

Wavelengths



Volume 61 – Issue 10

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Upcoming Events

We have a number of events coming up this month. Listed below are some of the events, FYI.

Event	Date	Time
Physics, Race, and Gender: Lise Meitner and the Discovery of Nuclear Fission	01 Oct 2021	04:00 PM
Introduction to Embedded Systems (part 1)	02 Oct 2021	08:00 AM
Amateur Radio Technician License Preparation Class - Week 3	04 Oct 2021	07:00 PM
IEEE Day 2021	05 Oct 2021	05:30 PM
Power Systems for Non-Power Engineers	05 Oct 2021	06:00 PM
SEM Section ExCom Monthly Meeting for October 2021	07 Oct 2021	06:30 PM
Introduction to Quantum Computing	08 Oct 2021	12:00 PM
Introduction to Embedded Systems (part 2)	09 Oct 2021	08:00 AM
Amateur Radio Technician License Preparation Class - Week 4	11 Oct 2021	07:00 PM
Ch8: AdCom Teleconference	14 Oct 2021	11:00 AM
Connected Vehicle Data	15 Oct 2021	04:00 PM
Amateur Radio Technician License Preparation Class - Week 5	18 Oct 2021	07:00 PM
Fall 2021 Mid-Semester Break MOVIE NIGHT=>The life of James Clerk Maxwell	21 Oct 2021	06:00 PM
The NASA-ISRO Synthetic Aperture Radar (NISAR) Mission – Technologies and Techniques for Earth Science	22 Oct 2021	12:00 PM
Embedded Systems Workshop 2021 - Day 1	23 Oct 2021	08:00 AM
IEEE Virtual Distinguished Lecturer (VDL) Talk: "Connecting Space Assets to the Internet: Challenges and Solutions"	29 Oct 2021	08:00 PM
Embedded Systems Workshop 2021 - Day 2	30 Oct 2021	08:00 AM

Note: All times are EST/EDT. If any events are missed do kindly bring them to the attention of wavelengths@ieee-sem.org. Thank you!

Chair Person's Column



I continue to be impressed with the number of activities our Chapters and Affinity Groups are scheduling. October is no exception. This month we have events on history/discovery behind nuclear fission, quantum computing, and power systems. The Embedded Systems Workshop pivoted towards a virtual event for the 2nd straight year. This is one of the premier events in our section. Be sure to check it out.

Also for the second year, we will be featuring an online quiz for IEEE day 2021. The event will be held on October 5th. There will be games and prizes. The event is open to everyone from new members to veterans of IEEE. It is a great place to start your adventure with IEEE volunteering. I had the opportunity to attend last year's event, and it was a lot of fun.

If you are ready to get involved with IEEE, feel reach to reach out. We will get you on the mailing list for the Executive Committee meeting. You can see what we are all about in person and find a volunteer role. Everybody is welcome, the only requirement is that you believe in the IEEE Mission of advancing society through technology.

Thanks to the amazing team of volunteers that we have in this organization. I look forward to seeing everyone soon!

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

SusTech 2022 CFP

IEEE SusTech2022

<https://ieee-sustech.org>

Call For Papers

April 21st-23rd, 2022

The 9th Annual IEEE Technologies for Sustainability Conference (SusTech 2022) is designed to explore technical development that meets the needs of the present without compromising the future generations. The conference brings together scientists, engineers, technologists and scholars from disparate disciplines to conduct a dialogue on environmental issues and collaborate on ideas to develop and utilize innovative tools and intelligent systems to address them. Attendees will explore emerging relevant technologies, latest tools, and proactive solutions to take their sustainability programs to the next level.



- **SusTech 2022** is a virtual and on-demand event and will feature technical papers & presentations, posters and workshops.
- Prominent experts will be giving keynotes, plenary presentations and invited talks.
- Best Posters and Papers in the conference will be eligible for an award.
- Full papers will be considered for publication in the IEEE SusTech 2022 Proceedings.

Conference content that meets IEEE quality review standards and format will be submitted for inclusion into IEEE Xplore as well as other Abstracting & Indexing (A&I) databases.

Papers are solicited for presentations from industry, government, and academia (including students) covering relevant research, technologies, methodologies, tools, case studies and public policy.

Conference Fields of Interest (see web site for full details)

Technologies that drive sustainable infrastructure design and implementation

Energy Efficiency	Sustainable Electronics	Smart Grid
Renewable/Alternative Energy	Water Resource Management	Internet of Things (IoT)
Intelligent Transportation Systems	Societal Implications/Quality of Life	Public Policy

The Conference will also consider submissions representing: Smart Grid, e-Waste, Ocean Waste & Pollution, Ecological Sustainability & Conservation, Agriculture & Food Technology, Sustainable Management.

Instructions to Authors: Submit in **PDF** form, a full submission of the paper for oral presentation via the SusTech website. For information for authors, please visit the conference website at <https://ieee-sustech.org>. Select the Authors *tab* and follow the instructions.

There will be a separate Student Poster Competition.

Important Dates	November 1 st , 2021	Submission Deadline for Paper
	December 15 th , 2021	Notification of Acceptance
	January 31 st , 2022	FINAL manuscript submission deadline

For more information or questions, please contact: sustech@ieee.org

SusTech 2022 Leadership

General Chair: David E. Gonzalez | davidgonzalez@ieee.org

Vice Chair: Sharan Kalwani | sharan.kalwani@ieee.org

Technical Program Chair: Rakesh Mahto | ramahto@fullerton.edu

Past Chair: Gora Datta | gora.datta@ieee.org

Emeritus Chair and Co-Founder: Ed Pekins | e.perkins@ieee.org



IEEE Environmental
Engineering Technical
Community

Embedded Systems 2021



19th Annual Embedded Systems Workshop

October 23 & 30, 2021, 8:00 a.m. to 12:45 p.m. (Saturdays)
Virtual/Online Live Sessions, EST/EDT Time Zone

IEEE Computer Society & IEEE Education Society (South East Michigan Chapters) is offering a TWO half-day set of workshops on Embedded Systems on Saturday, October 23rd and 30th, 2021. This workshop is open to all industry professionals, both experienced and newly minted engineers, as well as students. This is the 19th year that the event is being held. The theme for this year is: "Role of Embedded Systems in Battery Electric Vehicles (BEV)".

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

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

Deadline is 17th October 11 pm

<https://bit.ly/embed2021>

Venue: Virtual using Video Conferencing



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

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

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

Open to all, Pre-registration is necessary prior to attending! The deadline to register is 17th October 11 PM

For Technical questions, contact the Program Committee at: esw2021@ieee-sem.org

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

ESW 2021 Organizing Committee: Subra Ganesan (Chair), Sharan Kalwani (Vice Chair), Ramesh S, Carla Gerst, Nileshe Dudhaia, Praveena Jakkula, Sreenivas Eeshwaraju and Ben Sweet

Technical Activities Report

2021 IEEE SE Michigan Section Geo-unit Status (Till Sept 30th)									
Ch's & AG's	Ave Tech Mtg. Attend	Ave Tech Mtg Guest	#L31 - Technical	#L31 -Admin	#L31 Professional	#L31 -Other	Geo-Unit Name	# Unreported	Total Mtgs
Cnslt	20	1	1	5	1	0	Consultants Network	0	7
LIFE	0	0	0	0	6	0	Life Members	0	6
WIE	0	0	0	8	2	0	Women In Engineering	0	10
YP	0	0	0	0	0	0	Young Professionals	0	0
1	2	1	3	3	0	0	Circuits & Systems, Signal Proc., Info Th.	1	6
2	40	9	3	1	0	0	Vehicular Technology	0	4
3	103	37	3	0	0	0	Aerospace & Elec. Sys., Communications	0	3
4	29	9	2	0	0	0	Trident (Ant, Elect Dev., uWave, Photo)	0	2
5	30	1	43	9	6	2	Computers	0	60
6	0	0	0	0	0	0	Geoscience & Remote Sensing	0	0
7	41	8	7	2	0	0	Power Engineering, Industrial App.	0	9
8	85	35	13	7	0	0	Electromagnetic Compatibility (EMC)	1	20
9	48	18	3	1	0	0	Power Electronics, Industrial Electronics	0	4
10	4	0	3	1	0	0	Engineering Management	0	4
11	0	0	0	0	0	0	Eng. in Medicine & Biology	0	0
12	30	1	1	3	0	0	Control Systems	0	4
13	37	2	15	1	3	0	Education	0	19
14	0	0	0	0	2	0	Robotics & Automation	0	2
15	64	39	5	0	0	0	Nuclear Plasma Science Society	0	5
16	0	0	0	0	0	0	Computational Intelligence / Sys.Man.Cyber.	0	0
17	21	17	3	0	0	0	Nano Technology Council	0	3
SEM	21	2	3	14	4	1	SEM (Section)	0	22
Tot	575	182	108	55	24	3	NOTE: Highlight Green = Active	2	190
		32%					NOTE: Highlight clear = Concern		

The monthly Section Health report now includes columns representing the numbers of unreported meetings see, (#Unreported) as well as total meetings see (Total Mtgs) for each GA.

Chapters 1 and 8 have an unreported meeting, otherwise keep up the great work. GA leaders are requested to review the report and clarify any unreported meeting activity by either submitting the appropriate L31 status report or by contacting the undersigned for assistance.

We have only a few GAs who seem to be inactive as of the end of September. I trust that this is the quiet before the great storm of activity being planned for the Fall. Remember that our technical chapters and societies can conduct joint technical meetings where both groups can receive recognition by IEEE and our Section. Please endeavor to engage your group membership by: 1. Meeting F2F or virtually to discuss IEEE presentations or other technical content germane to your group; 2. Invite members or outside speakers to present relevant technical achievements and or issues; and 3. Collaborate with other GAs on relevant joint technical topics of interest via webinar. These are just a few suggestions to maintain healthy technical interchanges within our Section.

Your Technical Activities Committee (TACom) stands ready to assist as needed. Stay well and stay safe.

V/r
 Jeff Mosley
 Chairman, Technical Activities Committee
 R4 IEEE SEM
jvmosley@ieee.com

Member News

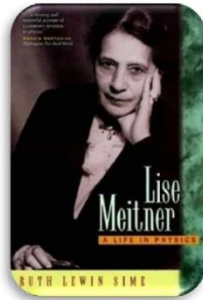


Increased Section Membership Retention

The IEEE Southeastern Michigan Section Membership Development is pleased to report that our Section for the 2nd year running has achieved the Silver Award for membership.

Sharan Kalwani,
Chair, IEEE SE Michigan Section Membership Development
2019-2020~2021

Physics, Race & Gender

IEEE SE Michigan
Presents*Physics, Race, and Gender: Lise Meitner & the Discovery of Nuclear Fission*

At Glance

- **When:**
Date: October 1st, 2021
Time: 04:00 – 6:00 PM
(EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by
IEEE
SE Michigan

Speaker Bio:

Ruth Lewin Sime is a physical chemist who taught chemistry for over thirty years at Sacramento City College in California. She is the author of the award-winning biography, *Lise Meitner: A Life in Physics*, and has taken part in several documentary films about Meitner. Currently Ruth is working on a biographical study of Otto Hahn during and after the Nazi period in Germany.

***Pre-Registration Required!**

<https://events.vtools.ieee.org/m/276501>

IEEE Southeastern Michigan Section



Chapter 10 Profile

Technology and Engineering Management Society “Who We Are”

The Engineering Management Society (EMS) was founded in 1951 and became the Technology Management Council (TMC) in 2007. In 2015 we transitioned to the Technology and Engineering Management Society (TEMS). TEMS focuses on multiple facets of the management practices required for defining, implementing, and managing engineering and technology. Specific topics include: technology policy development, assessment, and transfer; research; product design and development; manufacturing operations; innovation and entrepreneurship; program and project management; strategy; education and training; organizational development and human behavior; transitioning to management; and the socioeconomic impact of engineering and technology management.

TEMS Values:

- Help IEEE members to maintain essential engineering management skills
- Support the leadership career path of IEEE members
- Foster active knowledge transfer between the academic and practicing communities

TEMS Mission

- To advance, enhance, and improve essential management and leadership knowledge and skills of IEEE membership

TEMS Vision

- To be the premier resource of essential management and leadership knowledge

2021 TEMS Leadership team

Ray Sasinowski, Chapter Chair



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

Becoming an active member in Technology & Engineering Management society back in 2016 brought me back to volunteering in my local IEEE chapter and rekindled old friendships within S.E. Michigan IEEE Society. TEMS activities has kept me up with the dynamic changes currently occurring within work environment and mentoring seasoned & new staff members. I really have enjoyed collaborating with our membership through meetings and networking.

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

One of my proudest accomplishment was to establish the EMC Society chapter (1989) here in Southeastern Michigan. I collaborated with Dr. Val Liepa (EECS Professor Univ. of Mich.), William Sperber (Director of EMC Dept. GM LLC.), and Kimball Williams (IEEE Sr. Member) who guided me in the planning and founding the S.E. Michigan EMC Society Chapter.

Mark Robinson, Vice Chair

I started my career as a design engineer and subsequently transitioned into providing consulting services in the technology management area with the last 34 years spent focusing on assisting companies and their legal counsel in addressing issues related to the management of intellectual property, including licensing, technology / competitor landscapes, and the economic valuation of intellectual property. I am a registered professional engineer, a registered patent agent, and a CPA.

I became involved in IEEE's Technology and Engineering Management Society in 2015 and have found it to be an extremely valuable resource for gaining knowledge in a very dynamic and multifaceted field.

TEMS Chapter Activities

In 2020, just like everyone, we pivoted to virtual meetings and our focus for the last year has been being a remote leader guiding & leading your team in this tumultuous time.

Working Remotely and Leading Your "Out-of-Office" Team was the topic of discussion for a chapter meeting held in February of this year. We discussed virtual meeting etiquette, having the right tools to be connected, and keeping everyone involved & participating during the meeting.

Our Chapter meeting held in March of 2021 had an overview of the Collabratec tool available to all IEEE members. I led a "live" hands-on outline of Collabratec tool tab by tab allowing participants to follow along and ask questions on the spot. The meeting was very good, and everyone learned new features of the tool. The TEMS chapter presentation led to an article for Wavelength's titled "Collaborate 101".

TEMS Future Chapter Activities

Chapter 10 is working on bringing back past speaker Al Gunther for the fall talking about his own transition from traditional workplace employment to becoming an independent consultant titled "Consulting Entrepreneur 101". Al goes over the do's and don'ts of becoming a consultant and where you can get support while working independently. This presentation has been well received in the past and I continue to get requests to bring Al back for more consultant experiences.

Another TEMS chapter meeting presentation in the early stages will talk about enhancing your skills via "free" continuous online learning. I was able to take a four-part series on the topic of "What Great Teams do Great". This was an on-line book club sponsored by Ann Arbor Spark and facilitated by Humanergy. We will review & discuss Universities and professional organizations (like IEEE) who offer continuous learning for their membership.

TEMS Past Chapter Activities

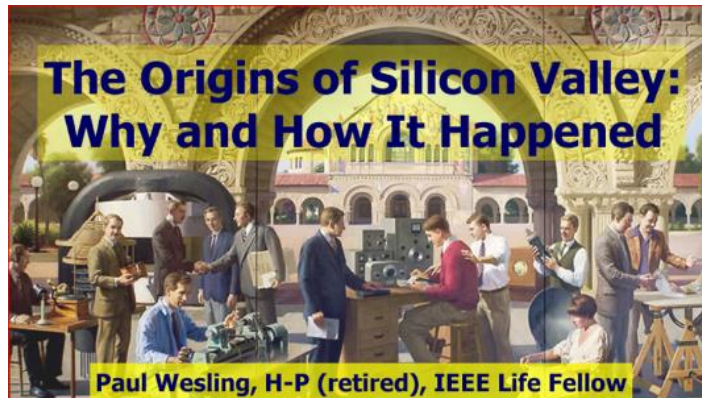
Our biggest chapter accomplishment was being co-sponsor for TEMSCON 2020 held in June of 2020. Originally TEMSCON was to be held in the Detroit Metro area, but like everything else we had to pivot due to COVID and become a virtual event. Focus of the conference was on "Managing the Development of Connected Systems". The virtual event was



held over several days and different time zones.

TEMS chapter (August 2018) gave a presentation on the evolution of office environment from traditional office to today's Open office. I presented and lead the discussion on the impact on workers old and new. Studies by consultants looked at the concern workers had about an open office layout. We looked the positive and negatives of an open office environment thru several studies completed by companies & researchers.

Way back in Spring of 2019 speaker Paul Wesling give a talk about "The Origins of Silicon Valley: Why & How it Happen". Paul discussed the key events and people whose work generated electrical applications benefitting the growth of technology. How initial projects were seeded and an emerging process to develop their ideas grew over time. We had a crowd lecture hall held onsite on the UofM engineering campus.



Please Support & Grow Chapter 10 TEMS

I would like to invite TEMS members and all S.E. Michigan IEEE members to join us at a future chapter meeting. All meetings are announced through IEEE VTOOLS events calendar. Also, you can reach out to me via COLLABRATEC message to get more information on TECHNOLOGY & ENGINEERING MANAGEMENT SOCIETY Chapter 10.

We have upcoming chapter elections happening this fall and I invite current and new members to volunteer and become a chapter officer. All chapter positions are open this election. Please contact me if you would like to discuss joining TEMS and become an active chapter member. I'm always looking for members to join our executive team.

Best Wishes in your future endeavors,
Ray Sasinowski Chapter-chair
Mark Robinson Vice-chair

Robotics Event

Robofest eNewsletter 09-23-21

- (1) Robofest Online World Championship Award Ceremony
- (2) Robofest 2022 World Championship Season Tentative Dates
- (3) Site Host Opportunity Returns for 2022

Note: All times are listed in EDT unless noted

(1) Robofest Online World Championship Schedule and Webinar Links

We are wrapping up **2021 Robofest Online World Championship (ROWC)** events for the season. We invite all to join us for the Junior and Senior Game "œStackRolls" events this weekend and the Closing and Awards Ceremony on Saturday, October 2. Start time of each event is 8:00am EDT/12PM GMT (Greenwich Mean Time):

Sr Game	Friday 9/24	https://ltu.zoom.us/webinar/register/WN_Pv3JI74xST-oPJILLlwYMw
Jr Game	Saturday 9/25	https://ltu.zoom.us/webinar/register/WN_4wKg_w3TSb6lUneU5H-2lQ
Awards Ceremony	Saturday 10/2	https://ltu.zoom.us/webinar/register/WN_p0LhMnQ-QfWYelaLj75khw

(2) UPDATED 2022 Robofest Season Tentative Dates

We have made some adjustments to the start of the 2022 Robofest season timeline to allow the Robofest Staff a much-needed break and to finish up the end-of-season assessment.

UPDATED: Release of the International Game Rules	December 6, 2021
UPDATED: Kickoff meetings to review rules	December 8, 2021 and January 15, 2022
UPDATED: International Qualifiers Begin	January 2022
Release of final US Official Game Rules	January 15, 2022
Warmup Competition/Judge Training on LTU Campus	Feb 12, 2022
US Qualifiers Begin	February 26, 2022
World Championship at LTU*	May 12, 13 and 14, 2022

*We are also discussing the possibility of hosting an in-person AND online World Championship for teams that may not yet be able to travel to Michigan in May 2022.

(3) Site Host Opportunity Returns for 2022

Robofest is seeking site hosts for the 2022 Competition Season for Robofest Game and Exhibition Qualifiers as well as BottleSumo and RoboParade Open events in the spring of 2022. Returning Site Hosts may contact the Robofest office at spalonis@ltu.edu to start the registration process. Online forms and FAQ information for prospective Site Hosts will be available in Mid-October.

Lawrence Technological University / Robofest / J-233 / 21000 W. Ten Mile Rd, Southfield, MI 48075

Dr. Christopher Cartwright, Director, cwright@ltu.edu

Elmer Santos, Assistant Director, esantos@ltu.edu

Shannan Palonis, Coordinator, spalonis@ltu.edu

Pam Sparks, Coordinator, psparks@ltu.edu

Dr. CJ Chung, Advisory Board Chairperson, cchung@ltu.edu

<http://www.robofest.net>

<http://facebook.com/robofest>

Embedded Systems Intro1

IEEE SE Michigan Computer Society
Presents
Introduction to Embedded Systems (part 1 of 2)



• Embedded System:

"Embedded" means hidden inside so one can't see it.
"System" means multiple components interfaced
Together for a common purpose.



This is a prelude to the [Embedded Systems Workshop 2021](#) (see this link for more details).

An introductory overview in two parts for those who wish to enter this field and also obtain maximum knowledge gain from the ESW 2020 event. Some knowledge of engineering, computer programming and engineering domain knowledge is expected.

All those who attend and complete both parts of this, are encouraged to register and attend [ESW 2021](#).

Speaker Bio:

Sharan Kalwani is an industry technology specialist with 25+ years of experience. Sharan has degrees in both Engineering and Computer Science. He has worked in many diverse areas. He is a senior member of IEEE, Emeritus member of Michigan!UNIX/user group (mug.org), member of Association for Computing Machinery (ACM) and also leads the SIG-Linux section of SEMCO. He enjoys teaching, holds an Adjunct Faculty position at local educational sites. He has published one book and is now working on his second. He is a recipient of the IEEE MGA Achievement award for his contributions to IEEE activities in 2018

At Glance

- **When:**
Date: October 2nd, 2021
Time: 08:00 – 10:00 AM
(EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by
IEEE
SE Michigan
Computer Society
Chapter

***Pre-Registration Required!**

<https://events.vtools.ieee.org/event/register/275083>



IEEE Southeastern Michigan Section

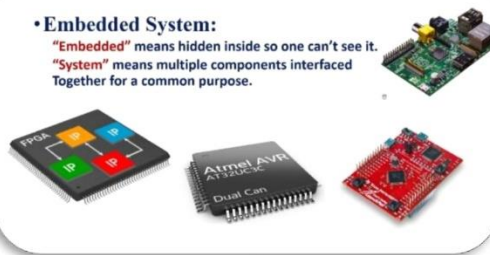


Embedded Systems Intro2

IEEE SE Michigan Computer Society
Presents
Introduction to Embedded Systems (part 2 of 2)



• **Embedded System:**
"Embedded" means hidden inside so one can't see it.
"System" means multiple components interfaced
Together for a common purpose.

**At Glance**

- **When:**
Date: October 9th, 2021
Time: 08:00 – 10:00 AM
(EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by
IEEE
SE Michigan
Computer Society
Chapter

Speaker Bio:

Sharan Kalwani is an industry technology specialist with 25+ years of experience. Sharan has degrees in both Engineering and Computer Science. He has worked in many diverse areas. He is a senior member of IEEE, Emeritus member of Michigan!UNIX/user group (mug.org), member of Association for Computing Machinery (ACM) and also leads the SIG-Linux section of SEMCO. He enjoys teaching, holds an Adjunct Faculty position at local educational sites. He has published one book and is now working on his second. He is a recipient of the IEEE MGA Achievement award for his contributions to IEEE activities in 2018

***Pre-Registration Required!**

<https://events.vtools.ieee.org/event/register/275084>



IEEE Southeastern Michigan Section



IEEE Day 2021



About IEEE Day

IEEE Day is celebrating the first time in history when engineers worldwide and IEEE members gathered to share their technical ideas in 1884. Worldwide celebrations demonstrate the ways thousands of IEEE members in local communities join together to collaborate on ideas that leverage technology for a better tomorrow.

Theme

Now engraved in its essence, the IEEE Day's theme is: "Leveraging Technology for a Better Tomorrow". While the world benefits from what's new, IEEE focuses on what's next.

Date

IEEE Day is an annual event celebrated on the first Tuesday in October, IEEE Day 2021 will be held on 5 October. Celebrations can be held between 1 October and 17 October. To this end, we are inviting all members interested in helping to celebrate IEEE Day 2021 to add their names to this volunteer link and become an IEEE Day Ambassador. All IEEE members i.e. Senior member, Life member, Fellow, YP, students,... all can celebrate the day. Once can conduct photo, video contests, any local event which shows the value of IEEE. If you would like to see some of the events done last year during the pandemic – check out: <https://ieeeday.org/eventslist-2020/>.

Call for Ambassadors!

IEEE Day 2021 team is looking for enthusiastic Ambassadors from all of it's organizational units. This Ambassador program will provide an opportunity to volunteer with an international team for global exposure. Main job of an ambassador is to promote IEEE Day 2021 in their respective student branch, chapter, affinity groups and sections.

The CALL FOR AMBASSADORS program is now open for all the active IEEE Members! An Ambassador has to have active IEEE Membership for the year of 2021. So if you think you are interested, do not wait for the deadline. Go ahead and If you have any query, do not hesitate to contact [Sharan Kalwani](#).

IEEE Day 2021 has lots of social media activity. Click on any of the icons below for the latest.

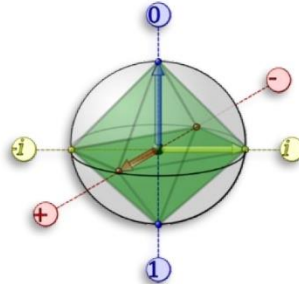


Quantum Computing

IEEE SE Michigan Computer & Education Society

Presents

Introduction to Quantum Computing



Quantum computing is the exploitation of physical properties of quantum states, such as superposition and entanglement, to perform computation. The devices that perform quantum computations are known as quantum computers. They are believed to be able to solve certain problems, such as integer factorization (used in cryptography), substantially faster than classical computers. Quantum Computing is expected to grow in the next few years as the field shifts toward real-world use in pharmaceutical, data security and many other applications.

Speaker Bio:

Alex Khan is the Principal Consultant and Advisor Quantum Computing at Aligned IT, LLC. He is an active contributor to the rapidly growing quantum computing ecosystem advising various quantum startups including QuSecure and is now writing a quantum computing book to be published by Packt in 2022. He is currently leading a joint quantum security project between QuSecure and Harrisburg University where he is a Corporate Faculty member in quantum computing. He is a former Health IT executive and has a BSME from Purdue University, MSME from Kansas State University and an MBA from Duke University. He has a certificate in quantum computing from MIT

At Glance

- **When:**
Date: October 8th 2021
Time: 12:00 PM – 1:30 PM (EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by
IEEE
SE Michigan
Computer Society
&
Education Society
Chapters

***Pre-Registration Required!**

<https://events.vtools.ieee.org/m/280195>



IEEE Southeastern Michigan Section



Officer Elections

Elections in 2021:

Because of the 'staggered terms' that were enacted with the 2015 elections, this year we will elect our **Section:** Secretary-elect and Treasurer-elect for their training terms.

Affinity Groups and Technical Chapters:

Officer elections are held each year for all of the Section's 4 Affinity Groups and 17 Technical Chapters (geo-units). □ Chair, □ Vice-Chair, □ Secretary, □ Treasurer,

The pre-election candidate registration process received less attention from members this year, and we will have a great number of **"write-in" positions**. We encourage anyone interested in 'learning-by-doing' who wishes to develop their management and team building skills to step up to an officer position, and help organize and run one of our technical chapters or affinity groups, in one of the otherwise vacant officer positions.

2021 Election Schedule:

Our current plans for the election schedule this year are:

October 10: Open Ballots for all positions.

October 31: Close all Ballots and correlate results.

This will give everyone three weeks to vote.

Requirements:

Note that holding office in any Affinity Group (AG), or Technical Chapter (Ch), requires membership in the AG or Ch., in addition to membership level above Student level.

Which Chapter is mine?

It has come to our attention that many members may know which Affinity Group or Technical Society they have joined but, may not know which local Southeastern Michigan Geo-unit supports members of that particular organization. To help unscramble that situation, Sharan Kalwani created the **"ORG UNITS cheat sheet"** which can be found on Page 20 of this month's Wavelengths. The easy way to use it is to go to the page, and do a 'search' <Control F> and enter one of the title words for the Society you are interested in finding. The system should put you on the proper spot in the listing.

What about Students???

Student members are encouraged to seek offices in their local university Student Branches, and gain experience in those organizations. Students may not hold office in a Section geo-unit.

(We want you to concentrate on getting that all-important 1st degree before becoming too involved with Section level activities.)

Candidate & Officer Training

A series of Officer Training events are planned to be broadcast early in November. Since in the past these were only minimally attended, the Nominations & Appointments Committee is considering alternatives to recommend to the Executive Committee for those who have been elected before they need to 'take office'. Watch for a notice in the November issue of Wavelengths.

If an officer is unable to attend a training session, the option remains to look for the voice over power point training materials on the SEM webpage at:

<http://sites.ieee.org/sem/about-sem/training/>

Voice over Power Point Training:

Many on-line virtual training modules are available through the SEM Website Training page at:

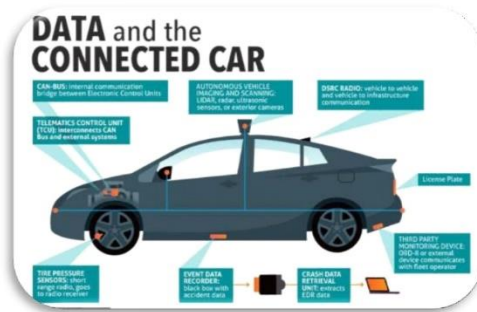
<http://sites.ieee.org/sem/about-sem/training/>

More in depth training may be found on the IEEE Center for Leadership Excellence site located at:

<https://ieee-elearning.org/CLE/>

Connected Vehicle Data

IEEE SE Michigan Computer Society Presents Connected Vehicle Data



Connected Vehicle Data has given a new meaning to our relationship with customers at Ford Motor Company. In our Ford+ plan, we pursue an always on approach to our relationship with customers. In addition to customer facing connected services, the Product Development team at Ford also uses Connected Vehicle Data to continuously improve our products – the underlying powertrain and various propulsion components. In this talk, we will highlight our work with data science using connected vehicle data to provide optimized design and prognostics for electric vehicles. Connected Vehicle Data is used in the design of future components that are optimized according to usage learnt from connected vehicle data.

Speaker Bio:

Khalid is a Technical Expert in Connected Vehicle Analytics and Machine Learning at Ford Motor Company. His work involves using connected vehicle data for powertrain system sizing and quality needs. He leads the Product Development Connected Vehicle Analytics User Group, helping the proliferation of the use of connected data in PD with a focus on electric vehicles. His education includes a Ph.D. from the University of Michigan, Ann Arbor. He is also currently pursuing an Executive MBA at the Ross School of Business.

At Glance

- **When:**
Date: October 15th, 2021
Time: 04:00 – 6:00 PM
(EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience:** OPEN to ALL*

Sponsored by
IEEE
SE Michigan
Computer Society
Chapter

***Pre-Registration Required!**

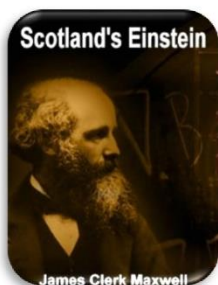
<https://events.vtools.ieee.org/m/279786>



IEEE Southeastern Michigan Section



James Clerk Maxwell

*IEEE SE Michigan Computer Society
Presents A Video Documentary on
The life of James Clerk Maxwell*

James Clerk Maxwell is responsible for many of things that dominate the modern world. He is the man who inspired Albert Einstein and his discoveries helped in the development of electricity, radio, television and so much more. Many physicists regard Maxwell as the 19th-century scientist having the greatest influence on 20th-century physics. His contributions to the science are considered by many to be of the same magnitude as those of Isaac Newton and Albert Einstein. Despite this Maxwell remains largely to the general mainstream population.

He used his genius to work across a wide range of subjects in the 19th century - astronomy, physiology, color, optics, thermodynamics, electricity and magnetism - and changed many of them beyond recognition.

Running time: 59 minutes

At Glance

- **When:**
Date: October 21st, 2021
Time: 04:00 – 6:00 PM
(EST/EDT)
- **Where:**
Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

*Sponsored by
IEEE
SE Michigan
Computer Society
Chapter*

***Pre-Registration Required!**

<https://events.vtools.ieee.org/m/279664>



IEEE Southeastern Michigan Section



Antenna Time

Ham Radio Article: It's getting Cooler and Time to Get Ready for the Fall:

Yes this is my annual message to everyone to get off your butts and refurbish your antennas before the cold weather sets in. Here is a list of things to look at:

1. Do an SWR sweep of all your antennas with a Nano VNA or Antenna Analyzer or even just an SWR meter. You can buy a NanoVNA for less than a hundred bucks on Amazon these days and they will tell you a huge amount about your antenna when sweeping them. It is probably one of the most versatile tools you can have as a ham for analyzing your antenna's health.
2. Physically go out to your antenna(s) and look at them and see if there is any corrosion on the connections. Especially if you are using aluminum tubing. Make sure you have a thin coat of Jet Lube SS-30 or equivalent spread out between the connections. This is almost pure copper and is highly recommended by antenna manufacturers to maintain connectivity between element pieces. I have used it on my Butternut vertical for over 30 years and it is still near new and works perfectly. I clean the aluminum and redo the connections every couple of years.
3. Look at your tower for loose parts and repair them immediately. If it has popped some rivets, replace them and make sure it is safe. If the cross braces are loose, they will fail eventually and that would be a catastrophe. Maintain your masts and towers properly according to the instructions from the manufacturers.
4. If something needs to be painted, paint it with some UV resistant paint. Make sure you prime the surfaces first so the paint will adhere.
5. Check your pulleys for sticking or gunge on the roller. Ensure they are freewheeling and not all rusted out. I use brass pulleys on all my wire antennas.
6. Check the halyards you are using for abrasions and fading. If the rope you are using is fading it means that it is being affected by the sun. Replace the rope before it becomes brittle and prone to breaking. I use only Dacron or equivalent rope. It can be purchased from GPS Central Radio World in Calgary for good prices or if you need large quantities go to <https://www.mapleleafropes.com>
7. Check your insulators for cracks and replace them. You can buy new egg insulators from GPS Central Radio World in Calgary <https://www.gpscentral.ca/accessories/mfi/mfi-16c01.html>. You can get a six pack for \$9.00. That's a good price for glazed insulators.
8. Check the lead in from the antenna to the shack. Make sure the outside of the coax isn't cracked or broken. Disconnect the ends and check for discoloration around the connector which might indicate water has gotten into the shield. Using the TDR function on your antenna analyzer check the coax cable for breaks or anomalies or bad connections.
9. Check your baluns and their cases or boxes for signs of rust at the coax connection. If you see rust around the connector, it may indicate that water has gotten into it.
10. Last but not least, make sure you wrap all your connections, PL259's, with some rubber vulcanizing electrical tape such as Magic Wrap. It comes in 1" by 16' lengths at Home Depot, but is the best I have found for wrapping connectors. It is expensive, but worth it. I have never had it leak and easy to take off with just a swipe of a box cutter. One thing to remember with this tape is once you take it out of the package, store it in a sealable container because it will dry out and be a pain to use if you don't.

So get out there and do your antenna maintenance while we still have some warm summer and fall days ahead of us. The benefits of doing so will be far reaching and it is so much easier to do it when it is warm than it is when it gets cold.

Tom Buchanan VE6ARG was originally licensed in Vancouver, BC in 1965 and became an Advanced in 1968. Served in RCN from 1962 sailing the Pacific and with broken time got out finally in 1969. While serving he held VE0NH on HMCS St. Croix. He spent most of his career in electronics and process control retiring in 2002 from 3M Corporation as a Technical Services Manager in Vancouver.

Tom is now a professional photographer and writer. He creates biographical stories for senior citizens and has a blog www.seniorcitizenfun.com. You can see his photographic work at www.tombuchananphoto.com

ORG UNITS cheat sheet**Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)**

Consultants Network Affinity Group: (CN40035)

Life Members: (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 SocietyChapter: 04 (CH04050) (AP03) Antennas and Propagation Society,
(ED15) Electron Devices Society,
(MTT17) Microwave Theory and Techniques Society,

Chapter: 05 (CH04055) (C16) Computer Society

Chapter: 06 (CH04056) (GRS29) Geosciences and Remote Sensing Society

Chapter: 07 (CH04057) (PE31) Power Engineering Society,
(IA34) Industrial Applications Society

Chapter: 08 (CH04088) (EMC27) Electromagnetic Compatibility Society

Chapter: 09 (CH04087) (IE13) Industrial Electronics Society,
(PEL35) Power Electronics Society

Chapter: 10 (CH04142) (TEM14) Technology and Engineering Management Society

Chapter: 11 (CH04099) (EMB18) Engineering in Medicine & Biology

Chapter: 12 (CH04103) (CS23) Control Systems Society

Chapter: 13 (CH04113) (E25) Education Society

Chapter: 14 (CH04115) (RA24) Robotics And Automation Society

Chapter: 15 (CH04144) (NPS05) Nuclear Plasma Sciences Society

Chapter: 16 (CH04125) (CIS11) Computational Intelligence Society,
(SMC28) Systems, Man and Cybernetics Society

Chapter: 17 (CH04128) (NANO42) Nanotechnology Council

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)

University Of Detroit-Mercy: (STB00531)

Michigan State University: (STB01111)

University Of Michigan-Ann Arbor: (STB01121)

Wayne State University: (STB02251)

Lawrence Technological University: (STB03921)

Oakland University: (STB06741)

Eastern Michigan University: (STB11091)

University of Michigan-Dearborn: (STB94911)

Curated & Maintained By

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

Activities & Events

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

SEM Wavelengths:

<https://r4.ieee.org/sem/about-sem/sem-history/wavelengths-magazine-archive/>

This is our 'Active' event listing site where everyone should look first to see what events are scheduled for our Section in the near future.

SEM Web Calendar:

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

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

SEM Web Meetings:

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

Select "SEM Meeting List" button in the left-hand column.

vTools Meetings:

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

Select "Schedule a Meeting" button in the left-hand column of buttons.

Other 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: You may need to copy the URL and paste it into your browser address bar.**

Send details to: wavelengths@ieee-sem.org OR letters@ieee-sem.org

.....

Michigan Institute for Plasma Science and Engineering: Seminars for the 2021-2022 academic year:

https://mipse.umich.edu/seminars_2122.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/ea/eaa-chapters/find-an-eaa-chapter>

Robots

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

Science Fiction Conventions

<https://2021.penguicon.org/>

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

Mad Science

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

ESD PE Review Class

<https://www.esd.org/programs/pe/>

Maker Faire:

<https://swm.makerfaire.com/>

Executive Committee

The **SEM Executive Committee** is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2019/2020/2021 arrangement of communications links designed to provide inter-unit coordination and collaboration.

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

If you wish to attend, or just monitor the discussions, please contact **Bhupinder Mavi**, the section secretary at: bmavi@outlook.com, and request to be placed on the distribution list for a monthly copy of the agenda and minutes. More meeting details are available on the next page of this newsletter.

Other Meetings:

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

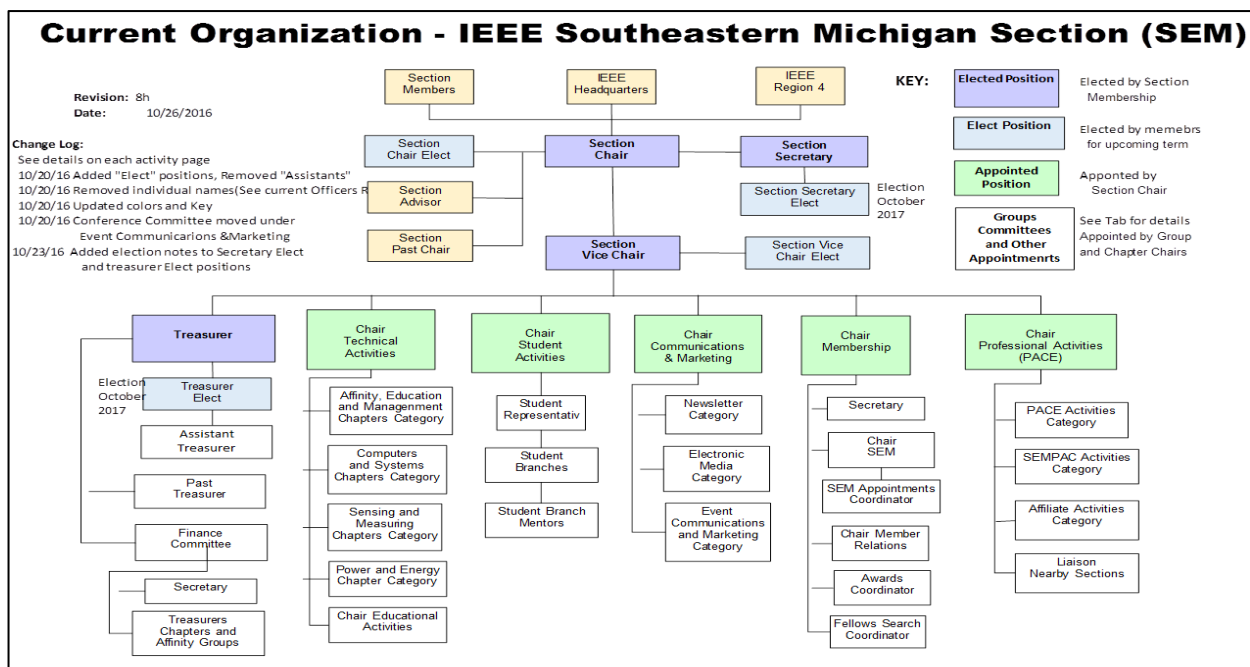
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

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

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

Bhupinder Mavi - SEM Secretary 2021

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



ExCom Meeting Schedule**NOTE: All SEM members are invited to attend ALL ExCom (executive committee) meetings:**

Below is the 2021 schedule for the Section ExCom meetings with links to add the events to your calendar. It is important that at least one person from each Chapter/Affinity Group attends each scheduled ExCom meeting. Information on each Face-to-Face (in-person) Meeting will be sent out once the venue is confirmed.

Please mark your calendars for the 2021 meetings. Or, link your personal calendar to the SEM Web calendar.

Section Administrative Committee (ExCom) Meeting Schedule for 2021:

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

2021 Meeting Schedule:

<i>ExCom Meeting</i>	<i>Date & Time</i>
SEM Section ExCom Monthly Meeting (Teleconference) for October 2021	10/7/2021 18:30
SEM Section ExCom Monthly Meeting (Teleconference) for November 2021	11/4/2021 18:30
SEM Section ExCom Monthly Meeting (Teleconference) for December 2021	12/1/2021 18:30

Bhupinder Mavi
SEM Secretary 2021
bmavi@outlook.com

Editorial Corner

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

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

OR

sharan.kalwani@ieee.org

d.romanchik@ieee.org

nilesh.dudhaia@ieee.org

k.williams@ieee.org

cjohnson@ieee.org

lunnmalcolm@me.com

akio@emcsociety.org

We rely on our officers and members to provide the ‘copy’ that we finally present to readers of the newsletter.

The **Wavelengths Focus Plan and Personal Profiles** plan shown in the matrix below is presented to ensure coverage of section activities and events.

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

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

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

Quote:

“If a tree falls in a forest and no one heard 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
Editor, Wavelengths,
2018~2019~2020~2021

Wavelengths Annual Publication Plan for Articles

Month	AG's	Ch's	Ch's	SB's	Special Notice	Reporting Events	Monthly Focus	Awards
Jan		1		OU	New Year Officers	Officer's Welcome	The Year Ahead	
Feb	Cons	2		MSU	Science Fair Judges	National Engrs Wk	Surviving Winter	
Mar		3	13	EMU	Elections - Prep			
Apr		4		U/M-D		ESD Gold Awards	Chapter Focus	
May	Life	5	14			Science Fair		
Jun		6					Leadership Skills	
Jul		7	15				Students Issues	
Aug	WIE	8			Nominations Call		Womens Issues	
Sep		9	16	LTU	Ballots	Engineers Day?	Professional Skills	
Oct		10		U/M-AA	Elections!	IEEE Day		
Nov	YP	11	17	WSU	Election Results	New Fellows		
Dec		12		U/D-M	IEEE-Com Apmts.		Happy Holidays	R4 Nom

Wavelengths Annual Publication Plan for Personal Profiles

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



Web & Social Sites**SEM Website**

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

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

Section Website Event Calendar

(Select the “SEM Calendar” button - top row)

SEM Facebook Page

(Select the “” button under the top row)

SEM LinkedIn Page

(Select the “” button under the top row)

SEM Twitter Account (new)

(Select the “” button under the top row)

Or try <https://www.twitter.com/ieeesemich>

SEM Officers:

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

Section Officers**Section Chair**

David Mindham

Section Vice-Chair

Sharan Kalwani

Section Secretary

Bhupinder Mavi

Section Treasurer

Colleen Chmielewski

Standing Committees:**Section Adviser**

Don Bramlett

Wavelengths Editor

Sharan Kalwani

Chair Educational Activities

Christopher Guirlanda

Chair Finance

Sharan Kalwani

Chair Membership Development

Sharan Kalwani

Chair Nominations & Appointments

Kimball Williams

Chair Professional Activities (PACE)

Sharan Kalwani

Chair Student Activities

Mel Chi

Student Communications Coordinator

Michael Anthony

Student Representative**Chair Technical Activities**

Jeffery Mosley



IEEE Southeastern Michigan

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

finally found the square root!



Advertising Rates

SEM Website & Newsletter

Leadership Meetings

SEM Executive Committee Monthly Teleconferences:

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

SEM Executive Committee Face-to-Face Meetings:

- Once every Qtr. Find the location, and Registration at:
<http://bit.ly/sem-ieee>

SEM Standing Committee Meetings:

SEM Affinity Group Meetings:

SEM Technical Society/Chapter Meetings:

SEM University Student Branch Meetings:

- Meeting schedules are announced on SEM Calendar
<http://r4.ieee.org/sem/>
(Select the “SEM Calendar” button in the top row.)
- Registration for all at:
<http://bit.ly/sem-upcoming>