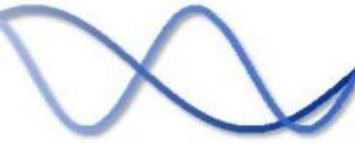


# Wavelengths



**Volume 60 – Issue 08**

## Contents

Upcoming Events	1
Chair's Message	2
Activity During COVID	3
Field Day 2020	4
Robofest Now	5
ESD Gold Awards	7
Technical Activities	9
Ham Radio Classes	10
New Tattoo	11
LICW ARC	13
IEEE Day 2020	14
Comet NEOWISE	15
TEMSCon 2020	16
ESW 2020	17
ISC 2020	18
ECCE 2020	19
ORG UNITS cheat sheet	20
Non-IEEE Events	21
Executive Committee	22
ExCom Meeting Schedule	23
Editor's Corner	24
Section Officers	26
Web & Social Sites	26
Advertising Rates	27
Leadership Meetings	27

## Upcoming Events

We have a number of events coming up this month. Be sure to check out the Section Website

<https://r4.ieee.org/sem>

As well as vtools:

[IEEE Region 4 - SE Michigan Section Upcoming](#)

Listed below are some of the events, FYI.

Event	Date	Time
SEM Section ExCom Monthly Meeting (Teleconference) for August 2020	06 Aug 2020	12 noon
Ch8: AdCom Teleconference	13 Aug 2020	11:00 AM
SEM Ch09 AdCom August 2020 meeting	15 Aug 2020	02:00 PM
AUTOSAR the ubiquitous Automotive standard	18 Aug 2020	06:00 PM
EduCom Monthly Meeting - Aug	25 Aug 2020	07:00 PM

**Chair's Message**

This month's Wavelengths features articles on recent events held in SEM along with some upcoming events of interests. As would be expected, activity in the Section is down overall. There is an update by the Technical activities committee in the Wavelengths. There is also a highlight of TEMSCON, a virtual hosted by SEM in June. Events of interest coming up include, The Engineering Society of Detroit's annual GOLD Award reception and Robofest.

I continue to be impressed by the manner in which our members are responding to the COVID-19 crisis, and how our companies are safely and responsibly adapting their development and construction activities to respond to the health and safety needs of our employees and communities. We continue to keep all of you in our thoughts as each of us adapts to this new environment.

Please stay safe and let us know what we can do to be of help.

Thank you for reading this month and stay safe.

David Mindham: [dmindham -At- ieee.org](mailto:dmindham@ieee.org)

## Activity During COVID

Looking over the breadth of IEEE Southeastern Michigan Section, and considering its performance as an IEEE entity in the face of the Covid-19 pandemic, I am both encouraged, and discouraged.

Some of our Chapter, Affinity Group, Student Branches, HKN Chapters and Committee (Geo-unit) leaders have acknowledged the situation, stepped up to the challenge and lead their organizations forward with innovation and insight.

When the pandemic terminated any possibility of face-to-face group meetings (the IEEE ‘normal’ for meetings), I am sad to report that most of our individual Geo-unit leaders simply stopped planning and organizing any activities at all. That is a disappointing performance from a group of individuals who are supposed to be leading our efforts as the ‘Best and Brightest’ of us all.

However, several of our leaders took the situation in stride, and adjusted their thinking and their IEEE activities to continue their good work for our membership in several ways:

- Schedule leadership ‘administrative’ meetings in virtual space using some of the freely available online conference tools that allow face-to-face meetings.
- Contact potential event speakers to arrange virtual membership technical presentations.
- Shift ‘normal’ meeting schedules to accommodate changed working hours for many who now work from home.
- Establish member ‘chat rooms’ to exchange ideas with their members and get suggestions for new operations.
- Host ‘Social’ meetings among members for ‘Breakfast Coffee and Conversation’, noon time ‘Lunch & Learn’ talks, evening ‘Relax and Unwind’ discussions over bread and cheese, all as ‘virtual’ gatherings.

Ch's & AG's	Ave Tech Mtg. Attend	Ave Tech Mtg Guest	#L31 -Technical	#L31 -Admin	#L31 Professional	#L31 -Other	Geo-Unit Name
Cnsit	0	0	0	0	0	0	Consultants Network
LIFE	0	0	0	0	0	0	Life Members
WIE	0	0	0	5	0	0	Women In Engineering
YP	0	0	0	0	0	0	Young Professionals
1	0	0	0	0	0	0	Circuits & Systems, Signal Proc., Info Th.
2	0	0	0	1	0	0	Vehicular Technology
3	22	0	1	0	0	0	Aerospace & Elec. Sys., Communications
4	18	6	1	0	0	0	Trident (Ant, Elect Dev., uWave, Photo)
5	18	2	12	5	2	0	Computers
6	21	3	1	0	0	0	Geoscience & Remote Sensing
7	0	0	0	3	0	0	Power Engineering, Industrial App.
8	33	17	6	7	0	0	Electromagnetic Compatibility (EMC)
9	0	0	0	3	0	0	Power Electronics, Industrial Electronics
10	129	12	2	1	0	0	Engineering Management
11	0	0	0	0	0	0	Eng. in Medicine & Biology
12	0	0	0	0	0	0	Control Systems
13	18	1	11	3	2	0	Education
14	0	0	0	0	0	0	Robotics & Automation
15	40	21	1	0	0	0	Nuclear Plasma Science Society
16	0	0	0	1	0	0	Computational Intelligence / Sys.Man.Cyber.
17	20	15	1	4	0	0	Nano Technology Council
SEM	0	0	0	12	0	0	SEM (Section)
Tot	319	77	36	45	4	0	<b>NOTE: Highlight Green = Active</b>
		24%					<b>NOTE: Highlight clear = Concern</b>

Since 99% of these take place through the internet and via computer software, it is natural to expect that our own Chapter 5 (Computer Society) would take the lead in these activities.

Indeed, the chart to the left shows the levels of Geo-unit activities in 2020, and clearly, several of our Geo-unit leadership should be commended for their proactive planning and execution of events designed to connect with and provide information to our members.

Chapter 5 (Computers)

Chapter 13 (Education)

Chapter 8 (Electromagnetic Compatibility)

Chapter 10 (Engineering Management)

Several others are demonstrating their ability stand up in the face of the current threat we all face and move forward with the primary purpose and function as given in the first paragraph of the Geo-unit ‘Chair’s job description:

“...engage the members and supplementing their technical knowledge by conducting informative technical meetings and events at the local level.”.

## Field Day 2020

In accordance with the first of the 5 basic reasons why the US Federal Government established the Amateur Radio Service, "Emergency Communications", every year the American Radio Relay League (ARRL) sponsors and coordinates "Field Day", which is really a weekend and always held on the 4th full weekend in June.

Field Day is ham radio's open house. Every June, more than 40,000 hams throughout North America set up temporary transmitting stations in public places to demonstrate ham radio's science, skill and service to our communities and our nation. It combines public service, emergency preparedness, community outreach, and technical skills all in a single event. Field Day has been an annual event since 1933, and remains the most popular event in ham radio.

Normally most of the amateur radio clubs gather their members to make Field Day a multi-functional event.



Field Day is primarily focused on setting up club stations in local parks, recreation areas, etc. and includes community outreach, education and exposure of youngsters with 'Get On The Air' (GOTA) stations to allow students to talk with other amateurs around the world, educational experiences such as building small electronic 'toys' or demonstrations of different communication methods. Social gatherings at Field Day usually center on meals and food offerings abound with many members bringing 'a dish to pass', and sharing food with other members in the traditional 'breaking bread' and conversation we all enjoy.

The current pandemic put a break on many of the 'adjunct' educational and social aspects of Field Day as most clubs followed the directions of their local State governors and maintained 'Social Distance' by operating as individual stations.



This change in operating options was recognized by the ARRL which facilitated a change in the operating rules for field day and encouraged much more participation by individual stations.

The primary objective of the 'contest' aspect of field day has always been:

**"To contact as many stations as possible on the 160, 80, 40, 20, 15 and 10 Meter HF bands, as well as all bands 50 MHz and above, and to learn to operate in abnormal situations in less than optimal conditions."**



The emphasis on individual verification of their emergency preparedness and not relying on their local club to arrange for location, antennas, equipment, emergency power source, water, food, weather protection and all the other elements that allow a successful communications system to operate under adverse conditions was a 'wake-up call' for some Hams. A few found that they have some work to do to actually be ready if a disaster required their station to operate successfully.

## Robofest Now

**LTU's Robofest goes online—making it the only robotics competition in the world this year**

SOUTHFIELD—Like so many other educational activities, Lawrence Technological University's Robofest World Championship is moving online this year.



More than 2,500 students participate each year in Robofest in over 27 countries. When the coronavirus pandemic closed thousands of schools around the world in March, the student robotics competition was in the busy midst of its season of qualifying and regional competitions. The Robofest World Championship had originally been scheduled for May 14-16 on LTU's Southfield campus.

C.J. Chung, Robofest inventor and professor of computer science at LTU, announced there will be a series of online competitions beginning Aug. 28 and 29, continuing through Oct. 9 and 10. Included will be this year's **Robofest Game**, **GolfBowl**, in which students design and build a robot to putt golf balls into holes on a six-foot table while also knocking over water bottles. Also included will be other Robofest competitions: **Exhibition**, in which students dream up any task they choose and design a robot to perform it; **BottleSumo Time Trial**, a competition in which robots try to push water bottles off a table; **RoboArts**, in which students create robots that offer artistic performances like music or dance; **RoboMed**, in which students create medical care robots; and the **Unknown Mission Challenge**, in which students don't know the task their robot will have to perform until competition day.

For the Exhibition open competitions, a panel of expert judges will decide winners after observing team presentations and robot demonstrations via video conference using the same rubric as they would if they were physically present. For game competitions, unknown tasks and factors will be unveiled at the same time all around the world, then local judges will score robots' performance, while trained volunteer judges will monitor and proctor all the game locations via videoconference.

**Robofest Now**

"We are proud to announce that Robofest is currently the only robotics world championship operating this year," Chung said. "Rather than canceling it, we are creating a new modality in competition-based learning to cope with the unpredictable future. We firmly believe this will be a great opportunity for Robofest students to develop both hard STEM skills, and soft skills such as online technical communication and remote teamwork skills through internet tools."

Success at Robofest requires mastery of multiple STEM and computer science subjects, which in turn drives preparation for college classes and high-tech careers. In addition, Robofest teaches students to develop soft skills such as problem solving, teamwork, creative thinking, and communication. The Robofest rules allow the use of any robotics kit on the market in the construction of robots that can be programmed with any programming language. Robofest offers a wide variety of events that fit many robotics experience levels and interests. Robofest Games are like robotics exams. Students must solve unknown tasks and factors on the fly, without adult help. Unlike other robotics competitions, the robots are completely software-controlled, not controlled by remote operators using joysticks. And Robofest offers a more modest cost than other robotics competitions, with a basic robotic kit that costs \$400.

Details about Robofest Online World Championship can be found at [www.robofest.net](http://www.robofest.net). The Robofest office has been conducting mock online competitions using the Zoom webinar platform to prepare for the world championship. Watch the following videos to see how online competitions are organized:

- Mock Online "GolfBowl" Game Video (29min): <https://youtu.be/dyRPhFOId0Q>
- Mock Online Exhibition Video (10 min version): <https://youtu.be/FkUmZZqOkJ0>

DENSO is the platinum sponsor of Robofest again this year. The Michigan Council of Women in Technology Foundation is the gold sponsor. Robomatter Inc. is the silver sponsor. Bronze sponsors include National Defense Industrial Association Michigan Chapter, IEEE Southeastern Michigan Section, SoarTech, Realtime Technologies, Toyota, and IBM. Friends level sponsors include ART/DESIGN Group in Clawson, Aramark, ValPak, Robin G. Leclerc, CJ & Min Chung, Dein-Maehroboter.de, and Best Western Premier.

Lawrence Technological University, [www.ltu.edu](http://www.ltu.edu), is a private university founded in 1932 that offers more than 100 programs through the doctoral level in its Colleges of Architecture and Design, Arts and Sciences, Business and Information Technology, and Engineering. PayScale lists Lawrence Tech among the nation's top 15 percent of universities for the salaries of its graduates, and U.S. News and World Report lists it in the top tier of best Midwestern universities. Students benefit from small class sizes and a real-world, hands-on, "theory and practice" education with an emphasis on leadership. Activities on Lawrence Tech's 107-acre campus include more than 60 student organizations and NAIA varsity sports.



*Last year, Bob Neff (Back row, center) represented IEEE SEM at Robofest along with C.J. Chung and several other IEEE volunteers.*

This article reprinted from the Engineering Society of Detroit "Tech Century" magazine. Courtesy of the author Matthew Roush and Elana Shelef, Director of Corporate Relations & Education Outreach for ESD.

## ESD Gold Awards

# GOLD AWARD RECEPTION & RECOGNITION 2020

FEATURING  
**Gold Award**  
**Affiliate Society Awards**

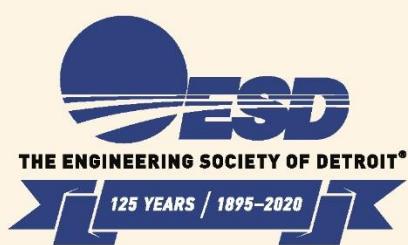
**SAVE THE DATE**

September 16, 2020 • 5:30 P.M.  
**2020 Gold Award Recipient**

**Dr. Arup Gangopadhyay**

Nominated by

The Society of Tribologists and Lubrication Engineers (STLE)



# GOLD AWARD

## RECEPTION & RECOGNITION

### 2020

Join the ESD Affiliated Technical Societies as we come together to honor and recognize our leaders – engineers, scientists and technical professionals who have distinguished themselves through outstanding achievement and service within their respective Societies.

Hosted by The Engineering Society of Detroit and its Affiliate Council, the event will feature this year's Gold Award winner. This award is given to an individual who is collectively upheld by the council for his or her outstanding contributions to the fields of science and engineering.

September 16, 2020

**Location TBD**

**5:30 PM**

Strolling Reception

**6:45 PM**

Awards Program

**COST**

**Before August 31:**

**\$60** per person or **\$55** per person for 5+ reservations

**August 31 and After:**

**\$75** per person or **\$70** per person for 5+ reservations

**\$35** per student (no alcohol)

**Cost includes:**

A variety of hors d'oeuvre stations, beer and wine.



Sponsored in part by:



Register online at [www.esd.org](http://www.esd.org) or by phone at 248.353.0735

## Technical Activities

### Introducing - SEM Section Technical Activities Committee (TAcom)

What is the TAcom mission? - The Technical Activities Committee (TAcom) is a standing committee charged to report to the IEEE Southeastern Michigan Section (SEM) Executive Committee (ExCom) with recommendations designed to improve the operations and activity levels of SEM Geo-units (Chapters and Affinity Groups) on behalf of the Section's membership.

What does the TAcom do? - The TAcom surveys the Section health with respect to technical and administrative activity for represented chapters and affinity groups. The Section health is reported to the Section Executive Committee (ExCom) quarterly, although the TAcom monitors it monthly. There is a need for each group within our IEEE Section to conduct meetings and support seminars and technical exchanges such that the membership stays technically fluent and to increase non-member interest to join IEEE.



Who cares? - Everyone within our Section should care about and support the TAcom mission to promote administrative and technical meeting scheduling, initiation, and reporting (i.e. via L31 reports). The Section budget is dependent on funds that it receives from IEEE International which are tied to achieving the required number of technical meetings (i.e. 2 per year) for each technical chapter. The numbers of administrative meetings (i.e. meeting of chapter leadership) are also tracked by the TAcom. When chapters do not conduct administrative meetings, they cannot plan for conducting technical meetings, so administrative meetings are also important.

How can you get involved? - Join one or more of the Section's 17 technical chapters and 4 affinity groups. Strive to become part of the leadership of one or more of those groups. Encourage your chapter or group leadership to plan and initiate meetings in support of technical and administrative goals. Lastly you can become part of the TAcom and help identify areas of collaboration via co-hosted technical events, meetings, and or reviews. For more information please contact the current TAcom Chairman at [jvmosley@gmail.com](mailto:jvmosley@gmail.com).

Dr. Jeff Mosley works as an engineering consultant for MoTech LLC. His current work focus is on developing embedded training systems for ground vehicles.  
He and his wife have five children.

ΙΧΘΥΣ  
Jeff

## Ham Radio Classes

Next Tech class – ONLINE!



In place of face-to-face classes, I'm now teaching online Tech classes. This is a two-edged sword. I miss the face-to-face interaction with the students, but teaching online will allow me to offer classes more frequently. Instead of doing this all in a single day, the classes will consist of four, two-hour sessions, spanning two weeks:

- Session 1
  - Electrical Principles
  - Electronic Components and Circuit Diagrams
- Session 2
  - Radio Wave Characteristics
  - Antennas and Feed Lines
- Session 3
  - Amateur Radio Signals
  - Electrical Safety
  - Amateur Radio Practices and Station Setup
- Sessions 4
  - Station Equipment
  - Operating Procedures
  - Rules and Regulations

The next class will start on Monday, August 3, and costs \$20. Register for the class [here](#).

To find out when these classes will take place in the future, sign up for the mailing list by using the link below and enter your email into the online box.

<https://app.mailerlite.com/webforms/submit/m6l6t4>

## New Tattoo

### The new tattoo: Drawing electronics on skin

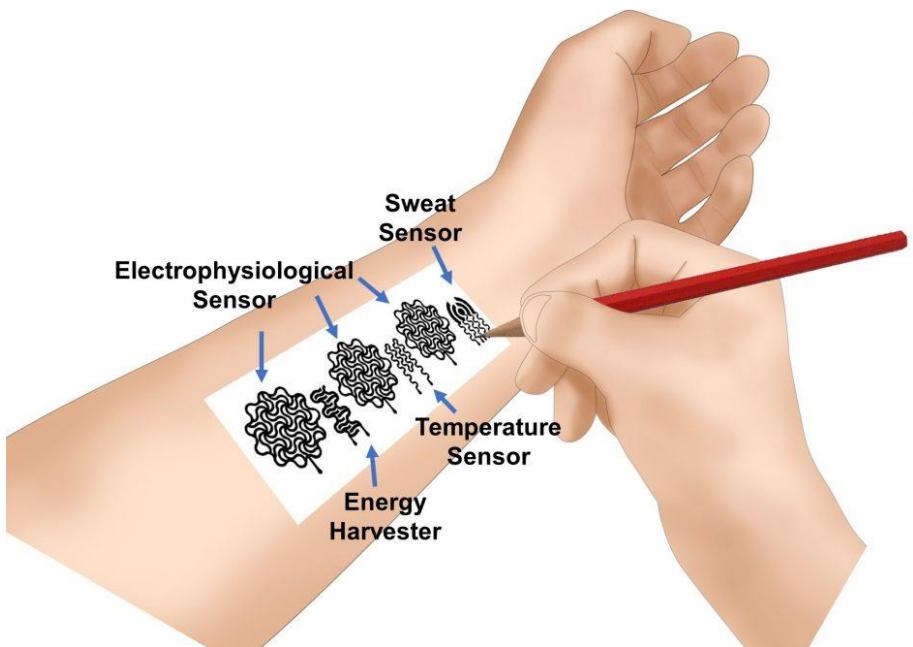
One day, people could monitor their own health conditions by simply picking up a pencil and drawing a bioelectronics device on their skin. In a new study, University of Missouri engineers demonstrated that the simple combination of pencils and paper could be used to create devices that might be used to monitor personal health.

#### Graphic of possible bioelectronics device

COLUMBIA, Mo. — One day, people could monitor their own health conditions by simply picking up a pencil and drawing a bioelectronic device on their skin. In a new study, University of Missouri engineers demonstrated that the simple combination of pencils and paper could be used to create devices that might be used to monitor personal health.

Their findings are published in the journal Proceedings of the National Academy of Sciences.

Zheng Yan, an assistant professor in the College of Engineering, said many existing commercial on-skin biomedical devices often contain two major components — a biomedical tracking component and a surrounding flexible material, such as plastic, to provide a supportive structure for the component to maintain an on-skin connection with a person's body.



"The conventional approach for developing an on-skin biomedical electronic device is usually complex and often expensive to produce," he said. "In contrast, our approach is low-cost and very simple. We can make a similar device using widely available pencils and paper."

Since its invention, pencils — made of lead including various levels of graphite, clay and wax — have often been used for writing and drawing. In the study, the researchers discovered that pencils containing more than 90% graphite are able to conduct a high amount of energy created from the friction between paper and pencil caused by drawing or writing. Specifically, the researchers found pencils with 93% graphite were the best for creating a variety of on-skin bioelectronics devices drawn on commercial office copy paper. Yan said a biocompatible spray-on adhesive could also be applied to the paper to help it stick better to a person's skin.

The researchers said their discovery could have broad future applications in home-based, personalized health care, education and remote scientific research such as during the COVID-19 pandemic. Yan said the group's next step would be to further develop and test the use of the biomedical components, including electrophysiological, temperature and biochemical sensors.



**New Tattoo: Continued**

"For example, if a person has a sleep issue, we could draw a biomedical device that could help monitor that person's sleep levels," he said. "Or in the classroom, a teacher could engage students by incorporating the creation of a wearable device using pencils and paper into a lesson plan. Furthermore, this low-cost, easily customizable approach could allow scientists to conduct research at home, such as during a pandemic."

An additional benefit to their approach, Yan said, is that paper can decompose in about a week, compared to many commercial devices that contain components that are not easily broken down.

The study, "Pencil-paper on-skin electronics," was published in Proceedings of the National Academy of Sciences. Other authors on the study are Yadong Xu, Ganggang Zhao, Qihui Fei, Zhe Zhang, Zanyu Chen, Yangyang Chen, Yun Ling, Shinghua Ding and Guoliang Huang at MU; Liang Zhu and Pai-Yen Chen at the University of Illinois-Chicago; Fufei An and Qing Cao at the University of Illinois Urbana-Champaign; and Peijun Guo at Yale University.

Funding was provided by a University of Missouri start-up fund, and grants from the National Science Foundation, the Air Force Office of Scientific Research and the National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding agencies.

Contact: **Eric Stann**,  
573-882-3346,  
[StannE@missouri.edu](mailto:StannE@missouri.edu)

**LICW ARC**

**The Long Island CW Club** teaches the use of Morse Code (CW) through online ZOOM classes. The club was established in January 2018, and has quickly grown to 753 members branching out into 50 states and 15 countries with one being Australia.

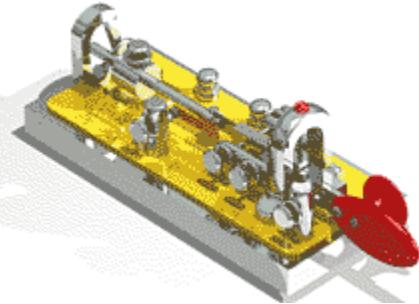


The club holds beginner, intermediate and advanced CW (Morse Code) classes 39 times per week via internet video conference, (Zoom), practicing copy and sending. Classes move at the pace of the student in a relaxed environment without fixed goals. We do not use keyboards as we encourage hand sending and hand copy eventually leading to head copy at the advanced class level. Our objective is to get the student on the air as soon as possible during one of our video conference live QSO classes where students get on the same frequency and we all work the same station, while we give pointers on technique simultaneously via video conference. The QSO copy will be assisted by the instructor and we concentrate on sending protocol and timing so the student starts to realize the fruits of their study labors. Getting on the air quickly, which is usually in 3-4 months, leads to higher motivation to keep learning and practicing. Our full class schedule can be seen on our website calendar.

<https://longislandcwclub.org/>

We are teaching CW to kids grades K-12 to keep them occupied during this no school lockdown period. This program now has 75 kids of all ages in both the USA and Europe and we are running 10 online classes weekly. We also started YL (Young Ladies) only classes to encourage CW growth and stronger Club participation among our 40 women members.

Monthly we have a video conference forum where there are presentations on topics ranging from QRP (Low power), boat anchors (vintage gear), Dxpeditions (Travel to distant locations), antennas and satellites. Our talks are about ham radio nostalgia, ham radio communications at the 2010 Haiti Earthquake disaster which was set up by one of our members, the historical commercial and ship to shore stations of Long Island, how to build a band pass filter and recently SOTA (Summits on the air) and POTA (Parks on the air).



Frequently we have Club activities local to the Long Island / New York area and have gone to radio museums, had a portable operation on the Palisades (over looking the Hudson River), a Jones Beach BBQ with portable operation, operating from a museum ship fireboat in Greenport LI, a trip to a ham radio auction, Marconi Day operation and a kit Build-A-Thon. We have become the LI chapter of the NAQCC QRP organization so QRP outings are an important part of our club.

Once every 4 months we have a lunch at the historic Milleridge Inn in Jericho Long Island. So we are very active and are composed of some of the best members from 4 clubs here on LI. We realize being out of our area, that attending these events might not be possible but we still want to let you know our aim is to have fun with CW.

To find out more about LICW Club, go to the website at:

<https://longislandcwclub.org/membership/>

## IEEE Day 2020

IEEE Day 2020 Events Will Be Virtual.  
By Denise Maestri and Sakib Ahmed

*Sakib Ahmed is the IEEE Day communications lead from the IEEE Bangladesh Section in Region10. Denise Maestri is the IEEE Day staff coordinator. She's the member and volunteer-engagement manager for IEEE Member and Geographic Activities. [Reprinted from IEEE Spectrum]*



For the first time in the 11-year history of [IEEE Day](#), the events—scheduled for 6 October this year—are to be held virtually. Due to the COVID-19 global health crisis, the IEEE Day team has made structural changes.

IEEE Day commemorates the anniversary of the meeting in Philadelphia in 1884 when members of the American Institute of Electrical Engineers, one of IEEE's two predecessor societies, gathered for the first time to share technical ideas.

The event's organizing team is excited to be able to engage members from around the world with the virtual events. Time, location, and travel are no longer obstacles to attending an event. What's more, to accommodate those sections that prefer to hold weekend events, celebrations can be held throughout the first two weeks of October.

### IEEE Day 2020 Organizers suggest activities for the 2020/6<sup>th</sup> October celebration

Not sure the type of virtual event to plan? The team is working on a list of ideas. Here are a few to consider:

- **Webinars:** These could include IEEE-related technical talks, many of which are available [on demand](#). Consider inviting experts from one of the IEEE societies' Distinguished Lecturer programs, or subject-matter experts from industry. Ask members involved with humanitarian activities to talk about their project.
- **Interactive events:** Consider online social gatherings, networking sessions, and virtual gaming.
- **Virtual gatherings:** Use WebEx, IEEE Collaborate, Microsoft Teams, Zoom, or Facebook Live to watch technology videos together. Conduct virtual tours of plants and factories. Read interesting articles or discuss a book.
- **Videos:** IEEE has several videos on [IEEE.tv](#) about its programs. They include a [tour of the IEEE History Center's](#) most treasured artifacts, an overview of some [humanitarian projects](#) members are involved with, and tips on mastering [STEM topics](#).

### PLANNING TOOLS

To assist planners, organizers have created a helpful IEEE [Day-in-a-Box event kit](#). Located under the Resources tab on the [IEEE Day website](#), the kit walks you through the planning process.

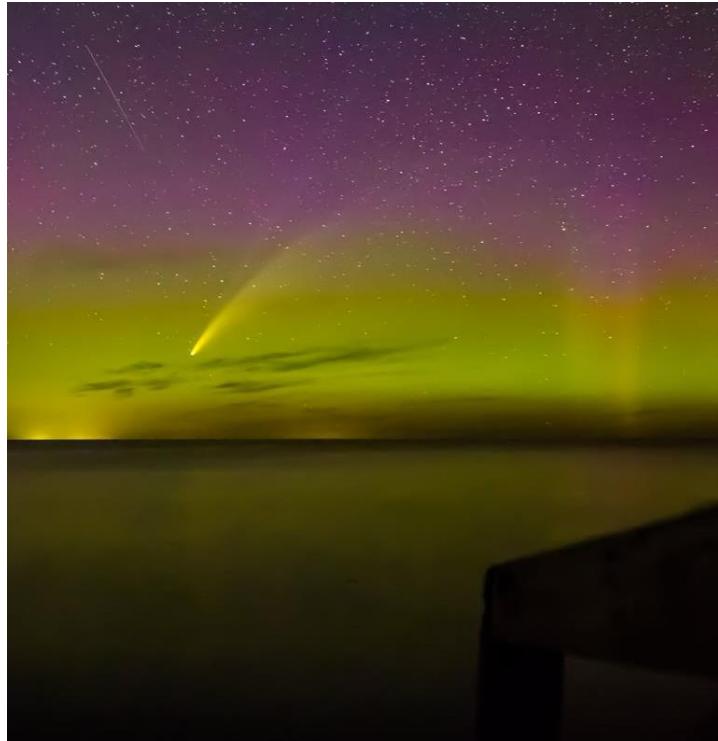
In the [Toolkit section](#) of the website are posters, banners, and other promotional materials that can be downloaded. For those who want to distribute T-shirts to their attendees, there are downloadable [templates](#) with this year's design.

It's not too early to start planning. Check the IEEE Day website for updates, and follow us on social media.

*{Our local IEEE Day 2020 coordinator – Sharan Kalwani, can be reached for help in this regard. You can reach him via email. Local planning has already begun with LTU Student Branch have already kicked off their plans}*

## Comet NEOWISE

Amidst the grim pandemic news, one of the brightest spots – literally speaking – was the arrival of the comet NEOWISE. These last few days of July, you can look up to the night skies, for the brightest comet to have graced the northern skies since Comet Hale-Bopp made its appearance in 1997.



**Figure 1: NEOWISE, above Lake Huron as well as the Aurora Borealis and a shooting star, photo credit - our very own Aisha Yousuf!**

NEOWISE, formally known as C/2020 F3 NEOWISE, was discovered on March 27, 2020 by NASA's Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE), hence the name. The comet reached and survived its closest approach to the Sun (perihelion) on July 3 and has since become brighter with every passing day as it moves closer to the Earth.

Currently, the almost three miles (4.83 kilometers) wide comet is visible with naked eyes from very dark Northern Hemisphere locations during a short window of time just after sunset. To see it, find a dark spot with little to no ambient lighting and look up—the darker your viewing location, the better you will be able to see this icy visitor from outer space and its tail. If you are unable to spot the comet amongst the many stars in the night sky, try using binoculars to first locate it and then looking at it with naked eyes. Binoculars are especially helpful in spotting the comet's majestic split tail. Most household binoculars will suffice.

Since the comet's path brings it very close to the horizon at most locations, we recommend that comet gazers find an observation point with an unobstructed view of the horizon. Remember to check the weather before you step out.

One can use this interactive map – available at <https://www.timeanddate.com/astronomy/night/usa/pontiac>, to find the position of the comet in your night sky. It also provides you with the best dates and time to see it.

NEOWISE started as an early morning comet and is quickly developing into an evening comet. Astronomers anticipate that it will remain bright and be visible with naked eyes or with the help of binoculars throughout the month of July. By early August, however, the comet is expected to fade away as it finds its way back to the outskirts of our Solar System. If you are in the Northern Hemisphere, make sure you take the time to catch a glimpse. Apparently this comet will not be back for a long time—6,800 years to be precise!

**Sharan Kalwani**

**TEMSCON 2020**

TEMSCON 2020 Goes Virtual

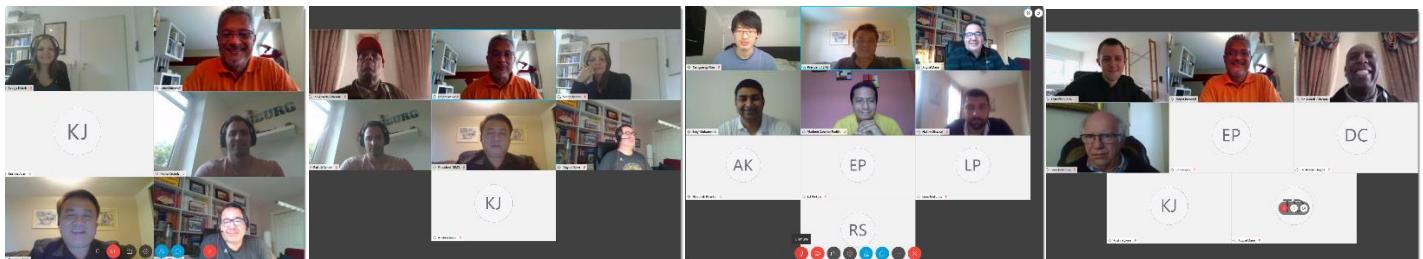


The Detroit Metro was scheduled to host Technology and Engineering Management Society's signature conference, TEMSCON 2020, in June. Unfortunately, COVID-19 forced the conference to turn virtual. Still, TEMSCON 2020 brought together 200+ engineering leaders, researchers, educators, innovators, entrepreneurs, and students together to help advance the understanding and the state of practice related to successful technology and engineering management from around the world. It focused on the art and science of management and leadership driving innovation and change.

Going virtual offered an opportunity for broader attendance and participation across the globe. In fact, participating in the conference was free. Several members of the Southeastern Michigan Section were able to participate. The keynote presentation was delivered by Sri Talluri, from Michigan State University. He presented on "Managing Macro Level Supply Chain Disruptions: Lessons from COVID-19". The interactive session was well attended.

Two members of SEM, Raymond Sasinowski (current Vice Chair of the TEMS chapter) and David Mindham (SEM Chair), chaired sessions at the conference. Ray's session was on "Technology Management" and David's was on "Emerging Technologies". Both sessions had attendance of over 40 individuals.

Nearly 40 papers came out of the conference and the full proceedings have been published to IEEE Xplore. Some pictures from the event below:



## ESW 2020



## 18<sup>th</sup> Annual Embedded Systems Workshop

October 17 & 24, 2020, 8:30 a.m. to 12:30 p.m. (Saturdays)  
Virtual/Online Live Sessions, EST/EDT Time Zone

IEEE Computer Society in collaboration with the IEEE Education Society (South East Michigan Chapters) is offering TWO half-day workshops on Embedded Systems on Saturday, October 17<sup>th</sup> & 24<sup>th</sup>, 2020. This workshop is open to all industry professionals, both experienced and newly minted engineers, as well as students. This is the 18<sup>th</sup> year that the event is being held.

The aim is to disseminate knowledge, directly benefitting the IEEE members, at the same time **improve the technology skills pool, indirectly boosting the Michigan economy**. Speakers and experts from the embedded systems industry will be making presentations, and will also be available for discussions and networking throughout the day. In addition to the technical presentations, there will be industry information display and professional recruitment sessions. Use this opportunity for virtual networking with other engineers, industry experts and embedded enthusiasts.

Please confirm your participation by registering on the IEEE events web site

**(Deadline is 15<sup>th</sup> October 5 pm!)**

<https://bit.ly/embed2020>

**Venue: Virtual using Video Conferencing**



**Sponsors in the past: Beningo Embedded Group, Infineon, Zenuity, Intrepid CS and many others...**

Attendees: There is a small one-time cost of \$5 to attend, this will help cover video recording, storage, presentations, a dedicated website and other logistics. Several random raffles and virtual door prizes representing the embedded systems industry will also take place. All are welcome. Do post this flyer in your workplaces, share/inform your peers & colleagues about this event. It is a great way to learn not only what is going on, but network (virtually) with other professionals as well.

*Brought to you by the IEEE SE Michigan Computer Society & IEEE SE Michigan Education Society chapters. Do seriously consider joining the IEEE, boost your technical skills, broaden your awareness of compute-based engineering in the region, support numerous similar initiatives & learn other benefits this brings.*

**Open to all, Pre-registration is necessary prior to attending! The deadline to register is 15<sup>th</sup> October 5 PM**

For Technical questions, contact the Program Committee at: [esw2020@ieee-sem.org](mailto:esw2020@ieee-sem.org)

A CEU/PDH Certificate will be made available for participants who Pre-register and attend both days!

**ESW 2020 Program & Organizing Committee:** Subra Ganesan (Chair), Sharan Kalwani (Vice Chair), Ashok Prajapati, Ramesh S, Carla Gerst, Nilesh Dudhaia and Ben Sweet

## ISC 2020

The screenshot shows the homepage of the IEEE IAS Annual Meeting 2020 website. At the top, there's a navigation bar with links to IEEE.org, IEEE Xplore Digital Library, IEEE Standards, IEEE Spectrum, and More Sites. On the right, there's a 'Sign In' button. Below the navigation is the IEEE IAS logo. A banner for ECCE 2020 is visible. The main content area features a large image of a city skyline at sunset with the IAS logo overlaid. Navigation links for Home, Call for Papers, Registration, Critical Dates, Conference Committee, Tutorials, and Hotel are at the bottom of the main content area.

## ECCE 2020

Announcements Contact [f](#) [t](#) [d](#)

**ECCE 2020**  
IEEE ENERGY CONVERSION CONGRESS & EXPO DETROIT, MICHIGAN OCTOBER 11-15

HOME REGISTRATION ▾ AUTHORS/REVIEWERS ▾ STUDENTS ▾ PROGRAM ▾ HOTEL/TRAVEL ▾ EXHIBITION ▾ ABOUT ▾ [Q](#)

**IEEE-ECCE 2020**  
**Detroit, Michigan**  
**October 11 – 15**

The expo will feature both industry-driven and application-oriented technical sessions, as expositions. The five day conference will bring together practicing engineers, researchers and other professionals for interactive and multidisciplinary discussions on the latest advances in various areas related to energy conversion.



**The Twelfth Annual Energy Conversion Congress and Exposition**

**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 &amp; 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,  
 Wavelengths,  
 2017 ~ 2020**



## Executive Committee

The **SEM Executive Committee** is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2019 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 Christopher Johnson, the section secretary at: [cjohnson@ieee.org](mailto:cjohnson@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.

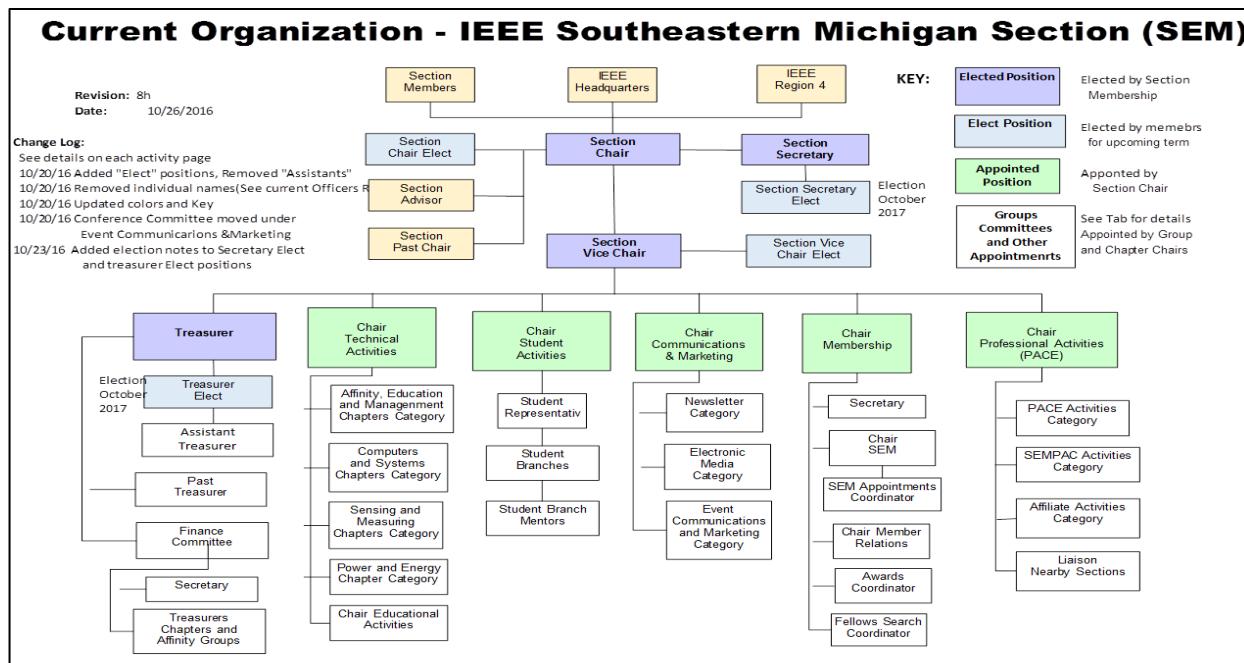
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

**Christopher Johnson** - SEM 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 2020 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 2020 meetings. Or, link your personal calendar to the SEM Web calendar.

### Section Administrative Committee (ExCom) Meeting Schedule for 2020:

**Note:** All IEEE Members are welcome at any IEEE meeting, at any time but please register so we can be sure to accommodate you. This month's meeting is highlighted in **Bold**.

**Teleconference, Thursday August 6 <https://events.vtools.ieee.org/m/216755>**

Teleconference, Wednesday September 2 <https://events.vtools.ieee.org/m/216756>

FACE TO FACE, Thursday October 7 <https://events.vtools.ieee.org/m/216971>

Teleconference, Wednesday November 4 <https://events.vtools.ieee.org/m/216759>

Teleconference, Thursday December 2 <https://events.vtools.ieee.org/m/216760>

Chris Johnson  
SEM Secretary  
[cjohnson@ieee.org](mailto:cjohnson@ieee.org)

## 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](mailto:wavelengths@ieee-sem.org)

OR

[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)  
[nilesh.dudhaia@ieee.org](mailto:nilesh.dudhaia@ieee.org)  
[k.williams@ieee.org](mailto:k.williams@ieee.org)  
[cjohnson@ieee.org](mailto:cjohnson@ieee.org)  
[cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com)  
[lunnmalcolm@me.com](mailto:lunnmalcolm@me.com)  
[akiofujimaki@hotmail.com](mailto:akiofujimaki@hotmail.com)  
[nevrus.k.kaja@ieee.org](mailto:nevrus.k.kaja@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](mailto:wavelengths@ieee-sem.org) OR any one of the following:

[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)  
[nilesh.dudhaia@ieee.org](mailto:nilesh.dudhaia@ieee.org)  
[k.williams@ieee.org](mailto:k.williams@ieee.org)  
[cjohnson@ieee.org](mailto:cjohnson@ieee.org)  
[cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com)  
[lunnmalcolm@me.com](mailto:lunnmalcolm@me.com)  
[akiofujimaki@hotmail.com](mailto:akiofujimaki@hotmail.com)  
[nevrus.k.kaja@ieee.org](mailto:nevrus.k.kaja@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	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 Banquet	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://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 “” 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 Officers.”

**Section Officers****Section Chair**

David Mindham

**Section Secretary**

Chris Johnson

**Section Vice-Chair**

Sharan Kalwani

**Section Treasurer**

Michael Folian

**Standing Committees:****Section Adviser**

Don Bramlett

**Chair Communications & Marketing****Chair Educational Activities**

Christopher Guirlanda

**Chair Finance**

Nevrus Kaja

**Chair Membership Development**

Sharan Kalwani

**Chair Nominations & Appointments**

Kimball Williams

**Chair Professional Activities (PACE)**

Sharan Kalwani

**Chair Student Activities**

Mel Chi

**Student Representative****Chair Technical Activities**

Jeffery Mosley

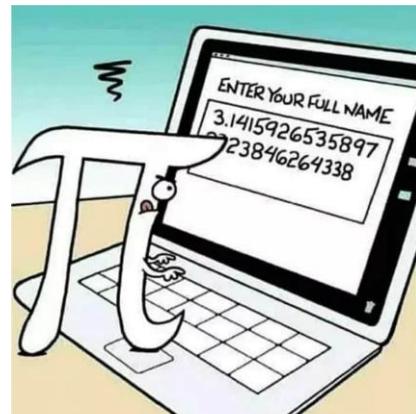
**Wavelengths Editor**

Sharan Kalwani



IEEE Southeastern Michigan

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](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:

- 1<sup>st</sup> 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>