

Wavelengths

July, 2011 | Volume 51 | Issue 2
IEEE Southeastern Michigan Section

Newsletter

In this Issue

100th Anniversary *Once in a Lifetime!* Event Registration, page 1 • Showing Up, page 3 • DLSEMC course, page 4 • The Secretary's Pavane, page 5 • Mentor News, page 7 • PACE News, page 8 • RoboFest RoboExpo Conference, page 8 • UofM Hybrid Vehicles course, page 11 • EV Battery Tech USA Conference, page 12 • EMC Design, page 13 • Ethics Survey Call for Participants, page 14 • Call of Nominations, page 14 • Definition of IEEE "Chapters" and "Section", page 15 • In Memoriam, page 15 • Science Fair Awards, page 16 • Chapter IV Activities - New Society Added, page 17 • Officers List, page 18

Once in a Lifetime!

100th Anniversary Event

Tuesday, October 11, 2011 6pm The Henry Ford Museum

Early Registration through August 15, 2011

It's here! The 100th Anniversary Event for IEEE Southeastern Michigan Section will be at The Henry Ford Museum, Tuesday, October 11, 2011 starting at 6pm. You and your spouse / companion will enjoy the following at the event:

- Reception and networking with the keynote speaker, the 2011 IEEE USA President, and others in Lovett Hall Lobby
- Robofest Sumo Robot competition demonstration, organized by Prof. C.J. Chung from Lawrence Tech

- Lecture on the history of electricity and electronics during the past 100 years
- Dinner in the Lovett Hall Ballroom
- A night of private viewing of the Museum (a \$15 value!)

The keynote speaker will be Dr. Michael Geselowitz from the IEEE History Center at Rutgers. The title of talk is "From Starters to Startups: 100 Years of IEEE & Southeastern Michigan". He will present a non-technical history of the last 100-years of electronics and electricity --

perfect for members as well as spouses / companions!

Members who attended the Spring Section Conference already registered early (see photo of members lining up to register!).

IEEE members get special discount early registration price of \$90 per couple. Hurry! Early registration is open through August 15, 2011. All of the information is on the web site at http://ewh.ieee.org/r4/se_michigan/100.

We are seeking event sponsors and supporters. See the event web site for details. •



Members line up for 100th Anniversary registration at the April Spring Conference



Wavelengths Newsletter is produced by IEEE volunteers and published by IEEE Southeastern Michigan (SEM) Section (<http://www.ieee-sem.org>) for the Section members.

Newsletter website:
http://ewh.ieee.org/r4/se_michigan/newsletter

Email: wavelengths@ieee-sem.org

Once in a lifetime !

100th Anniversary



**Tuesday Evening
October 11, 2011**

The Henry Ford Museum
Dearborn, Michigan



Web Site: http://ewh.ieee.org/r4/se_michigan/100

Showing Up

– by Kimball Williams

A few months ago I was attending a lecture on training new employees for general employment and was startled when the first topic on the list was showing up for work, on time and ready to go. For anyone educated in the USA school system, where regular attendance is the norm, the thought that someone new to a job had to be reminded of this simple fact was a revelation.

Of course we need to be there. If we are not, everything after is not going to happen. At least it is not going to happen to me, and if I keep that up, I won't be asked to come back. In fact, I may be forcefully asked NOT to come back!

Any organization cannot run effectively if some of the people who said they 'wanted to do the work' consistently fail to show up. It is no different with a volunteer organization like the IEEE. If someone volunteers to perform some function, or lead some activity and they do not show up, the function or activity is in jeopardy.

Universities don't hire extra professors to cover some who decide that 'This is a nice day, so I'll just wander in the park today'. Industries don't hire multiple workers to do the same assembly line job assuming that one or more is not going to show up for work. The IEEE doesn't elect multiple officers, or appoint multiple directors in the assumption that one or more will just decide that 'today I don't

have time for that'. There are no extra hands to pick up the work and carry on when someone decides that their promise to be present and help out is non-binding and that someone else must do that instead.

No-one else will do it. The project will fail. The activity will stall.

The progress that might have been accomplished will crash and burn!

IEEE Southeastern Michigan Section ExCom Teleconferences

Everyone is working toward the success of IEEE and of our Section. Your active and consistent participation is needed and necessary to the accomplishment of our goals. We need you to do your part. That can only happen when you 'show up'.

Each month, on the 1st Thursday of the month at Noon the Section holds its monthly administrative teleconference. We made this a teleconference so that it would be easy for people to attend. No one has to drive to the meeting. No gas is used. No wear on the tires. Only time is required. Attendance at the teleconferences can be by either by the responsible officer (Say, a Chapter Chair) or any of their co-officers (Such as the Vice-Chair, Secretary or Treasurer).

We also ask that each operating element; Section Officer or

Director, Chapter or affiliate group send in a monthly written (e-mail) status update, so we know:

- Everything is OK, and
- You are planning and working toward success of your element, and
- If you need help or funding for special projects, we have a 'heads up'.
- Anything that might be drifting 'off into the weeds' can be caught and addressed.

The reports don't have to be long epistles, and many Chapters structure their reports so that the same basic report, with minor 'tweaks' each month serves to keep us all up to speed on their operation.

Our Section Secretary, Lora Schulwitz, compiles all the reports together and publishes them before each teleconference so that all Section elements have a chance to catch up with everything that is going on in the Section before the teleconference begins. As a result, when we hold the teleconference, we don't have to "read" our reports into the record...they are already there. We also then have sufficient time to discuss any problems or concerns that need detailed explanation and or discussion and debate. If a vote is needed, we can do it then, and approve an action (such as a funding request) that same day.

"Your active and consistent participation is needed and necessary to accomplish our goals."

Advertise in *Wavelengths* Newsletter! Our readers specify and purchase a wide range of electronic components, equipment, and services. Our sponsor are from industry, education, and non-profit organizations. Full page \$500, Half page \$250 Quarter page \$125, Eighth page \$65.

All in all, the system is working quite well for those who show up. There lies the problem. Some elements do not show up. (By that I mean that a few Chapters
(continued on page 4)

Showing Up (continued)

(continued from page 3)

have officers that never take the time required to dial the teleconference phone number, or write a short report and send it in.)

Don't misunderstand. Most of our Section Officers are regular contributors and help out and assist at every turn. (In fact, some actively 'cover' for some other Officers who neglect their responsibilities on a regular basis.) The work of the Section is moving forward. We are making progress. I know how much more we could accomplish if most of the Officers participated in most meetings.

Face-2-Face ExCom Meetings

Section Face-2-Face meetings are designed to allow us to 'network' with each other, enjoy each other's company, and discuss Section level issues of importance without having to deal with all of the administrative 'stuff' at the same time. This schedule (Monthly administrative teleconferences and Quarterly non-administrative face-2-face discussion meetings) is de-

"Most of our Section Officers are regular contributors and help out and assist at every turn."

signed to address one of the long term complaints about Executive Committee (ExCom) meetings: "We

never have time to talk about what is important." Well, now we do!

Our next Section Face-2-Face ExCom meeting takes place on **Thursday September 22, 2011** registration at 5PM, with dinner provided, and the working business / dinner meeting to begin at 5:30PM.

The meeting will take place at the University of Michigan – Dearborn School of Management Fairlane conference center in Dearborn, Michigan.

I look forward to seeing you there. Please 'show up'. •

Kimball Williams is the Section Chair, and a Technical Fellow of the EMC Laboratory, Denso International America Inc. email: k.williams@ieee.org.

Advertisement

In response to popular request New 3-Day Format

Keeping the same important concepts and material presented in a more condensed format



EMC by Your Design

An EMC Practical Applications Seminar and Workshop

with a free 45 min. individual product design evaluation on Oct. 21, take home proprietary computer program, expanded chapter on filter design, signal integrity, signal return currents on PCB's and a second textbook at no extra charge

October 18 - 20, 2011 (Tues. - Thurs.)
Hilton Hotel, Northbrook, IL



In honor of the 100th Anniversary of IEEE SE Michigan, we are offering an extra \$100 discount (in addition to the \$300 discount) if you register by September 27, 2011 and mention this ad

Classes fill quickly so register early

email cgorowski@dlsemc.com or call 847-537-6400
www.dlsemc.com/1001

The Secretary's Pavane

– by Kimball Williams

The Secretary in a professional organization such as an IEEE Chapter, Section or Society acts as the 'spark plug' for the 'engine' that we think of as the Executive Committee (ExCom). By maintaining an awareness of critical event timing & functions and ensuring that the necessary 'spark' is sent to the relevant officers to initiate preparation and follow up action as needed, the Secretary keeps the entire organization functioning smoothly. In its final form, a well functioning organization responding to the Secretary's prompting behaves like a well choreographed

Definition: Pavane (pə-ˈvæn):
A measured, stately dance in which all steps are known to all the participants.

dance troop. The cycle of meeting activity for a typical Chapter shown in Table 1 illustrates this.

Of course, as with any dance, all partners in the dance must respond in the proper sequence and at

the proper time. As above, for example, the Secretary is dependent on the response from the Chair to the draft agenda sent for comment. If nothing comes back, the rhythm is broken, and the dance falters. In any volunteer organization, time commitments are at the discretion of the volunteer, and it may not always be possible to respond fully, immediately, when the initiative is handed off.

In cases where circumstances force a change in the 'steps', it becomes critical to communicate this to the dance partner. A quick e-mail or phone message that confirms;

- I received your document (message/ request/ missive) and,
- Should be able to reply by (date & time as appropriate) is vital.

The first part lets the partner know that the first message successfully got through. This puts them at ease. At least they won't be wondering if it got lost in cyberspace. The second part allows them to alter their normal 'dance' pattern to adjust to changing circumstances.

A similar, though shorter dance occurs between the Chapter Secretary and the Section Secretary as they near the time for the monthly Section ExCom meeting (see Table 2).

Table 1: Chapter / Section Administrative Teleconferences / Meetings

Meeting date – 14 days	Send draft agenda to Chair for comment and revision
Meeting date – 12 days	Send revised agenda & last minutes to Chapter Officers
Meeting date – 10 days	Send calendar notice of meeting to Chapter Officers
Meeting date – 7 days	Send e-mail meeting notice to Chapter Officers
Meeting date – 2 days	Send e-mail reminder of meeting to Chapter Officers
Meeting date	Transcribe minutes of the meeting Record attendance at meeting
Meeting date + 1 day	Send draft minutes to Chair for review and comment
Meeting date + 2 day	File vTools: L-31 form for IEEE HQ
Meeting date + 5 days	Send revised draft minutes to Chapter Officers
Meeting date + 7 days	Update next agenda based on revised draft minutes
Meeting date + 10 days	Setup vTools calendar meeting page for next meeting

Also, the rapid turn around of the meeting minutes to the Chapter Secretaries is vital to ensure that actions at the Section level are communicated back to the Chapters as rapidly as possible. This is especially critical when there is a sudden change in a well publicized Section event, or some vital change in operating methods or policy takes place.

Finally a response from the Chapter Secretary to the Section Secretary that they received the copy of the last minutes helps the Section Secretary relax and know that their final twirl in the 'dance' was successfully completed.

Table 2: ExCom Meetings for Chapter and Section Secretaries

Meeting date – 10 days	Compose Chapter Report for the Section ExCom
Meeting date – 9 days	Send Chapter Report to the Chapter Chair for Review
Meeting date – 5 days	Send revised Chapter Report to Section Secretary
Meeting date	Ensure Chapter is represented at ExCom Meeting
Meeting date + 5 days	Distribute draft ExCom minutes to Chapter Officers

Occasionally, some parts of the dance are performed almost 'Solo'. Preparation for a normal monthly membership meeting is a typical example (see Table 3 on page 6).

As you can see, planning ahead is one of the elements that ensure

(continued on page 6)

The Secretary's Pavane (continued)

(continued from page 5)

that the dance is well performed, and that no one missed a step.

Chapter Calendar

One of the most powerful tools in the secretary's kit is the long range planning calendar. This calendar needs to look at least 1 year ahead of the current date at all times. The Secretary should be planning activities for the Chapter along with the other relevant Officers at least 1 year ahead of the current date.

There are a number of advantages to taking this long range view:

- Regular meeting dates can be planned well in advance, and venues, menus, support functions (A/V, Computer, Projector, Microphones, etc.) can be anticipated and scheduled.
- By establishing regular meeting days, times and locations, members (and Officers) become used to the routine, and begin to bend their other schedules around the planned meetings.
- Different types of meeting may be noted (administrative, presentation, tours of plants, workshops, classes, PAC's, etc.)
- The schedule can be interleaved with other related events of note: Section and Society Conferences, Section ExCom meetings, Society Symposia, Sister Chapter events of interest to your membership, etc.

Section vTools Calendar

The Section / Chapter vTools Calendar becomes an extension of the Chapter's long range planning calendar, and is one of the communications tools needed to keep members updated on Chapter activity planning. Conversely, the "Register for Meeting" feature of the

vTools calendar provides feed back from Chapter members as to how many are planning to attend a particular meeting (see Table 3).

Chapter Web Site

The chapter web site falls into the Secretary's area of responsibility. If you do not possess the skills to actively manipulate the Chapter web site, send your update requests through the Section Website director for action (see Table 4).

Chapter On-Line Community

The chapter On-Line Community, if one exists, also falls into the Secretary's area of responsibility. Ideally, the Secretary should also be one of the administrators for the On-Line Community (see Table 5).

Of course, all this activity requires a good tool box, well stocked with the

(continued on page 7)

Table 3: Section vTools Calendar

Meeting date – 45 days	Setup vTools calendar meeting page
Meeting date – 30 days	Send e-mail notice to members (include vTools link)
Meeting date – 1 day	Ck # registered & advise on refreshments
Meeting date + 2 day	Fill in vTools L-31 form to register meeting

Table 4: Chapter Web Site

Once per Week	Review web site for currency
Once per Month	Review web site for next meeting accuracy
Once per Quarter	Update long range plans
Once per Year	Include update as a discussion topic for meeting agenda

Table 5: Chapter On-Line Community

Once per Week	Review site for currency
Once per Month	Update site with next meeting agenda and past meeting minutes
Once per Quarter	Review content of entire site
Once per Year	Include update as a discussion topic for meeting agenda

Table 6: Tools

1. ExCom Meeting agenda template.
2. Macro to facilitate taking minutes directly using the current agenda.
3. ExCom Meeting notice template.
4. Section "vTools" for calendar meeting updates.
5. Chapter ExCom attendance spreadsheet.
6. Chapter Speakers Planning Spreadsheet
7. Link to IEEE HQ (L31 Form) through the "vTools" on the web.
8. Section Chapter monthly Report Format (Summarize minutes).
9. Blank Roster of the Chapter Executive Committee.
10. e-mail contact list for the Chapter membership (SAMIEEE).

The Secretary's Pavane (continued)

(continued from page 6)

appropriate tool for each task (see Table 6). With these tools, the individual jobs become only a matter of knowing when to throw which switch, and how far to turn each valve.

With the tools above, and solid long range plan in place, and cooperative fellow Officers, an active chapter keeps a Secretary busy, but not frantic. The 'dance' is indeed 'measured' and, to some degree, 'stately', and with all the 'partners' dancing in time, it can be a pleasure to watch. •

Kimball Williams is the Section Chair, and a Technical Fellow of the EMC Laboratory, Denso International America Inc. email: k.williams@ieee.org.

Mentor News

– by Kimball Williams

The IEEE Mentor Program in Southeastern Michigan Section (SEM) is possibly one of the most ambitious in the country. With 10 University Student Branches (SB) in our Section, we need to link with and support a great diversity of IEEE Student Members located in two countries, 8 in the US and 2 in Canada (see Figure 1).

If you have been counting, you will notice that there are 12 institutions listed here. Eastern Michigan University is building its Student

Branch, and is expected to be a fully recognized Branch later this year. Kettering is technically in Northern Michigan Section, but has applied to be part of the SEM Mentor program. We are awaiting a final "OK" from the leadership in Northern Michigan Section.

The plan is to have 2 Mentors for each school. This will allow sufficient 'overlap' to ensure almost continuous Mentor support for Student Branch activities. Membership is building now, and the Mentors hold regular administrative teleconferences each month on the 1st Monday of the month in the even-

ings. With as many schools as we have in our Section, we need 20 to 24 Mentors to ensure coverage, so potential new Mentors are most welcome.

Mentor Goals & Objectives

The overall goals and objectives of the SEM Mentor program are straight forward (see Figure 2).

Student Branch Activity

As with most volunteer organizations, some University Student Branches have 'gone dark' when the cadre of officers graduated without electing and training their immediate replacements. We are beginning to plan the efforts to bring back those Student Branches and utilize the Mentors to provide interim training and coaching while the new Officers learn their functions and how to perform their duties.

Some Student Branches have remained active, and those usually have two characteristics that we have noted:

- At least one member of the faculty is interested and willing to assist the Officers, and
- The Student Branch holds its elections in the spring.

It should be noted that IEEE requires that the faculty advisor must be a member of IEEE and one technical Society above student grade, (continued on page 8)

Figure 1: Student Branch Locations

- | | |
|----------------------------------|----------------------|
| • Lawrence Inst Of Tech | Southfield, MI |
| • Michigan State University | Lansing, MI |
| • University of Michigan | Ann Arbor, MI |
| • Oakland University | Auburn Hills, MI |
| • St Clair College Of Technology | Windsor, Ontario, CA |
| • Univ Of Detroit-Mercy | Detroit, MI |
| • Univ Of Michigan-Dearborn | Dearborn, MI |
| • Univ Of Windsor | Windsor, Ontario, CA |
| • Wayne State Univ | Detroit, MI |
| • ITT Technical Institute-Troy | Troy, MI |
| • Eastern Michigan University | Ypsilanti, MI |
| • Kettering University | Flint, MI |

Figure 2: Mentor Goals & Objectives

- Ensure continuity of SB Officers from one school year through the next.
- Maintain continuous contacts between the Branches and the Section.
- Train SB Members on the IEEE structure; (What it is, how it works).
- Foster communications between SB members and the Section.
- Create options for students to participate in Southeastern Michigan Section.

Mentor News (continued)

(continued from page 7)

appointed by the University and approved by the local Section.

A spring election makes sense since this ensures that the new officers have had a chance to watch the Branch in operation, and have the old officers to lead them in their first few weeks of operation. Also, with a spring election of officers, the new officers can hit the ground running

when they return to School in the fall semester and the Student Branch is not floundering without elected officers, and no one with experience is present to organize the election.

Student Branch / Section Planned Meetings

The current list of SEM Section and Region planned Student Branch meetings is shown (see Figure 3).

Most events will take place at the University Student Branch, or at the University of Michigan – Dearborn, Fairlane Conference Center in Dearborn, Michigan. Exact arrangements will appear on the SEM Section website calendar with details of the event, and the ability for attendees to register to participate.

Anyone interested in volunteering to become a Mentor for one of the universities in the Section should contact Kimball Williams for more information on the program, and how to join. •

Kimball Williams is the Section Chair, and a Technical Fellow of the EMC Laboratory, Denso International America Inc. email: k.williams@ieee.org.

Figure 3: Upcoming Student Branch Meetings

9/24/2011	Student Branch Officer Training
10/8/2011	S-PAC
10/14-15/2011	R4 SB Leadership Conference (Region 4 sponsored)
3/31/2012	STEP
9/27/2012:	Student Branch Officer Training
10/25/2012:	S-PAC

PACE News

– by Kimball Williams

Professional Activities Committees for Engineers (PACE) has as its goal to ‘promote the professional interests of the IEEE members as well as provide a mechanism for the communications of members views on their professional needs.’ This gives rise to a number of interrelated concerns:

- Ethics
- Employment
- Professional awareness
- Professional training
- Professional certification
- Pre-college education,
- Employer awareness
- Career transition planning,
- Student professional awareness, and
- Technology policy issues

Of course, the question arises, what should/can we do to promote these

concerns at the Section and Chapter level?

Ethics

Each one of us signs up to the IEEE Code of Ethics when we renew our membership each year. We need to ensure that we all understand and appreciate what this means and what it requires of us.

1. Presentations at SEM Conferences, S-PACs, and Membership Meetings may focus at least one element of discussion on ethical considerations.
2. Prepare a SEM general presentation on Ethics that can be used for Chapter awareness programs.
3. Support efforts to promote ethical awareness in our membership at our Spring and Fall conferences

Employment

1. Review of our current “Jobs” section on the SEM web site, with

an eye to ensuring that all listed opportunities are still ‘current’.

2. An ‘out-reach’ to any known ‘head hunters’ that may find promising candidates through the SEM web site.
3. Investigate the IEEE jobs web site for possible links to the SEM web site to help connect jobs to candidates more easily.
4. Write the first of a series of SEM Newsletter articles on the use of resources for matching jobs to engineers and encouraging the use of available tools.
5. Conduct another SEM based “Job Fair” where employers and candidates may meet. (In Work)
6. Develop a Chapter level program on the use of IEEE job hunting tools: (First presentation to SEM: Chapter VIII occurred on 4/18/2009)

Professional awareness

When we are working hard and ‘turning the crank to the best of our (continued on page 9)

PACE News (continued)

(continued from page 8)

ability, we need to occasionally step back and consider the implications of direction we have set for ourselves and make some decisions as to whether or not we want to be traveling on the road we are moving down.

1. Develop an appreciation in our young engineers that their career directions are controllable factors in their lives, and that they have choices.
2. Encourage individual personal assessments of our personal career choices.
3. Discuss re-printing some of the excellent articles on professional awareness from other IEEE sources in our newsletter.

Professional training

Most of us were acutely aware of the need for technical training during our education. We need to make our members aware that the need for the 'soft skills' is as important to success in the working world as the technical part of our training.

1. Consider training programs in our Spring and Fall Conferences on the engineering 'soft skills'.
2. Write the first of a series of SEM Newsletter articles discussing the importance of the 'soft skills' in the training of a well rounded engineer.
3. Develop a presentation on the importance of non-technical training and skills to the success of engineers in the 'real world'.

Professional Certification

If you are already a registered Professional Engineer (PE), or an IN-ARTE Certified EMC or ESD or Product Safety engineer, congratulations. If not, consider the update courses provided by the Engineering Society of Detroit (ESD) that prepare those who have been 'in the field' for a few years and need a

background 'brush up' before taking the examination. Then...Get Registered!

Pre-college Education

We see three major efforts, two are sponsored by the IEEE and the SAE in this area that can use more volunteers. Research tells us that the best time to interest potential young engineers in Science, Technology, Engineering and Math (STEM) is in the early grades. Your help may be critical to a young person making the decision to become an engineer or scientist.

The IEEE ReSeed program trains retired engineers and scientists to return to the classroom as assistants to teachers working with young students in fields of science, mathematics, engineering and technology.

"The 'SAE' A World in Motion (AWIM) volunteer STEM professionals serves as an in-classroom resource for teachers. As such, volunteers have the opportunity to influence and enhance the ways in which our youth are prepared to meet the challenges of the future. For a short-term, flexible time commitment, 'volunteers' will help make learning fun, help students discover the exciting application of science and math principles, and share information about rewarding careers in your chosen profession."

The third program here in Southeastern Michigan conducted by Dr. C.J. Chung is the ROBOFest program out of Lawrence Technological University which attracts high school students from all over the state to focus their energies on the engineering challenges of designing and building autonomous robots of all types. This is one example where involvement by interested SEM vo-

lunteers can help change the future of young minds. (Please note the reference information for all three programs at the end of this article.)

Employer Awareness

Potentially great impact on IEEE can be gained by improving employer awareness of the benefits to their employees of participation in professional society activities. While we tend to focus on IEEE, the benefits of professional participation are universal across all professional organizations. However, it seems that many employers have come to believe that professional activities are something that diverts their employee from their main job tasks, instead of a place where training and experience can enhance their value on the job, and as a company representative off the job.

In planning is a presentation to employers that will attempt to change their point of view about what a professional society is, does and why every engineer should be active in at least one.

Career transition planning

Many of us find that our careers 'morph' over the years. Typical is technician to engineer to manager to sales person. Long range planning is in work to develop assistant documentation to provide the following:

1. Defining the skill sets needed to succeed in engineering as well as the many related fields in which engineers may find their next job.
 2. Developing a 'tool' to assist engineers in the evaluation of their strengths and assets in order to provide the most promising career selection at various times in their career.
 3. Locating existing or developing new training for engineers who are changing the course of their career
- (continued on page 10)

PACE News (continued)

(continued from page 9)

either through desire or circumstances to assist them to prepare for both the technical as well as the emotional challenges they will face.

4. We will write the first of a series of SEM Newsletter articles on making the move to alternative career objectives (management / field engineering / sales / short order cook / etc.) in the next few months.

Student professional awareness

If we want to attract the best and brightest into the field of engineering, we have several tasks ahead:

1. Help provide new graduate engineers with an awareness of "Career" as opposed to "Job" as they begin their search for employment.

2. Ensure that they are aware of engineering as one of the potential "Job" choices that can lead to a long and satisfying career. (Presentations to local Student Branches to develop and refine presentation material have begun.)

3. Work with employers to ensure that there is a clear career 'path' for a young engineer with a flare for engineering and an interest in pursuing our line of work.

4. Develop training materials suitable for presentations to students

that can be given by our Chapters at local Student Branches, and encourage them to make use of those materials.

5. We will write the first of a series of SEM Newsletter articles encouraging more direct Chapter involvement with local Universities and Colleges.

Measurements

Measurements for the PACE activity have proved to be one of the most difficult parts of establishing a viable program. A few, (very few), elements have readily presentable measurements that can be applied to determine effectiveness. Most have eluded my efforts, and I would love to have a heart to

"The goal of PACE is to promote the professional interests of IEEE members."

heart talk with someone who has ideas on how to get a handle on this part of the problem.

All of these worthy efforts need volunteer assistance to help make a difference here in Southeastern Michigan. If you have time, and are interested in following up on any of these activities, please contact the SEM Director of PACE activities:

Dr. Adel Marzougui
734-213-1240
adel_mar@hotmail.com

ROBOFest

CJ Chung, Ph.D., Associate Professor & Robofest Director
Dept. of Math and Computer Science, Lawrence Tech University
21000 West Ten Mile Rd.,
Southfield MI 48075, USA
CHUNG@LTU.edu
http://qbx6.ltu.edu/chung
Office (248)204-3504
www.robofest.net

IEEE: ReSeed

Retirees Enhancing Science Education through Experiments and Demonstrations
The Center for STEM Education
Suite 520, International Village
Northeastern University
360 Huntington Avenue
Boston, Massachusetts 02115
Phone: 617.373.8380 / 617.373.8380
E-mail: stem@neu.edu
www.stem.neu.edu

SAE: World in Motion

SAE International
1-800-457-2946 / 1-800-457-2946
awim@sae.org
www.awim.org
www.sae.org •

Kimball Williams is the Section Chair, and a Technical Fellow of the EMC Laboratory, Denso International America Inc. email: k.williams@ieee.org.

RoboFest "RoboExpo" Conference 9/26/2011

– by Prof. C.J. Chung

The IEEE PACE-sponsored Robofest event is organizing a new program called "RoboExpo" which is an annual exposition conference connecting academia, industry, and

government sectors involved in robotics in order to share knowledge, demonstrate new products and services, promote R&D, and inspire students to pursue STEM careers. Please go to www.RoboExpo.us to find more

information. Robotics and Automation Chapter (XIV) will have a booth during the event on Sep. 26, 2011, Noon~ 5pm, at Lawrence Tech. •

CJ is a professor at LTU and Founder of RoboFest. email: cchung@ltu.edu.



HYBRID AND ELECTRIC VEHICLES

Principles, Applications, and Future Technologies

UNIVERSITY OF MICHIGAN
COLLEGE OF ENGINEERING



HIGHLIGHTING THE LATEST RESEARCH-BASED FINDINGS ON CLEAN VEHICLE TECHNOLOGIES

This short course covers all key topics in hybrid vehicles including modeling and control, batteries, battery management systems, motors and power electronics, and EMC.

\$2,495* COVERS THE ENTIRE FIVE-DAY PROGRAM
ONE-DAY MODULE: \$600 | HALF-DAY MODULE: \$350

Fee includes tuition, instructional materials, continental breakfast, lunch and breaks each day. Fee is payable in advance.* Upon registration, you will receive an email confirmation including directions to the program site and recommended lodging.



Scan to visit the Hybrid and Electric Vehicle website.

2011 PROGRAM DATES

Ann Arbor, Michigan

ENTIRE FIVE-DAY SHORT COURSE

October 3–7 All six modules included

INDIVIDUAL MODULES

- October 3** Model-Based Approach for Hybrid Vehicle Design and Analysis
- October 4** Battery Fundamentals
- October 5** Battery Management Systems for Electric Drive Vehicles
- October 5–6** Power Electronics for Electric Drive Vehicles
- October 6** Military and Non-Automotive Applications, Diagnosis, Prognosis, Reliability, and NVH of HEVs
- October 7** EMC of Hybrid and Electric Vehicles

© 2011 The Regents of The University of Michigan 072511

Learn More and Register Online: InterPro.engin.umich.edu/HybridVehicles

EV BATTERY TECH USA

4th International Global Cost Reduction Initiative

Organized by

American Business Conferences

Examining Practical Solutions For Driving Down The Cost & Improving The Performance Of EV Batteries



TRANSLATING TECHNICAL SOLUTIONS INTO COMMERCIAL OPPORTUNITIES FOR REDUCING THE COST OF ELECTRIC VEHICLE AND PLUG-IN HYBRID ELECTRIC VEHICLE BATTERIES

▶ **BATTERY SYSTEM COST REDUCTION**

Understanding how lessons learnt from batteries in current generation EVs can be applied to driving down the cost of the battery in the short term

▶ **ENERGY DENSITY OPTIMIZATION**

Determining how near-term advances in improving energy density could help drive EV battery cost reduction

▶ **COST-EFFECTIVELY IMPROVING BATTERY LIFE**

Examining current generation advances in cost-effectively improving EV battery life & solutions for preventing cell degradation & failure

▶ **COST-EFFECTIVELY IMPROVING BATTERY SAFETY**

Evaluating advances in cost-effectively improving battery safety & applying new battery safety methodologies

▶ **TRANSLATING MATERIAL ADVANCES INTO SHORT-TERM COST REDUCTION**

Providing an update on how the latest material advances in the cathode, anode & electrolyte are driving cost reduction at the level of the battery system

▶ **COST-EFFECTIVELY IMPROVING THERMAL MANAGEMENT**

Analyzing cost-effective advances in improving thermal management & cooling systems to deliver optimal battery performance

▶ **STANDARDIZATION**

Examining standardization opportunities for short, medium & long-term developments to deliver industry wide benefits & economies of scale

▶ **DEV CHARGING COMPLIANCE**

Examining the US National Electric Code (NEC), Nationally Recognized Testing Laboratories (NRTL) and Charging Stations For Legislation Compliance



Takehito Yokoo
General Manager Of Advanced Powertrain
Toyota



Ted Miller
Senior Manager of Energy Storage Strategy and Research
Ford



Zafer Sahinoglu
Senior Principal Member Research Staff
Mitsubishi



Cheng Tung
Director of Cell Integration
CODA Automotive



Egil Mollestad
Chief Technology Officer
Think



John Pohill
CEO
Venturi Automobiles North America



Naveen Munjal
Managing Director
Hero Electric



Ian Wright
CEO
Wrightspeed



Anil Ananthakrishna
Chairman & CEO
Ekovehicles

Co-Sponsors:



Partners:



To register (1) 800 721 3915 info@american-business-conferences.com www.ev-battery-tech.com

SEPTEMBER 27-28 2011
DETROIT MARRIOTT
TROY | MICHIGAN | USA

Please email info@american-business-conferences.com to claim discount.

Learn how to comply with the many EMC regulatory requirements



EMC by Your Design *An EMC Practical Applications Seminar and Workshop*

Now offered in 3-day format
Tues. Oct. 18 – Thurs. Oct. 20, 2011
Hilton Hotel, Northbrook, IL

847-537-6400
www.dlsemc.com/1001

Newly updated curriculum developed by Donald L. Sweeney and his associates include an understanding of the many EMC regulatory requirements including FCC, CE, US Military, RTCA-DO-160 and those of many foreign countries. Classes start with the fundamentals of electromagnetic compatibility and then focus on the methodology of how to minimize EMC problems, starting with the design process through final testing and approval, all of which are brought to life through hands-on practical application to real life products.

Students will learn how an electronic circuit becomes a radio transmitter, how the physics of even the simplest devices such as capacitors, inductors and shielding can help or hinder compliance and how to control the design to minimize emissions. They will be lead step-by-step through sample calculations, be introduced to take-home proprietary software and led through trouble shooting a product that does not meet the requirements. Additionally, attendees will be offered an exclusive, hands-on personal consultation with the instructor or technical staff to apply what has been learned to their specific product.

Have You Had an Ethical Dilemma?

Call for Participants for UofM-Flint Research Survey

– by Prof. Judith Carlisle and Prof. Michael Farmer

Ethics is a difficult topic to explore. It seems "obvious" that we should all know how one should behave, and what one should do in various situations. It is another thing altogether to deal with the everyday, and occasionally alarming, ethical situations in which we find ourselves. What are the guidelines that are available to you when it comes to making ethical decisions? What are the ethical beliefs of the organization for which you work? How well are you versed in the ethical policy of your organization?

Do you feel that this policy supports you? What do you do when faced with an ethical quandary?

Two faculty members at the University of Michigan-Flint, Judith Carlisle and Michael Farmer, have begun an exploratory study intended to better understand what safety-critical software engineers think about ethical issues --- the ethical responsibilities they face, ethical decisions that they must make, ethical pressures that they are under, and others. If you are a software or systems engineer involved in Safety-critical systems development we'd like you to participate in this study by following

the link below to a survey:

http://umflint.qualtrics.com/SE/?SID=SV_ahQ5TK3DCwGXrr6

The survey should take 15 to 20 minutes.

Questions: If you have questions regarding this study, feel free to contact us. •

Judith Carlisle and Michael Farmer are faculty members at the University of Michigan-Flint. email: carlislj@umflint.edu, farmerme@umflint.edu

Call for Nominations

2012 IEEE Southeastern Michigan Section & Chapter Officer Nominations

– by Don Bramlett, P.E.

Greetings to all potential IEEE volunteers and leaders.

This is an open invitation to any IEEE member to learn about the many opportunities to serve in a volunteer or leadership role in IEEE within the boundaries of the Southeastern Michigan Section, from the downriver areas in the south to the northern suburbs, and from Lansing, Jackson and Ann Arbor in the west to the Pointes and Windsor & Essex County, Canada.

We are seeking nominations, including self-nominations, for 2012 Section and Chapter officers. Also, many members participate in some other volunteer role, such as helping to schedule or coordinate some technical meetings, speaking on a

subject at meetings, handling administrative duties, supporting the webmaster or newsletter editor, or whatever might interest you.

If you think you might have any interest in helping in some role as a volunteer with the Section or one of our Committees, Chapters or Infinity Groups, please contact me, via phone or email.

**Nominations
deadline
September 1st**

On the subject of the elections for 2012 Section and Chapter officers; if you have an interest or question concerning nominations for any of the open volunteer leadership positions, please also contact Don Bramlett as noted above. All Section and Chapter positions are open for nominations.

For brevity, please review the [positions listed for the Section and Chapters](#) associated with Technical Societies on the [Section website](#).

Nominations, including self nominations, need to be submitted **by September 1, 2011**. This will allow the Nominating Committee time to beat the bushes for candidates for the remaining vacant 2012 positions in the Section and Chapters before the formal electronic election process.

Please do not hesitate to contact Don Bramlett with your questions and nominations. He gets lonely and feels neglected without frequent contact. •

Don Bramlett, P.E., is the Section Advisor, and Immediate Past IEEE Region 4 Director. (office) 313-235-7549, (cell) 313-608-6223, (home) 734-591-1452. email: d.bramlett@ieee.org or bramlettd@dteenergy.com

(See page 15 for a definition of IEEE Chapters and Sections.)

Definition of IEEE "Chapters" and "Section"

Many IEEE members find the terms "Chapters" and "Section" a little confusing. Here is a short description of the terms "Chapters" vs. "Section". After reading this article you will be able to determine which IEEE Chapter(s) you are in, if any, and to which IEEE Section you belong.

"Every IEEE Member, including every student member, is a member of a Section."

Detroit, Windsor, Lansing, and Ann Arbor.

Every IEEE member, including every student member, is a member of a Section. Your Section is determined by your current address, so members only belong to one Section. The Sections are governed by the [IEEE Member and Geographic Activities](#)

an [IEEE Technical Society](#). IEEE has thirty-eight Technical Societies. When you join an optional technical society, you also join the local technical society chapter. The chapters are part of the Section, and they cover the same Southeastern Michigan geographic area as the Section. If you belong to many societies, you also belong to their respective local chapters. SEM has 17 Chapters, representing 23 Technical Societies.

In IEEE, the terms "Chapters" and "Section" mean different things. **Sections** are geographical areas -- they are the main organization for the local area. Our IEEE Section (here in Southeastern Michigan) is called [Southeastern Michigan \(SEM\) Section](#). Our Section covers a large area around the cities of

(MGA) board. Your Section does lots of local activities, and needs lots of help from local **volunteers like you**. Helping your Section increases your return on your investment in membership dues. (*How?* Find out by volunteering.)

Student Branches are the local IEEE organization for the university. [Student Branches](#), and the university Student Members, are part of the local Section.

Thank you to all of the past and present volunteers of *your* local Section and *your* Chapters!

A **Chapter** is a local organization for

In Memoriam

Two Section Officers Pass Away in April



Angela C. Sodan, Ph.D.
1955 - 2011

Angela passed away April 21st, 2011 after a courageous battle with cancer. Angela served as the IEEE SEM Director of Technical Activities and as the Chair of the IEEE SEM Women in Engineering Affinity Group. Angela came here 10 years ago from Berlin, Germany where she is survived by her mother Christel, her brother Dr. Halge Sodan, his wife Korneilia & their daughter Beatrice Sodan to whom she was Godmother. Angela had a PhD in Computer Science & was a professor at the University of Windsor. She was involved in numerous research projects. Most recently, her article on multiprocessing appeared as the cover article in the IEEE Computer March 2010 issue.



Paul Ostrowski, C.C.E., Ph.D.
1954 - 2011

Paul passed away suddenly on April 9, 2011. Paul recently served as Chapter Chair of the IEEE Engineering in Management and Biology Society SEM Chapter. In years past, Paul served in many SEM Section Offices. Paul graduated from Cornell University with a degree in Biomedical Engineering, and completed his post-graduate education at the University of Michigan. He served for 16 years as the Chief of Biomedical Engineering at the John D. Dingell VA Medical Center in Detroit, Michigan and for the Veteran's Integrated Service Network. He served on the national Veterans Administration Medical Devices Expert Panel. His professional interests focus on medical equipment technology management and development, especially in patient safety, systems design, telemedicine, imaging and neurology.

Science Fair Awards from IEEE

– by **Don Bramlett, P.E.**

The The 54th Annual Science and Engineering Fair of Metropolitan Detroit (SEFMD) was held from March 15 through March 19, 2011 in the Detroit Hall of the Cobo Conference Exhibition Center in downtown Detroit. Judging of student projects was performed on Wednesday, March 16. This year the SEFMD had over 131 schools participate from Wayne, Oakland and Macomb counties with approximately 1,378 students having projects on display in two Divisions, the Junior Division (6th thru 8th grade students) and the Senior Division (9th thru 12th grade students). Exhibits were classified into 13 general categories for judging; including engineering, computer science, physics, and environmental science.

For the seventeenth straight year the IEEE Southeastern Michigan (IEEE-SEM) Section has provided a team of volunteer judges to evaluate student projects associated with IEEE fields of interest. The Section expresses its appreciation to the IEEE-SEM Section members who volunteered to be IEEE judges or serve in other roles this year.

The Section wishes to thank the seven (7) IEEE members, and their companies/institutions, for taking the time to volunteer and help to make the Science Fair a more pleasurable and meaningful experience for the middle school and high school students who participated.

The IEEE-SEM judging team was composed of the following five (5) volunteers:

Don C. Bramlett, PE, SMIEEE, FESD, FMSPE
Detroit Edison (DTE Energy)

Laurence G. Dishman, Ph.D.

Wayne State University

William Quinlan
American Axle and Manufacturing

Sat Basu
Detroit Edison (DTE Energy retired)

Amar Basu, Ph.D.
Wayne State University

Other IEEE/SEM Section members served in other capacities at the SEFMD, such as Paul Ostrowski, Ph.D, CCE, SMIEEE (General Category Judge Coordinator) and Dave Morris, Ph.D. (General Category Judge) Mitre

The judges had the opportunity to view and evaluate a number of exhibits, especially some interesting projects in areas pertinent to IEEE fields of interest. The judges and the high school students in the Senior Division had the pleasure to interface and discuss in depth some of the principles, scientific techniques, engineering approach, experimental results and applications pertinent to the projects.

The IEEE-SEM Section, based on the evaluations of the panel of judges, awarded two (2) First Place Grand Awards, consisting of a personalized certificate and a cash award for each awardee. These awards were presented to:

Senior Division

Hyunjoon Song, a sophomore at Novi Senior High School in Novi for his project entitled “Optical Music Recognition of Printed Music Score.”

Samantha Myers, a sophomore at Divine Child High School in Dearborn for her project entitled “Solar Panel Efficiency: A More Colorful Future.”

The panel of judges also determined that the IEEE-SEM Section would provide five (5) Honorable Mention Awards to other noteworthy projects in the Junior Division. Each Honorable Mention Award consisted of a personalized certificate for each awardee. These awards were presented to:

Timothy Clish, in the 7th Grade at St. Michael Elementary School in Livonia for his project entitled “Check the Charge.”

Vivian Obia, in the 8th Grade at Ivan Ludington Magnet Middle School in Detroit for her project entitled “The Effect of Magnetic Fields on the Flow Rate of Diamagnetic Liquids.”

Kate Morris in the 8th Grade at Our Lady of Good Counsel Elementary School in Plymouth for her project entitled “Does Temperature Effect the Strength of an Electromagnetic.”

Bryce Paputa, in the 8th Grade at Novi Middle School in Novi for his project entitled “Artificial Intelligence in Mastermind.”

Jason Liu, in the 8th Grade at Detroit Country Day Middle School in Beverly Hills for his project entitled “Which Windmill is More Efficient.”

For further information on the Science Fair judging and project abstracts go to www.sefmd.org.

The IEEE/SEM Section plans to continue to staff other panels of special awards judges at both the Michigan Regional Future City Competition and the SEFMD in 2012, and in subsequent years. These are just a couple of the pre-university education programs that the IEEE-SEM Section promotes. •

Don Bramlett, P.E., is the Section Advisor. email: d.bramlett@ieee.org

Chapter IV Activities -- New Society Add!

– by Xueyang (Jessie) Duan, and the Chair Tayfun Ozdemir

This year, Chapter IV continues to grow and becomes a joint chapter of four societies including ED, MTT, AP, and PHO. PHO, the Photonics society, officially joined the chapter in March, 2011. Meanwhile, our team expanded to eight officers for more detailed duties. The officers' meetings were held twice for the first half of this year for team coordinating.

As a joint chapter, we invited professionals with wide technical background as speakers for seminars. In March, we hosted Dr. Ronan Sauleau from the Antenna & Microwave Department, Institute of Electronics and Telecommunications

of Rennes (IETR), University of Rennes, France. His talk was about the 'Antenna Research at IETR'. As a speaker for the 2011 IEEE SEM spring conference, our chapter hosted Dr. Tal Carmon of EECS department, University of Michigan, who presented a talk on 'Harnessing Radiation Pressure'. Most recently, we hosted Dr. Sajeev John from department of physics, University of Toronto, Canada. He gave a lecture on 'Photonic Band Gap Materials: Light Trapping Crystal'. This seminar was attended by over 90 professionals and students. Soon in September, we will be hosting Dr. Herbert S. Bennett from Physical Measurement Laboratory, NIST, as our speaker.

Moreover, we have started planning for the 2012 Great Lake Technology

Symposium (GLTS). Mr. Zachary J. Lemnios, director, DR&E, DoD, has been confirmed as the keynote speaker of the symposium. Additional details regarding the symposium will be announced soon, and we expect larger attendance than the first symposium held in 2010.●

Xueyang (Jessie) Duan <xduan@umich.edu> is the Chapter Secretary and a Graduate Research Assistant at University of Michigan. Dr. Tayfun Ozdemir <tayfunozdemir@ieee.org> is the Chapter Chair and President of Virtual EM Inc.

Chapter IV web page is at <http://www.ieee-sem.org/ChapterIV/ChapterIV.html>

IEEE Spectrum Online

Did you know that **IEEE Spectrum Inside Technology** has online technology articles?

<http://spectrum.ieee.org>

Did you know that **IEEE Spectrum Radio** produces science and technology news podcasts?

<http://spectrum.ieee.org/static/radio>

IEEE Member Benefits

IEEE USA Jobs

Did you know that **IEEE USA** has a member job site, career resources, salary survey, innovation education, consultants network, and public policy information?

<http://ieeusa.org/>

IEEE Member Benefits

IEEE Section Officers for 2011

Section Chair	Kimball Williams
Section Vice Chair	(vacant)
Section Secretary	Lora Schulwitz
Section Treasurer	Mark Ciechanowski, P.E.
Director of Professional Activities	Adel Marzougui, Ph.D.
Director of Membership Activities	Momand Berri, Ph.D.
Director of Student Activities	Trisha Taylor
Director of Technical Activities	(vacant)
Director of Educational Activities	(vacant)
Director of Marketing	Robert Neff
Section Junior Past Chair	Randy Stevenson
Section Senior Past Chair	Dave Laurent
Section Adviser	Don Bramlett, P.E.
Section Webmaster	Scott Lytle
Newsletter Editor	Mark Ciechanowski, P.E.
Graduates of the Last Decade (GOLD) Committee Chair	(vacant)
Women in Engineering Committee Chair	(vacant)
Chapter I Chair (Signal Processing, Circuits, and Systems)	Jeff Dulzo
Chapter II Chair (Vehicular Technology)	Mengyang Zhang
Chapter III Chair (Aerospace, Electronics Systems, Comm.)	Elizabeth Chesnutt, Ph.D.
Chapter IV Chair (Trident)	Tayfun Özdemir, Ph.D.
Chapter V Chair (Computer)	Subra Ganesan, Ph.D.
Chapter VI Chair (Geosciences and Remote Sensing)	Adib Nashashibi
Chapter VII Chair (Industry Applications, Power Engineering)	Kevin Taylor
Chapter VIII Chair (Electromagnetic Compatibility)	Scott Lytle
Chapter IX Chair (Industrial and Power Electronics)	Kevin Taylor
Chapter X Chair (Engineering Management)	Liang Downey
Chapter XI Chair (Engineering in Medicine and Biology)	(vacant)
Chapter XII Chair (Control Systems)	Momand Berri, Ph.D.
Chapter XIII Chair (Education)	Dean Aslam, Ph.D.
Chapter XIV Chair (Robotics and Automation)	Leandro Barajas
Chapter XV Chair (Systems, Man, and Cybernetics)	Oleg Gusikhin
Chapter XVI Chair (Computational Intelligence)	Chaomin Luo
Chapter XVII Chair (Nanotechnology)	Dean Aslam Ph.D.

You have read another issue of Wavelengths Newsletter. Please take a moment to give us [feedback](#) by taking our Newsletter survey at <http://www.surveymonkey.com/s/8V2GDCZ>.



Production note: This newsletter layout and final PDF file creation was produced entirely with open source tools from [OpenOffice.org](#) and [Gnu Image Manipulation](#). The original layout file is permanently stored in [OpenDocument Format \(ODF\)](#). The web site HTML, CSS, and JavaScript was crafted manually by hand.