Wavelengths

Volume 63 – Issue 06

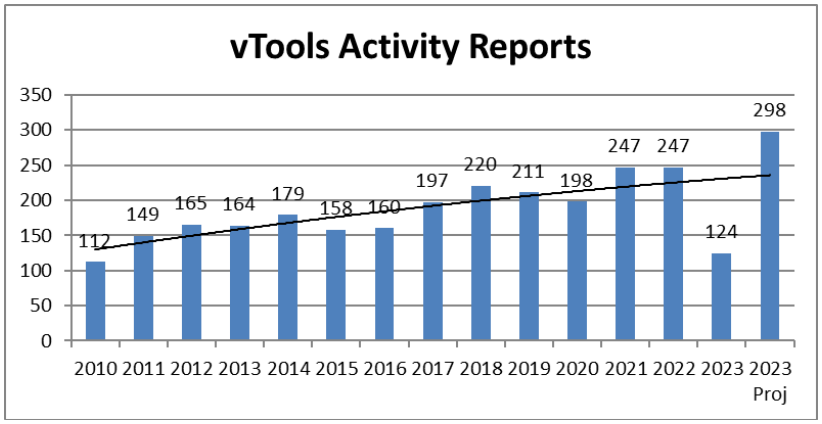
Contents

Upcoming Events

We have several events coming up this month, all are listed below, FYI.
Note: All times are EST/EDT. If any events are missed do kindly bring them to the attention of wavelengths@ieee-sem.org. Enjoy!
You can also use this bookmark to view All of the links at a single glance
http://bit.ly/sem-upcoming

Event	Date	Time
IEEE SEM Fall 2023 SECTION CONFERENCE Initial Planning Meeting - Jun 2023	02 June	12:00 PM
Documentary Night: Forgotten Genius	02 June	04:30 PM
Ch8: AdCom Teleconference	08 June	11:00 AM
SEM Section ExCom Monthly Meeting (virtual) For JUNE 2023	08 June	06:30 PM
IEEE SEM Fall 2023 SECTION CONFERENCE Initial Planning Meeting - Jun 2023	09 June	12:00 PM
Large Scale Generator Interconnection Processes and Challenges	14 June	12:00 PM
IEEE SEM Fall 2023 SECTION CONFERENCE Initial Planning Meeting - Jun 2023	16 June	12:00 PM
Documentary Night: Crypto Decoded	16 June	04:30 PM
Second-Life EV Batteries for Renewable and Smart Grid Storage Applications	21 June	5:00 PM
IEEE SEM Fall 2023 SECTION CONFERENCE Initial Planning Meeting - Jun 2023	23 June	12:00 PM
NEXT The POWER of REINVENTION in LIFE and WORK	28 June	06:30 PM
IEEE SEM Fall 2023 SECTION CONFERENCE Initial Planning Meeting - Jun 2023	30 June	12:00 PM
2023 Summer Potluck Picnic!	2 July	12:00 PM

Chair's Column



Mid-Year review:
It sure seems like time has started flying faster these days. By the way we remain on track to meet/exceed the total # of meetings we did in 2022, so good job to all our volunteer chapter, affinity group, committee, and student branch **leaders**! I have attached a small graph that was shared with me, showing the trendline for 2023, slated to surpass both 2021 & 2021.

Coming up soon:
Chapter 5 has scheduled a Summer Potluck Picnic on July 2nd at the Rochester Municipal Park. Expect to see an E-notice but you can see the flyer on page 12. A 'save the date' email will be also going out soon.

We have 2 more very interesting documentaries scheduled for our Friday nights to help kick off our weekends. The topics are: Forgotten Genius on June 2nd (flyer on page 4), Crypto technology (it seems to be in the news all the time) (page 6), and a re-screening of quantum entanglement (we have audio video issues last month).

Last month in May Robofest was held at LTU (check out CJ's brief report on page 13). The IEEE Section was of course there and supported them in more ways than one! And one of the grand events – EMC Fest took place on May 25th – Candance Suriano has a very nice report. (See page 9)

Last year Chapter 5 celebrated the 20th anniversary of their ESW (Embedded Systems Workshop). They have already begun planning to up the ante and are preparing for a massive 3-day event spread over October 14, 21 and 28th. Keep a weather eye out for announcements!

The TEMS (Technology and Engineering Management Society) chapter has a new format for their tech event – a book discussion. See their event on the SEM website calendar (June 28).

Also in this edition, we are featuring Ray Sasinowski, (Chapter 10 or TEMS) chair (see page 20). In the next few editions, we will highlight more of our volunteer leaders.

Finally, I am happy to share the news that we have a Distinguished Speaker visiting our neck of the woods on June 21. This will be held at the University of Michigan Dearborn Campus, courtesy of Dr Wen Cong Su, Chair ECE and the IEEE Student Branch there – faculty counselor Dr Alireza Mohammadi. (see page 7. One does need to register, since we will be serving dinner and an accurate headcount is requested!)

Finally, I ask you to help share news about our IEEE Section to fellow engineers. This will help us fulfill the mission and goals, which is to use technology to help society. Do help us gain more visibility – word of mouth, invitations to our tech events, skills, join as members, post our events to your social media feeds, etc.

Sharan Kalwani
Via email: chair@ieee-sem.org
Section members are encouraged to engage using <u>any</u> of these online platforms:

Technical Activities Report

2023 IEEE SE Michigan Section Geo-unit Status (Till May 30th)

Ch's & AG's	Ave Tech Mtg. Attend	Ave Tech Mtg Guest	#L31 -Technical	#L31 -Admin	#L31 Professional	#L31 -Other	Geo-Unit Name	# Unreported	Total Mtgs
Cnslt	0	0	0	0	4	0	Consultants Network	1	4
LIFE	0	0	0	0	3	0	Life Members	1	3
WIE	25	15	1	4	2	0	Women In Engineering	0	7
YP	0	0	0	0	0	0	Young Professionals	0	0
1	0	0	0	1	0	0	Circuits & Systems, Signal Proc., Info Th.	0	1
2	21	8	3	0	0	0	Vehicular Technology	0	3
3	12	0	1	0	0	0	Aerospace & Elec. Sys., Communications	0	1
4	40	27	3	0	0	0	Trident (Ant, Elect Dev., uWave, Photo)	0	3
5	30	8	14	2	0	0	Computers	0	16
6	161	56	1	0	0	0	Geoscience & Remote Sensing	0	1
7	183	74	3	2	0	0	Power Engineering, Industrial App.	0	5
8	39	19	5	5	4	0	Electromagnetic Compatibility (EMC)	3	14
9	0	0	0	0	0	0	Power Electronics, Industrial Electronics	0	0
10	5	0	1	1	0	0	Engineering Management	0	2
11	0	0	0	0	0	0	Eng. in Medicine & Biology	0	0
12	17	1	2	1	0	0	Control Systems	0	3
13	19	0	18	4	0	0	Education	0	22
14	34	30	2	0	1	1	Robotics & Automation	0	4
15	40	27	3	0	0	0	Nuclear Plasma Science Society	0	3
16	0	0	0	1	0	0	Computational Intelligence / Sys.Man.Cyber.	0	1
17	27	0	1	0	0	0	Nano Technology Council	0	1
SEM	28	0	3	26	1	0	SEM (Section)	1	30
	681	266	61	47	15	1	NOTE: Highlight Green = Active	6	124
		39%					NOTE: Highlight clear = Concern		

Chapter and Affinity group leaders please reach out to the TAcom for any assistance. Chapter and Affinity group members if you have suggestions or requests to host or co-host technical meetings, please contact me via the email below. Your TAcom plans to conduct a survey of Geo-unit and committee leaders to elicit needs and desires to better engage our SEM membership. The TAcom also plans to offer career focused webinars and talks to equip our membership for seeking and or changing employment. These events are to be open to the entire SEM membership.

Your TAcom plans to continue contacting chapters and groups needing assistance in meeting IEEE and SEM Section goals for encouraging member participation and discussions related to the vast amounts of technical and engineering challenges facing our world.

V/r

Jeffery V. Mosley
TAcom Chairman
jvmosley@ieee.org

Forgotten Genius

IEEE Southeastern Michigan
Presents a Video Documentary on
Forgotten Genius

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Quick Summary

- **When:**
  Date: June 2nd, 2023
  Time: 04:30 – 6:30 PM (EST/EDT)
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by IEEE Southeastern Michigan Education Society Technical Chapter

The grandson of Alabama slaves, Percy Julian met with every possible barrier in a deeply segregated America. He was a man of genius, devotion, and determination. As a black man he was also an outsider, fighting to make a place for himself in a profession and country divided by bigotry—a man who would eventually find freedom in the laboratory.

Running time: 1 hr 50 minutes ()

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/356299

IEEE Education Society

IEEE Southeastern Michigan Section

This Month in June

Or: Notable Events in Engineering & Science 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 duri ng 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.

This continues the yearlong feature of interesting ***engineering*** events or milestones that occurred in a specific month. Readers are invited to share their views and opinions (or suggestions) at the accompanying link. Submissions can also be made using direct email to the editors at: wavelengths@ieee-sem.org.

Sharan Kalwani
Just one of the Editors, Wavelengths,
2022-2023 Chair, Southeastern Michigan Section
Passionate Engineering History Buff/Aficionado

Crypto Decoded

IEEE Southeastern Michigan
Presents a Video Documentary on
Crypto Decoded

From Bitcoin to NFTs, crypto is making headlines. But what exactly is it, and how does it work? In this documentary experts go beyond the hype and skepticism to unravel the social and technological underpinnings of crypto – exploring how it came to be and why this new technology may change more than just money.

Running time: 50 minutes ()

Quick Summary

- **When:**
  Date: June 16th, 2023
  Time: 04:30 – 5:30 PM (EST/EDT)
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by IEEE Southeastern Michigan Education Society Technical Chapter

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/356301

IEEE Southeastern Michigan Section

VTS Distinguished Talk

IEEE Southeastern Michigan
Presents VTS Distinguished Speaker: Dr Chris Mi
Second-Life EV Batteries for Renewable & Smart Grid Storage Applications

The number of electric vehicles (EVs) on roads is growing rapidly. EV batteries today, almost exclusively lithium-ion based, can last about 10 years before they can no longer provide the required performance such as power and range. They cost heavily in both production and recycling. So economically dealing with retired EV batteries is an important topic. It is estimated that the first huge wave of EV battery retirement will hit in 2025, and more retired batteries will be available each year thereafter.

Speaker Bio:

Dr. Mi is the distinguished Professor of ECE at San Diego State University. He is a Fellow of IEEE and SAE. He is also the Director of the US Department of Energy-funded Graduate Automotive Technology Education (GATE) Center for Electric Drive Transportation at SDSU. He was previously a faculty member at the University of Michigan-Dearborn from 2001 to 2015, and an Electrical Engineer with General Electric from 2000 to 2001. He also served as the CTO of 1Power Solutions from 2008 to 2011 and is currently the CTO of EV Safe Charge, Inc. Dr. Mi received his Ph. D from the University of Toronto, Canada, in 2001.

Dr. Mi has published 5 books, 204 journal papers, 126 conference papers, and 25 issued and pending patents. He served as Editor-in-Chief, Area Editor, Guest Editor, and Associate Editor of multiple IEEE Transactions and international journals, as well as the General Chair of over 10 IEEE international conferences.

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/362934

Quick Summary

- **When:**

  Date: June 21st, 2023

  Time: 05:00 – 6:30 PM (EST/EDT)

Where:

Room IAVS-1011
Institute for Advanced Vehicle Systems
4901 Evergreen Road,
Dearborn, MI 48128

Audience: OPEN to ALL

Sponsored by
Vehicle Tech Society Chapter
&
U Michigan-Dearborn ECE Department
&
IEEE Student Branch

IEEE Southeastern Michigan Section

Member News

At $108 billion (as of March 2023) educational facilities are the second- largest building construction market in the United States. As a whole, the education industry in the United States is undergoing significant change; much of reflected in the facility spend. This committee is in the right place at the right time, given the importance of electro technologies needed to contribute to this industry's safety and sustainability goals.

The 4 times monthly teleconferences were hosted with about 20 different attendees clicked in to 48 of them from May 2022 to May 2023. Productive, insightful discussion about how IEEE can contribute to the safety and sustainability of nearly all occupancy classes that are present in schools, colleges, universities, and hospitals. All the Listserv rosters are stable.

Mike Anthony is the only electrical engineer in regular attendance at International Code Council meetings of the Building Code Action Committee which is the oversight body for all other ICC codes and standards. It would be nice to have some help because there are many, many electrical issues that are being handled by fire safety officials and regulators (such as electric vehicles, microgrids, solar panels, etc.). Among some of his recent accomplishments are:

- ✓ At least two proposals to get IEEE 3000-collection titles into the 2023 NEC accepted. The remaining 20+ (non-3000 series) were rejected; possibly because of snags in NFPA/IEEE copyright/permissions communication during the pandemic.
- ✓ One proposal for the 2023 National Electrical Safety Code was accepted-in-principle though the language was changed and moved to a different section.
- ✓ Published a review of Giuseppe Parise's research in the inaugural edition of Harvard Business School's new Journal of Healthcare Management Standards.
- ✓ Contributed some original, "serviceable" content on campus outdoor lighting systems to Gary Fox's project: Recommended Practice for the Design of Power Systems Supplying Lighting Systems in Commercial and Industrial Facilities.
- ✓ Now have an AUTOCAD subscription which now makes it possible to create IEEE content with an effective balance of words and figures that was needed in the outdoor lighting chapter.
- ✓ Relevant to many IAS/PES stakeholders: Comments on proposed Department of Energy regulation of building distribution transformers.
- ✓ Keeping Bob Arno's USACE Homeland Power Security Project visible

What Mike is up to next….

- ✓ *Papers in process:* Impedance grounding for campus medium voltage distribution grid, athletic stadium scoreboard case study, significance of ASHRAE 90.1 scope expansion to facility electrical engineers.
- ✓ Continuation of education facility industry feeder and branch circuit load project begun in 2017.
- ✓ It would be nice to do an example solar panel calculation for the 2026 NEC to show up in Appendix D. Mike has a coarse calculation, but it needs a review by a full time designer who is more expert in this field.
- ✓ Mike would like some backup to train other members how to get IEEE technical literature to be references in other standard developer catalogs such as ASHRAE and the catalogs of the International Code Council, Illumination Engineering Society, in addition to federal and state electrotechnical regulations

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EMCFest'23 Report

It was a bright and brilliant day that dawned on May 25th for another EMCFest. The Southeastern Michigan IEEE EMC chapter headed by our Chair Scott Lytle and Secretary Steve Tomba, planned the day in a terrific tandem with the Chicago chapter which presented the same sessions on MAY 23rd: Professors Eric Bogatin and Todd Hubing were the keynote speakers.

Set up for the EMCFest started the night before the EMCFest. Malcolm Lunn, audio visual maestro, synchronized the five screens and speakers (Figure 1). Malcolm Lunn made the large center screen by putting together a screen posted on a portable antenna frame. Akio Fujimaki, chapter photographer, checked the alignment of the center screen while two people from KITAGAWA INDUSTRIES America, Inc. (KGS) assist Malcolm Lunn and John Suriano as they finish putting the center screen together.

Figure 1

Figure 2

The morning of the EMCFest (Figure 2: left to right) saw Jim Woodyard, Bob Adams, Candace Suriano, and Scott Lytle at the check in desk.

Attendance was amazing! Almost three hundred attended, over three hundred signed up!
Figure 3 shows a portion of the show floor where the exhibitors were set up under the blazing sun coming in the skylights.

Figure 3

Scott Lytle, Chair of the Southeastern Michigan IEEE EMC Society welcomed the speakers and started the meeting (Figure 4) while Steve Tomba and Candace Suriano manned the check in desk (Figure 5).

Figure 4

Figure 5

Figure 6

Professor Eric Bogatin (Figure 6) did delightful demonstrations that highlighted how decoupling capacitors can be an easy and elegant way to reduce EMC on a board. Dr. Bogatin showed where decoupling capacitors should be placed on a board, and the fundamental principles that determine their placement. In Professor Bogatin's second presentation right after lunch, he did more demonstrations deftly exhibiting how the participants could use three important PCB layout techniques to keep boards from screaming like a banshee!

Figure 7

Professor Todd Hubing's (Figure 7) presentations highlighted the benefits of his long experience. His presentations were **Simple Calculations Anyone Can Do to Help Ensure EMC Design Compliance,** and **Horrible EMC Design Advice You Can Find on the Internet (and in Print)**. **Simple Calculations** covered ways to estimate the amount of coupling and severity of noise sources. Professor Hubing showed basic equations for noise sources, cross talk and other aspects of EMC as a means to mitigate possible compliance problems in the design stage. His afternoon presentation revealed that many data sheets and application notes continue to promote out of date design guidelines that have been proven to be wrong.

Lunch at the Livonia Hilton (Figure 8) was a sumptuous feast of pasta, meatballs, chicken, mixed fingerling potatoes, soups, and salad.

Figure 8

After lunch was another class with Professor Bogatin (Figure 9 below) and Professor Hubing.

Figure 9

At the end of the day, there was an ice cream reception and a drawing with great gifts donated by the EMCFest vendors (Figure 10). Megan Denk (of Rohde & Schwarz) and Esther Suriano (student) drew the tickets, Louis Feudi of Raymond EMC announced the winners, and Steve Tomba awarded the gifts.

CR Suriano, PhD
Suriano Solutions

Figure 10

EMC SIPI2023

SUMMER PICNIC!

SUMMER POTLUCK PICNIC!

The IEEE Southeastern Michigan Section invites all IEEE members & their families & friends, to join us for a Summer Potluck Picnic.*(In other words, we engineers also know how to play and are not all work all the time!!)*

Plan to join us on Sunday, July 2nd 2023
From 11:30 AM to 6:30 PM (SUMMER TIME) at:

Kiwanis Pavilion
400 Sixth Street
Rochester, Michigan
United States 48307

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/m/356581

The event is open to all IEEE Southeastern Michigan Section members, their families AND friends! Please email the sponsors with what dish you will be bringing to share, approximately what time and how many members are expected to join in the fun (RSVP by June 30). We will help provide the napkins, plastic ware, paper plates, water, table covers, etc. Feel free to also let the organizers also know if you are bringing a board game, music, or group activity item, etc. As engineers we too know how to spend a relaxing day with family together! We look forward to seeing you on that Sunday.

About the Municipal Park
The City of Rochester's park system offers a wide variety of recreational opportunities. At Rochester Municipal Park, the recreation opportunities include:

- Open air shelter (the Kiwanis Shelter) - has electrical outlets, so we can use crockpots, etc.
- Duck Pond
- Over a mile of paved walkway
- Restrooms
- Sand volleyball
- Tot lot (at the south end at the end of Pine Street)

Do come join us!



RoboFest News

Robofest Qualifying Competitions and World Championship in May
IEEE SEM Sponsored Robofest World Championship 2023 Report

For the first time after the pandemic, in-person world championship was held at Lawrence Technological University in Southfield on May 11 ~ 13, 2023.

Goals of Robofest program that allows only fully autonomous robots are to:

(1) generate excitement and interest among young people for Science, Technology, Engineering, Arts, and Mathematics (STEAM), AI and Computer Science,
(2) develop essential skills such as teamwork, leadership, creativity, communication, and problem solving, and
(3) prepare students to excel in higher education and technological careers.

We had teams from Novi and Rochester (Michigan) and Riverview (Florida), from the United States, as well as Hong Kong, Macau, Saudi Arabia and Taiwan – all overseas, who earned 1st place awards. Figure 2 shows all the participants who received IEEE SEM medals (See Figure 1). Figure 3 shows a picture of IEEE SEM Section Chair Sharan Kalwani, one of the Judges, who speaks during the introduction of Judges. Figure 4 shows over 700 people in the gym during the opening ceremony.

Figure 5 shows five IEEE members who served as Judges for Game and Senior Exhibition competitions. In Figure 6, member Jonathan Berent is asking questions of a Senior Exhibition team. Figure 7 shows another IEEE member, Hao Jiang, who served as a Judge for robotics medical applications. On behalf of IEEE SEM, Victor Manske received a plaque of appreciation from LTU during the closing ceremony (See Figure 8).

The complete list of winners and a link to official photos are posted on the World Championship page on the Robofest website. https://robofest.net/index.php/current-competitions/world-championship

Figure 1. IEEE SEM Medal for Robofest World Championship 2023

Figure 2. Robofest World Championship Contestants who received IEEE SEM medals.

Figure 3. IEEE SEM Section Chair, Sharan Kalwani, speaks during the opening ceremony

Figure 4. Robofest World Championship 2023 Opening ceremony

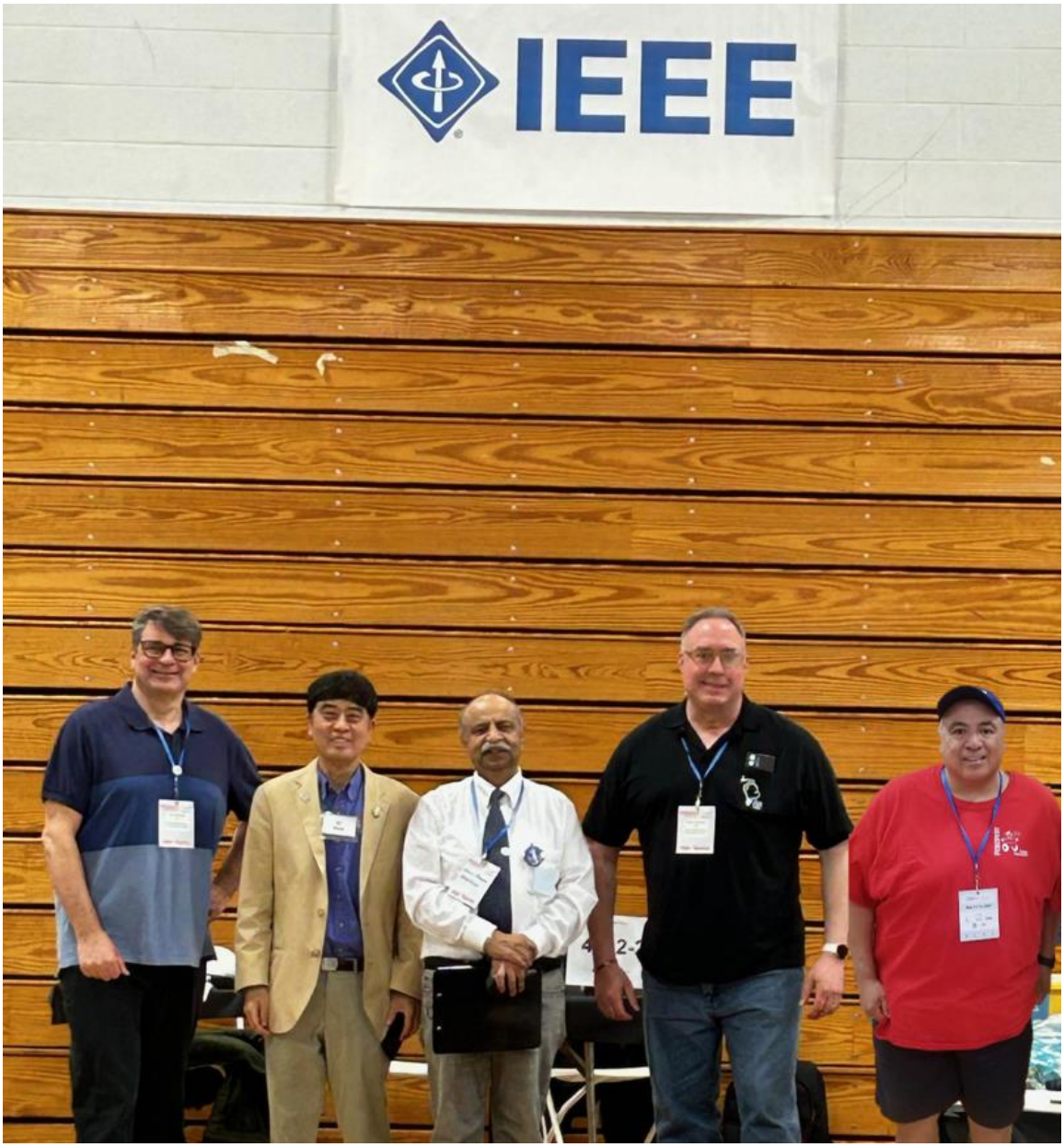


Figure 5. IEEE members who served as Judges (Left to right: Jonathan Berent, CJ Chung, Sharan Kalwani, Victor Manske, Benancio Gonzalez)

Figure 6. IEEE member Jonathan Berent is asking questions to a Senior Exhibition team

Figure 7. IEEE member Hao Jiang as a Judge is asking question to a RoboMed team.

Figure 8. On behalf of IEEE SEM, Victor Manske received a plaque of appreciation from LTU during the closing ceremony.

Lawrence Technological University / Robofest / J-233 / 21000 W. Ten Mile Rd, Southfield, MI 48075
Dr. Christopher Cartwright, Director, ccartwrig@ltu.edu
Elmer Santos, Assistant Director, esantos@ltu.edu
Shannan Palonis, Coordinator, spalonis@ltu.edu
Pam Sparks, Coordinator, psparks@ltu.edu
Dr. CJ Chung, Advisory Board Chairperson (Volunteer), cchung@ltu.edu

ORG UNITS cheat sheet

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit code is in parentheses)		
Consultants Network Affinity Group:	(CN40035)	
Life Members:	(LM40035)	
Young Professionals:	(YP40035)	
Women in Engineering:	(WE40035)	
Chapter: 01 (CH04049)	(SP01)	Signal Processing Society,
	(CAS04)	Circuits and Systems Society and
	(IT12)	Information Theory Society
Chapter: 02 (CH04051)	(VT06)	Vehicular Technology Society
Chapter: 03 (CH04053)	(AES10)	Aerospace and Electronic Systems Society and
	(COM19)	Communications Society
Chapter: 04 (CH04050)	(AP03)	Antennas and Propagation Society,
	(ED15)	Electron Devices Society,
	(MTT17)	Microwave Theory and Techniques Society,
Chapter: 05 (CH04055)	(C16)	Computer Society
Chapter: 06 (CH04056)	(GRS29)	Geosciences and Remote Sensing Society
Chapter: 07 (CH04057)	(PE31)	Power Engineering Society,
	(IA34)	Industrial Applications Society
Chapter: 08 (CH04088)	(EMC27)	Electromagnetic Compatibility Society
Chapter: 09 (CH04087)	(IE13)	Industrial Electronics Society,
	(PEL35)	Power Electronics Society
Chapter: 10 (CH04142)	(TEM14)	Technology and Engineering Management Society
Chapter: 11 (CH04099)	(EMB18)	Engineering in Medicine & Biology
Chapter: 12 (CH04103)	(CS23)	Control Systems Society
Chapter: 13 (CH04113)	(E25)	Education Society
Chapter: 14 (CH04115)	(RA24)	Robotics And Automation Society
Chapter: 15 (CH04144)	(NPS05)	Nuclear Plasma Sciences Society
Chapter: 16 (CH04125)	(CIS11)	Computational Intelligence Society,
	(SMC28)	Systems, Man and Cybernetics Society
Chapter: 17 (CH04128)	(NANO42)	Nanotechnology Council

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit code 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)

Use the Geo-unit ‘Code’ for faster access in the vTools system applications.

HKN Code	HKN Name (Student IEEE Honor Society)
HKN029	University of Michigan-Ann Arbor, Beta Epsilon
HKN042	University of Detroit-Mercy, Beta Sigma
HKN054	Michigan State University, Gamma Zeta
HKN073	Wayne State University, Delta Alpha
HKN163	University of Michigan-Dearborn, Theta Tau
HKN164	Lawrence Institute of Technology, Theta Upsilon
HKN190	Oakland University, Iota Chi
HKN244	Southeastern Michigan Alumni

Organization Unit IEEE Code	Student Technical Chapter name
SBC00531	University of Detroit-Mercy, Computer Society Chapter
SBC02251	Wayne State University, Computer Society Chapter
SBC03921	Lawrence Tech University, Computer Society Chapter
SBC06741	Oakland University, Engineering in Medicine & Biology

Why do we publish this? Well, this is most useful when searching the vTools page for entering L31s or creating new events or searching for existing events!

Curated & Maintained By
Sharan Kalwani,
Chair, IEEE Southeastern Michigan Section (2022-2023)
Editor, Wavelengths (*Serving you as an active newsletter contributor since 2018)*
Enthusiastic IEEE volunteer since 2011

Use the Geo-unit ‘Code’ for faster access in the vTools system applications.

24 Hour Clocks

Those of us who served in the military, or learned to fly a plane, or got serious about sailing a boat, or became Amateur Radio operators quickly were introduced to the 24-hour clock system. The reasons for 24-hour time keeping are obvious once a bit of consideration is given to ensuring that there is never a mistake when someone says “lets meet at 11:00 hours.” They mean 11:00 in the morning. That would never be mistaken for 11:00 at night!

In the world of 12-hour clocks, the necessity of following each declaration of time with either an AM or PM designation becomes completely unnecessary in a 24 hour system. Once you begin to think in 24-hour time, you begin to wonder why you ever got sucked into a 12 & 12 dual system. The hour immediately after Noon (12:00) becomes 13:00 Hrs. Within a few days, or a week or two at most, you lose any confusion and wonder how you got along without the 24-hour system to begin with.

The next logical step is to reference all clocks in your life to Universal Coordinated Time (UTC). (*The acronym is French, thus UTC, not UTC.*) This is often referred to at GMT, or Greenwich Mean Time which marks the new day according to the stars passing the observatory at Greenwich England. This system established the navigation system for British ships that allowed the circumnavigation of the planet once reliable clocks become available.

By the way, an interesting film of the story of the development of those clocks may be seen in the film “Longitude”: “In two parallel stories, the clockmaker John Harrison builds the marine chronometer for safe navigation at sea in the 18th Century and the horologist Rupert Gould becomes obsessed with restoring it in the 20th Century.”

History may see another revolution as the current pace and scope of modern electronic communications has made reaching out to someone on the other side of our planet a daily occurrence. People needing to arrange conversations with others in different time zones not only have to arrange mutually convenient times but account for how many ‘time zones’ there are between, and whether those zones are on normal or ‘daylight savings’ time shifts.

Using Universal Coordinated Time (UTC) at both ends of the communications loop makes that coordination problem go away. As part of my duties for IEEE I serve as the secretary for two Society Committees which have members in many industrial countries around the world. The use of the 24-hour UTC system removes any confusion as to when meetings are to be held. Here in Michigan, which ‘adjusts’ its clocks twice in the yearly ‘daylight savings’ dance, we stay with the same UTC schedule and shake our heads as everyone around us goes through that disruption to their lives.

In our modern communications world, we think nothing of setting up a virtual meeting with friends or relatives in other states, or countries from a technical point of view but can struggle with time zone confusion at both ends. How much easier when we all finally convert to 24 Hour time and the Universal Coordinated Time (UTC) standard.

I can hear some thinking; “How will I know when to wake up?”. Simple once you adopt the 24-Hour time schedule you learn what the clock reads when you want to wake up. ‘You mean I have control of that?’ Of course, you do. You always did. But if you let others tell you what you should be doing by their clocks, you become a slave to their system. As soon as you have you own clock, and a time standard recognized by the rest of the world, you can set your own schedule by your own 24-Hour clock, and tell those others, how to do it.

Chapter Chair Profile

This month we are once again continuing with our volunteer leader profiles. We would like to introduce Ray Sasinowksi, a very active and enthusiastic person.

My involvement in Chapter 10 (aka Technology & Engineering Management Society or TEMS) began in the fall of 2016. Since then, I have been active & enjoyed multiple TEMS chapter volunteer activities. This has led to great opportunities improving & refining my management skills. Volunteering has allowed me to meet & network with leaders in both technology and academic fields in and outside of Michigan. Currently I'm the chapter's chair and am being challenged to grow membership and member involvement.

In summer of 2020 our chapter hosted the Technology & Engineering Management Society Conference. TEMSCON 2020 was to be held in Metro Detroit with the focus on "MANAGING THE DEVELOPMENT OF CONNECTED SYSTEMS". Presentations from engineering leadership community, shared knowledge to advance the understanding and the state of practice related to successful technology and engineering management. Just like everyone else in 2020, the conference needed to pivot and became a "virtual conference" due to the COVID pandemic. Our chapter volunteer team working with the TEMS society, made the conference was a great success!

I have over 38 years in the field of engineering as a technician and engineer with most of the experience gained in the automotive sector. I have held various engineering positions in testing, validation, development, product design, and project management. As I moved forward in my career IEEE played an important role allowing me to gain experience, insight, and maturity within the electrical engineering profession. Volunteering and holding various officer appointments allowed me to build strong relationships with industry leaders.

I joined IEEE in 1986 and became a volunteer with Southeastern Michigan Section and the Trident Chapter which led to becoming the chapter chair. At that same time, I was employed by Bell Northern Research as an EMC engineer and the experience I gained being an officer in the Trident Chapter gave me the initiative and abilities required to begin planning and executing the formation of a new EMC Chapter in Southeastern Michigan region.

One of my proudest accomplishments was to establish the EMC Society chapter (1989) here in Southeastern Michigan. I collaborated with Dr. Val Liepa (EECS Professor University of Michigan), William Sperber (Director of EMC Dept. GM LLC.), and Kimball Williams (IEEE Senior Member) who guided & supported me in the planning and founding of the Southeastern Michigan EMC Society Chapter 14.

I'm also active in SAE & WSU College of Technology Advisory Board.

Society of Automotive Engineers (SAE) Committees: Active voting member

- Cooling Systems Standards member of sub work group updating SAE specifications
- Non-Hydraulic Hose member of sub work group updating SAE specifications

Wayne State University:

College of Engineering Technology Joint Industrial Advisory Board Member 2016 to present

Ray's contact information can be found using the roster at the Section website OR the IEEE Roster page OR you can email him directly at rays@ieee.org OR his ham radio call handle is: N8UTP

Activities & Events

We try to publish IEEE events in several places to ensure that everyone who may want to attend has all the available relevant information. **NOTE: The IEEE SE Michigan section website is located at http://r4.ieee.org/sem/**

SEM Wavelengths:
https://r4.ieee.org/sem/about-sem/sem-history/wavelengths-magazine-archive/

SEM Calendar of events:
https://r4.ieee.org/sem/sem-calendar/
Select "SEM Calendar" button in the top row of the website. 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 Collabratec Workspace:
https://ieee-collabratec.ieee.org/app/workspaces/5979/IEEE-Southeastern-Michigan-Section/activities
An IEEE supported space for online chat, discussions, connecting with other global IEEE entities, besides our local Michigan folks.

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

Other Happenings

Here are some of the non-IEEE functions that may be of interest to you or someone you know. Let us know if you have a special interest in a field that encourages technical study and learning, and wish to share opportunities for participation with members of the section. NOTE: Copy the URL and paste it into your browser address bar.
These websites were checked in June 2022 and found viable.
Send details to: wavelengths@ieee-sem.org OR letters@ieee-sem.org

Michigan Institute for Plasma Science and Engineering: Seminars for the academic year:
https://mipse.umich.edu/seminars.php

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

Model Rocketry
https://www.nar.org/find-a-local-club/nar-club-locator/

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

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

Robots
https://www.robofest.net/index.php/about/contact-us

Science Fiction Conventions
https://2022.penguicon.org/

http://www.confusionsf.org/

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

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

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

It appears that the SouthWest Michigan Maker Faire was a casualty of the Global Pandemic, as were many of our friends and several organizations.

However, we retain this link for anyone wishing to make contact and consider pumping life back into what was a wonderful experience.

Executive Committee

The Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2023 arrangement of communications links designed to provide inter-unit coordination and collaboration.

The SEM Executive Committee meets in a teleconference each month on usually on a Thursday at 6:30 pm. 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 secretary@ieee-sem.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.

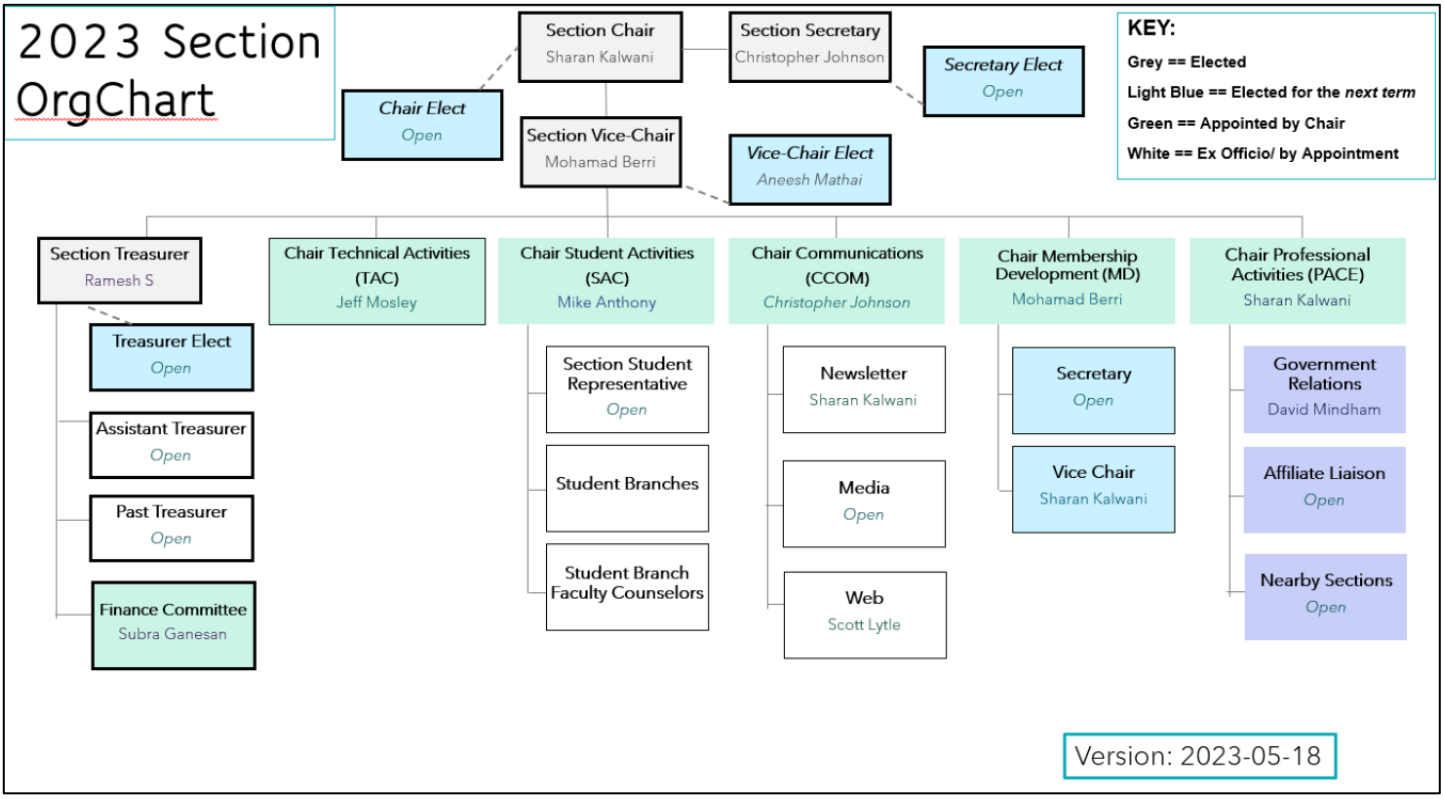
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

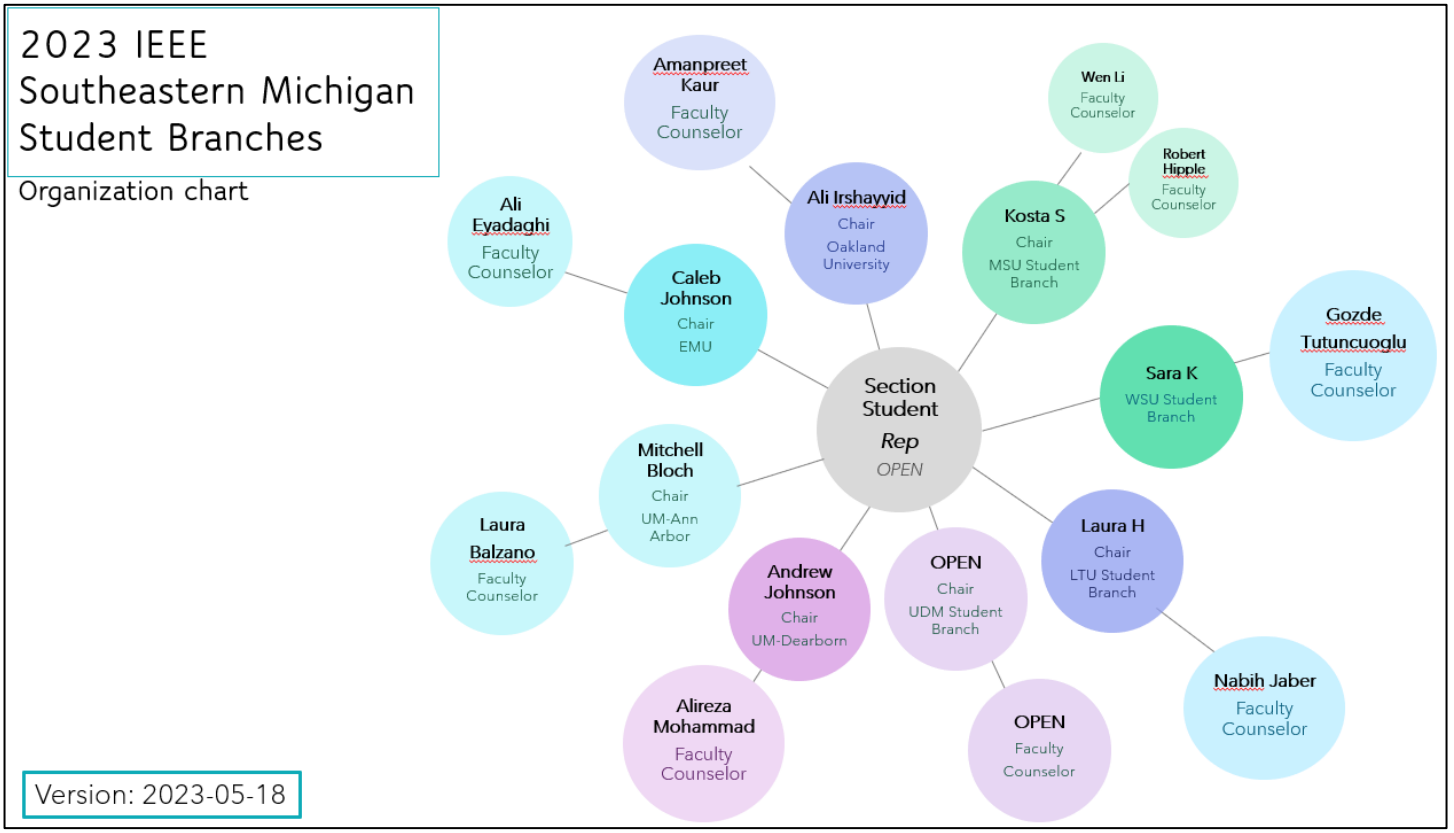
More detailed information on meetings may be found through the IEEE SEM Website: **http://r4.ieee.org/sem/** and clicking on the **SEM meetings list** button near the bottom of the left-hand banner.

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 (Secretary)
Email: secretary@ieee-sem.org

If you wish to download the complete SEM Organization Chart, in PDF format, it will be made available soon at http://r4.ieee.org/sem/ . In the meantime, you may use the diagram below (recently refreshed!)





ExCom Meeting Schedule

NOTE: All SEM members are invited to attend ALL ExCom (Executive Committee) meetings:

Below is the 2023 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. Please mark your calendars for the 2023 meetings. Or, link your personal calendar to the SEM Web calendar.

Section Administrative Committee (ExCom) Meeting Schedule for 2023: (clickable links)

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**.

ExCom Meeting (all clickable links)	*Date & Time*
SEM Section ExCom Monthly Meeting (virtual) For JUNE 2023	8 Jun 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For JULY 2023	13 Jul 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For AUGUST 2023	10 Aug 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For SEPTEMBER 2023	14 Sep 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For OCTOBER 2023	12 Oct 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For NOVEMBER 2023	9 Nov 6:30 PM
SEM Section ExCom Monthly Meeting (virtual) For DECEMBER 2023	14 Dec 6:30 PM

Christopher Johnson (Secretary)
Email: secretary@ieee-sem.org

Section Administrative Committee (ExCom) Meeting Schedule for 2023: (screen snapshot)

Title	Date	Host	Location	Options
SEM Section ExCom Monthly Meeting (virtual) For JUNE 2023	08 Jun 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For JULY 2023	13 Jul 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For AUGUST 2023	10 Aug 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For SEPTEMBER 2023	14 Sep 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For OCTOBER 2023	12 Oct 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For NOVEMBER 2023	09 Nov 2023 06:30 PM	R40035		View
SEM Section ExCom Monthly Meeting (virtual) For DECEMBER 2023	14 Dec 2023 06:30 PM	R40035		View

Editorial Corner

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

Comments and suggestions may be sent to the editorial team at wavelengths@ieee-sem.org
OR
sharan.kalwani@ieee.org
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k.williams@ieee.org
cgjohnson@ieee.org
lunnmalcolm@me.com
akio@emcsociety.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.

We always encourage all chapters and student branches to share news of activities (both past and future) in their arenas. Please feel free to share any and all information so your peers, colleagues can hear about all the good work you do.

Quote:
"If a tree falls in a forest and no one hears it, how do you know it actually fell??"

So, publicize your work, one never knows when it can pay off!

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.

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

Sharan Kalwani,
Chair, IEEE SE Michigan Education Society Chapter
Vice-Chair, IEEE SE Michigan Computer Society Chapter
Co-Editor, Wavelengths,
2018~2019~2020~2021~2022-2023

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*	*New Year Officers*	*Officer's Welcome*	*The Year Ahead*	
Feb	*Cons*	*2*		*MSU*	*Science Fair Judges*	*National Engrs Wk.*	*Surviving Winter*	
Mar		*3*	*13*	*EMU*	*Elections - Prep*			
Apr		*4*		*U/M-D*		*ESD Gold Awards*	*Chapter Focus*	
May	*Life*	*5*	*14*			*Science Fair*		
Jun		*6*					*Leadership Skills*	
Jul		*7*	*15*				*Students Issues*	
Aug	*WIE*	*8*			*Nominations Call*		*Womens Issues*	
Sep		*9*	*16*	*LTU*	*Ballots*	*Engineers Day?*	*Professional Skills*	
Oct		*10*		*U/M-AA*	*Elections!*	*IEEE Day*		
Nov	*YP*	*11*	*17*	*WSU*	*Election Results*	*New Fellows*		
Dec		*12*		*U/D-M*	*IEEE-Com Apmts.*		*Happy Holidays*	*R4 Nom*

Wavelengths Annual Publication Plan for Personal Profiles

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

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Web & Social Sites

Southeastern Michigan Section Website
http://r4.ieee.org/sem/

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

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

SEM Facebook Page
(Select the "f" button under the top row)
https://www.facebook.com/groups/ieeesemich

SEM LinkedIn Page
(Select the "in" button under the top row)
https://www.linkedin.com/groups/1766687/

SEM Twitter Account (new)
(Select the "t" button under the top row)
https://www.twitter.com/ieeesemich

SEM Collabratec Workspace (new)
https://ieee-collabratec.ieee.org/app/workspaces/5979/IEEE-Southeastern-Michigan-Section/activities

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 web page (top banner)

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

IEEE Southeastern Michigan

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

Leadership Meetings

SEM Executive Committee Monthly Teleconferences:

- 2nd Thursday of Each Month @ 6:30 PM
- Check the Section Web Calendar at:
  http://r4.ieee.org/sem/sem-calendar/
  (Select the "SEM Calendar" button in the top row.)

OR

SEM Executive Committee Meetings:

- Find the location, and Registration at:
  http://bit.ly/sem-ieee

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:
  http://bit.ly/sem-upcoming