Wavelengths

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Volume 59 – Issue 7

Contents

Spring Conference Report

IEEE South Eastern Michigan Section Spring 2019 Conference Report

The event was held on May 2nd 2019 (instead of the usual April month time frame) and also during the week, so one could attend mid week and partake of all the section conference has to offer. This year the theme was: "The Next Big Thing" and the venue was the old venerable University of Michigan-Dearborn's Fairlane Conference Center North (where we have held many a conference in the past seasons).

Spring 2019 Conference attendees

The event was very enjoyable as it had a lot of technical sessions for the great diversity of our membership. It kicked off with 3 concurrent sessions on the topics of "Deep Learning Accuracy in Computer Vision Systems" by Dr Sarhan & Mr Hammadi, of Wayne State University, "New Communication Bus for Future Vehicles" by Dr Subra Ganesan of Oakland University and "Classification of Images using Deep Learning" by Dr Jindal, also from Wayne State University. All very hot areas of intense activity in our neck of the woods and clearly one can see that the topic of "Deep Learning" – which are Neural Networks arranged in a fashion that facilitates "learning" and incorporates feedback, is driving the next big thing. Of courser all the future of self driving vehicles will use these big topics and the communications architecture described by Dr Ganesan, are extremely important for portions of the future vehicles to "talk" to each other in what one views as even faster than real time!

After a quick break for change of rooms, we were again fascinated by our visitor speaker Dr Ghose, Associate Professor of Physics and Computer Science and Director of the Centre for Women in Science at Wilfrid Laurier University in Waterloo, Canada who spoke on the other "big" thing: namely "Quantum Computing"! Her talks was very engaging and using literature, physics and mathematics – did reveal a little glimpse of this new world. At the same time in the other sessions we had talks on "AI & Machine

Learning: The Legal risks" by our very own Jennifer Dukarksi (of Butzel Long Associates), which again highlighted how Artificial Intelligence & Machine Learning are playing a major role in our immediate future. The third talk of this concurrent session we had again Dr. Sarhan, accompanied by Mr Hani and Mr. Alhabsy, who spoke about "Energy Adapted Video Streaming". Now lest someone wonder how does this fit in with the theme? Well a simple fact – 20 years ago, 50% of the internet was simple text and email. Today video streaming is 50% of the internet traffic and on course to becoming the largest majority usage of the internet! Clearly it is already the next big thing!

During these entire sessions we had student posters in the lobby – which in itself the depth and breadth of the research work they presented was very inspiring. Dr Harpreet Singh of Wayne State University and the IEEE Life Members Affinity helped organize the posters and also gave away the top 3 poster awards. Look for a separate article on this in this or next months issue of Wavelengths.

Our Membership Development Committee, led by Irina Sullivan and Amanda Mohan, also presented awards to those who have contributed towards the section activities as well as student activities.

Doug Patton Spring 2019 Section Conference keynote speaker

The evening was finally rounded off with our keynote speaker – Doug Patton – who has spent a great deal of time in the industry and gave a talk on what he saw as what are ALL the next big things happening, from his perspective. Despite the little glitches with the laptop and screen projector, it was very well received and generated a great deal of interest from the audience. We were indeed very fortunate to hear so much of what diverse activity is occurring and brewing, that it did indeed leave a heady feeling to all those who listened with rapt attention to the views shared by Doug.

A quick word of thanks to all the volunteers who put together this event and the lovely refreshments, eats as well. The event closed with a big round of applause for all the speakers, participants, students and poster presenters.

Sharan Kalwani, **Wavelengths,**

Vice-Chair, Chapter 5 (Computer Society), Chair, Chapter 13 (Education Society) and PACE

Passionate IEEE supporter

Section Chair's Message

Volunteering:

Technology advances are happening faster than most people can keep up with, so are organizations, jobs and how we communicate work together as engineers and humans. IEEE SEM volunteers learn leadership and team building skills that are not usually part of the engineering curriculum. We have openings at some of our chapters and we are seeking help with our Fall Conference planning committee. Consider volunteering.

At IEEE Southeastern Michigan Section we have developed a Volunteer Portal to display current opportunities within our organization. Please go to our Section web site at https://r4.ieee.org/sem/ and click on the "About SEM " tab at the top of the home page. On the "About SEM" page cursor down to the "Volunteer Portal".

Nominations and Elections:

Speaking of volunteering, the nominations web site will open up in September for volunteers to serve at the Section, Chapter and Affinity Group officer levels. These are elected positions so please consider how you can participate in the Technical Society or Affinity Group that fits your interests. This year we will elect Section Secretary and Treasurer Elect positions for terms as "Elect" Officers in training in 2020 and begin fulfilling their 2 year term beginning in 2021.

Chapter and Affinity Group Activity Requirements:

IEEE requires all Chapters and Affinity Groups to have technical meetings, administrative meetings and educational events as often as possible. The minimum requirement is to have 2 meeting/events per year. Chapters and AGs can use your budgeted allowance without seeking permission from the Section. If you did not ask for funding or if wish to apply for funds beyond your budgeted amount you need to contact our Financial Committee and supply a plan for what you want to do. The tracking method for these meeting is the L-31 reports that you file following the event or meeting.

Upcoming Events:

Planned events by committees, Chapters and Affinity Groups can viewed on the interactive calendar on the home page of the section web site https://r4.ieee.org/sem/.
A leader and support volunteers are needed to plan and support the Section Fall Conference.

Officers Training:

As a reminder, all elected and appointed officers are requested to begin the Virtual Officers Training so you are better able to understand your position and to make you aware of available IEEE's support. The virtual format allows you to proceed through the training modules as you have time. They are available on our SEM web site www.ieee-sem.org under the "SEM Tools/Links" column on the left side of the home page by clicking on "Training Materials" or at http://sites.ieee.org/sem/about-sem/training/ .

I look forward to hearing from you and seeing you at our events. As always, your ideas and suggestions are encouraged and welcome.

Robert Neff
IEEE SEM Section Chair
RLNeff1@gmail.com

After The Fox:

1st Fox Hunt 2019:

On the morning of Saturday May 25th, 2019 members of Motor City Radio Club (MCRC) gathered at a local restaurant for a genial breakfast and general social conversation. At 10:30, when breakfast was over, most adjourned to their vehicles, erected HF (High Frequency) directional antennas, and prepared for their first 'Fox Hunt' of the season.

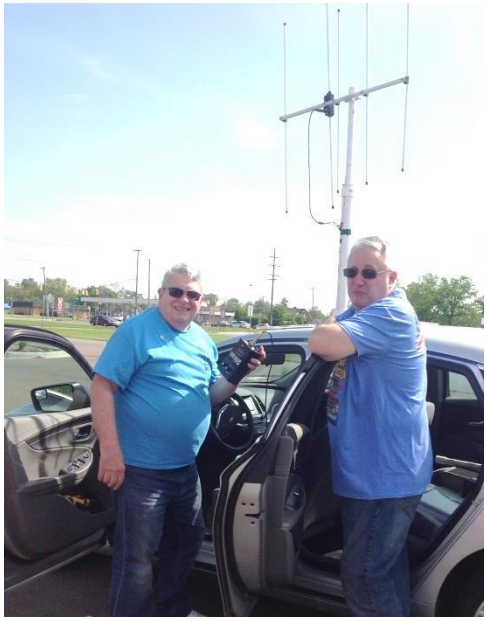
Fox Hunting has a long tradition with Amateur Radio groups in which one of the group members, (the Fox) takes their mobile radio communications equipment to a nearby, but secrete location, and hides, often 'in plain sight' but, sometimes cleverly hidden from direct view by causal passersby. This can add an extra challenge for those of the group who are the active 'hunters'. The Fox then transmits a specific signal, along with their unique Amateur Radio 'Call Sign' for one minute on, then for one minute off, continuing until either the Fox is located by the hunters, or the agreed upon allowed time has expired.

The 'hunters' begin the hunt by setting up their mobile equipment at their vehicles, taking initial bearing readings on the signal. The photo at the right shows two members of MCRC preparing their equipment to take that initial axis reading. Once an initial direction toward what appears to be the Fox's location is set, the hunters climb into their vehicles, and the 'hunt' is on!

Conditions for the hunt are often complicated by radio wave reflections from nearby structures (both for the hunters and at the Fox's hidden location) which can send the hunters off in 'interesting' directions. But, the general behavior of radio 'plane waves' of increasing signal strength as you approach the source (+ 3dB each time the distance is reduced by half) generally holds true. However, intervening geography (hills), structures (buildings), vegetation (trees), etc. tend to give false indications as the hunters move from one observation location to another.

Generally, the 'complications' introduced into the hunt by local landscape and structures provide enough complications to each hunt to make it 'interesting' enough and send hunters in enough different directions that all the hunters have a chance to get acquainted with parts of the local area they might never have seen or noticed before.

Most eventually find the Fox's 'hiding hole' and enjoy conversations with the Fox, and the other hunters, about the complications of this particular hunt.



So….what's it all for? It could be just for the fun and challenge of the 'hunt'. It could be for developing facility at using their radio equipment and antennas. It could be just for the comradery of a morning out with friends. But, there is a more serious side as well.

Part 97 of the FCC regulations, which gives the Amateur Radio service its basis in law, contains the rules governing the Amateur Radio Service. It lists five "purposes" for the existence of amateur radio.

Number one is providing emergency and public-service communications.

Part of that charge includes finding emergency transmitters when planes go down, or boats become disabled, or hikers with radio communications equipment become stranded. Protecting the emergency communications network also includes finding problem transmitters when, for example, a transmitter is turned on by accident, without the knowledge of its owner. If left on, it would interfere with local communications.

Amateur Radio operators locate and identify the problem so the owner can take remedial action.

Sometimes, problems with electrical, electronic or electrical power equipment cause it to emit radio emissions on frequencies that directly interfere with local police, fire or ambulance services. Again, Amateur Radio is often called into service to help locate the source of the problem.

As part of its charter as a not-for-profit, public service organization, Motor City Radio Club maintains its equipment and its operator's skill set to fulfil one part of its duty to the first element of the FCC Part 97 'Charter', "…providing emergency and public-service communications.".

STEM in Rochester Hills:

Science, Technology Engineering & Mathematics (STEM) training seems to be in short supply in our traditional, lecture based educational system.

The part of the process of helping each student 'get it', with 'hands on' experience to solidify knowledge has few opportunities when classes and teachers are tied to rigid progress schedules and the next evaluation test is looming ahead.

Hands on STEM:
At the Rochester Hills library volunteer members from the historic McMath Hulbert Solar Observatory (located nearby in Lake Angelus, MI) conduct classes in programming small microprocessor systems so students can experience control of these devices and understand how program changes affect the performance and outcome of device operation.

Ken Redcap and Tom Hagen (above) teach a group of young students the details of 'Python' in order to program their 'Adafruit' microprocessor systems to recognize different colors.

Rochester Hills lead Youth Librarian Tierney Czartoski observes the STEM class while a student applies the lesson to his Adafruit microcomputer and uses the colored pen tops to 'test' the results of his work.

STEM Planning:

STEM Summer Activities:

The IEEE Education Committee (EduCom) STEM (Science, Technology, Engineering, Mathematics) activities normally focus on the local 'School Year' schedule to provide alternative 'hands on' learning experiences for young students. However, the Carole Kennedy Library in Dearborn Heights conducts a series of 'science nights' for families to explore alternative learning experiences. Members of the SEM EduCom participate and assist library staff for several of these.

Unconference:

Almost 100 librarians from all parts of Southeastern Michigan gathered to participate in the "STEAMers Think Tank" unconference in May at the Rochester Hills library for a day of panel presentations with questions and answers. This was followed with a series of specialty 'break out' group discussions of a wide variety of topics related to different STEM training topics. (See the 'hold the date' poster at the right.)

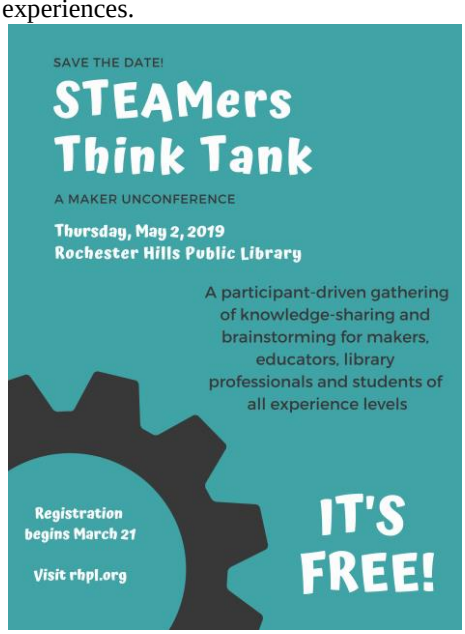
Conference attendees freely exchanged their experiences, ideas and discussed current planning, difficulties, progress and hopes for expanding STEM activities in libraries all around Michigan. Many exchanges resulted in trading e-mail accounts and phone numbers in order to follow up with more detail on experiences that can help boost some libraries up into adopting a STEM activity that will be 'new for them'.

We hope this will be a yearly event for local STEM enthusiasts.

Inventory:

Summer is also a time for a yearly assessment of the condition and state of equipment used to each specialty topics such as 'Fundamental of Electricity' and 'Safe Soldering'.

At the Caroline Kennedy library in Dearborn Heights, Al Habbal, Jim Moir and Malcolm Lunn conducted the yearly assessment of the STEM equipment used for IEEE classes. Note that most of this equipment was supplied by generous grants from ZF Cares to help encourage young students to learn more about technology subjects through 'hands on' experiences.



Inventory activities also took place at the Wyandotte, MI, 'Bacon District Memorial Library' with Barry Steltz and Jaclyn Malnar, the Bacon youth librarian, helping review equipment 'in stock' and planning for replacement and 'refresh' of those elements that have 'gone missing', and such items as batteries that have died of old age.

Inventory at CKL

Special Events:

Direct STEM teaching usually takes a step back during the summer months, with the exception of 'Special' event days when some of our libraries hold a 'Science Night' with a focus on STEM related topics, members of the SEM Education Committee step in to help young students gain a better appreciation of the excitement and wonder that keeps all of us engineers working in the field, and enjoying our careers.

Several of these are planned for the Caroline Kennedy Library in Dearborn Heights this summer and into the fall. Also plans are being developed for STEM activities of all sorts at the Makers Faire to be held at 'The Henry Ford' in the summer. If you would be interested in participating in any of these activities, contact members of the SEM Education Committee identified in the SEM Organization Roster available for download at: https://r4.ieee.org/sem/wp-content/uploads/sites/6/2019/04/Organization_Roster_3.29.2019-1.pdf

Electric Aircraft Symposium

AIAA/IEEE ELECTRIC AIRCRAFT TECHNOLOGIES SYMPOSIUM

22–24 AUGUST 2019 | INDIANAPOLIS, INDIANA

Building upon a successful event in 2018, the 2019 Electric Aircraft Technologies Symposium will look at progress over the past year and continue the discussion about the aerospace industry goals for future aircraft. To accommodate rapid growth in emerging markets and ensure sustainability of air travel, one approach being explored is using nontraditional aircraft propulsion: electric, turboelectric, or hybrid-electric powertrains. AIAA and IEEE crafted this unique symposium to bring the aerospace engineers and the electrical engineers together to discuss these topics and their challenges.

The 2019 symposium will focus on electric aircraft technology across three general areas: electric-power-enabled aircraft configurations and systems requirements, enabling technologies for electric aircraft propulsion, and electric aircraft system integration and controls.

TOPIC AREA 1

Aircraft Configurations and Systems Requirements

- System feasibility studies
- Electric-enabled innovative aircraft design and propulsion concepts
- Electrical powertrain performance requirements
- Safety, critical failure modes, certification
- Lifecycle energy, operational cost, and emission analysis

TOPIC AREA 2

Enabling Technologies and Components

- Machines and drives integration for optimum performance
- Conventional, cryogenic, and superconducting
- Energy storage devices and systems
- Electric machine and gas turbine integration
- New material solutions or applications
- Novel thermal management solutions

TOPIC AREA 3

System Integration and Controls

- Electric powertrain architectures
- Fault isolation and reconfigurable systems
- Energy management systems
- Integrated electro-thermal systems
- System modeling tools
- Monitoring and diagnostics
- Verification and testing

Learn More

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EMCFest 2019:

In May 2019, Professor Eric Bogatin, came to instruct the Southeastern Michigan EMCFest participants of the finer points of EMC measurement.

Professor Bogatin, Dean of the Signal Integrity Academy, specializes in making complex signal integrity topics easy to understand while strengthening engineering intuition.

Dr. Bogatin wanted us to understand the physical interaction of the components and anticipate measurement values before taking them, making it obvious when EMC measurements are incorrect.

One of the topics was Don't Let Ground Bounce Spoil Your Day. Ground bounce is cross talk that is dominated by inductive coupling. Dr. Bogatin said that any structure other than a wide uniform ground plane will cause ground bounce as will two signals sharing a return path. Professor Bogatin suggested using differential signaling to reduce ground bounce when two signals share the same path. Thus, the return currents of the two signals will overlap and cancel out.

He suggested avoiding signal paths without continuous return paths, narrow package traces, narrow connector pins, resistor SIPS, plane transitions (return path impedance discontinuities), gaps in planes (return path impedance discontinuities), Vcc to Vss connections (return path impedance), vias- signals changing layers (return path impedance discontinuities). He urged us to remember that noise margins are getting smaller, and planes have the smallest inductance. Stick with planes- the wider the better!

Professor Bogatin explained how to make valid power rail measurements without destroying a scope in the presentation Secrets to Successful Power Rail Measurements. He said that we must be aware of the limitations of EMC measurements. He reminded us that PC boards should be designed with built in testing connection points. We need to understand the operation of the oscilloscope to avoid being tricked by measurement anomalies.

The scope bandwidth and signal bandwidth is very important. If the signal bandwidth is large - using a probe, such as a 10x probe, with a small bandwidth will be futile - any measurements will not allow us to understand the dynamics of what we are measuring. He warned us that large DC offsets limit voltage resolution, rf pick up can swamp rail noise, poor SNR can hide rail noise, low-impedance probe loading can distort rail voltages and that inadequate BW response of a measurement system can hide rail noise. He suggested that active "rail" probes be used which allow for high resolution high bandwidth measurements of signals with DC offset. Soldered-in tips should be used where possible to provide for low rf pick up and highest bandwidth. This provides the lowest loop-inductance tip for the probe measurements!

Faster Time to Insight Using Real Time Spectral Analysis of Power Rails was Dr. Bogatin's third subject. Professor Bogatin reintroduced us to the principles of signal filtering, and the figures of merit that are used to describe a signal. He talked about the differences between time domain analysis, frequency domain analysis, and how to get from one to another.

Dr. Bogatin explained the basis of FFT analysis of signals now available in oscilloscopes. He reviewed how the analysis is impacted when the measurement does not contain an integral number of waveform periods and how intelligent windowing is used to lessen the impact of this "leakage" error. He covered some of the most popular filtering windows. Professor Bogatin explained why the Blackman-Harris, Von Hann, and Hamming windows reduce leakage.

Transmission Lines were Dr. Bogatin's final subject in his presentation, What Every Scope User Needs to Know About Transmission Lines. He reminded us that every measurement device includes a transmission line and thus a delay and a rise time as well as the possibility for mismatch effects. Professor Bogatin told us once again his favorite rule, Rule #9:
Never do a measurement or simulation without first anticipating what you expect to see.

He said that we must understand that all interconnects are transmission lines, signals propagate with an instantaneous impedance, those signals will reflect with any change of impedance, and that Vth, Rth, RT need to be established in order to predict the measurement values. He explained when an active probe and a passive probe should be used along with the best way to connect them to the scope.

Dr. Bogatin taught us an immense amount about EMC measurements!

Kimball Williams, Scott Lytle, and Candace Suriano were honored for their work in EMC education.

Jim Woodyard presents Candace Suriano with her award for Excellence in Service to EMC Education.

Teledyne LeCroy gave all attending a gift subscription to the Teledyne LeCroy Signal Integrity Academy for three months.

Thanks Professor Bogatin, Teledyne LeCroy, EMCFest staff, and the many vendors that participated to make this year's EMC fest another great success!

Below, Malcolm Lunn, (on left) worked tirelessly behind the scenes to set up all the audio & video (A/V) equipment that made EMCFest a success relaxes with a friend at lunch during the day. During all the lectures and presentations Malcolm constantly monitored all the A/V operations to ensure clear visuals and intelligible audio signals for every attendee.

The strong support of industry EMC engineering suppliers, vendors, services and their representatives is one of the primary reasons for the continued yearly success of EMCFest.

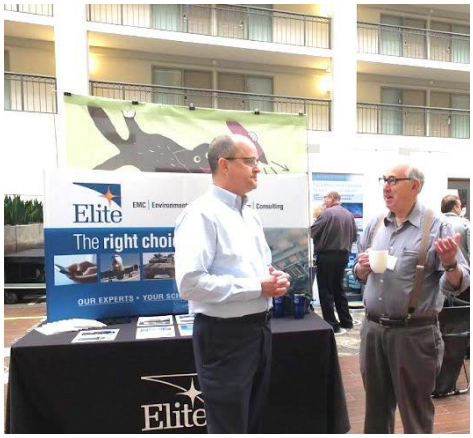
The EMC fest included a vendor display area where participants made many valuable professional contacts.

Continued on the next page.

EMCFest – 2019 Happenings

Along with the great training at EMCFest one of the primary focal areas of the day was the over 40 vendors who provided SEM engineers with direct access to the latest technological solutions for EMC problems, and ways to detect, find, analyze and correct new product performance before they go into production.

Some vendors come from neighboring cities, such as Chicago, where their own version of EMCFest took place just two days before the SEM event. Below, Steve Laya, of Elite Electronics in Chicago talks with Arnie Neilson (retired) of Ford Motor Company.



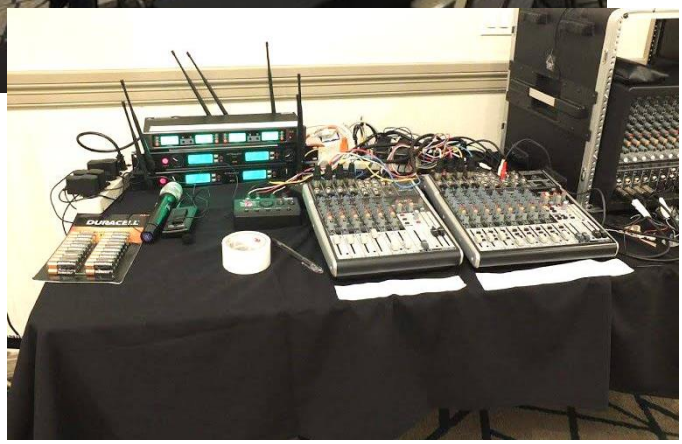
The crowd shown below was continuous throughout the day with visitors and vendors engaging in animated discussions at every booth.

EMC engineering companies from all over joined us. Germany is represented above, and Japan is shown below.

Even companies from Michigan were represented.

EMCFest – 2019 Continued:

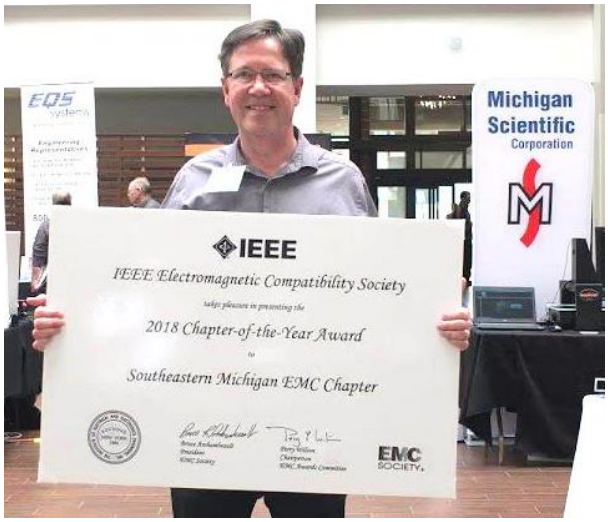
Setup of equipment began the evening before the event with Malcolm Lunn placing projectors, screens, microphones, speakers, controls and lots of wiring in advance of the expected guest's arrival.



Below: Matt Feusse helps one of the attendees to find his name tag at the registration desk.

Scott Lytle (Chapter 8 Chair) and Matt Feusse (Chapter 8 Treasurer) man the registration desk as attendees begin to check in for the day.

Candace Suriano and Chapter 8 (EMC) Treasurer Matt Feusse take time to relax at the registration / sign-in table during a lull in activities. Total registration for EMCFest 2019 was 152 engineering visitors and 77 Vendors for a total of 229.
No wonder the registration desk was so busy!



Above: Scott Lytle, Chair of our EMC Chapter, proudly displays the EMC Society award for the 2018 Chapter of the year award. This is a fitting tribute to 20 years of successful EMCFest events in Southeastern Michigan.

WIE Summit:

Click on page to open Registration Option

IEEE WIE LEADERSHIP SUMMIT

WHAT: ***IEEE Women in Engineering AI Leadership Summit in Chicagoland***

Join women leaders and innovators to learn about AI technologies, AI applications, how to build an AI solution, and to understand the ethical complication of AI.

Women and men are welcome to attend the event!

WHEN: 8:18 – 5pm, followed by a reception, 9/20/2019

WHERE: Nokia Auditorium, 2000 W. Lucent Lane, Naperville, IL 60563

HOW: https://attend.ieee.org/wieails-2019/

Our Speakers:

IEEE WIE event!

ZF Employment Ad

Section Matters

Joint Chapter Meetings: A Painless Way to Keep Current

Engineering, as are most disciplines in the world, is evolving. Electrical engineering is evolving very rapidly. How many of today's EEs know the function of a suppressor grid or the task of a 6SN7? Software was the domain of mathematicians and the occasional scientist. Solid state was the domain of physicists and chemists. The challenge for today's engineer is to stay apace with rapid technological advancements..

IEEE has Sections that focus on EEs staying current in their field and exploring other areas through a variety of ways, including conferences, meetings and courses. IEEE SEM has all of these available. Since there is a finite amount of time to attend meetings, conferences and take courses, the challenge is to become more efficient in staying current and expanding one's networks of contacts and interests. Holding joint meetings with other Chapters is an easy solution. Joint Chapter meetings lighten the administrative burden while reducing the cost for each Chapter. A joint meeting can allow exploration of an area that is a complimentary field of interest, or is one you always wanted to know about. What better way to do this than by having a joint meeting?

Chapter officers should contact one (or more) of their fellow Chapter officers to explore scheduling a joint meeting. Chapter members should let their officers know which Chapters they would like to join with for a meeting. Joint meetings are easy, reduce administrative burden and expenses, and can even be fun. Joint meetings are a painless way to expand everyone's horizon.

Joe Giachino

Section Focus

The IEEE SEM Section Officers have reaffirmed the Mission and Goals of the section with the guidance of the Region 4 leadership. The Mission and Goals conform to those of IEEE worldwide.

You have probably seen the Mission and Goals before. However, it is important to keep these clearly in mind and remind ourselves often that this is what we are about and what we are trying to accomplish.

Section Mission

Inspire – Enable – Empower and Engage Members of IEEE at the local level.
For the purpose of:

- Fulfilling the mission of IEEE to foster technological innovation and excellence for the benefit of humanity,
- Enhancing the members' growth and development throughout their life cycle, and
- Providing a professional home,

Section Goals

- Increase member engagement,
- Improve relationships with and among members,
- Increase operational efficiency and effectiveness, within the section and its interfaces,
- Enhance collaboration – serve as the local face of IEEE to the community,
- Increase membership, and
- Ensure the collection of appropriate information necessary to assist the IEEE to become a data driven organization.

It is now the task of the section leadership to guide and coach all section officers and elements to focus their activities on achieving those goals

ORG UNITS cheat sheet

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)		
Consultants Network Affinity Group:	(CN40035)	
Life Members:		
Young Professionals:		
Women in Engineering:		
Chapter: 01	(SP01) (CAS04) (IT12)	Signal Processing Society, Circuits and Systems Society and Information Theory Society
Chapter: 02	(VT06)	Vehicular Technology Society
Chapter: 03	(AES10) (COM19)	Aerospace and Electronic Systems Society and Communications Society
Chapter: 04 "Trident"	(AP03) (ED15) (MTT17)	Antennas and Propagation Society, Electron Devices Society, Microwave Theory and Techniques Society,
Chapter: 05 "Computer"	(C16)	Computer Society
Chapter: 06	(GRS29)	Geosciences and Remote Sensing Society
Chapter: 07	(PE31) (IA34)	Power Engineering Society, Industrial Applications Society
Chapter: 08 "EMC"	(EMC27)	Electromagnetic Compatibility Society
Chapter: 09	(IE13) (PEL35)	Industrial Electronics Society, Power Electronics Society
Chapter: 10	(TEM14)	Technology and Engineering Management Society
Chapter: 11	(EMB18)	Engineering in Medicine & Biology
Chapter: 12	(CS23)	Control Systems Society
Chapter: 13	(E25)	Education Society
Chapter: 14	(RA24)	Robotics And Automation Society
Chapter: 15	(NPS05)	Nuclear Plasma Sciences Society
Chapter: 16	(CIS11) (SMC28)	Computational Intelligence Society, Systems, Man and Cybernetics Society
Chapter: 17	(NANO42)	Nanotechnology Council

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)	
University Of Detroit-Mercy:	(STB00531)
Michigan State University:	(STB01111)
University Of Michigan-Ann Arbor:	(STB01121)
Wayne State University:	(STB02251)
Lawrence Technological University:	(STB03921)
Oakland University:	(STB06741)
Eastern Michigan University:	(STB11091)
University of Michigan-Dearborn:	(STB94911)

Curated & Formatted By

Sharan Kalwani,
Wavelengths team
2017-2018-2019

Non-IEEE Events

We try to publish IEEE events in several places to ensure that everyone who may want to attend has all the available relevant information. **NOTE: The IEEE SE Michigan section website is changing to its new home, kindly make a note of it! The new home is located at http://r4.ieee.org/sem/.** The old links will continue to work for sometime, but will be changing permanently in the near future.

SEM e-Wavelengths:
www.e-wavelengths.org
This is our 'Active' event listing site where everyone should look first to see what events are scheduled for our Section in the near future.

SEM Web Calendar:
http://r4.ieee.org/sem/
Select "SEM Calendar" button in the top row of the website.

SEM Web Meetings:
http://r4.ieee.org/sem/
Select "SEM Meeting List" button in the left-hand column.

vTools Meetings:
http://sites.ieee.org/vtools/
Select "Schedule a Meeting" button in the left-hand column of buttons.

Other IEEE Local Meetings:
http://www.e-wavelengths.org/

Other Happenings

Here are some of the non-IEEE events that may be of interest to you or someone you know. Let us know if you have a special interest in a field that encourages technical study and learning, and wish to share opportunities for participation with members of the section.

Send details to: wavelengths@ieee-sem.org

Michigan Institute for Plasma Science and Engineering: Seminars for the 2017-2018 academic year: http://mipse.umich.edu/seminars.php

Model RC Aircraft
http://www.skymasters.org/

Model Rocketry
http://team1.org/

Astronomy
http://www.go-astronomy.com/astro-clubs-state.php?State=MI

Experimental Aircraft Association
https://www.eaa.org/en/eaa/eaa-chapters/find-an-eaa-chapter

Robots
http://www.therobotgarage.com/about-us.html

Science Fiction Conventions
https://2019.penguicon.org/

http://www.confusionsf.org/

Mad Science
http://www.madscience.org/

ESD PE Review Class
https://www.esd.org/programs/pe/

Maker Faire:
https://swm.makerfaire.com/

Executive Committee

The SEM Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2018 arrangement of communications links designed to provide inter-unit coordination and collaboration.

The SEM Executive Committee meets in a teleconference each month on either the first Wednesday or first Thursday at noon. The specific meeting days, times, phone or WebEx numbers and log in codes are published on the IEEE SEM Website calendar: **http://r4.ieee.org/sem/** Click on the "Calendar" button in the top banner on the first page of the web site.

If you wish to attend, or just monitor the discussions, please contact Eric George, the section secretary at: **eric.george.us@ieee.org** and request to be placed on the distribution list for a monthly copy of the agenda and minutes.

More meeting details are available on the next page of this newsletter.

Other Meetings:
About half of our members maintain memberships in one or more of the IEEE technical societies, which automatically makes them members of the local chapter which is affiliated with that society. As a result, they should receive notices of the local chapter meetings each month.

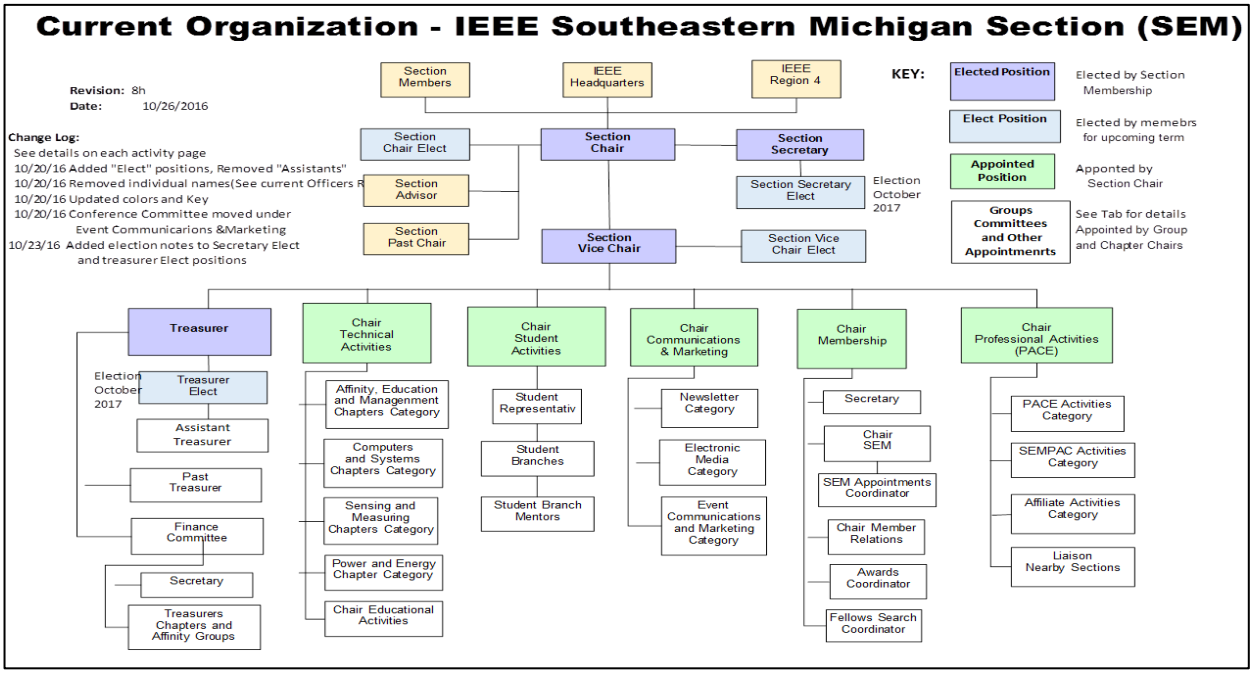
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to send meeting information to our webmasters for posting on section's calendar.

More detailed information on meetings may be found through the IEEE SEM Website: **http://r4.ieee.org/sem/** and clicking on the **SEM meetings list** button near the bottom of the left-hand banner.

Automatic e-mail notification of web updates may be received using the "**Email Notifications**" button at the top of the **SEM Tools/Links** side banner.

Eric George - SEM Asst. Secretary

Download the complete SEM Organization Chart, in PDF format, from our Website at: http://r4.ieee.org/sem/
Click on "About SEM" Tab and "Current Officers" ***(NOTE: this is now password protected)***



ExCom Meeting Schedule

Below is the 2018 schedule for the Section ExCom meetings with links to add the events to your calendar. It is important that at least one person from each Chapter/Affinity Group attends each scheduled ExCom meeting. Information on each Face-to-Face (in-person) Meeting will be sent out once the venue is confirmed.

Please mark your calendars for the 2018 meetings. Or, link your personal calendar to the SEM Web calendar.

ExCom: Meeting Schedule for 2019:

~~F2F, Wednesday Jan 9, [New Officers Meet and Greet]~~
~~Teleconference, Thursday Feb 7~~
~~Teleconference, Wednesday March 6~~
~~**F2F, Thursday, April 4**~~
~~**Teleconference, Wednesday May 1**~~
~~**Teleconference, Thursday June 6**~~
F2F, Wednesday July 10 [Moved for the 4th of July]
Teleconference, Thursday August 1
Teleconference, Wednesday September 4
F2F, Thursday October 5
Teleconference, Wednesday November 6
Teleconference, Thursday December 5

Note: All IEEE Members are welcome at any IEEE meeting, at any time but, please register so we can be sure to accommodate you.

Eric George
SEM Assistant Secretary

Editor's Corner

Previous editions in this series may be found on the IEEE SEM website at: http://r4.ieee.org/sem/. Click on the "Wavelengths" button in the top row of selections.

Comments and suggestions may be sent to the editorial team at wavelengths@ieee-sem.org

OR

k.williams@ieee.org
sharan.kalwani@ieee.org
nilesh.dudhaia@ieee.org

We rely on our officers and members to provide the 'copy' that we finally present to readers of the newsletter. The **Wavelengths Focus Plan and Personal Profiles** plan shown in the matrix below is presented to ensure coverage of section activities and events.

We try to complete the newsletter layout a week before the first of the month to allow time for review and corrections. If you have an article or notice, please submit it two weeks before the first of the month or earlier if possible.

The plan below relies on the contributions of our members and officers, so please do not be shy. If you have something that should be shared with the rest of the section, we want to give you that opportunity.

Editors:

We are always looking for members interested in helping to edit the newsletter. The process is always more fun with more people to share the duties. Having more participants and contributors also helps us keep the newsletter interesting.

Heads Up

We are contemplating making the submissions of articles and events for the Wavelengths, a little easier and a little more inviting. Ideas are of course welcome and to this end, we are toying with setting up a little "newsletter portal". Stay tuned for some news on that end!

Join the Team:

If you feel you might like to join the team, or would like to train with us, please contact one of us at: wavelengths@ieee-sem.org OR any one of the following:

sharan.kalwani@ieee.org
k.williams@ieee.org
nilesh.dudhaia@ieee.org

Wavelengths Annual Publication Plan for Articles

Month	AG's	Ch's	Ch's	SB's	Special Notice	Reporting Events	Monthly Focus	Awards
Jan		1		OU	Future Cities Judges	Election Results	Resolutions	
Feb	Cons	2		MSU	Science Fair Judges	Officer's Welcome	Surviving Winter	Future Cities
Mar		3	13	EMU	Spring Conf. Flyer	Spring Conference	Spring Conference	Science Fair
Apr		4		U/M-D	National Engrs Wk.	Future Cities	Chapter Focus	ESD - GOLD
May	Life	5	14		Outstanding Eng Awd	Science Fair	Elections - Prep	New Fellows
Jun		6			IEEE-USA Apmts.	ESD Banquett	Leadership Skills	SEM Awards
Jul		7	15		Nominations Call	MD-Webcasts	Students Issues	Region 4
Aug	WIE	8			MGA - Apmts.	Tech-Webinars	Womens Issues	
Sep		9	16	LTU	Region 4 Apmts.	Engineers Day	Professional Skills	
Oct		10		U/M-AA	Fall Conf. Flyer		Fall Conference	
Nov	YP	11	17	WSU	ELECTIONS!		Humanitarian	
Dec		12		U/D-M	IEEE-Com Apmts.	Fall Conference	Happy Holidays	

Wavelengths Annual Publication Plan for Personal Profiles

Month	Profiles	Profiles	Committees
Jan	Chair	New Officers	
Feb	V-Chair	Secretary	Communications
Mar	Treasurer	Sect-Adviser	Conference
Apr	Stud-Rep		Education
May		Sr Officers	Executive
Jun			Finance
Jul			Membership
Aug			Nominations
Sep			PACE Activities
Oct			Student Activities
Nov			Technical Activities
Dec		Editor-WL	

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Web & Social Sites

SEM Website
http://r4.ieee.org/sem/

Each of the sites below may be accessed through the SEM Website:

Section Website Event Calendar
(Select the "SEM Calendar" button - top row.)

SEM Facebook Page
(Select the "f" button under the top row.)

SEM LinkedIn Page
(Select the "in" button under the top row.)

SEM Officers:
For a complete listing of all - Section - Standing Committee - Affinity Group - Chapter and Student Branch Officers, see the SEM Officers Roster on the SEM web page under the "About SEM" button and select "Current Officers."

Online Community http://sem.oc.ieee.org

Section Officers

Section Chair
Robert Neff

Section Secretary
Eric George

Section Vice-Chair
Nevrus Kaja

Section Treasurer
Michael Folian

Standing Committees:

Section Adviser
Don Bramlett

Chair Communications & Marketing

Chair Educational Activities

Chair Finance
Nevrus Kaja

Chair Membership
Irina Sullivan

Chair Nominations & Appointments
Kimball Williams

Chair Professional Activities (PACE)
Sharan Kalwani

Chair Student Activities
Mel Chi

Student Representative

Chair Technical Activities
Kimball Williams

IEEE Southeastern Michigan

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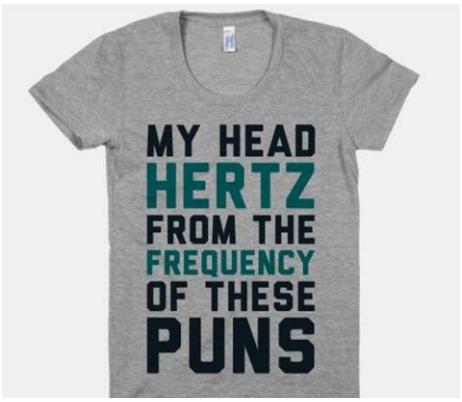
Visit Us on the Web at:
http://r4.ieee.org/sem



Advertising Rates

SEM Website & Newsletter Advertising is coordinated through our e-Wavelengths website at:

http://www.ieee-sem.org/ewavelengths/?page_id=181.

Please see the information listed on the site, and contact our web editor of e-Wavelengths, Nevrus Kaja, for further details.

Leadership Meetings

SEM Executive Committee Monthly Teleconferences:

- 1st Wednesday or Thursday of Each Month @ Noon
- Check the Section Web Calendar at:
  http://r4.ieee.org/sem/sem-calendar/
  (Select the "SEM Calendar" button in the top row.)

SEM Executive Committee Face-to-Face Meetings:

- Once every Qtr. Find the location, and Registration at:
  https://meetings.vtools.ieee.org/main

SEM Standing Committee Meetings:
SEM Affinity Group Meetings:
SEM Technical Society/Chapter Meetings:
SEM University Student Branch Meetings:

- Meeting schedules are announced on SEM Calendar
  http://r4.ieee.org/sem/
  (Select the "SEM Calendar" button in the top row.)

- Registration for all at:
- **https://meetings.vtools.ieee.org/main**