section is fortunate to have several of its members (including Don Bramlett, Mark Hunter, Sat Basu, and Chuck Severance) active in supporting Region IV and its members.

David G. McKendry is awarded the IEEE Region 4 Outstanding Member Award for exceptional efforts and instrumental contributions at the national, section, and chapter levels. He is to be particularly recognized for his improvements to the organization and administration of Southeastern Michigan Section and by example other sections in Region 4. Through his insightful guidance and suggestions, the Section's semiannual meetings have become impressive mini-conferences, which have more



Award recipients at the Fall Section Meeting  
David Horvath, PE  
Region 4 Outstanding Engineer  
David McKendry  
Region 4 Outstanding Member

than tripled in attendance through his efforts and foresight and have become an example for many other Region 4 Sections to follow. His notable improvements include:

- The highly successful present format of chapter breakout sessions followed by social period dinner

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## 1999 Region IV Recognizes SEM Section Members

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and keynote speaker;

- Use of subcommittees to improve membership involvement in Section activities;
- Successful recruiting and mentoring of new and energetic officers to the Section's Executive Committee;
- Use and implementation of goal setting and followup; and
- Suggestions of successful approaches from other professional societies.

His membership efforts both nationally and locally are tireless and without peer. He is a past Section Chair and has been a mentor for many others who have followed him for this office. He is also active in the Society of American Engineers where he is presently a local section Vice President for membership development. He was also recently elected to the Board of Governors of IEEE's Computer Society and has been active for many years in professional activities support at the national and local level.

He completed his BSEE in 1980 and his MSEE in 1983 at Marquette University and an MBA from Wayne State University in 1988.

David Horvath, PE is awarded the IEEE Region 4 Outstanding Engineer Award for invaluable contributions and achievements in the areas of power production, aging assessment and management approaches, information management improvement, standards activities, and local section support. He has over 25 years of experience in the areas of research, engineering consulting, design, and project management and has authored or supervised the preparation of over 50 publications, major technical analyses, and engineering reports. In recent years, his technical contributions have been in five important but diverse areas. He has:

- Developed an innovative approach for determining remaining life in electrical cable insulation resulting in two patent applications. It is widely accepted that one of the most potentially limiting roadblocks to achieving life extension in electric power plants (as well as in other facilities) is the inherent difficulty in predicting residual useful life of electric insulation.
- Assisted Professor Terry Kammash of the University of Michigan's to further refine Dr. Kammash's gas dynamic mirror rocket propulsion system concept. This concept is one of only a few considered viable and achievable in the near term as a means for deep space exploration (including a manned mission to Mars).
- Completed participation in and management of a major information management improvement project for an electric utility client. This project emphasized the importance

of controlling and tracking design basis requirements. Extensive cost savings as well as improved regulatory compliance is anticipated to result from this project for Advent's client.

- Supervised and guided the successful completion of a major reanalysis of a client's power plant cooling system in a way which both improved and redefined margin availability.
- Chaired two IEEE standard working groups which revised and vastly improved the usability of standards IEEE 692 (Security Systems) and IEEE 1205 (Aging Assessments).

Mr. Horvath is part-owner and President of Advent Engineering Services, Inc. located in Ann Arbor, MI. In this role, he serves the industry as Principal Consultant, Project Manager, and Research Investigator. Mr. Horvath received his BSEE from West Virginia University in 1972 and an MSE in Nuclear Engineering and an MSE in Electrical and Computer Engineering both from the University of Michigan in 1979 and 1981. He is a past Chair of the IEEE SEM Section and has previously chaired the local section and local chapter of the American Nuclear Society and Michigan Society of Professional Engineers, respectively. He is a registered professional engineer in six states as well as a certified energy auditor technical analyst.

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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-13)

#### X Engineering Management:

Eng. Management (EM-14)

Wavelengths

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Section: [ewh.ieee.org/r4/se\\_michigan/ieeesem](http://ewh.ieee.org/r4/se_michigan/ieeesem)

IEEE: [www.ieee.org](http://www.ieee.org)

IEEE Region 4: [ewh.ieee.org/reg/r4/](http://ewh.ieee.org/reg/r4/)



## Calendar of Events

Event: **Technical Presentation "Comparison of Methods to Evaluate the Performance of a Three-Meter Semi-Anechoic Chamber (Robert F. German)."**  
When: Tuesday, January 11, 1999  
Time: 6:00PM  
Location: MIRA North America (47523 Clipper street, Plymouth, MI 48170-2470)  
Sponsor: Chapter VIII EMC  
Contact: Contact Graeme Rogerson 734-455-6352 for directions.  
Comments: No charge for this technical presentation, Refreshments Served at 5:30

Event: **Executive Committee Meeting**  
When: Tuesday, January 10<sup>th</sup> or 11<sup>th</sup> ??  
Time: Dinner at 6:00PM, Meeting 6:30PM  
Location: Eaton Corp., 26201 Northwestern Highway, South field  
Contact: Kimball Williams, 248-354-2845

Event: **2000 Michigan Regional Future City Competition**  
When: Tuesday, January 18, 2000  
Time: 8:30 am to 4:00 pm, at (Judging is from 8:00 am to 11:00 am)  
Location: Spirit of Ford in Dearborn Oakwood Blvd., Dearborn  
Contact: Don Bramlett 313-235-7549(O), 313-525-5422(H) or email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org), or [bramlettd@dteenergy.com](mailto:bramlettd@dteenergy.com)

Event: **IEEE Region 4 Committee Meeting**  
When: Saturday and Sunday, February 5 & 6, 2000  
Location: The O'Hara Marriott in Chicago, IL  
Contact: Don Bramlett 313-235-7549(O), 313-525-5422(H) or email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org), or [bramlettd@dteenergy.com](mailto:bramlettd@dteenergy.com)

Event: **ESD Affiliate Council Gold Award Banquet**  
When: Wednesday, February 23, 2000  
Time: 6:00 pm Cocktails, 7:00 pm Dinner, 8:00 pm Program  
Location: The Dearborn Inn; Dearborn; MI  
Contact: Don Bramlett 313-235-7549(O), 313-525-5422(H) or email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org), or [bramlettd@dteenergy.com](mailto:bramlettd@dteenergy.com)

Event: **National Engineers Week**  
When: February 20-26, 2000  
Location: TBD  
Contact: Don Bramlett 313-235-7549(O), 313-525-5422(H) or email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org), or [bramlettd@dteenergy.com](mailto:bramlettd@dteenergy.com)

Event: **Science and Engineering Fair of Metropolitan Detroit (SEFMD)**  
When: March 18-20, 2000.  
Time: Judging on Saturday, March 18, from 8:00 am to 11:00 am  
Public Viewing on Sunday and Monday, March 19 & 20  
Location: Michigan Hall at Cobo Hall in Detroit  
Contact: Don Bramlett 313-235-7549(O), 313-525-5422(H) or email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org), or [bramlettd@dteenergy.com](mailto:bramlettd@dteenergy.com)

Event: **Spring Section Meeting**  
When: Wednesday, March 29  
Time: 5:00PM-9:00PM  
Location: University of Michigan (North Campus)  
Featured Speaker: Dr Mary Rosenkrantz; Director of Information Institute at AFRL  
Topic of Talk: "Collaborative technologies"  
Contact: John Miller at or [jmi11e24@ford.com](mailto:jmi11e24@ford.com)



*Capt. Al Haynes, United Airlines retired*

Edzko Smid from Oakland University. Special thanks to the WSU student branch members who volunteered their services to assist with parking at FT&DC, posting signs for directions and assisting participants find their way to technical sessions and to the banquet. I thoroughly enjoyed working with the program committee and volunteer students. I wish to extend my appreciation to this fine team on behalf of IEEE/SEM!

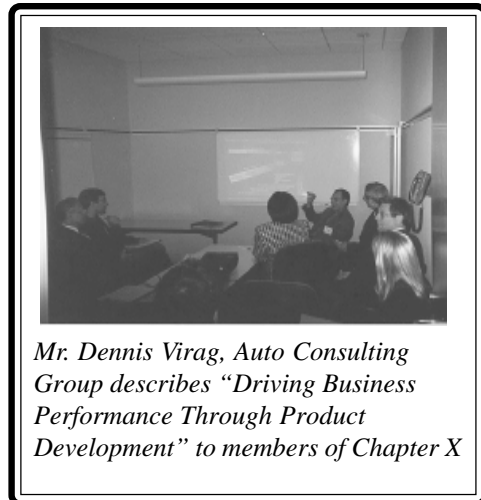
The keynote speaker, Capt. Al Haynes, United Airlines retired, presented the *Flight of UA 232* and discussed the teamwork both in the air and on the ground that contributed to so many individuals surviving the crash in July 1989. Of particular note was the importance that Capt. Haynes attributed to the cool headed air traffic controller in Sioux City, Iowa. The fact that this controller remained calm the entire time contributed to the flight crew remaining calm and focused which transferred to flight attendants remaining calm and consequently to the passengers remaining calm. The presentation by Capt. Haynes was very engaging and his insights into the entire event as seen from the left seat of Flight 232 held the entire audience captivated for over 90 minutes.

### **Registration and Attendance**

In the past when the IEEE/SEM meeting was held at FT&DC we were unable to accommodate the plenary session due to lack of facility, and held the registration and technical sessions at FT&DC then participants were guided next door to the Fairlane Club for dinner and the keynote presentation. With the opening of the North wing at FT&DC we are now able to host the entire event in a world class facility.

There were 140 total registrations. Some attendees elected to attend only the technical sessions. Prior to the event, we budgeted 125 dinners with some margin for no shows or overflow without incurring excessive expense. FT&DC banquet services will place set the number of dinners budgeted, and this year, because of at the door registrations we increased the dinner count to 130. Of these, 121 meals

were served with 16 of those being IEEE/SEM guests. Guests include the keynote speaker and his/her guest plus technical session speakers and IEEE/SEM award recipients. Thanks to a good pre-registration response by our members we were able to project the total dinner count very closely. Early at the door registrations prompted the program committee to revise the dinner count upward to 130. IEEE/SEM is charged for each place setting regardless of attendance for dinner or not. This year nine dinners (all vegetarian) were paid for but not used. 100% of the regular dinners



*Mr. Dennis Virag, Auto Consulting Group describes "Driving Business Performance Through Product Development" to members of Chapter X*

*continued on next page*

Applied Dynamics International's

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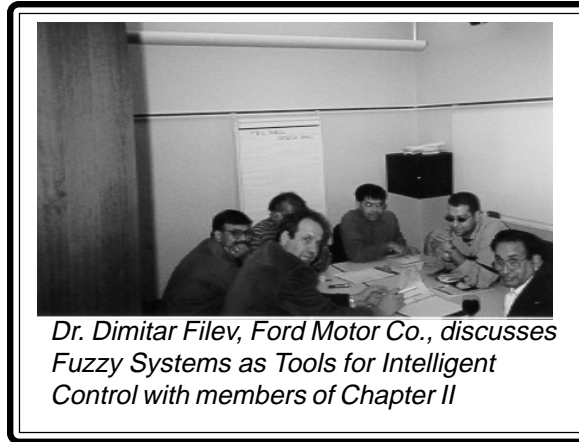
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were consumed. This illustrates the importance of getting early counts on meal preferences.

*for a breakdown of IEEE/SEM attendance.*

Looking back at past IEEE/SEM meetings we can see that attendance ranges between 111 and 148 participants. In determining our meeting site we consider a facility with a capacity for 175 or more persons. In fact, the program committee solicits members to propose future meeting sites that both meet the needs of the section and are willing to co-sponsor the event so that IEEE/SEM incurs no additional cost. *See next page*



*Dr. Dimitar Filev, Ford Motor Co., discusses Fuzzy Systems as Tools for Intelligent Control with members of Chapter II*

For convenience to our members, IEEE/SEM now accepts pre-registration payments by cash, check or Visa. The 1999 Fall Meeting was our first experience with credit card registration and we found that it was used by approximately one fourth of the registrants. The convenience of credit card

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<b>Chapter</b>	<b>Name of Speaker</b>	<b>Title of Presentation</b>
Keynote address	Capt. Al Haynes, UA-retired	Crash of UA Flight 232
Chapter I	Dr Robert L. Ewing, USAF Res. Lab	Pioneering Technology Leadership – Make your Designs Fly
Chapter II	Dr Dimitar Filev, Ford Motor Co.	Fuzzy Systems as Tools for Intelligent Control
Chapter III & V	Dr Subra Ganesan, Oakland Univ. Dr Maurice Snyder, Dir. Aisa Op's Applied Dynamics International	Auto-PC in-vehicle computing Laboratory Design & Testing of Vehicle Intelligent Controllers
Chapter IV	Mr Gregory H Foster, Detroit Edison	Detroit Edison's Electric Choice Program
Chapter VII & IX	Mr Ken Jones & Mr Roger Cooper, Collmer Semiconductor	IGBT Technology Overview
Chapter VIII	Mr Robert Dockey, HP Corp.	New Techniques for Reducing Printed Circuit Board Common-Mode Radiation
Chapter X	Mr Dennis Virag, Auto Consulting Group	Driving Business Performance Through Product Development
Student Track	Dr Mohammed Zohdy, Oakland Univ.	Artificial Genetic Optimization

<b><i>IEEE/SEM Attendance</i></b>				
	<b># Members</b>	<b># Students</b>	<b>Total Attendance</b>	<b>Meeting Site</b>
<b>Fall 1997</b>	90	30	120	GM Mg' mt Cent
<b>Spring 1998</b>	107	41	148	FT&DC
<b>Fall 1998</b>	103	43	146	WSU-McGregor
<b>Spring 1999</b>	87	24	111	FT&DC
<b>Fall 1999</b>	109	31	140	FT&DC
<b>Spring 2000</b>	*	*	150*	UM-North
<b>Fall 2000</b>	*	*	140*	TBD
* Estimates only				

registration is expected to grow in the future as more of our members become aware of it. A more deterministic registration process will enable the program committee to budget dinner counts and thereby minimize additional meeting cost to the section.

Thanks to the efforts of our Professional Activities director, Dr T. Lahdhiri this year's exhibits consisted of six University Showcase tables and two vendor sponsored tables. These exhibits were set up in the north building hall and lounge area at FT&DC and open from registration through the social period. University tables included Lawrence Technological Univ.,



*IEEE/SEM members engrossed in a technical session.*

University of Michigan at Dearborn, University of Detroit Mercy, Oakland University, Wayne State University and Saint Claire College Windsor. In addition, our company exhibits included Modern Engineering and Imagine Software.

### **Congratulations to Don Silversmith!!**

Donald Silversmith, Ph.D, a past Section Director of Professional Activities, recently past Section Treasurer and incoming Section Secretary, received the Professional Achievement Award given by IEEE-USA in 1999. The IEEE-SEM Section nominated Don.



*Vice Chair John Miller and Awards Chair Sandy Hunter present IEEE USA Professional Achievement Award to Don Silversmith*

## Chapter Activity Updates

### Chapter VI

by Bob Onstott, Chair

I want to take this opportunity to fill you in on planned chapter activities. I anticipate Chapter sponsored meetings about every couple months. Meetings will be held at the EECS Department of the University of Michigan (UM), or at ERIM International (EI). In the case of meetings at ERIM, please inform R. Onstott prior to the meeting. Meetings at UM will be held at 4:00-5:00 pm, typically. Meetings at ERIM will be brown bag talk at noon to 1:00 pm. Meeting notification will be made via email and flyers placed at strategic UM and EI locations. The intent of these meetings is to allow researchers to present their most recent work, to inform people of ongoing activities, or to present a tutorial on an interesting subject. Please provide updated email address so that you are placed on the notification list. Please send information to [onstott@erim-int.com](mailto:onstott@erim-int.com) or [lep@eecs.umich.edu](mailto:lep@eecs.umich.edu).

As an example, in April Dr. Ed Joshberger of the US Geological Survey (Tacoma, Washington) made a presentation titled, "Passive Microwave Snow Depth Algorithm with a Proxy for Snow Metamorphism." Not only is it surprising how well snow depth may be retrieved using satellite sensors

with the latest algorithms, but that physical changes in the snow column may be tracked. Dr. Joshberger also revealed the art found in nature through images of snowflakes obtained using a special electron microscope. A snowflake is cooled with liquid nitrogen and then sputter coated with platinum. The first example (see Figure 1) is the form most people have of snowflakes. The second example (see Figure 2) is just one of the many common snow crystal forms. In this case, the crystal is called a double sheet structure. As you can imagine,

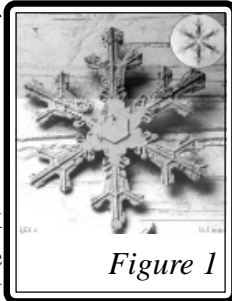


Figure 1

photography with optical light is unable to preserve the true form of the snowflake due to the heating caused by the light source.

Over the upcoming year, I will also be pursuing how to increase participation in IEEE and GRS. One avenue being considered is to sponsor joint meetings with other chapters,

such as Trident and Communications. In addition, I will investigate the interest in a forum in Southeastern Michigan to bring together people who have technical needs with people who are strong problem solvers. Topics which come to mind include the use of active and passive sensors for collision avoidance, and antenna technology requirements for automotive digital radio.

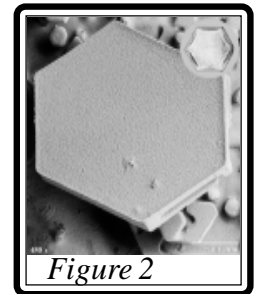


Figure 2

### Chapter VII

by Chuck Albrecht, Vice Chair



The Chapter VII Power and Industrial Applications Chapter held a technical session meeting at the Advent Engineering office in the Domino's Farms complex off of Frank Lloyd Wright Drive in Ann Arbor. The turnout for the event was 13 strong, which can be attributed to both a pertinent topic and perhaps also the venue being located on the West Side of Metro Detroit.

The topic was "Distribution SCADA 2000" and our speaker was Bill Stroess of Power Systems Engineering, Inc. out of Madison, WI. Bill had some very interesting insight to what has been going on in the world of SCADA and where it seems to

be heading due to his past and current experience in the industry.

Bill mentioned that the driving factors behind a utilities desire to implement a SCADA/Automation system today are capital investment expenditure deferment, outage time reduction, O&M savings and employee/public safety. He mentioned that smaller utilities seem to upgrade more quickly than large ones.

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## Chapter Activity Updates cont.

### Chapter VII cont.

He also pointed out that when purchasing a SCADA system it is essential to standardize on design wherever possible, use off the shelf products rather than custom for cost savings and to make sure that a scope of work is well defined. These measures are essential to ensuring that the system that is implemented is cost effective.

Jim Evans of Detroit Edison was also present at the meeting and was able to interject some of his personal experience

regarding SCADA systems into the presentation. The interactive format was great! One of the most interesting notes was the discussion regarding prices that Detroit Edison has to pay on bulk power, which can be as much as \$7000/MWhr from other energy suppliers on peak days in order to stay online. This extreme cost is due to a short-term lack of capacity.

Energy capacity planners are probably the biggest users of the data that a SCADA system can accumulate, as load data over time is recorded and used to determine the sites where equipment may need to be upgraded.

## Chapter X, Engineering Management

by Marty Biancalana

Our chapter started off the 1999-2000 activity year with a dynamic presentation by Dennis Verlag of the Automotive Consulting Group at the Fall Section Meeting. Dennis's insightful presentation highlighted the differences in approach between the best of breed suppliers and the rest of the pack. The presentation and discussion brought out the key differences and made them accessible to those attending the meeting. Of course, actually applying this knowledge to ones own job in a company that may not be an auto supplier is the challenge our members face every day. Chapter X tries to be a resource for engineering managers whose work often directly impacts the productivity and profitability of their companies. Dennis discussed the use of integrated design tools as either a costly burden or, in the case of best-of-breed companies, a competitive advantage. Chapter X has discussed topics such as practical decision aids and managing change in the workplace; all are topics that are directly applicable to engineering managers.

In the upcoming year, Chapter X will focus on fun topics like how well we predicted the impact of the Daimler-Chrysler merger to more practical discussions on motivators and demotivators for engineers. We are also planning to have Mr. Mike Dudzik talk about the digital automobile testbed at the Spring Section Meeting and have a Tour of the Army's TACOM.

Our meetings are open (we have never turned anyone away) and are energized by the diverse interests and work experiences of our members. Besides the automobile industry we have members who manage engineering at power companies, research companies, communications firms, and other fields. The next meeting will be on December 8th, at 6:30 pm at the Ann Arbor facility of Veridian ERIM International. Contact Marty Biancalana [biancalana@ieee.org](mailto:biancalana@ieee.org) for directions or more information.

## IEEE at U of M (Ann Arbor)

by Elizabeth Yeh

The University of Michigan's IEEE student branch has accomplished quite bit this semester. Throughout the semester we organized Information Sessions with industry representatives for students to learn more about companies, and to help students in their job search, also we had Technical Luncheons by professors and industry every Thursday. These sessions range in topic from Blue LED's to Micro-mechanical Devices and Satellite Tether Propulsion. Some of the

presenting companies were GE Medical Systems, Guidant, Intel, and Lockheed Martin.

IEEE-U of M student branch has coordinated the Student Professional Awareness Venture (SPAve) this year. This was semi-formal event entitled 'Engineering Your Business Etiquette', which focused on proper business and dinner etiquette. Close to 100 students and industry representatives were in attendance for the event.

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## A Message to Students: It's time to get involved.

Walter Schilling, Acting Secretary

Greetings from the SEM acting secretary. This is my first article for Wavelengths, as I am a brand new member of the SEM Executive Committee. For the most part, this article is geared towards students, but all are welcome to read.

I first became a member of IEEE during my freshman year in college. I didn't know much about the group, excepting the four letters. Membership, however, was highly recommended by the upperclassmen. So I joined.

We had a very active chapter at Ohio Northern for my freshman year, meeting at least once a month for a guest speaker or other major event, and meeting every Tuesday for the IEEE lunch eon, where students joined department faculty in the cafeteria for lunch.

Near the end of my sophomore year, I was asked to serve on the student branches executive committee as newsletter editor, publishing our monthly branch newsletter. As newsletter editor, I helped the other five officers to coordinate all of the branch activities, learning valuable teamwork and communication skills. I served as newsletter editor until my graduation two years later. The skills that I obtained would soon prove to be very valuable.

Upon entering graduate school, I maintained my IEEE membership, though my activity level was greatly diminished. I read the magazines every month, but my time was completely devoted to graduate work. About halfway through my first year of graduate school, I received an e-mail message from one of the local section officers. They were looking for a newsletter editor, and someone had

mentioned my name.

Within a month, I was back serving in IEEE again as the section's newsletter editor. The position entailed a lot more than at the student branch level, but my student branch experience had prepared me quite well.

A few months before I completed my graduate work, I had the opportunity to attend a regional meeting of approximately 30 officers from around the country. I learned a lot from that meeting, but more importantly for someone who was graduating in a few months, was able to circulate my resume to approximately a dozen different people.

Attending the regional officers meeting was not the only way IEEE benefited me in my job hunt. The online services, as well as periodicals, provided a wealth of information, and all in all, my job hunt went extremely smoothly.

Now, little over a year later, I am serving the SEM Section as acting secretary, making new professional contacts and learning new and valuable skills that I'm certain will come in handy in the future.

Now, if you are still reading this rather long article, I am about to bring it to a close. For you, as students, there is a wealth of opportunity ahead, and IEEE provides a plethora of benefits to becoming involved in IEEE. One student I know served for two years as student editor of Potentials Magazine. Now, as he enters into a job search, he is able to list this as experience on his resume. It is up to you to become involved and use IEEE membership to your advantage.

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## DETROIT SCIENCE FAIR JUDGES NEEDED FOR MARCH 18, 2000!!

by Don C. Bramlett, PE - IEEE/SEM Advisor

For the sixth year, IEEE-SEM will provide a dedicated team of judges and awards for projects related to electrical, electronics and computer engineering subjects at the Science and Engineering Fair of Metropolitan Detroit (SEFMD). Judging for the 43rd annual Science Fair will be conducted on Saturday, March 18, 2000 in the Wayne Hall, on the street level (1) or concourse level of Cobo Hall, on the waterfront in downtown Detroit. Judging will be from 8:00 AM to 12 noon. Free parking, coffee, donuts, and lunch are available that day for the judges. This pleasurable and fulfilling task only takes half a day and you are done by noon.

IEEE-SEM provides judging and awards in both the Junior/middle school and the Senior/high school Divisions. IEEE-SEM provides two Grand Awards, certificates and money, and several Honorable Mention certificates. Response from Section members willing to be judges has been outstanding each year; please volunteer to be among those to comprise the desired team of eight or more judges.

I encourage anyone who has an interest in the science and math education of our youth or an interest in student outreach programs to consider being a judge at the Science

Fair. As a judge myself in previous years, I have found the experience of talking with the students, finding out their interests and observing their projects/presentations to be very rewarding. So come out and spend the morning with us as we meet with some of the potential engineers, scientists and Nobel Prize winners of the future.



If interested in more information concerning being a judge for the IEEE-SEM professional awards at the Science Fair contact Don Bramlett wk. 313-235-7549 hm.734-591-1452, d.bramlett@ieee.org or bramlettd@dteenergy.com .

General information on the Science Fair and last year's Grand Award Winners may be found on the SEFMD website ([www.sefmd.org](http://www.sefmd.org) ). The SEFMD Committee also needs judges in the 13 categories, including engineering, of exhibits being judged. Inquiries related to being a category judge for the Science Fair organization can be made to Carol Dendler at the SEFMD office at 313-832-2066 or on the SEFMD website.

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## IEEE at U of M (Ann Arbor)

*Continued from page 8*

Our main fundraising is our Bagel Stand, where we sell bagels each morning throughout the term, which also happens to be our main source for new members. We use our income to provide food and services to our members. The following companies have sponsored the Bagel Stand: Cypress Semiconductor, Tellabs, Gems, Hewlett Packard, Intel, Trilogy, and Goldman Sachs.

For next semester we hope to hold a resume writing workshop, undergraduate course tutoring, a ski trip, a trip to see a Michigan hockey game, an end-of-year picnic, and industry plant tours. We are also looking forward to holding the Southeast Michigan Section meeting on Michigan's North Campus.



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## Student Activities

by Edzko Smid, Director

Looking back at the last several Section Meetings, we have seen an enthusiastic participation of student members. The Wayne State University Student branch especially deserves an extra compliment for their support during these Meetings.

The names and numbers of students that register for the meeting, reflect the oscillatory nature of student organizations in general. The fast throughput of students in the branches brings about an extra challenge in maintaining the level of activities, and especially of the know-how of running the branch.

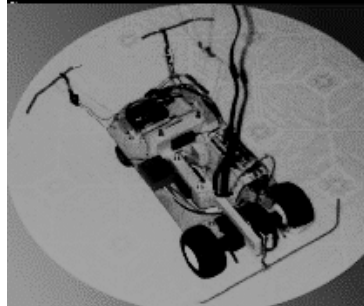
It is part of the Section's responsibility to continuously involve our students into our events and emphasize on their role in our organization. The general impression shows a two-fold objective for the activities of the branches. First most important is the size and establishment of the organization, being part of which is obviously helpful for EE Engineers to network and be up to date with national and international developments. The larger branches like at Wayne State and the University of Michigan in Ann Arbor with more student members, are able to launch a number of activities annually. These activities emphasize membership and are on their turn a good showcase to freshman student for joining.

In the effort to integrate student members and to exchange experiences among branches, the Section will try to maximize participation at the coming events. There will be the Spring Section Meeting in March, which students are encouraged to join.

Furthermore, we'll plan to have the Student Design Competition next year. The 1st annual competition, titled "Bucket O' Parts", was held by the IEEE student branch at Western Michigan and was sponsored by Zahn Electronics Inc. and Saurer Automation Systems Inc. This event is an excellent occasion for students to join in a team and challenge teams from their colleague student branches. The social event afterwards is an excellent opportunity to mix with fellow students and learn about activities and experiences in other places.

This year we hope to find participation of DSPACE Inc. even though talks are still preliminary. DSpace is a leading supplier worldwide of solutions for developing and testing rapid mechatronic control systems. Its use of technologies such as Alpha and PowerPC CPUs and simulation tools like MATLAB / Simulink are characteristic for the company profile. The majority of its customers come from the fields of automotives, aerospace, and drives.

As an organization, IEEE encourages student and counselor activities and involvement with the branch during the professional activities and events and involving students in the field of Electrical Engineering. An award is presented to a student branch, student branch member(s), section member(s), or a student branch counselor to recognize leadership, participation, support, or accomplishments related to the operations and program of a student branch and for promoting the engineering profession among students. The Section is open for nominations for the "Outstanding Student Branch Involvement



Award". There are a few rules for nominations. All nominees and nominators must be members or student members of the IEEE Southeastern Michigan Section. Nominations must be in written form (preferably electronic) and provide sufficient information to be a sound basis for nomination. Specific accomplishments, dates, locations, etc. should be included in the nomination. All nominations must be received by the deadline for the applicable award.

Award nomination forms can be downloaded from the section's web site in Microsoft Word format. The forms are designed to solicit relevant information about the nominees' accomplishments, which should help nominators in writing nominations. The forms will also help the Awards Committee in evaluating the nominations. Completed nomination forms for the outstanding student branch involvement award should be e-mailed to Sandy Hunter, S.E.Hunter@IEEE.org, by Monday, January 31, 2000.

Finally, I'd like to encourage every student who is interested or would like to learn more about involvement with the IEEE activities, to contact me at G.E.Smid@IEEE.org.

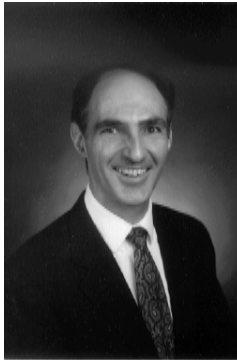
## Southeastern Michigan Section

### Wavelengths Newsletter

## The IEEE Southeast Michigan EMC Society presents . . .

### Comparison of Methods to Evaluate the Performance of a Three-Meter Semi-Anechoic Chamber

Presented by Robert F. German, German  
Training and Consulting  
Tuesday, January 11, 2000 at 6:00 PM  
MIRA North America  
47523 Clipper Street Plymouth, MI 48170  
Hosted by Graeme Rogerson 734-455-6352



This is a FREE event. Snacks and refreshments will be provided at 5:45 PM. Please RSVP to Scott Lytle [ScottRLytle@eaton.com](mailto:ScottRLytle@eaton.com). See <http://www.miranorthamerica.com/contact.htm> for a map.

Procurement of a state-of-the-art three-meter semi-anechoic chamber requires a thorough understanding of the two methods commonly used to evaluate chamber performance. The first method compares chamber performance to a theoretical model that employs free-space antenna factors and the second method directly compares a chamber to the measured performance of a near-ideal Open Area Test Site (OATS). These methods will be used to evaluate a state-of-the-art chamber and their advantages and disadvantages will be discussed. It will also be explained how chamber performance is currently unregulated because the accepted interpretation of American National Standards Institute (ANSI) C63.5-1988 allows a chamber to be directly compared to an unspecified OATS.

**Robert F. German** is the manager of the German Training and Consulting, LLC. He teaches EMC training seminars, and consults on the design of digital devices and EMC test facilities. He is a NARTE certified EMC engineer, a Senior Member of the IEEE, and a member of the ANSI C63 working group on International Reference Antennas.

Prior to 1990, Mr. German was a Senior Engineer at the IBM Boulder EMC Laboratory where he was responsible for reducing the radiated emissions and improving the RF immunity of printed circuit boards used in diskette drives, printers, and copiers. Furthermore, he developed techniques for performing radiated EMI measurements and evaluating test sites in the VHF/UHF range. Mr. German pioneered the volumetric site-attenuation measurement technique for alternate test-sites specified in ANSI C63.4 and EN 55022, explored the use of a monopole antenna for EMI and site-attenuation measurements, and

instituted three research projects at the University of Colorado to predict and optimize the performance of RF semi-anechoic chambers.

Mr. German developed communications software for facsimile machines, laser printers and ink-jet printers at IBM Boulder. He also investigated open waveguiding structures using a microwave model while pursuing the MSEE degree.

He received the MSEE degree from the University of Colorado, Boulder in 1979, the BSEE degree from the University of Miami, Coral Gables, FL in 1974, and was born in Bridgeport, CT in 1952.



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