

Wavelengths



Volume 58 – Issue 6

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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 as 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.

eNotice Policy:

An important description of our SEM communications policy is explained on page #2. This policy, adopted at the last Executive Committee meeting, spells out when SEM will send you notices of SEM activity.

Upcoming Events:

Some coming events are the Women in Engineering Ice Cream Social, details on page #3, and the joint Computer Society and Vehicle Technology Society event described on page #5. Also see the Internet security seminar announcement as well. Many other events can viewed on the interactive calendar on the home page of the section web site www.ieee-sem.org

STEM Activity:

Our Library STEM program is growing thanks to our volunteers and the generous financial support of ZF. Please read the report on pages 20-23.

Chapter and Affinity Group Activity:

All Chapters and Affinity Groups are encouraged to have monthly meetings and educational events as



often as possible. They are required to have a minimum of 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 budget you need to contact our Financial Committee and supply a plan for what you want to do.

Officers Training:

As a reminder, all Southeastern Michigan Section Chapter and Affinity Groups 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

Inbox Overload?

It would be difficult to find anyone in modern society not connected to society at large through one or more electronic communication media pipelines. Given the number of diverse concerns and issues we are all facing, the result is often a serious overload, and backlog, in one or more of those channels. Many of our members have let us know (in no uncertain terms) that they receive too many IEEE e-mail messages, and “*Please do something about it!*”

One of the most often used e-mail channel for local IEEE Southeastern Michigan Section (SEM) communications in recent times has been **eNotice**. While the local IEEE officers cannot limit messages from other sources, the SEM Executive Committee (ExCom) has taken steps to at control the number and type of eNotice messages sent from our Section leadership to our Section members at large.

Note that communications between our Geo-units (Affinity Groups, Chapters, Student Branches and HKN Chapters) and its membership is not limited by this policy. It only applies to ‘Mass’ eNotice messages sent to everyone, at large.

The policy document shown below is now in effect, and is being presented to our officers, and our members, both for information and comment.

SEMI eNotice Use Policy

This general policy applies to all Operating Units of the IEEE SEM Section: Officers / Committees / Affinity Groups and Chapters / Student Branches, HKN Chapters, effective 5/25/2018.

1. Purpose:

- **This policy is enacted with the intention of limiting the amount of e-mail that is sent Section wide to our members. This policy applies to all SEM Standing Committees.**
- **Note: This policy does not apply to Geo-unit (Affinity Groups, Chapters, Student Branches and HKN Chapters) normal communications.**

2. Conditions:

- **Upon the approval of at least one of the members of the Executive Committee, a single eNotice may be sent to all Section members for a specific purpose.**

3. Periodic Automatic Exceptions:

- **The use of eNotice for certain periodic publications are automatically expected to release their eNotices on a regular basis:**
 - **E-Wavelengths bi-monthly around the 1st and 15th of each month,**
 - **Wavelengths PDF newsletter around the 1st of each month.**
 - **A single ‘Correction’ message may be sent if a serious error is noted in either of our regular publications.**

4. Conferences and Special Meetings... shall be limited to pre-approved eNotice release dates agreed to by the appropriate ExCom officer.

Note: During the planning stage of any conference or special meeting, the planning committee shall submit a publication schedule request to the ExCom officers for consideration and/or approval.

WIE Social Event

YOU SCREAM, I SCREAM, WE ALL SCREAM FOR ICE CREAM!

The IEEE SEM **Women in Engineering** invites all IEEE and SWE members (and their families) who are able, to join us for a reprise of our Ice Cream Social!



(We had so much fun the last year that we decided to do it again!)

Come meet and 'network' (talk) with WIE and SWE members, and we will buy your first cone.

Plan to join us on **Sunday, June 10, 2018**
from **12:30 PM to 2:30 PM** at:

Michigan Creamery
302 S State St, Ann Arbor, MI 48104

There is no charge for the gathering but, please register so we know who and how many to expect.

Register at: https://events.vtools.ieee.org/meeting_registration/register/48155

We look forward to seeing you on that Sunday.

The event is open to all IEEE SEM and SWE members, who want to network, enjoy a relaxing early afternoon together and meet a few of the wonderful and fascinating people who live and work in our area.

Come join us!

EWG Gala

The Detroit Chapter of Engineers Without Borders invites all to....



An Evening with EWB Detroit
BLACK TIE FUNDRAISING GALA

Friday, June 8, 2018 at 6:00pm
Detroit Yacht Club Ballroom

Featuring:

	Jason Douglas Comedian Emcee for the Evening	Brian Sampson Concert Pianist Cocktail and Dinner Music	
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Cocktail Hour
Three Course Dinner
Comedy Show

Silent Auction
Raffle
Red Carpet Photo Op

Purchase tickets at ewb-detroit.org/events/gala/

Computers+Automobiles

**IEEE Computer Society Chapter &
Vehicle Tech Society Chapter
Jointly Presents
"Rise of Computing in Automotive DNA"**



The growth of electronics within the automobile has been nothing short of phenomenal. In 2015 it accounted for 13% of the total value of the car and in 2018 it has now jumped to 20%. A large portion of that has been purely due to the rise of computing component, such as ADAS, ECUs, etc. New technologies such as 3D laminated glass, haptic sensors, and augmented reality heads-up displays — which offer drivers alerts, safety aids, and warnings on invisible screens embedded in the windshield — have entered the vocabulary of traditional suppliers. Large navigation and entertainment display screens in the dashboard offer Web-based information and media as well as data arrays picked up from networked roads and other cars. The autonomous car will further up the ante, and soon. It will change the “living space” dimension of automotive interiors. The front seat may be reoriented to face the back seat, so passengers can converse as they would in their living rooms while the car cruises to a destination. Or seats could face a windshield that’s become a large movie screen.

This talk will focus on many of what is the “under the hood” computing portions, technologies and the accompanying massive software baggage that needs to go with it. It is time we got more familiar with the computing technologies and underlying foundations that go with it.

We will introduce many terms, concepts and issues to help folks in Automotive technologies get better prepared for the future (or is fusion a better word?) world of automotive & computer tech.

Speaker: *Sharan Kalwani*

Biography: *With over 30+ years’ experience, in various aspects of the way hardware, software has evolved, you can expect a unique perspective on the whole evolution of computing, now making its presence felt in the automotive world. The speaker has presented at numerous conferences and is viewed as an active evangelist in his areas of expertise.*

Logistics / Details

- **When? Where? ...**
*Sponsored by
Vehicle Tech Society &
Computer Society
SE Michigan Chapters*
- **Date:** June 5th, 2018
- **Time:** 6 PM → 8:30 PM
- **Energy Sources:** Soda
Pop, water, Vegetarian
pizza, Cheese Pizza to
maximize information
absorption bandwidth
- **Audience:** All Students,
Members, Professionals
and Industry Techs
- **Where:**
Butzel Long
41000 Woodward
Bloomfield Hills
MI 48304
- **Parking:**
Parking structure right
behind the address

Pre-Registration Required! Use vtools at
<https://events.vtools.ieee.org/m/172732>

Proudly Co-Sponsored by

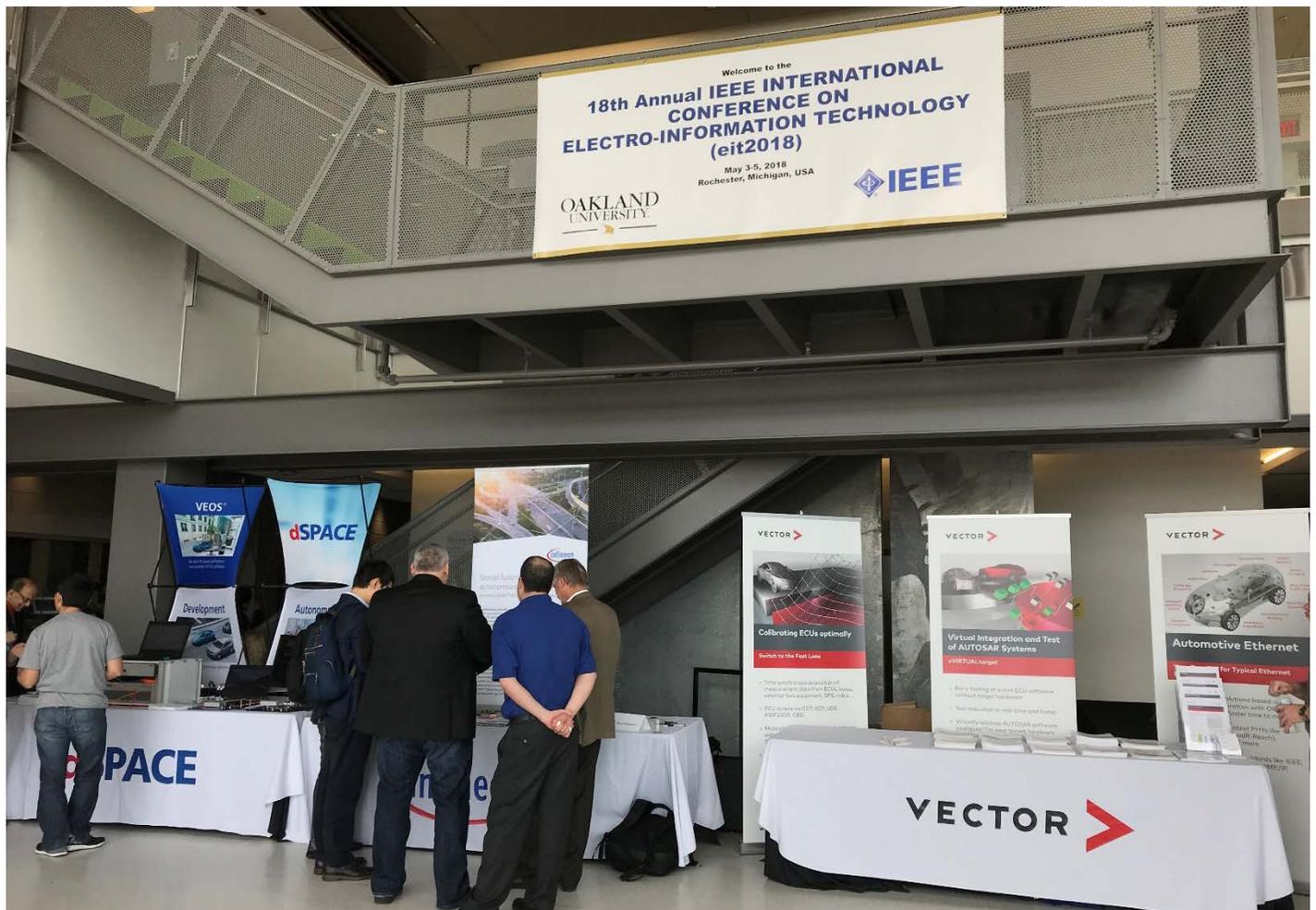


EIT2018 Report

IEEE INTERNATIONAL CONFERENCE on ELECTRO/INFORMATION TECHNOLOGY

*Report*

IEEE EIT 2018, 18th International Conference on Electro Information Technology Conference was held at Oakland University, Rochester, Michigan, on May 3-5, 2018. The conference was jointly organized by IEEE Region 4 and Oakland University. As a local organization, IEEE SEM, Chapter 5, Computers also supported/co-sponsored the conference. The Chapter 5 officers were in the EIT conference organizing committee, worked hard for the past 6 months to make the conference a success. Dr. Subra Ganesan, IEEE SEM Chapter 5 chair was the Co-General Chair for EIT 2018. The conference has been co-sponsored by the following industries: **Intrepid CS, Vector, Infineon and dSPACE.**



We received more than 240 papers and we have accepted nearly 172 papers from nearly 10 countries. There are 5 industry speakers, and 6 keynote speakers. The conference started with a inaugural session on Thursday 2 pm. Welcome remarks were delivered by the Conference Chairs: H. Mousavinezhad, S. Ganesan, and D. Aloji, OU SECS Dean L. Chamra, OU Provost J. Lentini, IEEE Region 4 Conferences Admin. J. Riess.

Prof. Hojjat Adeli, Ohio State University, gave the inaugural keynote speech on **“Recent Advances in Machine Learning and Classification Algorithms”**.

After 4 parallel technical sessions, the Welcome Reception Buffet was held at 6 pm. Mrs. Dona Burkard, Ford Motor Company gave a keynote speech on automotive electronics challenges.

The next day, Friday, morning keynote speech was given on **“Brains, Memristors and Race Logic”** by Dr. Advait Madhavan, NIST Center for Nanoscale Science and Technology. The lunch keynote on “Automotive Electronics Future architecture” was given by Mr. Dave Robins, President of Intrepid Control Systems. The awards banquet dinner speech was by Prof. Mark Steffka, IEEE EMC Society Distinguished Lecturer, on EMC, academia and industry collaboration. After the banquet dinner, awards were presented for three best papers, volunteers, keynote speakers, and session chairs.

The Saturday morning keynote speech was given by Prof. Madjid Fathi, University of Siegen, Germany, on **“Knowledge-Based Perspective on Big Data-Driven Smart City Developments”**. The conference ended at noon after the technical paper presentations.

Oakland University had the pleasure of hosting the same conference in 2001 before. Rochester is an exceptional location for a conference. It is surrounded by automotive companies and suppliers. The conference was held at the new Engineering Center building at the university.

The EIT 2018 Conference provided a wonderful forum for all to refresh their knowledge base and explore the innovations. The Conference strived to offer plenty of networking opportunities, providing opportunities to meet and interact with the leading academicians and researchers, friends and colleagues as well as sponsors and exhibitors. The technical papers are published by IEEE Explore and accessible to all IEEE and non-IEEE members.

All the attendees enjoyed the technical conference and the well-organized events. They also took a little extra time to enjoy the 1400-acre campus and unique beauty of this region. A tour to Henry Ford Museum was also organized after the conference on Saturday noon.

Computer Society Chapter 5 and the EIT 2018 Organizing Committee

EMCFest 2018 Report

EMCFest 2018 began with continental breakfast, registration, and opening of the vendor exhibit area, which always attracts attention as our attendees are able to view some of the latest and most impressive in new instrumentation, equipment, components and software for EMC engineering functions.



Steve Tomba (Chapter 8 Secretary), Malcolm Lunn (SEM Section Audio Visual guru) and Coleen Suriano (Chapter 8 Vice Chair Meetings) discuss the attendance numbers which were our largest in our 19 year history.

Students: 206

Vendors: 67

Total 273

The need for more information, training and insight on EMC topics, as well as the attraction of world known experts willing to share their knowledge is a powerful attractor.



IEEE SEM Chapter 8 was pleased to host Colin Brench (W1DJR) as our speaker for EMC Fest 2018. Colin presented “**The Art and Science of EMC Design**”. EMC design is an involved process and, while some portions of the work can be done very precisely, there are others that are too complex to easily analyze. Indeed, it is not uncommon for some critical information to be simply unknown. This leaves the design engineer with an array of tools and, more often than not, a wider range of questions.

There are many design aids available, computation tools that permit the analysis of very complex problems, rules of thumb that provide guidance on more standard situations, and the engineer’s experience and understanding of similar products is also a major resource. It is essential however to understand the limits of all these resources.

Both computational and analytical tools are capable design tools but to use them reliably it is essential to know exactly what assumptions are built into them. Rather than a ‘how to design for EMC Compliance’, this presentation will focus on how to use the appropriate tools correctly. The strength and weaknesses of tools, measurements, and even our own understanding will be examined in a way to provide the EMC design engineer with a robust process.

Colin Brench is currently a Principal Engineer at Amphenol High Speed Interconnects, in Nashua, NH. He is a co-author of the book, EMI/EMC Computational Modeling Handbook, has authored over 20 technical papers and articles, and holds 12 patents. Colin is a Senior Member of the IEEE, member of the EMC Society, and an iNARTE certified EMC Master Design Engineer. He has been a Distinguished Lecturer for the IEEE EMC Society, and has given several seminars for various IEEE Chapters and Sections. In 2002 he was awarded the Certificate of Technical Achievement by the IEEE EMC Society for his contributions to the development of EMC modeling directed to understanding EMI shielding and antenna behavior. .



Michael Kirkhart (Amateur Radio call sign KD8QBA) and Malcolm Lunn (KD8TPO) get re-acquainted during one of the lecture breaks which also allows attendees to visit vendor displays and discuss their needs, and possible solutions.



After the lunch break, Jim Woodyard, (KC8MSY) presented Colin with a letter of thanks, along with the notice that the Chapter will be donating \$100 to the EMC-S President’s Memorial Scholarship fund in Colin’s name.



Robert Neff (left) presented Malcolm Lunn with a plaque acknowledging the Chapter and Section debt to Macolm for all his contributions as our audio video guru and main ‘roadie’ for multiple meetings and conferences he supports throughout the year.

Back in the lecture hall again, Colin covered The Science of EMC Design, EMC Design Tools, The Art of EMC Design, and finally Design Verification and Validation.



The intention was to have students leave with a better feel for when to use which tools, and how much to rely on them, along with the confidence to trust in their knowledge and experience to help avoid some of the ‘traps’ that can so easily trap the unwary.



At the conclusion of EMCFest, our Section Chair, Bob Neff, served as ‘Master of Ceremonies’ at the traditional ‘Ice Cream Social’ and the ‘door prize’ drawings.

The Ice Cream Social has always been a great time to ‘unwind’ and relax with friends while we all wait for Detroit area traffic to subside before we begin the drive home.



Mike Kirkhart Joanna Hill and John Suriano share a few 'war stories' as EMCFest2018 winds down.



Malcolm Lunn (KD8PTO) Colin Brench (W1DJR) Bonnie Brench (KC1JTQ) and Kimball Williams (N8FNC), get ready for the drive home.



Mark Steffka (WW8MS) who teaches EMC at the University of Michigan – Dearborn Campus, stopped by to visit with Colin and Bonnie.

Another enjoyable EMCFest concludes, and we all relax for a bit while before we begin to consider what we can do to celebrate our 20th year of successful EMCFest in 2019.

EMC Training Classes



Become an EMC Expert!

Professional EMC training in the Midwest

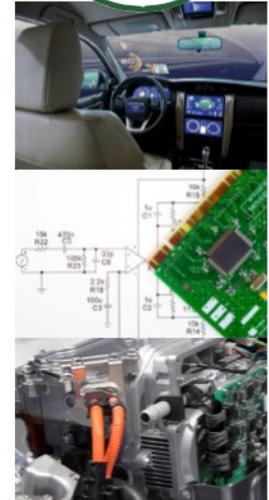
2018

Detroit, Michigan

- Sept 17-18 Design for Automotive EMC Compliance
- Sept 19 Automotive Printed Circuit Board Layout
- Sept 20 Power Electronics Design for Electromagnetic Compatibility

Stoughton, Wisconsin

- Oct 15-16 Fundamentals of Electromagnetic Compatibility
- Oct 17-18 Design for Guaranteed EMC Compliance



For Details & Registration, visit LearnEMC.com

10% discount for IEEE Members! Use Coupon **IEEE-EMC** at checkout.

Register early, classes are expected to fill!

Prof. Todd Hubing, IEEE Fellow and past-president of the IEEE EMC Society, is the primary instructor for LearnEMC short courses. His unique approach to EMC education uses real applications to demonstrate important fundamental concepts.



Internet Security v 2018

IEEE SE Michigan Seminar: Internet Security Awareness!



Securing your computer & yourself

Despite the advances in computing technology, the average person, remains vulnerable to all sorts of security threats.

In this wide ranging and comprehensive seminar, material is presented that will give you a number of steps you can do to improve the security of your computer (that includes PC, tablet, phone, etc.), at the same time also boost your privacy, so that the Internet is a little bit less of the “Wild West” experience. Some of the topics that will presented are:

- Ransomware
- Viruses
- Phishing Scams
- Privacy settings on web sites and social media forums (such as LinkedIn.com)
- Identity Theft and
- Other types of malware
- General tools (and reliable resources) one can use to assist you

Speaker: Sharan Kalwani

Biography: With over 30+ years' experience, in various aspects of the way hardware, software has evolved, you can expect a unique perspective on the whole evolution of computing. The speaker has presented at numerous conferences and is viewed as an active evangelist in his areas of expertise.

Pre-Registration Required!

Use vtools at

<https://events.vtools.ieee.org/m/173263>

Nominal fee to help cover cost of take home printed copy of class notes, refreshments, etc.

Logistics Details

- **When? Where? etc...**
- **Date:** June 16th, 2018
- **Time:** 9 AM to 2 PM
- **Material:**
Lecture+Class Notes
- **Energy Sources:** Coffee, Tea, Soda Pop, cold water, snacks to maximize information absorption bandwidth
- **Audience:** IEEE members
- **How Many:**
30 [Limited Seating Capacity]
- **Where:**
Room 275
Engineering Building
Oakland University
Rochester, MI 48309
- **Parking:**
115 Library Drive (in front of Engineering Building). After you park, go up the steps, take a left of the Einsteins Bagels Coffee Shop



ESD Council Meeting

An Evening with the Engineering Society of Detroit

Wednesday evening of May 16, 2018 saw the gathering of a few of the Affiliate Council representatives of the 109 different engineering societies that make up the **Engineering Society of Detroit (ESD)**. IEEE Southeastern Michigan Section is only one. The meeting took place in the ESD headquarters in its newly renovated, high tech meeting facility, hosted by **Elana Shelef**



Director of Corporate Relations & Education Outreach. Elana provides the attending member representatives with a light meal which encourages both a relaxed atmosphere and a spirit of collegial cooperation. ESD promotes and celebrates excellence, innovation, cooperation, professional growth and fellowship in the engineering, scientific and allied professions.

Part of the activity at this meeting was honoring the continued service of two of the ESD long time members who have contributed years of service to ensure the success of the Affiliate Council, and the overall mission of the ESD. Awards were presented to two of the Council members:

Janice Means received the Distinguished Service award.



Pranab Saha received the very prestigious Anne Fletcher Award.

Melissa Georgia, representing the Detroit Chapter of **Engineers Without Borders** invited everyone to the EWB Black Tie



fundraising gala on June 8 at the Detroit Yacht Club ballroom. A flier for this event appears elsewhere in this issue.

After the business meeting we were treated to a presentation by Jack Stein of INCOSE (International Council on Systems Engineering – Michigan Chapter) which outlined the work going on now to create a Thomas Edison Exhibit to be held in conjunction with EnergyTech 2018.



For details on the operation and activities of the ESD, please see the website at <https://www.esd.org/about/> where details about both individual membership as well as corporate and society membership may be found.

Computer Society Update

The IEEE SEM Computer Society Chapter (aka Chapter 5) and IEEE SEM Education Chapter (aka Chapter 13) has held several events during this part quarter. Many of them dealt with several new and exciting technologies such as Block Chain and the rollicking wave of Data Science. We also did an update on the various security vulnerabilities which continue to plague us, perhaps since the day the computer was invented!

In these endeavors – we have been helped by the local IEEE student branch at Oakland University and challenge the other Student branches to work with us to bring exciting and new technology speakers to their campuses as well.

Of course, sister societies are not exempt and we have an open invitation to them to pool our resources together and bring fresh and relevant topics for their members as well.

We might experience a slight lull during the summer however we plan on working with the local PACE to deliver:

- ✓ soft skill tutorials
- ✓ job hunting and interviewing tips
- ✓ cultural awareness acumen, in order to shine as an international team member
- ✓ leadership skills
- ✓ modern programming language hands on tutorials
- ✓ security and computer protection revised checklists and finally
- ✓ computing technology refresher courses for the folks who fear falling behind

If there is a topic we have not mentioned, feel free to blast us an email, so we may accommodate you. All courses will take place either in the evening or on a Saturday, so you can get a good solid understanding and benefit in a meaningful way.

You can find all of our contact information at the IEEE SEM website under the roster, located at http://sites.ieee.org/sem/files/2018/04/Organization_Roster_IEEE_SEM_4.2.2018.pdf



ZF Employment Ad



WHAT'S NEXT?

JOIN ZF

WORK AT THE FOREFRONT OF
AUTOMOTIVE INNOVATION WITH ZF,
ONE OF THE WORLD'S LEADING
AUTOMOTIVE SUPPLIERS.

ZF.COM/CAREERS

SEM Library STEM



STEM (Science, Technology, Engineering & Mathematics) classes in our Section have been growing and expanding in the past months, in great part due to the generous contributions from ZF Gives.

ZF funding has allowed us to expand existing and establish new and improved teaching capabilities and facilities at both the Dearborn-Heights Caroline Kennedy Library and the Bacon District Memorial Library in Wyandotte, MI.



These new facilities have allowed us to extend teaching the 'Fundamentals of Electricity' at both libraries, and introduce new classes in Safe Soldering in both.

Why STEM?

There has been some discussion in the general technical media about the need for STEM exposure for young students. Many STEM based jobs go unfulfilled every year, forcing some companies to postpone the development of new products. However, we should not expect STEM educational experiences to solve those problems. STEM is not about turning students into engineers, but rather *helping them learn* how to think and analyze more effectively.

Why Libraries?

We have focused on libraries as teaching sites for engineer conducted STEM experiences for a number of reasons:

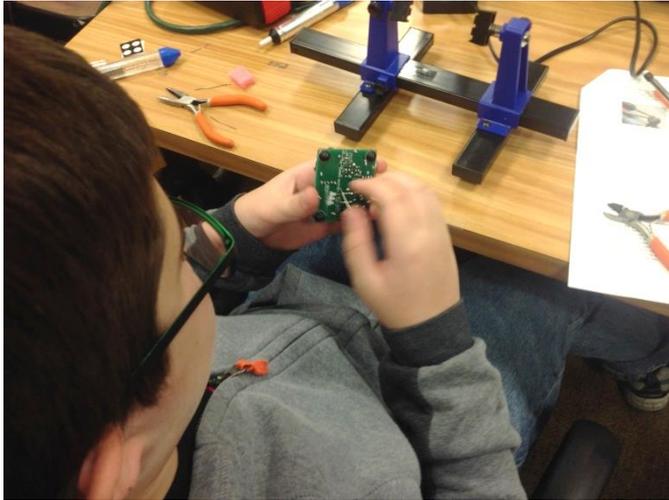
- Libraries provide a natural 'social' filter. Students who frequent libraries 'want to learn'. This avoids the problem in the school system in which some students are there as 'captives' of the system without the interest to explore and grow.
- Library teaching avoids state mandated curricula requirements and teacher certifications. This means that engineers who know and practice their disciplines in real life can offer their knowledge and experiences to those who want to learn.

Why SEM?

So, why are we seeing a strong STEM activity in South Eastern Michigan? The concentration of engineering and technical talent in South Eastern Michigan (SEM) represents an astounding diversity of technical disciplines. This results in a number of engineers, both currently working and retired, with a strong willingness to 'give back' to the community for the wonderful career and life that their technological experience has provided.



SEM Library STEM (Continued)

**Library Staff & IEEE Relationship**

One of the most conducive aspects of working with libraries is the dedicated people who seek library science as a profession. They dedicate themselves to offering their repositories of knowledge to anyone who walks through their doors.

That attitude of giving to the community aligns with the goals of STEM teaching and makes libraries a natural focus of diverse learning experiences of all types.

Advertising & Outreach

One recent lesson that has been learned is the need to reach out to the community at large through public media to let students know of the class opportunities well in advance. Also, some age groups find commitment to a long series of classes difficult given their school study requirements and an active social life. While some can make time for classes during the week, others can only find time on weekends. Thus class timing and flexibility at different locations becomes necessary in order to provide opportunities for as many as can be accommodated.

Teaching (IEEE) Staff

When the IEEE SEM Education Committee began working on STEM programs we initially looked to our large and diverse community of retired engineers in the Section as likely candidates for STEM teaching. However, it has been the working engineers and even students who have stepped forward to teach many of our classes.

Amateur Radio Club involvement

As part of our outreach beyond the 'normal' IEEE community we have partnered with several local Amateur Radio organizations who have helped us introduce students to "Ham" radio and the amazing diversity of opportunities it opens. Related classes include preparing for the FCC examinations for the 'Technician' (first introductory license) license, and Save Soldering and building a first low power Morse code radio station.



We are looking at other similar alignments with groups of like-minded people who maintain a core interest in technically related activities. These 'hobby' activities often focus the interest of youngsters in a science or technology related field which may lead to a future pursuit at university and a possible career.

Through our micro-computer programming and expansion classes we expect to be moving toward alignment with local robotics activities.

Curricula Options / Changes / Growth

In addition to the classes we have been teaching for a few years, we are also exploring options for 'micro' classes, focused on very young students. These will use science 'kits' that allow students to bypass some of the deeper learning required in our classes for older students, and see results of their experiments with immediate results.

SEM Library STEM (Continued)

These exposure events serve two functions:

- Young students can explore many STEM topics rapidly and discover which engage their interests.
- Those who find an immediate affinity for a particular topic will likely want to continue along that learning path by taking one of the deeper classes.

Requests from the School System

Students who have become involved in our STEM classes have interested some of the teachers in the local School System. When these teachers contact us, they often request that we consider bringing the STEM program into the school, as an 'after School' activity. This may take the form of a Science or Math club, led by an IEEE engineer or scientist.



While the opportunity to present learning opportunities to more students is intriguing, developing the systems needed to support that additional activity, and recruiting the teaching teams needed to sustain it will require another level of commitment from the SEM Education Committee, and a probable expansion of the Committee charter. This is a topic to be discussed at the SEM Executive Committee level.

Current Classes:

The introduction of the new Fundamentals of Electricity classes at the Bacon library was well received, and the students were all very excited about the topic and the hands on experiments.

The new classes on Safe Soldering classes that included each student constructing a low power, Morse code, Amateur Radio Station was well received at both libraries. We are now considering what other projects we might use to engage in developing the skills to build their own equipment as well as new circuit design and modeling before the final soldered stage.

More Libraries:

The current successes have encouraged us to begin to explore other libraries in Southeastern Michigan Section and we have turned up some interesting possibilities in the northern and western suburbs.

However, before we can take advantage of those new opportunities, we will need to recruit and engage more volunteer instructors.

We also need to improve the details of the entire set of class descriptions to provide a framework within which each instructor team can not only find the guidance where the material is currently a bit 'vague' yet remain sufficiently flexible to allow for the development of new and different 'Hands on' experiments and demonstrations.

At this time we are planning a series of brainstorming meetings with the current and past instruction teams to consider ways in which the structure and content of the STEM classes can be improved to benefit the students.

SEM Library STEM (Continued)

Special Thanks:

We wish to once again express our thanks to ZF Cares for their generous grant support of these STEM efforts.

We also thank Bacon Library for setting aside an entire room in their facilities to dedicate solely to STEM teaching, and equipping it with work benches, bench stools and a locking cabinet for expensive tool storage.

Also, thanks go to IEEE Southeastern Michigan Chapter 8 (Electromagnetic Compatibility) for a donation of \$1,500 for initial Amateur Radio electronic kits to begin our first Safe Soldering classes.

Overall the community, society, industry and general IEEE member support for these STEM classes has been commendable. Our profound thanks especially go out to our IEEE members, and members of the local Amateur Radio clubs who have volunteered as class instructors and devoted their time and energy to help bring youngsters to a greater understanding of the technical world in which we live, and an appreciation of how much sheer fun can be had through Science Technology Engineering and Mathematics.

With permission of the author (and her mom) we present a short poem by one of the library students.

My Room

By Hannah Hamka's

**My happy place, my peaceful room.
And it has just the most quietest tune.**

**It's the most warmest of them all.
And I crack my window open, when it's fall.**

**There's a big book shelf,
that's all for myself.**

**The walk-in closet is my engineering space,
Where I gather up gears and put them in place.**

**No one bothers me.
I can be myself.**

*Hannah is in 4th grade at Kinloch Elementary School, Dearborn Heights. She is 9 years old.
(Did you notice that her first name is a palindrome?)*

*This Month in June***Or: Notable Events in History, which I Did Not Know! ☺**

Henry Joseph Round; Born 2 Jun 1881; died 17 Aug 1966 at age 85.

English electronics engineer whose numerous inventions contributed to the development of radio communications. He joined the Marconi Company in 1902, and for his earliest work he devised the elements of direction-finding equipment. Round became Chief of Marconi Research in 1921. He was a prolific inventor. Amongst other inventions he designed the Straight Eight Gramophone Recording System, a large audience public address system which was used to relay King George's speech at the Wembley Exhibitions. A talking picture system he invented was used to record sound on to film during the 1930's cinema boom. In total he produced 117 patents. The last was "Pressure Wave Transmission Arrangements" (1964), at age 83.

Alan Dower Blumlein; Died 6 Jun 1942 at age 38, (born 29 Jun 1903).

British electronics engineer whose 128 patents contributed greatly in a wide field of electronics, including mono and stereo sound reproduction and sound recording, as well as high-definition radar, telephony and electrical measurements. His profuse creativity was achieved within just 18 years, because he died at age only 38 (while flight-testing a radar project during WW II). He began working in 1924 for International Western Electric Co., and by 1929 was with Columbia Gramophone Co. which became EMI (1931) where he invented the stereophonic recording system. Although a few stereo recordings were made in the 1930's, EMI did not extensively develop the technology until the 1950's, when it built on Blumlein's work.

Frederick Emmons Terman; Born 7 Jun 1900; died 19 Dec 1982 at age 82.

American electrical engineer whose research during WW II produced valuable radar countermeasures for the allied forces. He directed the Radio Research Laboratory at Harvard University formed for the purpose of inventing jammers of enemy radar, which included active radio transmitters, passive chaff (aluminum strips to mask targets by producing invalid reflections to enemy radar), and tunable receivers to detect radar signals. Terman also had responsibility for advising industrial contractors (such as RCA, GE, and Western Electric) concerning their manufacture. The radio electronics textbooks were popular because of his clarity. After the war, Terman worked on the design of long-distance electrical transmission and resonant transmission lines.

Tim Berners-Lee; Born 8 Jun 1955.

English computer scientist who invented the World Wide Web and director of the World Wide Web Consortium, which oversees its continued development. In 1984, he took up a fellowship at CERN, to work on distributed real-time systems for scientific data acquisition and system control. While there, he proposed (1989) a global hypertext project, to be known as the World Wide Web, which permitted people to collaborate by sharing knowledge in a web of hypertext documents. On 6 Aug 1991, the first World Wide Web site was made available to the Internet at large, giving information on a browser and how to set up a Web server. He then expanded its reach, always nonprofit, to become an international mass medium

Charles-Augustin Coulomb; Born 14 Jun 1736; died 23 Aug 1806 at age 70.

French physicist best known for the formulation of Coulomb's law, which states that the force between two electrical charges is proportional to the product of the charges and inversely proportional to the square of the distance between them. Coulombic force is one of the principal forces involved in atomic reactions. The inverse-square relationship is also seen in the relationship of the gravitation force between masses. In 1777, he invented a torsion balance which he subsequently modified for electrical measurements. He also did research on friction of machinery, on windmills, and on the elasticity of metal and silk fibers.

Readers are invited to share any **major engineering** event or milestones that they are aware of that occurred in April, next issue. Submissions can be made using direct email to the editors at: wavelengths@ieee-sem.org

Sharan Kalwani

Associate Editor, Wavelengths,

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

Passionate Engineering History Buff/Aficionado

ASME Social

ASME FUTUREME AND THE
ASME METRO DETROIT SECTION
PRESENTS

A NETWORKING EVENT

GUEST SPEAKERS:

SHIVA SIVASHANKAR, DIRECTOR
SIEMENS PLM

AND

BOB RICHARDS, GENERAL MANAGER
BAYLOFF STAMPED PRODUCTS

JUNE 9 | 12:00-4:00 PM
AUTOMOTIVE HALL OF FAME

21400 OAKWOOD BLVD.
DEARBORN, MICHIGAN 48124



GET TIX: [HTTP://BIT.LY/FMSMMD](http://bit.ly/fmsmmd)

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) Signal Processing Society,
(CAS04) Circuits and Systems Society and
(IT12) Information Theory Society

Chapter: 02 (VT06) Vehicular Technology Society

Chapter: 03 (AES10) Aerospace and Electronic Systems Society and
(COM19) Communications Society

Chapter: 04 "Trident" (AP03) Antennas and Propagation Society,
(ED15) Electron Devices Society,
(MTT17) Microwave Theory and Techniques Society,

Chapter: 05 "Computer" (C16) Computer Society

Chapter: 06 (GRS29) Geosciences and Remote Sensing Society

Chapter: 07 (PE31) Power Engineering Society,
(IA34) Industrial Applications Society

Chapter: 08 "EMC" (EMC27) Electromagnetic Compatibility Society

Chapter: 09 (IE13) Industrial Electronics Society,
(PEL35) 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) Computational Intelligence Society,
(SMC28) 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,
Associate Editor, Wavelengths,
2017-2018**

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.

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://sites.ieee.org/sem/>

Select "SEM Calendar" button in the top row of the website.

SEM Web Meetings:

<http://sites.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

However, since IEEE members tend to have eclectic interests, we want to give everyone a heads up for some of the non-IEEE events that may be of interest.

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 the particulars to

wavelengths@ieee-sem.org

OR

anyone of the following....

k.williams@ieee.org

karen.burnham@ieee.org

sharan.kalwani@ieee.org

An announcement may be placed in the newsletter.

Links:

Michigan Institute for Plasma Science and Engineering:

Seminars for the 2017-2018 academic year: <http://mipse.umich.edu/about/seminars.htm>.

Below are links to local SEM Clubs engaged in technical hobbies as well as links to sites that may be useful for locating clubs in the area.

XXXXXXXXXXXXXXXXXXXXXX

Amateur Radio Clubs in Southeastern Michigan

(This is a fairly comprehensive listing of all the 'Ham' clubs in SEM.)

<http://www.wa2hom.org/ham-radio-clubs-in-se-michigan/>

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/ea/ea-chapters/find-an-eea-chapter>

Robots

<http://therobotgarage.com/about-us.aspx>

Science Fiction Conventions

<http://www.conclavesf.net/>

<https://2018.penguicon.org/>

<http://2018.confusionsf.org/>

Mad Science

<http://www.madscience.org/>

ESD PE Review Class

www.esd.org

Maker Faire:

<http://www.thehenryford.org/events/makerFaire.aspx>

Executive Committee

The SEM Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2017 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://sites.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.

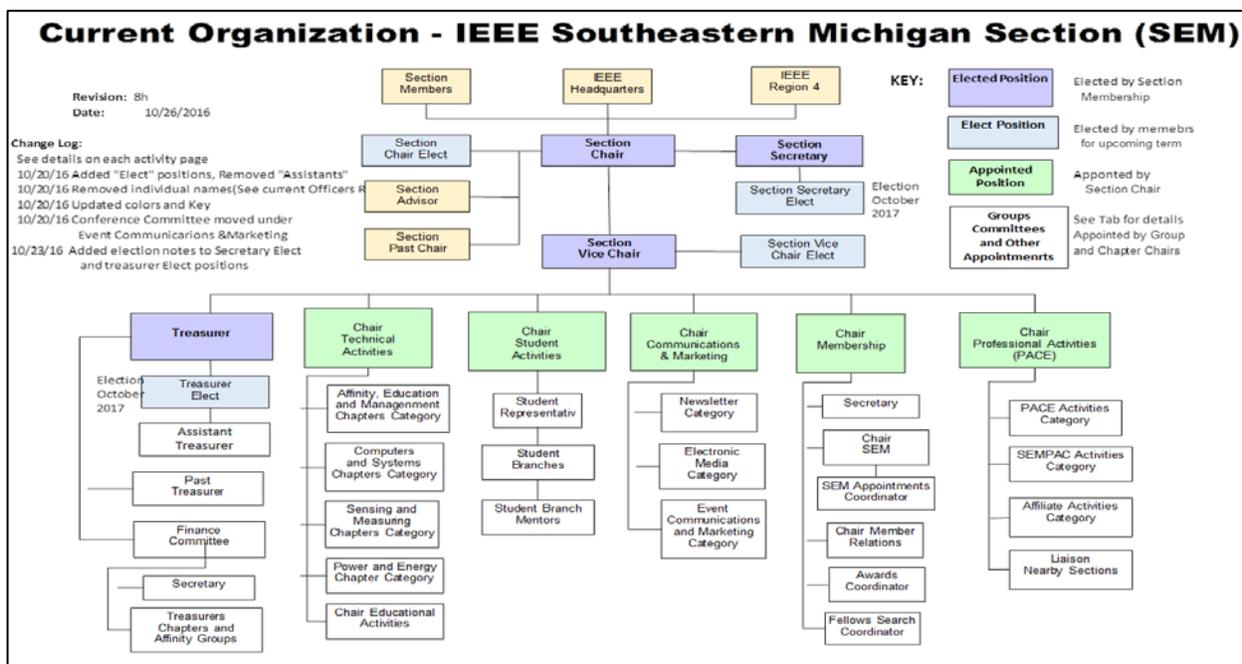
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

More detailed information on meetings may be found by using the IEEE meetings site. This may be found through the IEEE SEM Website: <http://sites.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 the SEM Website at: www.ieee-sem.com Then, click on “About SEM” Tab, followed by, click on “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 the meetings. Information on each Face to Face 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.

June 7, Thursday, Teleconference (online only), 12:00 – 1:00 PM, <https://meetings.vtools.ieee.org/m/49033>

July 11, Wednesday, F2F (In person meeting), 5:30 – 7:00 P.M., <https://meetings.vtools.ieee.org/m/49034>

August 2, Thursday, Teleconference (online only), 12:00 – 1:00 PM, <https://meetings.vtools.ieee.org/m/49035>

September 5, Wednesday, Teleconference (online only), 12:00 – 1:00 PM, <https://meetings.vtools.ieee.org/m/49036>

October 4, Thursday, F2F (In person meeting), 5:30 – 7:00 P.M., <https://meetings.vtools.ieee.org/m/49037>

November 7, Wednesday, Teleconference (online only), 12:00 – 1:00 PM, <https://meetings.vtools.ieee.org/m/49038>

December 6, Thursday, Teleconference (online only), 12:00 – 1:00 PM, <https://meetings.vtools.ieee.org/m/49039>

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

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 (...**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.

SEM Monthly Meetings

Scheduled Meetings:

The regular meetings of the SEM Leadership (Executive Committee) are scheduled well in advance to allow everyone to place them in their personal planning calendars, and then defend those dates against encroachment.

(Which we all understand is not always possible.)

Two types of Monthly meetings are normally scheduled:

Monthly Teleconference / WebEx as well as:

Quarterly Face-to-Face (F2F). See schedule on the page above:

Note: All IEEE meetings are '**Open**' for all members to attend.

The only caveat is that you please register using the specific meeting form on the vTools site at:

<https://meetings.vtools.ieee.org/main>

Registering will ensure there is sufficient space, refreshments and support for attendees.

Teleconference Schedule

(Held from 12-1 p.m.):

F2F Meeting Schedule:

More information for F2F meetings will be emailed to all officers, (and any members requesting the schedule), in a timely manner before the meeting dates.

Contact **Eric George** the
SEM Section Secretary at:

eric.george.us@ieee.org

for more information.

Additional information may be found at (<http://sites.ieee.org/sem/>).

The links to the SEM Facebook or LinkedIn pages on the SEM website may also be checked for updates. All the normally scheduled meetings of each of the other section chapters, affinity groups etc. are listed each month in the vTools area of our SEM website at:

http://ewh.ieee.org/r4/se_michigan/calendar1.php

The information is for:

Standing Committee Meetings

Affinity Group Meetings

Technical Chapter Meetings

University Student Branch

Meetings

University HKN Chapter Meetings

Calendar Schedule:

Meetings are also announced on the SEM Calendar web page

<http://sites.ieee.org/sem/>

(Select the “SEM Calendar” **button** in the top row.)

Note: Often meetings of the Executive Committees of Chapters and Affinity Groups (and standing committees, of course) are listed only in the SEM Calendar page, since it is felt that most members would not wish to sit through administrative meetings.

However, if this type of meeting is just your ‘cup of tea’, then contact the officers of the unit that is conducting the meeting, and ask to be ‘linked’ into their teleconference, SKYPE, Google Hangout, or WebEx meeting. They will be happy to have you as a participant.

Many volunteers become interested in section activities when they get a chance to attend a monthly meeting and ‘peek under the hood’ to find out how the machinery of the section actually runs. It can be a rewarding experience.

Eric George

SEM Section Assistant Secretary.

eric.george.us@ieee.org

Editors Corner

Previous editions in this series may be found on the IEEE SEM website at: <http://sites.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
jrwoodyard@gmail.com
karen.burnham@ieee.org

We also recommend a cc to the chair of the Communications and Marketing Committee, Ravi Nigam at: ravi.nigam@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 members to share the duties, and help keep the newsletter alive and lively by providing alternative points of view.

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 anyone of the following:
karen.burnham@ieee.org
sharan.kalwani@ieee.org
jrwoodyard@gmail.com
k.williams@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	



Web & Social Sites

SEM Website

<http://sites.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 “” button under the top row.)

SEM LinkedIn Page

(Select the “” 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 OfficerSection Officers

Community Section Officers <http://sem.oc.ieee.org>

Section Officers

Section Chair
Robert Neff

Section Secretary
Eric George

Section Vice-Chair
Nevrus Kaja

Section Treasurer

Standing Committees:

Section Adviser
Don Bramlett

Chair Communications & Marketing
Ravi Nigam

Chair Educational Activities

Chair Finance
Nevrus Kaja

Chair Membership

Chair Nominations & Appointments
Kimball Williams

Chair Professional Activities (PACE)
Sharan Kalwani

Chair Student Activities
Mel Chi

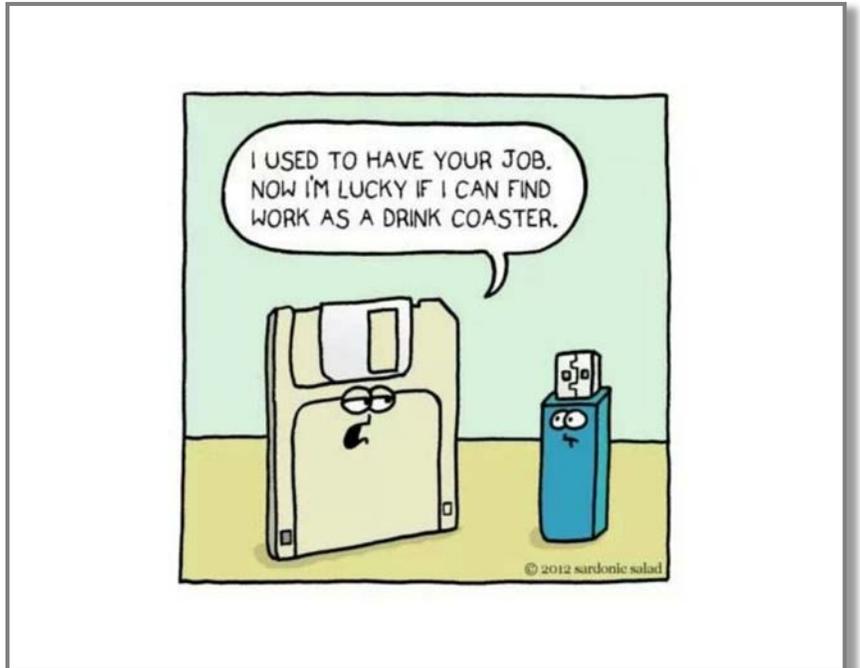
Student Representative

Chair Technical Activities
Kimball Williams



IEEE Southeastern Michigan

Visit Us on the Web at:
<http://sites.ieee.org/sem>



Leadership Meetings

All IEEE members are welcome to join us at any regularly scheduled meeting:

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, Ben Doerr for arrangements.

SEM Executive Committee Monthly Teleconferences:

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

SEM Executive Committee Face-to-Face Meetings:

- 1/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 Web Calendar
<http://sites.ieee.org/sem/>
(Select the "SEM Calendar" button in the top row.)
- Registration for all at:
<https://meetings.vtools.ieee.org/main>