Vol.39, No.7

April 2000

IEEE/SEM Section Award Recipients

by Sandy Hunter, Awards Committee Chair

Each year the section's Executive Committee recognizes members' contributions to the profession, section, chapters, and student branches through the section's awards program. Awards were presented to this year's award recipients at the Spring Section Meeting on March 29 at the University of Michigan. This was the ninth annual section awards program. The awards and recipients are described below:

Outstanding Engineer Award

This award recognizes a member for outstanding activity or accomplishment in the electrical, electronic, or computer engineering profession. Eric M. Aupperle, PE, this year's recipient, was chosen for his vital role in the formation of today's Internet through his leadership of the development and operation of NFSNET and MichNet. His accomplishments were profiled in the February 2000 Wavelengths issue. He is President of Merit Network, Inc.

Outstanding Section Involvement Award

This award is presented to a member for outstanding support, innovation, or longevity of service to the IEEE Southeastern Michigan Section. Dr. Ece Yaprak of Wayne State University will receive this award for providing outstanding service to the section for her role in handling registration for three section meetings. She has served on the section meeting program committee for two years and been responsible for all aspects of the registration function. The role entailed administration of pre-registration, on-site registration and providing reports for meeting planning purposes. She also coordinated the efforts of student volunteers who staffed the registration table. Due to her efforts, registration of about 150 people for each meeting went smoothly. Ece has also been the section's Director of Educational Activities since 1998.

Outstanding Chapter Involvement Award

This award is presented to a member for outstanding support, innovation, or longevity of service to one or more chapters in the IEEE Southeastern Michigan Section. Prakash Shrivastava, who works for General Motors, is the recipient this year. He was the driving force behind the creation of the Engineering Management Chapter in 1997. From 1997 until now, Prakash has recruited new members and officers, chaired meetings that advanced the professional abilities of the members, and found speakers for the semi-annual section meetings. He has attracted new members and inspired existing members.

Outstanding Student Branch Involvement Award

This award can be used to recognize a student branch for its activities, a student branch member for outstanding contributions to a student branch, or a student branch advisor

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Section Award Recipients

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for guiding a student branch. The University of Detroit Mercy Student Branch is recognized this year for its outstanding student branch programs and operations. The student branch has had a number of activities this year. General body meetings are held every other week. The branch toured the Eaton Innovation Center in Southfield in October. The branch conducted a Co-op question and answer session to help prepare sophomores for a co-op job fair. In December, the branch provided technical support during the Lego Robotics Competition for grade school students, which was held on campus. For the annual Halloween "Safety Street" event, the students built a facade and distributed candy so that neighborhood children could trick-or-treat safely. For a campus beautification project, the branch repaired and painted benches.

The student branch officers are Ryan McGilvrey, President; Katie Krause, Vice-President for Activity Planning; Vera Loggins, Vice President for Meeting Planning; Jason Twehues, Secretary; Miguel Valdovinos, Treasurer; and Mike Bippley, Sergeant-at-Arms. Dr. Mohan Krishnan is the branch advisor.

Plan Ahead for 2001 Awards

We have numerous members who have made substantial contributions to the profession, section, chapters, or student branches and who have never been nominated for a section award. I highly recommend that you nominate deserving colleagues for these awards. Just before the nomination deadlines in November and December, a number of people told me that they knew a member who deserved an award, but they didn't have time to nominate the person at the end of the year. The award criteria does not limit how early nominations can be made. If you have time to write a nomination over the summer or in the early fall, the Awards Committee will gladly accept the nomination. Contact Jim Woodyard, who becomes the Awards Committee Chair on July 1, for a nomination form as early as you wish. Jim can be reached at
or 313-577-3758.

Chapter VIII, EMC

by Kimball Williams

Mr. Neilson warms to his subject

On February 17, 2000 the IEEE Southeastern Michigan EMC Chapter VIII presented a discussion by Arnie Neilson entitled "Electronics Testing in Perspective - Pitfalls and a Realistic Approach". The presentation was followed by a tour of the Visteon EMC laboratories. The meeting was held in the conference rooms of Visteon's Dearborn Electronics Center and was attended by 62 members and guests. Visitors to the meeting came from as far away as Toronto in the East, and from Texas in the West. Refreshments were provided before the meeting and members spent the time networking and relaxing before the presentation began.

Arnie Neilson discussion included the approach that time and expense expended in testing electronic modules to validate their robustness may be missing the mark. The typical test program ("shake and bake" type of testing) emphasizes large sample sizes and

The audience pay close attention to the presentation

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IEEE Southeastern Michigan Section Executive Committee

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Vice Chair	John Miller	313-322-7486
Secretary	Donald Silversmith	313-577-0248
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IEEE/SEM Chapters

I ***Circuits & Signal Processing***: Acoustics, Speech & Signal Processing (ASSP-01), Circuits & Systems (CAS-04), Information Theory (IT-12) and Control Systems (CS-23)

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

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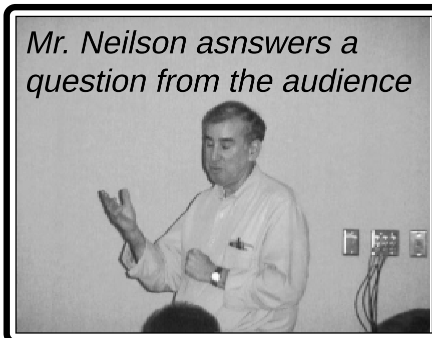
catastrophic failures. For EMC type testing, the emphasis is not on the type of issues relevant to today's vehicles and under realistic conditions (e.g. at operating and extreme temperatures).

The presentation showed the pitfalls of a typical test schedule. Mr. Neilson discussed a Design Verification test process that addressed these issues. Emphasis is placed on functionality issues, and the test plan is customized to the product to determine design margins and accommodate small sample sizes. The intent is to provide extensive monitoring, smaller focused test facilities and reduced test time. This type of testing incorporates EMC tests under more realistic conditions.



Mr. Neilson asnswers a question from the audience

Mr. Neilson followed this presentation with a second subject as an open discussion of standardizing the EMC test process throughout the industry. Presently the OEM's and vendors all have their own favorite ways of EMC testing. This results in increased cost, complexity and confusion.

Although there may be some differences between the test results for these different methods, similar conclusions can be reached as to a product acceptability in the field. It is proposed to use a different approach. Namely if a vendor can show that they have a capable design and test process they should be given some flexibility to propose a test plan that addresses all the key areas (i.e. radiated-conducted immunity-emissions).

Mr. Neilsen is the Senior Electromagnetic Compatibility (EMC) Technical Specialist for Visteon Automotive Systems. After receiving a BSEE from Wayne State University, Mr. Nielsen started his career as an electronics instructor for the Navy Submarine Service. He then spent 5 years as an Instrumentation Engineer at the Chrysler Instrumentation Dept. and at the Ford crash test facility.

He later joined Ford as a Product Design Engineer for 10 years on a number of Powertrain programs (engine-transmission modules, sensors/actuators and software). During that time he received 7 patents. For the last 15 years he has been an EMC Technical Specialist involved in the design and testing of most automotive electronic products and the development-implementation of a comprehensive EMC design process. He has also worked in the Ford Electronics Division Reliability Dept.

Tour of the Visteon EMC Laboratory

This evening provided an opportunity to visit one of the premier automotive component EMC laboratories in the United States. Several engineers from Visteon provided guided tours of this diverse and active test facility. The attending group was divided into five tour groups with an engineer guide for each. Tours completed in about 45 minutes, and impromptu discussions lasted another 30 minutes before the laboratory evening shift was able to return to 'business as usual'.

IEEE/SEM Electro-Technology Award
Michigan Regional Future City Competition

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

The 7th Annual Michigan Regional Future City Competition was held on Tuesday, January 18, 2000 at the Spirit of Ford Museum in Dearborn. The Future City Competition is held each year in association with National Engineers Week (NEW); with winners from the regional competitions participating in the finals at the Building Museum in Washington D.C. during NEW. Teams of students from 24 middle schools in southeastern Michigan displayed their future city design projects at the year old Spirit of Ford facility

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

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

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

Ford Motor Company
- Scott Amman, PE, Ph.D.
- Mike Bloomer
- David Ashland, PE (retired)

Detroit Edison
- Sat Basu
- Don Bramlett, PE

Another IEEE/SEM volunteer served as a mentor to St. John Lutheran School in Rochester:

Oakland University
- Mohammed Zohdy, Ph.D.

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IEEE BOOTH AT COMPUTER & TECHNOLOGY SHOWCASE
NOVI EXPO CENTER, MAY 16-17, 2000

by Maurice F. Snyder, Director of Membership Activities

The Southeastern Michigan Section of IEEE will sponsor an IEEE membership booth at the 6th Annual Computer & Technology Showcase at the Novi Expo Center May 16 and 17, 2000. The show will have over 100 exhibits including an Internet exposition – expected attendance is 6000 to 8000.

We are signing up volunteers to spend a ½ day at our booth – this will be a good opportunity for you to:
- Promote IEEE membership and the Southeastern Michigan Section.
- Provide a good opportunity to see the rest of the show - entrance to the show is free to booth volunteers.

Please email me at (or call me at daytime number 734-973-1300) and indicate which morning or afternoon of May 16 or 17 you would be available to be at our booth. Novi Expo Center is located off of I-96, just west of I-275.

Michigan Regional Future City Competition

Continued from page 5

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

The IEEE/SEM team of judges awarded the Electro-Technology Award to Helen Keller Middle School of Royal Oak. Don Bramlett and Mohammed Zohdy presented the award trophies to the team of three presenting students, accompanied by a larger support team of contributing students, the teacher and the engineer-mentor in the assembly hall of the Spirit of Ford facility that afternoon.

Helen Keller Middle School received the IEEE sponsored award this year for a number of interesting attributes characteristic of the design of their future city. The city project portrayed a model city structure prototype developed and constructed in a third world African nation. The city development was designed to provide the education and training to the populace required to operate the businesses and systems inherent to the future city. The primary source of electric power was a of combination biomass, geothermal and solar. The above ground pedestrian mass transportation system made use of solar power panels above the moving system. Data acquisition and automatic control systems were incorporated into the operations of the residential, commercial and industrial area to make the personal and professional lives of the population more productive and less burdensome.

As a point of information, the first place winner of the 2000 Michigan Regional Future City Competition was in fact Helen Keller Middle School. Helen Keller Middle School represented Michigan at the National Competition in Washington DC on Tuesday, February 22, 2000. Helen Keller Middle School took 4th place, out of nineteen school teams, at the National Competition during National Engineers Week. The school also won two special awards at the National Competition, including the People's Choice Award, which was selected by all the students themselves. The team of three students, teacher and engineer mentor worked together to produce an outstanding project.

Volunteers Needed for the Wavelength Committee!!!!

If interested please send your name, phone number & email address to Anita Malhotra or call at 313-845-2409

Activity 1: Editor-in-Chief

Responsibility:

1. Prepare the Annual Plan and Budget for the Wavelength & get it approved by the Executive committee
2. Coordinate timely printing of all Wavelength issues (8 / year).
3. Interface with printer & mailer, handle invoices from them
4. Coordinate and conduct meetings with the Wavelength Committee (Editor, Graphics, Advertising) resolve any issues
5. Present issues related to the Wavelength Committee to the IEEE/SEM Executive Committee.
6. Report status & financial statements to the Executive Committee & IEEE headquarters.

Desired Skill: Inter-personal, Conflict management, Leadership, Report-writing, Presentation, Familiarity with IEEE guidelines

Activity 2: Editor (Already Filled)

Responsibility:

1. Send out notices/reminders to the officers for articles.
2. Proof-read submitted materials
3. Advise correction & revisions

Desired Skill: Good command of English language (written). Previous editing or journalistic experience preferred. Should be familiar with IEEE guidelines

Activity 3: Graphics & Layouts (Already Filled)

Responsibility:

1. Design & layout Wavelength issue (8 / year)
2. Design & load graphics on electronic media
3. Layout the advertisements per the size of page

Desired Skill: Proficiency in computer graphics and publishing packages such as, Office (Word, Excel etc), Adobe PageMaker, etc.

Activity 4: Advertisement and Publicity

Responsibility:

1. Seek advertisement for Wavelength
2. Interface with Editor-in-chief for Postal rates.

Desired Skill: Previous organizational involvement preferred

CHAPTER X, Engineering Management
MOTIVATORS AND DEMOTIVATORS IN TODAY'S WORKPLACE

by Steven Kishok, Vice Chair

Chapter X held a meeting on February 9th at Veridian ERIM in Ann Arbor to discuss "Motivators and Demotivators in Today's Workplace". The meeting was an open discussion in a relaxed atmosphere with participants sharing their experiences both as employees and managers. Chapter President Marty Biancalana provided a well-researched presentation as a framework for the discussion, with additional material presented by Steve Kishok.

The discussion began with some recap of classical motivation theory from Maslow and moved quickly on to the Theory X, Y and Z motivation models. The members attending provided their experiences as a backdrop to this presentation as we moved to more specific motivational challenges. We discussed findings in the literature indicated that professional people (including engineers), accountants, and manual workers all viewed job satisfaction, recognition, and growth as strong motivators with money as a hygiene factor while directors viewed money as the motivator and job satisfaction neutral. It was noted that this disconnect could lead to misunderstandings of the needs of the employees and failure to effectively motivate them.

The participants discussed experiences in trying to motivate people in counterproductive environments where the organization seemed to be working to demotivate them. Ideas of sharing information, recognition, and using conferences and assignments as rewards or motivators came up. In general, the lower to mid level managers did not control compensation in any real way and consequently had to use more creative techniques of motivation.

A particular example of using personality typing via the Meyers-Briggs test to foster team communication came up where one company used it more as a weapon to coerce and divide the team rather than a tool of understanding. Other participants had much different views as the same tool was used to direct consensus among competitive people assigned to a job. When used correctly to direct work and gain consensus the results were spectacular accomplishment and morale. When used as coercion the result was cynicism and demotivation.

The idea of maintaining a human touch being more important than any single technique came to the fore. It was agreed that interpersonal skills were essential to good motivation and good management. Providing credit and recognition was recognized as a good motivator. The time spent conversing with the people being managed was recognized as contributing to motivation and productivity rather than as a distraction.

The participants in the discussion represented managers at different levels, in both the private and public sector. Active participation, interaction, and vibrant discussion from the attendees turned the meeting into a very informative and meaningful event. All agreed they gained useful insights, which could be used in their daily work.

Upcoming events for Chapter X include Mike Dudzik as a speaker at the Spring Section meeting and a tour of TACOM in June. We strongly encourage you to attend these events and we welcome participation by all visitors, guests, and new members!

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5 New IEEE Fellows in Section

by Sandy Hunter, Awards Committee Chair

Less than two percent of IEEE members are IEEE Fellows. The Fellow membership grade is awarded to IEEE members in recognition of outstanding contributions to the electrical and electronics profession. Fellow nominees must be at the Senior Member grade and have completed at least five years of IEEE membership. In addition, nominees are evaluated on the basis of individual contributions as engineer-scientist, technical leader or educator; evaluation by the Society selected by the nominator; evidence of technical accomplishment, such as publications, patents and peer recognition; confidential opinions of 5-8 references; service to IEEE and other professional engineering societies; and total years in the profession. IEEE Fellows have significant professional achievements.

This year, five section members have become new IEEE Fellows. Their names and citations are listed below. The full list of new IEEE Fellows can be viewed at

. Please congratulate these section members on their accomplishments.

James S. Freudenberg
University of Michigan
Ann Arbor, MI

For contributions to the theory of inherent design limitations in linear feedback systems.

Khalil Najafi
University of Michigan
Ann Arbor, MI

For contributions to biomedical microelectromechanical systems technology.

Kamal Sarabandi
University of Michigan
Ann Arbor, MI

For contributions to modeling of radar remote sensing, and to establish the connections between the incoherent and coherent domains of radar polarimetry.

Lynn F. Saunders
General Motors Corporation
Detroit, MI

For leadership in standards development for power distribution design, operation, safety, and maintenance.

Demosthenis Teneketzis
University of Michigan
Ann Arbor, MI

For contributions to the theory of decentralized information systems and stochastic control.