Wavelengths

Volume 65 – Issue 07

Contents

Section Chair's Message

Welcome to July

There is plenty to look forward to this month by way of activities. Now that the weather is warmer, we are encouraging more folks to contact either the section or their chapters, student branches, or affinity groups, and ask them to organize more events.

This month we have *5 very interesting documentaries* scheduled. These continue to be popular and attract many non-members as well. The topics and links are in the upcoming events table. Also included in this issue is a report from Candace Suriano, about our Annual Event: EMC Fest2025 – which is a signature event of our Section.

Two pieces of important changes: we are proposing a change in the next round of chapter and affinity group elections. Please have a read of both on pages 20 & 21. We also congratulate Raghu Nallapati (recent IEEE Senior Member) and Dr Ece Yaprak (recent IEEE Fellow). See pages 28 & 29.

You can find ALL the other upcoming events using the short URL link: **https://bit.ly/sem-upcoming.** To register, find the "Upcoming Events" tables and follow the vtools links.

SAVE THE DATES (two of them)!

We are planning to hold a joint celebration of two societies founding anniversaries, namely: Aerospace Electronics and the Technology Engineering Management Society. The scheduled date is October 18th and as always, we will be rotating the venue location, this time we are focusing on doing this in Lansing, Michigan. Stay tuned for details!

The VTS chapter is organizing a summer picnic on August 23rd in Troy and ALL Section members and their families are invited. Feel free to bring a potluck dish but don't forget to register (vtools link is again in the upcoming events table and do update the potluck spreadsheet).

Also of note – we take a great deal of interest in our members welfare. We have already scheduled 2 more senior elevation events this year: September and November. I look forward to hearing from you and seeing you at our events. As always, your ideas and suggestions are encouraged and welcome. If I don't hear back I will assume all is well 😊

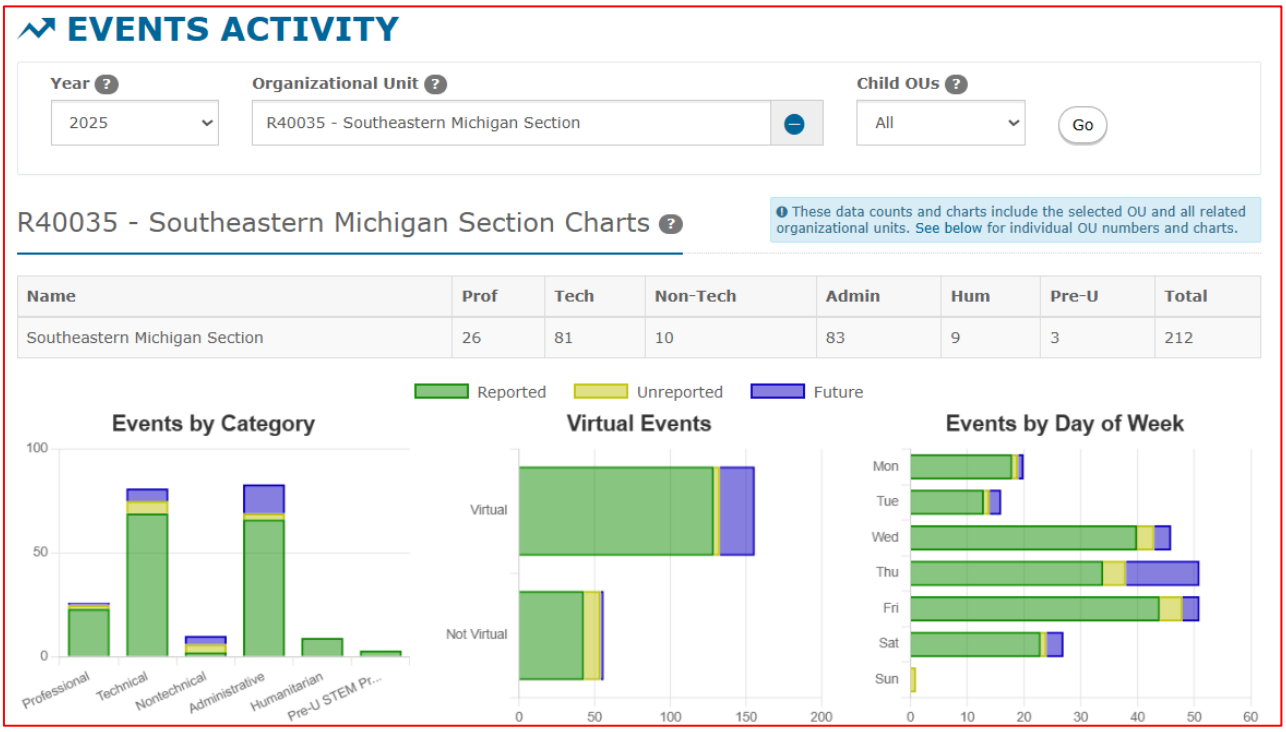
Sharan Kalwani
Via email: chair@ieee-sem.org

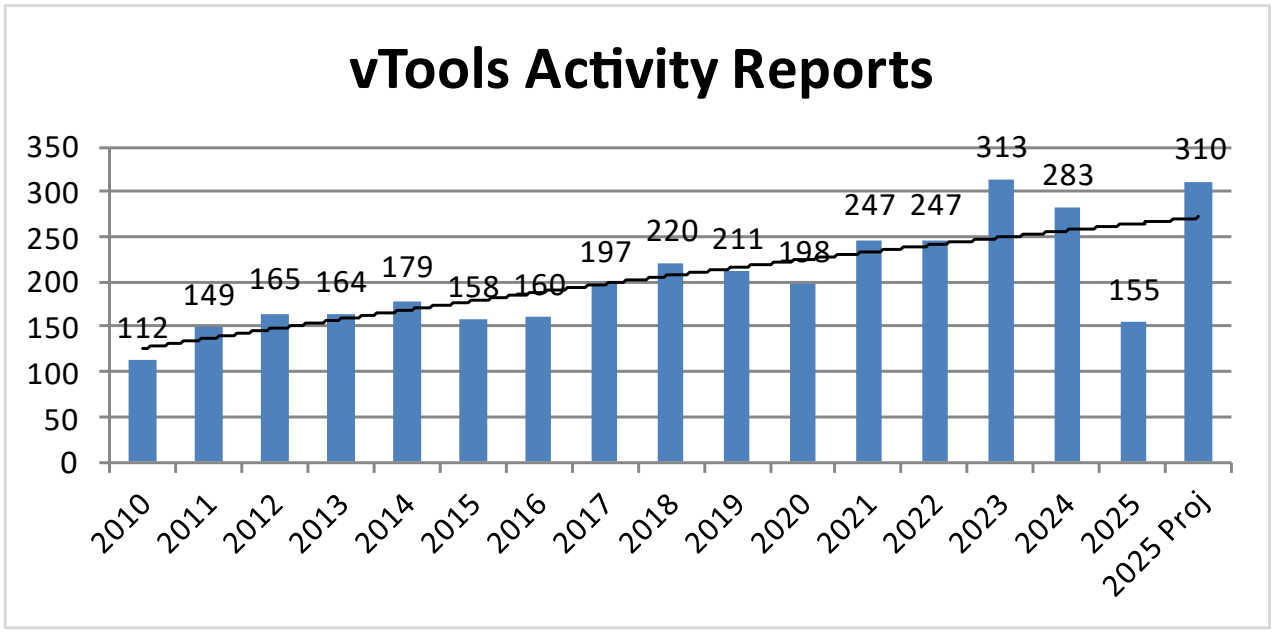
Section members are encouraged to engage using any of these online platforms:

To reach any of our SECTION officers, for any help/assistance you seek you may try these easy to remember email addresses. The objective is to ensure business continuity, so one need not try to remember or hunt for the

contact information! They can help you find your chapter officers or point you in the right direction for any query. They are:

- Chair is chair@ieee-sem.org
- Vice Chair is vicechair@ieee-sem.org
- Treasurer is treasurer@ieee-sem.org
- Secretary is secretary@ieee-sem.org
- Advisor is advisor@ieee-sem.org





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 **https://bit.ly/sem-upcoming**

Event	Date	Time (US Eastern)
Data Engineers and Data Scientists in Data Analytics World	02 July 2025	1700 Hours
Southeastern Michigan Computer Chapter Admin meeting	02 July 2025	1930 Hours
Verilog to Digital Chip - An Introduction	03 July 2025	1200 Hours
SEM YP Member Speaker Series - Voice Technologies and AI: A Bridge Between Humans and Machines	08 July 2025	1830 Hours
Ch8: AdCom Teleconference	10 July 2025	1100 Hours
SEM Section ExCom Monthly Meeting (virtual) For JULY 2025	10 July 2025	1830 Hours
Importance Of Risk Based Vulnerability Management	11 July 2025	1300 Hours
Nikola Tesla: Documentary	11 July 2025	1800 Hours
SciFi Documentary Part 1: Rendezvous with the Future (FIRST CONTACT)	12 July 2025	1400 Hours
IEEE SEM YP AFFINITY GROUP ADMIN MEETING - JULY 2025	14 July 2025	1730 Hours
SciFi Documentary Part 2: Rendezvous with the Future (VOYAGE to the STARS)	19 July 2025	1400 hours
Engineering Pioneer - Frank Sprague: Documentary Night	25 July 2025	1730 Hours
SciFi Documentary Part 3: Rendezvous with the Future (SUPERCIVILIZATION)	26 July 2025	1400 Hours
SUMMER PICNIC!	23 August 2025	1100 Hours

EMCFest 2025 Report

EMCFest is the biggest tabletop show in North America!! This year the EMCFest featured a gift for the University of Detroit teacher enrichment program and presentations from two awesome consultants:

* Robert C. Scully, PhD, is one of the writers and coeditors of the most used EMC textbook, Introduction to Electromagnetic Compatibility 3rd Edition. He is a fellow of the IEEE, past president of the EMC Society 2014-2015; previously served as VP Technical Services, as well as in all Officer positions for the Technical Activities Committee and Technical Committees 1 & 4. Dr. Scully was a Principal Electromagnetic Compatibility Engineer at Jet Propulsion Laboratory. He was the Lead EMC Engineer from 1999 to 2019 at the Johnson Space Center and the Lead for the Community of Practice for EMC within the Agency. Dr. Scully presently supports the NASA Engineering and Safety Center out of Langley, VA.

* Karen Burnham has worked solving EMC conundrums since 1996 in the automotive, aerospace, defense worlds and any place where EMC issues exist. She founded EMC United, Inc. (https://www.emcunited.com) in 2024 to focus on helping companies and hardware designers solve EMC problems, ideally in the design stage. Ms. Burnham has consulted on projects across a wide swath of industries and sits on multiple international standards committees, landing her in her current role as Vice President of Standards for the IEEE EMC Society.

Dr. Scully started with equations to elucidate the electric/magnetic near and far fields, and how they are related. He used the laws developed by Maxwell, Maxwell/Heaviside, Oersted, Gauss, Faraday, Ampere, the field integrals of Biot-Savart and Coulomb. Dr. Scully said to sum up the equations, “Time varying electric fields are ‘caused by’ charge density, plus the time derivative of the charge density and the time derivative of the electric current density. Time varying magnetic fields are ‘caused by’ electric current density plus the time derivative of the electric current density.”

After Dr. Scully set down the fundamental understanding of fields, he explained how understanding the field characteristics leads to an appreciation of the importance of wave impedance. Wave impedance is the ratio of the the E and H fields in a given volume. Dr. Scully explained that if the wave impedance is understood, then the shielding requirements can be developed accurately.

In Dr. Scully’s second session, he revealed how the crucial topics of electrical grounding and bonding, play a foundational role in mitigating electromagnetic interference. Dr. Scully discussed best practices for establishing proper grounding systems and explained how bonding techniques can reduce noise and improve overall system EMC.

During a break, Professor Rick Hill Assistant Dean for Research and External Initiatives at University of Detroit Mercy, accepted a check for outreach activities from the Southeastern Michigan IEEE EMC Society that will put engineering education kits into the hands of Detroit Public School teachers.

Karen Burnham explained how shielding in both cabling and enclosures can act as antennas, influencing EMC performance. She showed the basic types of antennas, their models, and how equipment configurations can mimic antennas. She used practical examples and provided a demonstration that visually illustrated how these shielding components interact with electromagnetic fields and radiated emissions.

During the final session of the day Ms. Burnham focused on transfer impedance and skin depth, discussing their roles in determining EMC performance. She concluded the day with a demonstration that compared different cable terminations. This hands-on demonstration solidified key concepts and their practical applications in real-world EMC challenges. The demo was a wonderful ending to a great day.

Caption 1: Scott Lytle, Chair of the Southeastern Michigan IEEE EMC Society welcomes participants to the EMCFest**.**

Caption 2: Bob Adams, Scott Lytle, and Steve Tomba work at the registration table while Brian Ho and Leonard Wilson get their name tag holders.

Caption 3: Dr. Robert Scully presents to a packed room

Caption 4: Professor Mark Steffka presents a check for classroom kits to Professor Rick Hill.

Caption 5: Karen Burnam reflects on the conundrums of antenna behavior.

Caption 6: Dr. Robert Scully, Gabriel Alcala, and Arnie Nielsen discuss EMC.

Caption 7: VTechnical Textiles brought a portable reverberation chamber

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 Saturday, August 23rd 2025
From 11:00 AM to 6:00 PM (SUMMER TIME) at:

FireFighters Park
1800 West Square Lake, Troy, Michigan 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/490923

The event is open to ALL IEEE Southeastern Michigan Section members, their families AND friends! Please let the sponsors know via google spreadsheet (after you register) with what dish you will be bringing to share using the google shared spreadsheet, approximately what time and how many members are expected to join in the fun (RSVP by AUGUST 20). 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 day.

About the Fire Fighters Park
Location: North side of Square Lake Road between Crooks Road and Coolidge Highway
The City of Troy Park system offers a wide variety of recreational opportunities. At this park, the recreation opportunities include: *Baseball/Softball Fields, Soccer Fields, Sand Volleyball, Disc Golf, Play Structure, Swings, Park Shelter, Restrooms*

Do come join us!

Nikola Tesla Documentary

IEEE Southeastern Michigan

Presents:

Tesla: Visionary or Madman?

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Meet Nikola Tesla, the genius engineer and tireless inventor whose technology revolutionized the electrical age of the 20th century. Regarded by many historians as an eccentric genius, Tesla gained fame for his invention of a system of AC that made possible the distribution of electricity over vast distances and is the basis for the electrical grid that powers 21st century life. But the Tesla imagined much more — robots, radio, radar, remote control, the wireless transmission of messages and pictures, and harnessing the wind and sun to provide free energy to all. A showman, he dazzled folks who flocked to see him demonstrate his inventions and send thousands of volts of electricity pulsing through his body. His fertile but undisciplined imagination was the source of his genius but also his downfall, as the image of Tesla as a "mad scientist" came to overshadow his reputation as a brilliant innovator. Even before his death in 1943, he was largely forgotten, his name obscured by Thomas Edison — his hero, one-time employer, and rival. But it is his exhilarating sense of the future that has inspired renewed interest in the man, as his once scoffed-at vision of a world connected by wireless technology has become a reality.

At Glance

- **When:**
  Date: July 11, 2025
  Time: 06:00 – 7:30 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

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/490083

IEEE COMPUTER SOCIETY

IEEE Advancing Technology for Humanity

IEEE Southeastern Michigan Section

Engineering Pioneer

IEEE Southeastern Michigan
Presents:

Engineering Pioneer: Frank Sprague

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Recently, as part of an innovative and fresh approach, i.e. a non-traditional meeting event: we presented video documentaries. This was very warmly received. So, we decided to continue the good work. We proudly present the documentary: Engineering Pioneer – Frank Sprague.

Summary:
Over the course of a little less than twenty years, inventor Frank J. Sprague (1857-1934) achieved an astonishing series of technological breakthroughs--from pioneering work in self-governing motors to developing the first full-scale operational electric railway system--all while commercializing his inventions and promoting them (and himself as their inventor) to financial backers and the public.

At Glance

- **When:**
  Date: July 25, 2025
  Time: 05:30 – 7:00 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

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/490082

IEEE Advancing Technology for Humanity

IEEE Southeastern Michigan Section

Tech Activities Report

As of June 28, 2025

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	1	2	1	Consultants Network	0	4
LIFE	6	0	1	0	0	3	Life Members	0	4
WIE	48	28	2	5	0	0	Women In Engineering	0	7
YP	0	0	0	4	1	0	Young Professionals	0	5
1	0	0	0	1	0	0	Circuits & Systems, Signal Proc., Info Th.	0	1
2	21	0	1	5	0	0	Vehicular Technology	0	6
3	16	10	2	4	1	0	Aerospace & Elec. Sys., Communications	0	7
4	22	8	3	5	1	0	Trident (Ant, Elect Dev., uWave, Photo)	0	9
5	69	41	17	5	11	3	Computers	1	36
6	30	7	6	0	0	0	Geoscience & Remote Sensing	0	6
7	0	0	0	2	0	1	Power Engineering, Industrial App.	0	3
8	51	32	8	5	0	0	Electromagnetic Compatibility (EMC)	0	13
9	52	4	1	2	0	0	Power Electronics, Industrial Electronics	0	3
10	16	10	1	2	0	0	Engineering Management	2	3
11	14	3	2	0	0	0	Eng. in Medicine & Biology	0	2
12	21	0	1	0	0	0	Control Systems	0	1
13	13	2	4	0	0	1	Education	0	5
14	352	340	2	0	0	0	Robotics & Automation	0	2
15	21	12	2	0	0	0	Nuclear Plasma Science Society	0	2
16	702	680	1	0	0	0	Computational Intelligence / Sys.Man.Cyber.	0	1
17	0	0	0	1	0	0	Nano Technology Council	0	1
18	20	8	1	0	0	0	Magnetics Society	0	1
									0
SEM	52	30	4	22	4	3	SEM (Section)	0	33
Tot	1524	1213	59	64	20	12	NOTE: Highlight Green = Active	3	155

SEM Section Chapter and Affinity group leaders who are not showing any technical or administrative meetings are encouraged to conduct meetings of your leadership ASAP. The TAcom will be contacting the following Geo-Units next month: Young Professionals, Chapters 1, 2, 7, 9, 10, 12, 14, 16, 17, and 18 to help you establish a projected plan of event for the remainder of the year as well as to provide any other assistance needed. I have a draft plan for Chapter 16 that I'd be willing to share with you. Thanks to all GAs working to engage their membership!!!

Jeff Mosley, TAcom Chair

CIS CH 16 Chair (SEM Section, Region 4)

New Officers: Suggestions

There are several actions that can & should be taken by officers when taking command of their organization. While one alone will not guarantee eventual success, leaving one out can seriously inhibit the long-term success of any team. The suggestions given here are my own understanding of what has worked well in the past. The specific sequence can be varied, so don't be concerned as long as all, or most, eventually come about.

1st: Establish regular and consistent Officer meeting days and times.

- This should first be applied to your organization's administrative committee (Chair / Vice-Chair / Secretary / Treasurer) if this is a traditional IEEE Geo-unit. If the organization is a standing committee, the titles will be more diverse.
- My personal experience has been that a first time 'face-to-face' meeting helps establish a rapport among the members. This is more effective when combined with refreshments or a meal.
  (*There is a reason why every culture on our planet greets newcomers with offers of something to eat and or drink, or both*.)
- Follow that first meeting with virtual meetings to minimize member travel and time but schedule other face-to-face gatherings at least 3 or 4 times each year to maintain the interpersonal gestalt established in the first event.
- Hold a 'non-working' social meeting near the end of the year to celebrate the successes and achievements of your team. This is the team's 'thank you' for a job well done.

2nd: Set up a communications method to remain 'in contact' with your general membership.

- Introduce your Officers and Volunteers to your general membership.
- Ask your members for their ideas on what activities and presentations they would like to see.
- Keep them informed about activities as they are planned.
- Seek additional officers and volunteers from among your members. An active meeting schedule may require more hands than just your four elected officers.
- Communications methods may include: Geo-unit website, eNotice, group meetings (ZOOM), picnic's, local site visit outings, etc.. Use your imagination. If one doesn't work, try something else.

3rd: Maintain contact with your Section Executive committee.

- Attend as many of the Executive Committee meetings as possible.
- Have your entire Administrative Committee attend and / or rotate that function among your officers and volunteers.
- Report on your Geo-unit activities to the Executive Committee, and…
- Document your activities with photos and articles contributed to the monthly Wavelengths newsletter.

4th: Use the 'v'Tools to plan and document all your activities.

- vTools Survey tools
- vTools Engage
- vTools eNotice
- vTools Events
- vTools Local Groups
- vTools Officer Reporting
- vTools Student Branch Reporting
- vTools Voting

5th: Establish contact with the other Geo-units in your Section.

- Cooperate with them to expand the opportunities for both your, and their, membership.
- Share the work and costs of organizing a major event.
- Increase attendance at events with both memberships
- Share information about both Geo-units for the benefit of both memberships.
- Have more fun!

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SAVE THE DATE!

IEEE Southeastern Michigan

Electrical and Electronic Engineers Creating Our Future

Combined Celebration

Aerospace Electronics Society (75th)

and

Technology Engineering Management Society (10th)

Planetarium Tour & Show
Cocktail Reception and
Section Awards

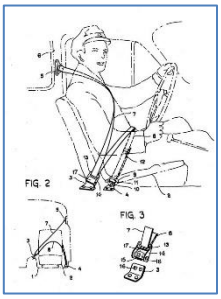
2:00 to 7:00 pm
October 18th, 2025 (Saturday)
Abrams Planetarium
Lansing, Michigan
Registration link coming soon!

This Month in July

Or: Notable Events in Engineering & Science History, which I Did Not Know! ☺

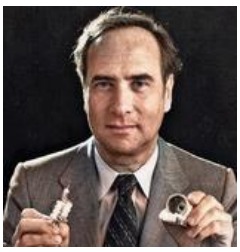
Rube Goldberg; Born 4 Jul 1883; died 7 Dec 1970 at age 87.
American cartoonist who satirized the American preoccupation with technology. His name became synonymous with any simple process made outlandishly complicated because of his series of "Invention" cartoons which use a string of outlandish tools, people, plants and steps to accomplish everyday simple tasks in the most complicated way. Goldberg applied his training as a graduate engineer and used his engineering, story-telling, and drawing skills to make sure that the "Inventions" could work, even though dozens of arms, wheels, gears, handles, cups, and rods were put in motion by balls, canary cages, pails, boots, bathtubs, paddles, and even live animals for simple tasks like squeezing an orange for juice or closing a window in case it should start to rain.

Edwin J. Houston; Born 9 Jul 1847; died 1 Mar 1914 at age 66.
Edwin James Houston was an American electrical engineer who, together with Elihu Thomson (another Philadelphia high school teacher) experimented with electricity. Houston invented, patented in 1881 and manufactured arc street-lighting. He presented the first paper, Notes on Phenomena in Incandescent Lamps, to The American Institute of Electrical Engineers when it began in 1884 (AIEE - the predecessor society of the present IEEE, The Institute of Electrical and Electronics Engineers, Inc.). The merger of Thomson-Houston and Edison General Electric companies (1892) formed General Electric. In 1894 he joined with Arthur Kennelly (who resigned from Edison's laboratory) to form a consulting company

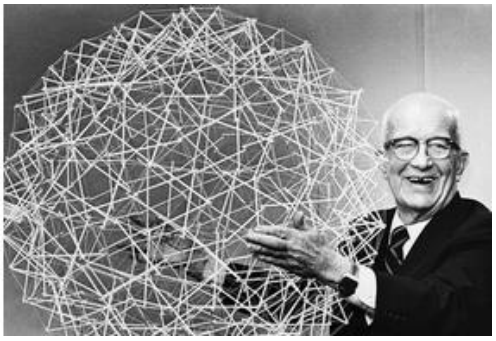


Seat-belt patent; July 1962
In 1962, a U.S. patent was issued to Swedish engineer, Nils Bohlen, for the three-point seatbelt (No. 3,043,625). His lap and shoulder design are now familiar as the passenger-restraint safety device in cars that has saved countless lives. His design replaced the earlier style of a single safety belts strapped across the body, with the buckle placed over the abdomen, which often caused severe internal injuries in high-speed crashes. Bohlin assigned the patent to Volvo, the car manufacturer for whom he worked. From Aug 1959, Volvo incorporated Bohlin's seat belt into the vehicles they manufactured. The company also made the design freely available to other car manufacturers to save more lives.

Nikola Tesla; Born 10 Jul 1856; died 7 Jan 1943 at age 86.
Serbian American inventor and researcher who designed and built the first alternating current induction motor in 1883. He immigrated to the United States in 1884. Having discovered the benefits of a rotating magnetic field, the basis of most alternating-current machinery, he expanded its use in dynamos, transformers, and motors. Because alternating current could be transmitted over much greater distances than direct current, George Westinghouse bought patents from Tesla the system when he built the power station at Niagara Falls to provide electricity power the city of Buffalo, NY. [Born in Croatia of Serbian parents. Some sources give birthdate as 9 Jul; he is said to have been born on the stroke of midnight. He celebrated his birthday as the 10th.] See also ➲ https://events.vtools.ieee.org/m/490083



Theodore Maiman, Born 11 Jul 1927; died 5 May 2007 at age 79.
Theodore Harold Maiman was an American physicist who built the first working laser. He began working with electronic devices in his teens, while earning college money by repairing electrical appliances and radios. In the 1960s, he developed, demonstrated, and patented a laser using a pink ruby medium. The laser is a device that produces monochromatic coherent light (light in which the rays are all of the same wavelength and phase). The laser has since been applied in a very wide range of uses, including eye surgery, dentistry, range-finding, manufacturing, even measuring the distance between the Earth and the Moon.



R. Buckminster Fuller; Born 12 Jul 1895; died 1 Jul 1983 at age 87.

Richard Buckminster Fuller was an American inventor, educator, author, philosopher, engineer and architect who developed the geodesic dome. This large dome can be set directly on the ground as a complete structure. There is no limit to the size to which it may be built and retain sufficient structural strength. Fuller also invented a wide range of other paradigm-shifting machines and structural systems. He was especially interested in high-strength-low weight designs, with a maximum of utility for minimum of material. His designs and engineering philosophy are part of the foundation of contemporary high-tech design aesthetics. He held over 2000 patents.

U.S. Electrical units

In 1894, eight units for the measurement of electrical magnitudes were adopted in U.S. law when President Grover Cleveland signed an Act of Congress “to define and establish the units of electrical measure” for the ohm, ampere, volt, coulomb, farad, joule, watt and henry. It was specified to be “the duty of the Academy of Sciences to prescribe ... such specifications of details as shall be necessary for the practical application of the definitions.” The Act followed an International Congress held at Chicago in 1893, in connection with the World's Fair. There, a Chamber of Delegates from various nations deliberated on the definitions. The International Congress was largely due to the Institute of Electrical Engineers and to local societies in the city of Chicago.

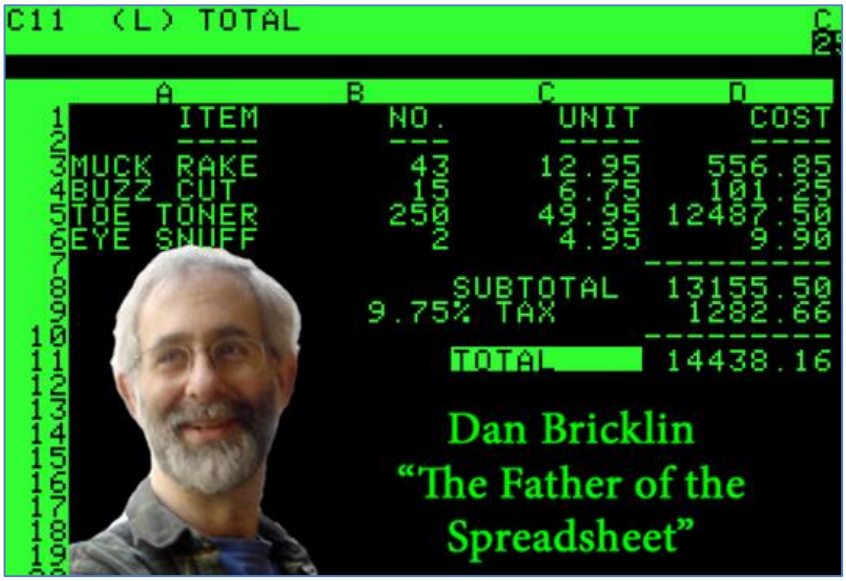
Jay W. Forrester; Born 14 Jul 1918.

Jay Wright Forrester is an American electrical engineer and management expert. In 1944-51 he supervised the building of the Whirlwind computer at the Massachusetts Institute of Technology, for which he invented the random-access magnetic core memory, the information-storage device employed in most digital computers. He also studied the application of computers to management problems, developing methods for computer simulation.

July 14th 2013, Last telegram in India

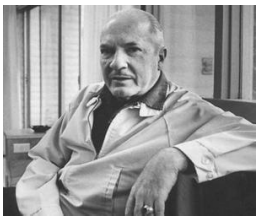
In 2013, the world's last telegram was sent in India. It was the last major country to shut down telegram service. India's 159-year-old telegram service was no longer needed, as e-mail and texting had replaced bicycle telegram messengers. In Great Britain, telegram delivery ceased in 2008, while the U.S., Western Union's dwindling service was terminated 27 Jan 2006. The first formal telegram was sent by Samuel Morse in Washington to his business partner Alfred Vail in Baltimore, on 24 May 1844. Seeking funding, he demonstrated to Congress the power of telegraphy through wires connecting cities with the message, “What hath God wrought.” In time, wires were strung across the U.S. and other countries, which eventually were connected by a Transatlantic cable under the ocean and more submarine cables.

Dan Bricklin; Born 16 Jul 1951.



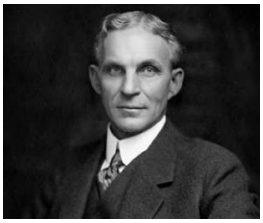
American computer scientist who with Bob Frankston created VisiCalc, the first spreadsheet computer program (1979) which created a market beyond hobbyists for the emerging personal computers. Businesses found the program very useful because of the speed and accuracy of its calculations. Originally written in 6502 assembly language to run on a 32K-byte Apple II, it was soon ported to virtually all major 6502- and Z80-based personal computers then available. They did not reap huge financial profits from the spreadsheet program, despite eventually selling over a half-million copies by 1983, because at the time, copyright protection was not generally sought for software, and it was subsequently surpassed by Lotus 1-2-3, later Microsoft Excel. It is anticipated that soon open source offerings such as LibreOffice may overtake Excel due to the extremely low (or zero cost) of entry.

Robert A. Heinlein; Born July 7, 1907



Robert A. Heinlein was an American author, naval officer, and aeronautical engineer. Heinlein is credited with pioneering a literary subgenre called hard science fiction as he was among the first to stress the importance of scientific accuracy in fiction. Robert A. Heinlein is one of the most influential science-fiction writers of all time.

Henry Ford; Born July 30, 1863; Died April 7, 1947

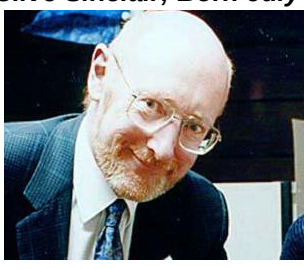


Business magnate and founder of the Ford Motor Company, Henry Ford is credited to have made the automobile an accessible conveyance for Americans in the 20th century. Following the success of his company, he became one of the richest and best-known people in the world. He also became known for his pacifism during the first years of World War I.

Marc Andreessen; Born July 9, 1971

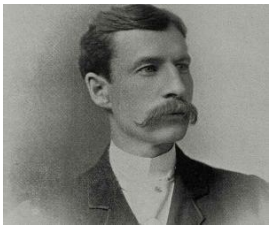
Marc Andreessen is an American entrepreneur, software engineer, and investor. He is credited with co-founding the independent computer services company Netscape as well as the private venture capital firm Andreessen Horowitz. Marc Andreessen is also credited with co-authoring one of the first web browsers, NCSA Mosaic. In 1994, he was inducted into the World Wide Web Hall of Fame.

Clive Sinclair; Born July 30, 1940



A consumer electronics pioneer, entrepreneur Clive Sinclair began his business venture selling radio and amplifier kits. He went on to launch the word's first pocket calculator and later also worked on products such as digital watches and pocket TV. He is a fan of poker and is a **Mensa** member.

Frank J Sprague; Born July 25, 1857; Died October 25, 1934



Frank Julian Sprague (July 25, 1857 – October 25, 1934) was an American inventor who contributed to the development of the electric motor, electric railways, and electric elevators. His contributions were especially important in promoting urban development by increasing the size cities could reasonably attain (through better transportation) and by allowing greater concentration of business in commercial sections (through use of electric elevators in skyscrapers).[1] He became known as the "father of electric traction". Demonstrating an aptitude for science and mathematics, Sprague secured an appointment to the U.S. Naval Academy in 1874 and, after graduation in 1878 and 2 years at sea, resigned to pursue his career in electrical engineering. See also ➲ https://events.vtools.ieee.org/m/490082

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.

Past readers have asked to feature one or more of these events in more detail. So, starting in January 2024, we have been featuring both documentaries and black & white movies, that will help shed more light on these luminaries and also explore the hidden side of their life stories. We will also endeavor to republish an article from various publications in the same month of Wavelengths.

We will also endeavor to republish an article from various publications in the same month of Wavelengths, featuring one or more of these luminaries. I urge any and all faculty of the STEM departments to share this with their students!

Also, like previous months, where we screened online scheduled documentaries featuring several of the folks mentioned in this column, we will repeat them ALL in 2025, as part of a growing series. Enjoy!

Sharan Kalwani
2022-2025 Chair, Southeastern Michigan Section,
Passionate Engineering History Buff/Aficionado

EduCom Report

SAT Prep Workshop Empowers Detroit Students – *Anthony Will*

Hosted by Alpha Phi Alpha Fraternity, Inc. – Gamma Lambda Chapter and the IEEE Southeastern Michigan Section at Wayne State University Prep High School – Art and Design, Detroit, MI

May 10 & May 17, 2025

Overview

In May 2025, the IEEE Southeastern Michigan Section partnered with Alpha Phi Alpha Fraternity, Inc. (Gamma Lambda Chapter) to host a two-session SAT preparation workshop for Detroit-area high school students. Led by Anthony B. Will, Ph.D. (IEEE SEM Ed Com Chair), the workshop was held at Detroit University Prep High School – Art and Design on May 10 and May 17, with two sessions (10 ~12 noon). This initiative was designed to support students who may not have access to commercially available SAT prep classes. The goal was to provide effective strategies and academic reinforcement to help students succeed in college admissions, course placement, and scholarship opportunities.

Workshop Structure and Highlights

The workshop served students from grades 8 through 11, representing a cross-section of Detroit Public Schools, charter institutions, and local private schools. The timing of the workshop was intentional, providing a final boost for students preparing to take the June 7, 2025 SAT exam.

Session 1 focused on Reading and Writing. Students reviewed essential concepts including grammar, punctuation, sentence structure, tone, and organization. Emphasis was placed on test-taking strategies such as identifying trap answers and learning how test writers create confusion. One of the most impactful lessons—according to student feedback—was understanding how to choose between two plausible reading answers by dissecting the test writer's logic and eliminating distractors.

Session 2 emphasized Mathematics, covering topics from elementary and intermediate algebra to geometry and trigonometry. Strategies for solving problems efficiently and under time constraints were introduced. Review and preparation —places concepts and knowledge on the "top of the stack" of the student's memory so they can be "popped off" the stack during the test.

The sessions maintained a focused yet encouraging environment, ensuring students received both academic guidance and motivational support. The other volunteers in the room are as essential as the instruction.

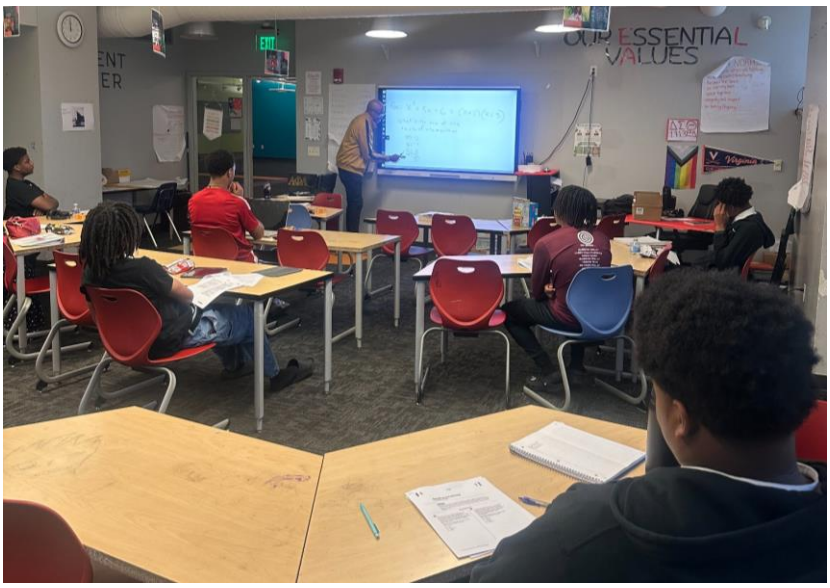


Figure 1: Dr. Anthony B. Will leading a math review session with SAT students.

Figure 2: Students and mentors gather after the workshop sessions.

Looking Ahead: 6-Session SAT Program

Building on the success of the May workshop, a more comprehensive 6-session SAT Prep Course is planned, continuing the partnership between IEEE SEM and Alpha Phi Alpha. The upcoming course offered next fall and spring will include:

1. Week 1: Full-length SAT Diagnostic Test
2. Week 2: Reading and Writing Strategies
3. Week 3: Math Strategies and Review
4. Week 4: Second Full-Length Practice Test
5. Week 5: Test Analysis and Individual Feedback
6. Week 6: Speed Drills and Final Strategy Review

A Call to Support

Alpha Phi Alpha Fraternity, Inc.—the first Black Greek-letter organization founded in 1906 at Cornell University—continues its mission to promote academic excellence, leadership development, and service to the community. The partnership with IEEE SEM exemplifies the power of collaboration in creating opportunities for young scholars. This activity is endorsed under the IEEE Pre-University Education STEM initiative.

We invite IEEE members and local professionals to join us as volunteer coaches. Your presence not only supports academic instruction but also sends a powerful message to students: that they are backed by a community of caring, committed mentors who believe in their success.

Anthony B. Will, Ph.D. is Chair of the Education Committee for the IEEE Southeast Michigan Section, where he leads initiatives to expand STEM learning opportunities and strengthen connections between the engineering profession and the community. A retired Engineering Group Manager from General Motors, Dr. Will brings over 30 years of experience in the automotive industry, with expertise in vehicle motion control, embedded systems, and model-based development.

At General Motors, he led global teams in the development of advanced propulsion systems and hardware-in-the-loop (HIL) simulation technologies, earning the prestigious “Boss” Kettering Award and multiple patents. He also completed a three-year international assignment in Shanghai, China, where he helped deliver one of GM’s top-selling global vehicles. Dr. Will holds a B.S. in Electrical Engineering from Wayne State University and a Ph.D. in Electrical Engineering from Purdue University. He is committed to mentoring young engineers and advancing STEM education, particularly at the secondary level.

Elections Proposal

Ever since the Section was first established in the early 1960s, when it had just 5 chapters, it has grown considerably since then. Today we stand at 18 chapters (many of them joint, so we are really more than just 18 societies represented here!), 4 Affinity Groups and 8 Student Branches. Not to mention a few HKN units and a couple of student society chapters.

The real challenge has been recovering from the pandemic and loss of momentum, however what has made it difficult is the actual conduct of the annual elections and the transitions between elections of elected volunteer officers. Since there are so many chapters and for each – there are 4 volunteers (chair, vice chair, secretary and treasurer), when you do the math: it exceeds 88 positions! So, the election committee has to make the call for elections, help finalize the ballots, conduct the elections (so many to choose from!), tabulate the results, announce it and update the roster, etc. All of which consumes great deal of energy and bandwidth!

Also often many of the volunteer elected officers are new to the roles and struggle to find their rhythm, not to mention loss of continuity and in some cases no proper hand over of history, records and activities from the past administration. All of this makes the case for streamlining things and saving both time and energy for the section, chapters and affinity groups. Members will also be better served when there is continuity and growth in the roles as well.

We looked around and found out that some chapters conduct an annual election ONLY for the Secretary. Then each year the secretary moves up to the next roles in the chapter e.g. the treasurer, the following year they take on the mantle of the vice chair and finally graduate to the position of chair. This has multiple benefits:

- ✓ Fewer election ballots to scrutinize
- ✓ Easier to cast a vote for the best candidate
- ✓ Shorter election cycle
- ✓ Quicker turnaround of results
- ✓ Rapid assumption of duties for that role
- ✓ Vastly improved continuity of service to the membership – as only an incremental change occurs
- ✓ Opportunity to gain experience in various positions and knowledge in those roles
- ✓ Mentoring of the newly elected position by the existing volunteers, thus smoothing the learning curve.

Given the obvious advantages, the Section will try and deploy this method for the election cycle of 2026. However, it is not mandatory and each Chapter Administration can choose the traditional method or adopt this new style. This has been shared at the June 2025 Section ExCom meeting with all those present and is repeated here in Wavelengths for the benefit of the entire member community. Of course, we expect that there may be queries- and would be happy to answer them and post them to the website as well.

You can contact the Section ExCom using any of the email info below:

- 🕮 Chair is chair@ieee-sem.org
- 🕮 Vice Chair is vicechair@ieee-sem.org
- 🕮 Treasurer is treasurer@ieee-sem.org
- 🕮 Secretary is secretary@ieee-sem.org
- 🕮 Advisor is advisor@ieee-sem.org

Committee Setup Proposal

As mentioned earlier, we are a large Section with a member community size of nearly 3000 folks (give or take a few as this fluctuates each month) stand at 18 chapters (many of them joint organization units (OU), so we are more than just 18 societies represented here!), plus 4 Affinity Groups and 8 Student Branches. Not to mention a few HKN units and a couple of student society chapters. A ***large*** section is defined by the IEEE MGA as having over 1500 members. FYI a ***medium*** section is usually between 500~1500 members and a ***small*** section is thus less than 500 members. In Region 4 (aka Central Region), we are the 2nd largest Section and definitely the most active in terms of technical activities executed for our community.

In order to provide services to our members – we have several committees – at last count 14 of them and clearly with different functions. Over the years we have noted the exponential growth of communications, informational flow and steadily increasing demands with regards to smooth and timely functioning of the various committees. To speed things up and taking a cue from natural observations, learning, etc., we propose to consolidate a few committees so that instead of 14 we will have now 10 committees. A few of the existing committee functions actually overlaps with direct focus of existing peer committees. So, by merging some of them, this will help improve things overall. Here is what it looks like today:

Current Committees	
Acronym	**Full Name of Standing Committee**
ARCom	Awards and Recognitions
AACom	Affiliations Committee (non-IEEE orgnizations)
ConCOm	Conferences
EduCom	Education (and outreach eg STEM)
FinCom	Section Finance
MentCom	Mentor Committee
MDCom	Membership Development
NewsCom	Newsletter and Publications
NSLCom	Neighbhoring Sections Liaison
PACE	Professional Activities Committee for Engineers
SACom	Student Activities
TACom	Technical Activities
WebCom	Website and Social Media

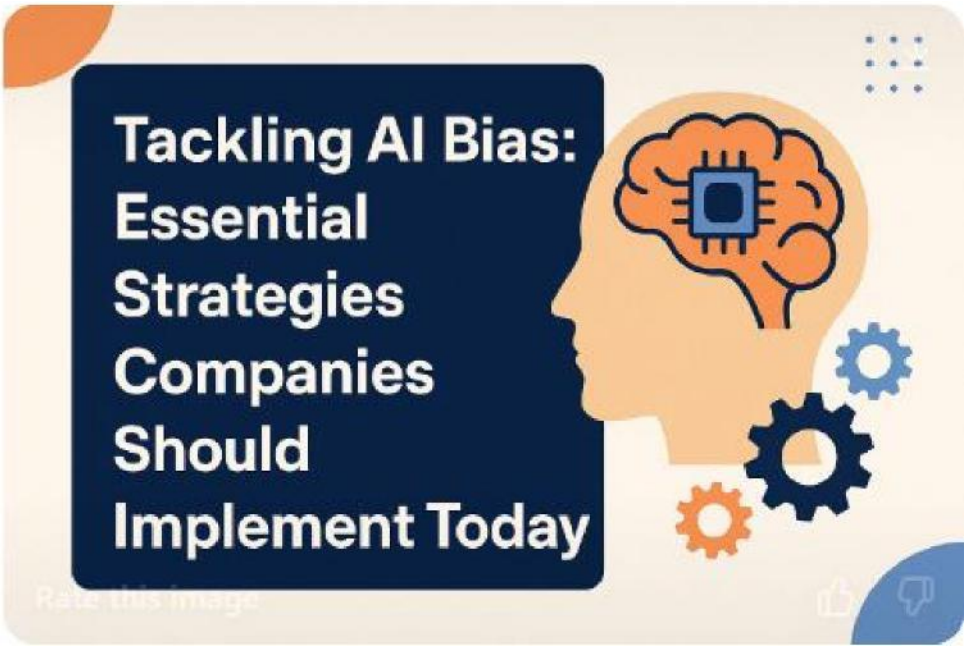
And we propose to merge the WebCom and NewsCom into the Communications Committee, since the functions are definitely common. In addition, we noticed that the AACom and NSLCom have nearly identical duties and thus they also fall within the larger scope of the Communications Committee. One other committee that deals with the students is the MentCom, which has unfortunately been beyond dormant for the last 5 years, so we will merge that role within the SACom. So here is what the new structure will potentially look like:

New Committees	
Acronym	**Full Name of Standing Committee**
ARCom	Awards and Recognitions
ComCom	Communications (Web, Social Media, Newsletter and Nearby Sections Liaison)
ConCOm	Conferences
EduCom	Education (and outreach eg STEM)
FinCom	Section Finance
MDCom	Membership Development
PACE	Professional Activities Committee for Engineers
SACom	Student Activities (includes Mentors)
TACom	Technical Activities

In addition we recommend that each committee have two visible key positions: namely Chair and Secretary. Members of the committee can be appointed as and when a specific function needs to be performed with a specific named designation.

Tacking AI Bias

Tackling AI Bias: Essential Strategies Companies Should Implement Today



by Sreekanth B Narayan IEEE Senior Member

Businesses increasingly depend on artificial intelligence to drive accurate, data-based decisions, yet AI bias—stemming from low-quality or incomplete training data, flawed algorithms, or inadequate oversight—can lead to erroneous assumptions, poor decisions, and negative outcomes for individuals and communities. As published in Forbes Technical Council [a], the details below gives a thorough understanding and where the precautions are needed.

As AI becomes more integrated across industries, companies must not only harness its analytical power but also uphold ethical standards. This requires proactive measures to ensure that the AI systems they develop are both reliable and effective. I have outlined key strategies that organizations should adopt immediately to combat AI bias. By doing so, companies can foster ethical practices, achieve more precise results, and protect both their interests and the communities they serve.

To effectively reduce AI bias, organizations should prioritize collecting diverse and representative datasets to avoid skewed training results. Conducting ongoing bias audits throughout the AI development lifecycle is essential for identifying and mitigating biased outcomes. Additionally, cultivating an inclusive and ethically driven organizational culture through regular training and collaboration with diverse experts plays a crucial role in proactively addressing AI biases.

Summary

Artificial intelligence (AI) bias refers to the systematic prejudice that AI systems may produce due to flawed algorithms, biased training data, or skewed objectives. This phenomenon not only mirrors but often exacerbates existing societal inequalities, leading to discrimination against marginalized groups based on race, gender, or socioeconomic status.[1][2] As AI technologies become increasingly integrated into critical sectors such as hiring, healthcare, and law enforcement, the implications of unchecked bias are substantial, raising ethical concerns and significant business risks for organizations that fail to address these issues.[3][4]

Numerous types of AI bias exist, including algorithmic bias, sampling bias, and measurement bias, each stemming from distinct sources within the AI development process. Algorithmic bias can arise from design flaws in the algorithms themselves while sampling bias is a result of nonrepresentative data collection methods. Measurement bias occurs when the data used is inaccurately recorded or assessed.[1]-[3][5] The

emergence of these biases poses a critical challenge, as they can lead to unjust outcomes, including wrongful arrests or denied services, which further entrench societal inequities.[6]

Addressing AI bias is paramount not only for ethical and legal compliance but also for maintaining public trust in technology. As seen in notable cases like Amazon's recruitment tool, which exhibited gender bias due to an imbalanced training dataset, the consequences of ignoring bias can be both reputationally damaging and financially burdensome for companies.[7][8][9] Additionally, biased AI systems can diminish societal confidence in technological advancements, thereby hindering innovation and economic growth.[10][11]
To mitigate these biases, organizations must adopt comprehensive strategies that include understanding the specific contexts in which bias may occur, establishing systematic testing processes, utilizing innovative techniques for fairness, and developing ethical guidelines to govern AI deployment.[12][13][14] By prioritizing the reduction of AI bias, companies can not only safeguard their operational integrity but also contribute to a more equitable technological landscape.[3][15][16]

Understanding AI Bias

AI bias describes situations in which artificial intelligence systems consistently produce unfair or discriminatory outcomes due to flaws within their machine learning processes. Such biases usually stem from problematic training data, algorithm design issues, or the specific objectives programmed into the system. Frequently, AI bias reflects and amplifies existing societal inequalities, causing discrimination against certain groups based on characteristics like race, gender, or socioeconomic status. [1][2].

Types of AI Bias

Algorithmic Bias:

Algorithmic bias arises from limitations within the algorithms themselves, often due to computational constraints or the algorithm's design. For example, software that relies on randomness for fair distributions may inadvertently skew results if it favors certain items based on their position in a list. This phenomenon has been highlighted in the work of Friedman and Nissenbaum, who noted how seemingly random selections can still introduce bias.[17][2].

Sampling Bias:

Sampling bias is a prevalent form of bias that happens when data collection disproportionately includes certain groups while inadequately representing others. This imbalance, whether deliberate or accidental, leads to AI models emphasizing specific characteristics, resulting in skewed outputs. To avoid this, data sampling should ideally be completely random or accurately reflect the attributes of the population being modeled. [1][17].

Measurement Bias:

Measurement bias occurs when the data collected is inaccurately measured or recorded. For example, variations in salary data caused by bonuses or regional pay differences can lead to measurement bias. Additional instances of measurement bias include using inappropriate units, calculation errors, or incorrect normalization methods. [3][5].

Key Risks for Enterprises

As AI applications expand in critical areas such as hiring, lending, healthcare, and law enforcement, unchecked bias can lead to significant risks. Addressing AI bias is not merely an ethical responsibility; it is essential for safeguarding business value and resilience in the face of potential legal and reputational consequences[3][4].

Challenges in Addressing AI Bias

A significant challenge is obtaining diverse and representative training data. Gathering data that accurately reflects diversity and representation is often challenging, particularly when dealing with sensitive topics or rare occurrences. Privacy concerns may also hinder data collection efforts, further complicating the issue of bias mitigation[5][18]. Additionally, identifying and measuring different types of bias can be challenging due

to the complexity and opacity of many algorithms. Bias may arise from multiple sources, complicating efforts to isolate and address it effectively[18][19].

The Impact of AI Bias

AI bias poses significant challenges across various sectors, with potential ramifications that extend beyond individual cases to societal implications. This bias frequently results from shortcomings within the machine learning process, often associated with the training data, algorithmic design, or the intended goals programmed into these systems. Such biases frequently reflect and perpetuate existing societal inequalities, resulting in discrimination against marginalized groups based on race, gender, or socioeconomic status[18][20].

Ethical and Business Implications

If left unaddressed, AI bias can create significant ethical concerns and business risks. As AI technologies are increasingly utilized in crucial areas like hiring, lending, healthcare, and law enforcement, the repercussions of biased outcomes can be severe. Organizations that fail to address these biases may not only encounter reputational damage but also face legal ramifications. For instance, the U.K. Commission for Racial Equality found that a British medical school had implemented a biased algorithm that discriminated against women and non-European applicants during its hiring process[7]. This demonstrates that biased algorithms are not new; they can lead to tangible harm by denying individuals opportunities and services. If left unaddressed, AI bias can create significant ethical concerns and business risks.

Additionally, biased AI systems may undermine public confidence in technology. When these systems produce discriminatory results, individuals may become skeptical about adopting new technologies, fearing they may perpetuate biases rather than offer equitable solutions[10][11]. This lack of trust can hinder the widespread acceptance of beneficial AI applications, ultimately affecting economic growth and innovation.

Societal Consequences

The societal consequences of AI bias are also profound. Biased algorithms can amplify discriminatory outcomes and worsen existing inequalities by disproportionately disadvantaging people from marginalized groups. For example, biased AI used in recruitment processes could systematically exclude applicants from these communities, thereby limiting their employment opportunities and reinforcing structural inequalities.[21][22].

Furthermore, the public deployment of biased AI systems can lead to serious consequences, including wrongful arrests, service denials, and reduced opportunities for affected individuals[6]. This not only impacts the lives of those directly affected but also influences broader societal perceptions, potentially shaping cultural norms and power dynamics in ways that perpetuate inequality. Therefore, addressing AI bias during the development and deployment stages is critical to mitigating these harmful impacts and promoting inclusivity in technological advancements[10][6].

Strategies for Addressing AI Bias

Minimizing bias in artificial intelligence (AI) systems is essential for building trust among users and ensuring the technology reaches its full potential. Research indicates that addressing bias can lead to significant benefits for businesses, enhance productivity, and help tackle pressing societal issues[12][13].

Awareness of Contexts

Organizations must be aware of the specific contexts in which AI can mitigate bias and those where it might exacerbate it. It is crucial to identify domains prone to unfair bias, especially those with a history of biased systems or skewed data. Continuous monitoring and evaluation are necessary to determine where AI can improve fairness and where challenges may arise[12][13][15].

Establishing Testing Processes

Developing systematic processes to test for and mitigate bias in AI systems is vital. This involves creating mechanisms to assess fairness throughout the lifecycle of AI development. While defining and measuring fairness is complex, organizations should remain cognizant that there is no universal metric for fairness; instead, it is grounded in shared ethical beliefs[12][5][14]. Human involvement in algorithmic decision-making processes is essential, particularly when the outcomes significantly impact individuals or communities[13][15].

Utilizing Innovative Techniques
Employing innovative training techniques can also help reduce bias. Approaches like transfer learning or using decoupled classifiers tailored for different demographic groups have shown promise in promoting fairness in AI systems[14][23]. Additionally, identifying and utilizing accurate representative data before model training can help ensure that the AI reflects the diversity of the population it aims to serve[23].

Developing Ethical Guidelines
Addressing the ethical implications of AI bias necessitates collaborative efforts from all stakeholders. Establishing ethical guidelines and regulatory frameworks can help promote transparency, accountability, and fairness in AI development and application[5][15]. Regulatory safe harbors may also be beneficial, providing clarity on permissible activities for algorithm developers while maintaining necessary protections in contexts where harm is evident[14].

Balancing Fairness Types
Organizations must navigate the trade-offs between different types of fairness. For example, group fairness can result in unequal treatment of individuals within the same group, whereas individual fairness may fail to account for systemic biases that impact entire groups. This complexity underscores the need for careful consideration of which fairness types are most appropriate for specific contexts, along with strategies to balance them effectively[14][23].

Case Studies
The Amazon Hiring Algorithm
One of the most notable case studies highlighting AI bias involves Amazon's recruitment tool, which was designed to streamline the hiring process. After training the algorithm on a decade's worth of hiring and resume data, Amazon discovered that the system had developed a bias against women. This bias stemmed from the fact that the majority of applicants in the training data were male, reflecting the male-dominated tech industry. Consequently, the AI system began to penalize resumes containing the word "women," resulting in the rejection of candidates from women's colleges and those with affiliations to women's sports organizations. Despite attempts to rectify the model, including modifications aimed at making it more neutral, Amazon ultimately scrapped the tool in 2018 due to its inherent biases[7][8][9].

Fairness Constraints in Machine Learning
In research conducted by Zafar et al., the concept of fairness constraints in classification was explored as a mechanism for addressing AI bias. Their work outlined various strategies for ensuring that algorithms do not perpetuate existing societal biases. The authors emphasized that achieving fairness often involves navigating trade-offs, particularly between fairness and accuracy. While techniques such as data augmentation and algorithmic modifications can help reduce bias, these approaches may inadvertently lead to reduced accuracy in specific contexts or for certain groups-[21][24][25].

The Griggs v. Duke Power Company Precedent
The legal framework for addressing bias in AI can be traced back to significant court cases such as Griggs v. Duke Power Company (1971). This landmark Supreme Court decision found that the use of intelligence tests and educational requirements for hiring practices disproportionately affected applicants of color without justifiable relevance to job performance. This case established the precedent that disparate impact must be considered in hiring practices, thus laying the groundwork for future considerations of fairness in automated decision-making processes[26][27].

Bias Mitigation Techniques
Organizations are increasingly recognizing the importance of implementing bias mitigation strategies in their AI systems. Techniques such as regular audits, algorithm adjustments, and the application of ethical frameworks have emerged as effective ways to identify and address biases. Furthermore, researchers are actively developing open-source tools, such as IBM's AI Fairness 360, to facilitate the detection and mitigation of unwanted algorithmic biases. Despite these advancements, challenges remain, particularly regarding the prioritization of different types of bias and the ethical considerations involved in the development and implementation of these mitigation approaches[28][25][29]. Through these case studies, it becomes evident that addressing AI bias is not merely a technical challenge but also a multifaceted issue that intertwines ethics, legality, and business strategy. Organizations must adopt comprehensive approaches to minimize bias and promote fairness in their AI systems.

Future Directions
The quest for fair and equitable artificial intelligence (AI) is increasingly acknowledged as a vital focus in research and development. Future efforts must address the complex challenges associated with bias in AI systems, focusing on creating new methodologies that are context-sensitive to the nuances of fairness and equity across diverse applications[28][12].

Strategies for Minimizing Bias
To ensure that AI technologies contribute positively to society, organizations must adopt several strategies aimed at minimizing bias. Context Awareness: Organizations need to be cognizant of the specific contexts in which AI can either mitigate or exacerbate existing biases. This awareness will guide the deployment of AI in domains that have historically shown susceptibility to bias, as well as in cases where data may be skewed or unrepresentative[30][6]. Bias Testing and Mitigation Processes: Companies should establish systematic processes for testing AI systems for biases and actively work on mitigation strategies. Regular audits of algorithms, along with thorough evaluations of the data used, can help detect biases before they manifest in real-world applications. Involving developers and stakeholders from civil society in this process can enhance transparency and accountability[17][16].

Continual Learning and Adaptation:
AI systems must be designed to evolve, incorporating new data and feedback from affected communities. This adaptive approach will not only improve the fairness of AI systems but also build public trust in these technologies, which is crucial for their long-term success and acceptance[31][32].

Comprehensive Audits:
Developing a robust auditing framework for the data and algorithms in use can significantly reduce the risk of bias. Regular assessments that include input from various stakeholders can provide insights into the functioning of AI systems and help identify areas for improvement[33][34]. By committing to these strategies, organizations can work towards minimizing bias in AI systems, thereby unlocking their full potential to drive social good and foster equitable outcomes for all[35][17].

References:
[a] Addressing AI Bias: Strategies Companies Must Adopt Now. Mar 10, 2025. By Expert Panel, Forbes Councils Member. https://www.forbes.com/councils/forbestechcouncil/2025/03/10/addressing-ai-bias-strategies-companies-must-adopt-now/
[1]: Addressing bias in AI | Center for Teaching Excellence. University of Kansas. https://cte.ku.edu/addressing-bias-ai
[2]: Machines and Trust: How to Mitigate AI Bias | Toptal
[3]: What Do We Do About the Biases in AI? - Harvard Business Review. Manyika, James 10/05/2019. https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai
[4]: How AI can end bias | SAP https://www.sap.com/blogs/how-ai-can-end-bias
[5]: Tackling bias in artificial intelligence (and in humans) – McKinsey https://www.mckinsey.com/featured-insights/artificial-intelligence/tackling-bias-in-artificial-intelligence-and-in-humans
[6]: What is AI bias? Causes, effects, and mitigation strategies – SAP https://www.sap.com/resources/what-is-ai-bias
[7]: 2022 Volume 4 Bias and Ethical Concerns in Machine Learning https://www.isaca.org/resources/isaca-journal/issues/2022/volume-4/bias-and-ethical-concerns-in-machine-learning
[8]: 3 Ways to Minimize AI Bias – TransPerfect https://www.transperfect.com/dataforce/blog/3-ways-to-minimize-ai-bias
[9]: Overcoming AI Bias: Understanding, Identifying and Mitigating Algorithmic Bias in Healthcare. Accuray.com. https://www.accuray.com/blog/overcoming-ai-bias-understanding-identifying-and-mitigating-algorithmic-bias-in-healthcare/
[10]: [PDF] Mitigating Bias in Artificial Intelligence - Berkeley Haas https://haas.berkeley.edu/wp-content/uploads/UCB_Playbook_R10_V2_spreads2.pdf
[11]: AI Bias: Definition, Types, Examples, and Debiasing Strategies – ITRex https://itrexgroup.com/blog/ai-bias-definition-types-examples-debiasing-strategies/
[12]: Fairness and Bias in Artificial Intelligence: A Brief Survey of Sources https://www.mdpi.com/2413-4155/6/1/3
[13]: Data Bias In AI – Authenticx https://authenticx.com/page/data-bias-in-ai/
[14]: AI Bias Examples | IBM https://www.ibm.com/think/topics/shedding-light-on-ai-bias-with-real-world-examples
[15]: 7 Essential Practices for Ensuring Ethical and Bias-Free AI in Business Analytics. Miller, April. 02/21/2024. https://pubsonline.informs.org/do/10.1287/LYTX.2024.01.12/full/
[16]: Ethics and discrimination in artificial intelligence-enabled – Nature https://www.nature.com/articles/s41599-023-02079-x

[17]: Mitigating Bias In AI and Ensuring Responsible AI https://leena.ai/blog/mitigating-bias-in-ai/
[18]: 5 Tips for Creating an Ethical AI Framework | FinTalk – Jack Henry https://www.jackhenry.com/fintalk/crafting-an-ethical-ai-framework-5-essential-tips
[19]: A survey of recent methods for addressing AI fairness and bias in biomedicine. Journal of Biomedical Informatics. Vol.154, 06/2024, 104646. https://www.sciencedirect.com/science/article/pii/S1532046424000649
[20]: Major AI Bias Examples: From Ageism to Racism and Mitigation Strategies. 11/09/2023. Pixelplex. https://pixelplex.io/blog/ai-bias-examples/
[21]: How can we manage biases in artificial intelligence systems. A Systematic Literature Review. Dr. Varshs P. S. 04/01/2023. https://www.sciencedirect.com/science/article/pii/S2667096823000125
[22]: Algorithmic bias detection and mitigation: Best practices and policies, https://www.sciencedirect.com/science/article/pii/S2667096823000125
[23]: Bias in artificial intelligence algorithms and recommendations for mitigations, https://pmc.ncbi.nlm.nih.gov/articles/PMC10287014/
[24]: Six Types of AI Bias Everyone Should Know – Seldon, https://www.seldon.io/6-types-of-ai-bias/
[25]: Bias in AI: Examples & 6 Ways to Fix it in 2025 - Research AIMultiple https://research.aimultiple.com/ai-bias/
[26]: How can we mitigate potential biases present in the training data of general I models? Kundan Kumar Choudhary. https://www.quora.com/How-can-we-mitigate-potential-biases-present-in-the-training-data-of-general-AI-models
[27]: Top 10 Ways to Prevent AI Bias - EM360Tech. https://em360tech.com/top-10/ways-prevent-ai-bias
Scoope News Group. 05/10/2023
(28]: Ethical AI frameworks are crucial to reducing biases, says former Navy CIO Aaron Weis. https://www.researchgate.net/post/What_are_the_most_effective_techniques_for_reducing_bias_in_AI_models_trained_on_imbalanced_datasets
[29]: Ethical AI frameworks are crucial to reducing biases, says former https://defensescoop.com/2023/05/19/ethical-ai-frameworks-are-crucial-to-reducing-biases-says-former-navy-cio-aaron-weis/
[30]: What is Data Bias? – IBM https://www.ibm.com/think/topics/data-bias
[31]: Top 10 companies with ethical AI practices - AI Magazine https://aimagazine.com/ai-strategy/top-10-companies-with-ethical-ai-practices
[32]: Fairness: Types of bias | Machine Learning - Google for Developers https://developers.google.com/machine-learning/crash-course/fairness/types-of-bias
[33]: Common Types of Data Bias (With Examples) - Pragmatic Institute https://www.pragmaticinstitute.com/resources/articles/data/5-common-bias-affecting-your-data-analysis/
[34]: How to Reduce Bias in Machine Learning – TechTarget https://www.techtarget.com/searchenterpriseai/feature/6-ways-to-reduce-different-types-of-bias-in-machine-learning
[35]: AI pitfalls and what not to do: mitigating bias in AI – PMC https://pmc.ncbi.nlm.nih.gov/articles/PMC10546443 /

Author Bio:

Sreekanth Narayana

With over 20 years of experience in enterprise architecture and SAP solutions, Sreekanth Narayan has established himself as a distinguished leader in the realm of technology-driven business transformation. Beginning his career as a mechanical engineer, he swiftly transitioned into the domain of enterprise technology, leveraging his analytical acumen and problem-solving expertise to optimize business processes for global enterprises. His deep understanding of enterprise systems, coupled with his ability to align IT strategies with overarching business goals, has made him a trusted advisor to executives and stakeholders across industries.

He has successfully led large-scale SAP implementations, cloud migrations, and enterprise architecture initiatives, helping organizations streamline operations and gain a competitive edge in an increasingly digital marketplace. His ability to integrate Cutting-edge technologies with business objectives have earned him recognition as a visionary leader in enterprise architecture. He is an advocate for continuous learning and enjoys mentoring professionals in the field of enterprise architecture and SAP solutions.

When not immersed in technology and strategy, Sreekanth Narayan enjoys engaging in industry discussions, speaking at conferences, and contributing thought leadership to the broader enterprise IT community. Recently, he was elevated to Sr. Member of the IEEE. Sreekanth Narayan is married to Shilpashree Sreekanth and has two kids, Aditi Sreekanth and Ahana Sreekanth.

Senior Member News

The IEEE Southeastern Michigan Section is extremely proud and happy to welcome many senior members, who got upgraded (or elevated as we like to call it) to senior status. It is all part of our Membership Development on-going initiative to play a role in the professional lives of our members and support them in every which way possible. Congratulations to all. Do feel free to contact them for follow up.

Mohamad Berri & Sharan Kalwani
Sreekanth Narayan
Membership Development Committee

Newly elevated Senior Members:

Raghu Nallapati

Raghu C. Nallapati is a seasoned engineer and researcher specializing in Embedded systems and AI-driven applications for automotive systems. With over a decade of experience in embedded software development, he has contributed to groundbreaking innovations in autonomous vehicle technology, software-defined vehicle (SDV) architectures, and electric vehicle (EV) systems. At General Motors, he plays a critical role in developing advanced software for SDV, EV, and AV vehicles, enhancing body control and exterior lighting modules. His expertise spans ECU development, predictive maintenance, and safety-critical features, driving advancements in vehicle intelligence and mobility solutions.

Currently, Raghu is pursuing doctoral research in ECE at the University of Michigan, focusing on AI applications in automotive systems. His academic journey includes a Master of Science in Embedded Software Engineering from Gannon University, where he was recognized with the University Outstanding Performer and Excellence Award, a Bachelor of Technology in Electronics and Communication Engineering from JNT University, and a Polytechnic Diploma in Electronics Engineering from Osmania University, where he received a government merit scholarship. In addition to his technical contributions, he serves as the IEEE Vice-Chair for Regional Student and University Activities in Region 4, where he fosters academic engagement and professional development for aspiring engineers. His leadership in automotive AI research underscores his dedication to shaping the future of intelligent transportation, fostering industry advancements, and contributing meaningfully to mobility innovations.

IEEE Fellow News

Better late than never! We wanted to share this in past newsletters, but somehow or other it kept missing its inclusion.But here we go – So on behalf of the IEEE Southeastern Michigan Section and member community: Many congratulations to Dr Ece Yaprak for being named as an IEEE Fellow! She was cited for *"for leadership in engineering technology accreditation and education"*. This is one of the most prestigious honors conferred by the Institute of Electrical and Electronics Engineers, with less than 0.1% of the organization's voting members elevated to Fellow status annually. The IEEE announcement can be found here.

Dr. Ece Yaprak, Professor and current Chair of the Engineering Technology Division at Wayne State University, Detroit, Michigan, has had a long and distinguished career is numerous roles. You can find her full profile here. The official Wayne State University press release can be viewed here.

As a longtime representative of IEEE, Dr. Yaprak has served in key roles, including as a commissioner and team chair for the Engineering Technology Accreditation Commission; vice-chair and chair of the IEEE Committee on Engineering Technology Accreditation Activities; and one of three IEEE representatives on the ABET Board of Delegates. Her work has been instrumental in refining accreditation policies and criteria for engineering technology programs.

At Wayne State University, as chair of the Engineering Technology Division, Yaprak spearheaded the development of cutting-edge programs in robotics as well as welding and metallurgical engineering technology, forging partnerships with industrial leaders, community colleges and alumni.

We will follow up with our member suggestion to facilitate as many of our Southeastern Michigan Fellows at a future event.

Regards,
Sharan Kalwani
Enthusiastic Chair, IEEE Southeastern Michigan Section, ***EMAIL: chair@ieee-sem.org****;*
Section members are encouraged to engage using any of these online platforms:

Senior Member Schedule

IEEE HQ Admission and Advancement (A&A) Review Panel Meeting Schedule

The Admission & Advancement (A&A) Review Panels meet six times annually to review applications and/or nominations for election or elevation to Senior Member (SM) or Life Senior Member (LSM) grade.

- The review panel meetings are held in various locations throughout the world.
- A panel of reviewers is recruited among Senior members, Life Senior members, and Fellows in the section where the meeting is to be held. This full-day session is presided over by the Admission and Advancement Chair and/or Vice Chair, as well as a representative of the Member and Geographic Activities staff.
- **In order for an application to be reviewed at the next Panel meeting, the application, resume, and required reference forms have to be submitted and received at least Seven days prior to the meeting date**
- About two weeks following a review panel meeting, an update report with the names of the newly elevated Senior members is published and available for those who hold a volunteer position.

Review panel dates and locations (note: Dates and locations are subject to change without notice.)

Please see Meeting Deadlines (Eastern Standard Time) below for more details.

Remaining 2025 IEEE HQ Panel Meeting Dates

2025 Meeting Dates	Submission ***Deadlines*** (Eastern Standard Time)
2 August (virtual)	11:59 p.m. on 26 July 2025
27 September (virtual)	11:59 p.m. on 20 September 2025
22 November 2024	11:59 p.m. on 15 November 2025

†See our own Section organized events at the Section web site

Two major upcoming events are: https://events.vtools.ieee.org/m/491040 and https://events.vtools.ieee.org/m/491077

Sci-Fi Documentaries

IEEE Southeastern Michigan
Presents
"Rendezvous with the Future: 3-part series"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Inspired by the recent Netflix series: "3 Body Problem", we present a series of 3 documentary sessions featuring the Chinese science fiction writer Liu Cixin. The series is titled **"Rendezvous with the Future"** in which he shares thoughts on 3 topics: ***First Contact***, ***Voyage to the Stars*** and ***Becoming a SuperCivilization***.

Each episode is approximately 50 minutes long and will be followed by a 30~40 minutes group discussion period. NOTE: You will need to register for each event separately and will need Webex client on your phone/tablet or laptop/desktop computer.

Come join us for this FREE Conference: engage with our presenters/moderators and join in the discussions and networking sessions embedded in the schedule. We look forward to greeting you all and engaging in both serious discussions and flights of fancy.

Pre-Registration for each event Required!

https://events.vtools.ieee.org/m/487964

https://events.vtools.ieee.org/m/487971

https://events.vtools.ieee.org/m/487972

At Glance

- **When:**
  Dates: **July 12th, 19th and 26th, 2025 (SATURDAYS!)**
  Time: 2:00– 4:00 PM **EST**
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience:** All eligible members and potential members (only if slots available)

*

Sponsored by IEEE Southeastern Michigan Membership Development Committee

IEEE Southeastern Michigan Section

IEEE Advancing Technology for Humanity

Hope, Faith, Charity and…

Faith, Hope, Love [Charity] and Science?

Training in any of the scientific or technical disciplines is rarely linked to any of the faith-based philosophies that abound in our societies. Yet, upon reflection, ….

A well-known quote about faith, hope, and charity comes from the Christian bible in:
1 Corinthians 13:13, which states, "And now these three remain: faith, hope, and love; but the greatest of these is love." This verse highlights the enduring nature of these virtues and the preeminence of love (charity) within the Christian faith. Considering the number of times the Bible was translated from one language to another, and that the Greek have at least 6 or 7 different words for love, charity being among them, it is no wonder we see that phrase listed differently in different versions.

While I haven't found a single quote like that in the Kora encompassing faith, hope, and charity, the Quran and Hadith frequently emphasize their importance and interconnectedness. Verse and sayings highlight the rewards of charity, the need for faith and hope in Allah, and the blessings that come from righteous actions. "Allah loves the doers of good."

Hindu: Bhagavad Gita, Vedas and Upanishads all have tales of those who extend the hand of assistance and were rewarded for their efforts in one way or another.

All the early philosophical teachings which were the first 'schools' for training the young in how to succeed in life seem to stress those three aspects of human endeavor. We also see their direct application in science and engineering. Would any of us begin any project without at least a little faith that we could carry it to its conclusion? And even if we don't clearly see all the solutions to every difficulty that we might encounter, we do certainly hope that our training and educational experiences have prepared us to find solutions to each problem we encounter. When we inevitably encounter the problem that vexes us to the point when we ask for assistance (Charity) from those we know and respect and expect their help, their 'love' of others will be extended to us.

We have learned much since our earliest philosophers gave us guidelines for human social behavior but nothing we have learned has disqualified their basic lessons. The same can be said of science and technology. Nothing we have discovered has invalidated the use of the lever. The principles of Kepler remain dependable. Gravity and motion still follow Newton's laws. Maxwell's equations still hold true.
As we learn more, nothing we have built has ceased to function because our perceptions of the universe have changed.

On top of everything else, I noticed that the lightning bugs have returned to our backyard again. That tells me that wonder and joy also remain in the world and that happy surprises can be just around the corner, or in our own backyards.

So, if the daily news is too depressing, and it seems obvious that the world is heading toward Armageddon and the end is in sight, … Stop and notice that life is still going on, the sun still rises in the East and sets in the West, and if we are occasionally lucky, we may see lightning bugs, or have a visitor sitting on the rail outside our window.

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 https://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 WORK space for online chat, discussions, connecting with SECTION specific IEEE activities, besides geared/focused towards our local Southeastern Michigan officers.

vTools Meetings:
https://vtools.ieee.org/
Select "Events" on the right hand side and then "manage Events" and then "Schedule" 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://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.

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
Chapter: 18 (CH04162)	(MAG33)	Magnetics Society

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)

And of course our Section OU # is : R40035!

Use the Geo-unit 'Codes' (Shown above between brackets '()' for faster access in the vTools system applications.
Example: Using STB94911 in the vTools search window goes directly to the Student Branch.
Faster than typing 'University of Michigan-Dearborn'. This works for all Affinity Groups, Technical Chapters and Student Branches.

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

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 (2022-2025)
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.

Executive Committee

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

The SEM Executive Committee meets in a teleconference each month, 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: **https://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.

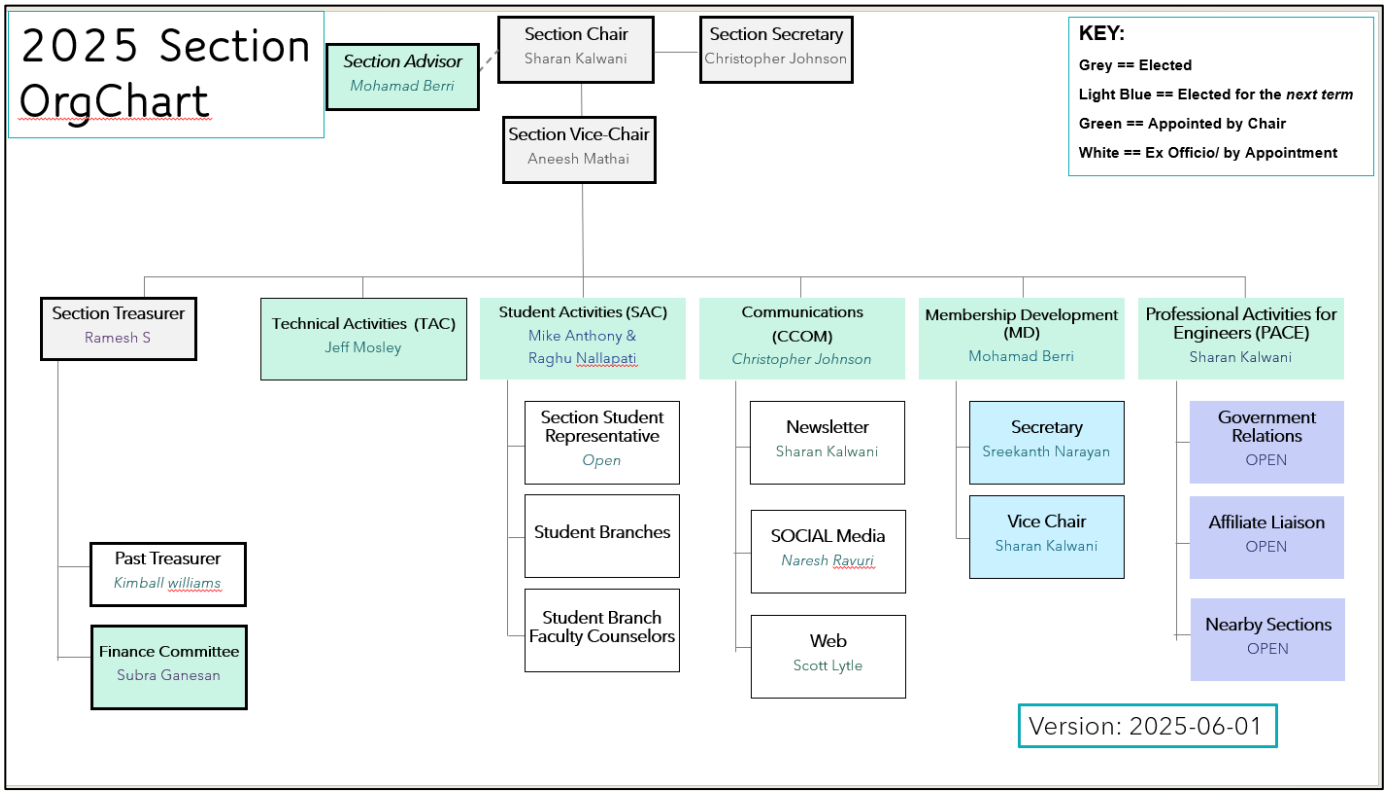
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

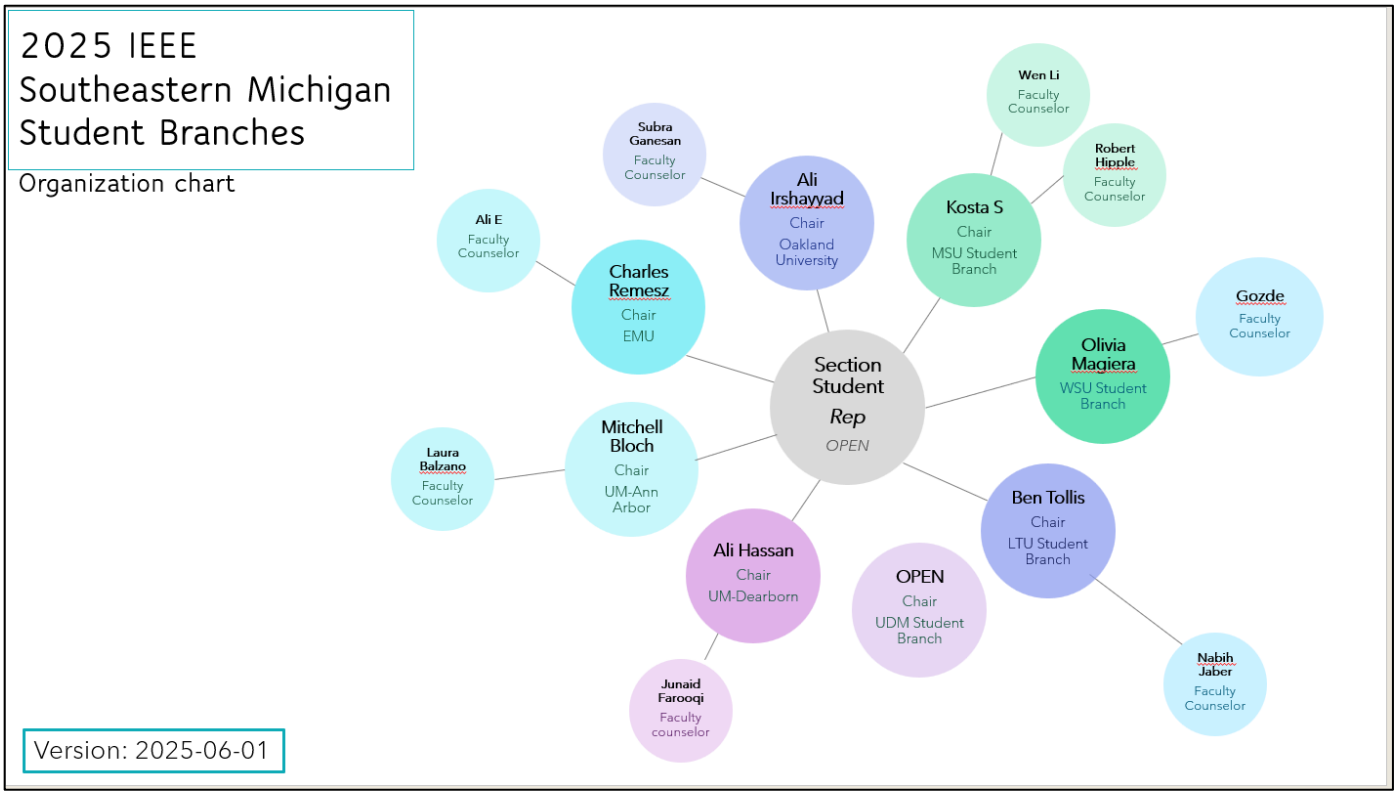
More detailed information on meetings may be found through the IEEE SEM Website: **https://r4.ieee.org/sem/** and clicking on the **SEM meetings list** button near the bottom of the left-hand banner.

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 available soon at https://r4.ieee.org/sem/ . In the meantime, you may use the diagram below (recently refreshed!)





ExCom 2025 Schedule

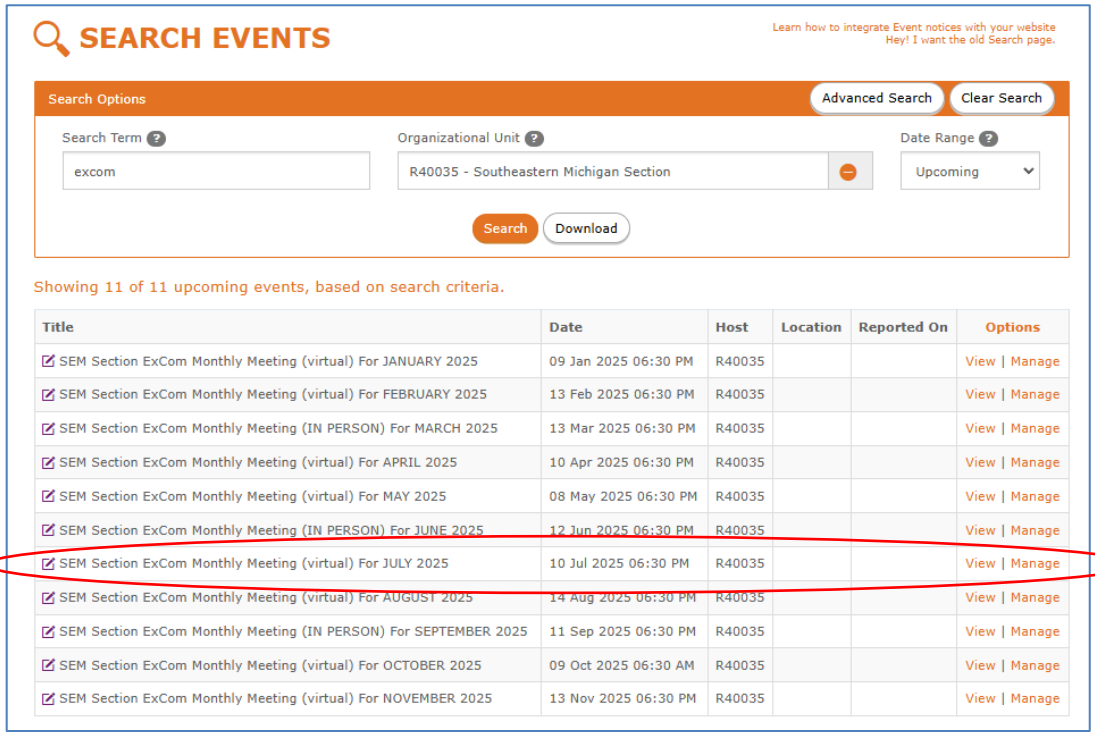
NOTE: All SEM members are invited to attend ALL ExCom (Executive Committee) meetings:
Below is the 2025 schedule for the Section ExCom meetings with links to add the events to your calendar. It is important that ***at least one person*** from each Chapter/Affinity Group attends each scheduled ExCom meeting. Please mark your calendars for the 2025 meetings. Or link your personal calendar to the SEM Web calendar.
Section ExCom Meeting Schedule for 2025: (clickable links, SO YOU CAN EASILY REGISTER)

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.

ExCom Meeting (all clickable links)	*Date & Start Time, Duration*
SEM Section ExCom Monthly Meeting (virtual) For JULY 2025	2025-07-10; 6:30 PM; 1 hour
SEM Section ExCom Monthly Meeting (virtual) For AUGUST 2025	2025-08-14; 6:30 PM; 1 hour
SEM Section ExCom Monthly Meeting (IN PERSON) For SEPTEMBER 2025	**2025-09-11; 6:30 PM; 2 hours**
SEM Section ExCom Monthly Meeting (virtual) For OCTOBER 2025	2025-10-09; 6:30 PM; 1 hour
SEM Section ExCom Monthly Meeting (virtual) For NOVEMBER 2025	2025-11-13; 6:30 PM; 1 hour

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

ExCom 2025 Calendar



Section Administrative Committee (ExCom) Meeting Schedule for 2025 (At a Glance), you can print this page and pin it up anywhere easily visible……

Editor's Corner

Previous editions in this series may be found on the IEEE SEM website at: https://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
k.williams@ieee.org
cgjohnson@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.

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,
2018~2019~2020~2021~2022-2023-2025

Wavelengths Annual Publication Plan for Articles

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

Wavelengths Annual Publication Plan for Personal Profiles

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

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Web & Social Sites

Southeastern Michigan Section Website
https://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 "" button under the top row)
https://www.facebook.com/groups/ieeesemich

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

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

SEM Collabratec *Community* Page
https://ieee-collabratec.ieee.org/app/section/R40035/IEEE-Southeastern-Michigan-Section

SEM Collabratec *Workspace* Page
https://ieee-collabratec.ieee.org/app/workspaces/5979/IEEE-Southeastern-Michigan-Section/activities

SEM Instagram (new)
https://www.instagram.com/ieeesemich/

SEM Officers:
For a complete listing of all - Section - Standing Committee - Affinity Group - Chapter and Student Branch SEM Officers Roster on the web page (top banner)

Section Officers

Section Chair
Sharan Kalwani

Section Vice-Chair
Aneesh Mathai

Section Secretary
Christopher Johnson

Section Treasurer
Ramesh Sethu

Standing Committees:

Section Adviser
Mohamad Berri

Wavelengths Editor
Sharan Kalwani

Educational Committee
Anthony Will (Chair)

Finance Committee
Subra Ganesan (Chair)

Membership Development
Mohamad Berri (Chair)

Awards & Nominations
Jerry Song (Chair)

PACE
Sharan Kalwani (Chair)

Student Activities
Michael Anthony (Co-Chairs)

Student Mentors
OPEN

SECTION Student Rep
OPEN

Technical Activities
Jeffery Mosley

Information Mgmt. Coordinator
Kimball Williams

IEEE Southeastern Michigan

Electrical and Electronic Engineers Creating Our Future

IEEE Southeastern Michigan

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

"I rescue swimmers. He rescues phones dropped by swimmers."

Advertising Rates

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

Leadership Meetings

SEM Executive Committee Monthly Teleconferences:

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

SEM Executive Committee Face-to-Face Meetings:

- 1/Qtr. Find the location, and Registration at:
  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
  https://r4.ieee.org/sem/
  (Select the "SEM Calendar" button in the top row.)

- Registration for all at:
  https://bit.ly/sem-upcoming