Wavelengths

Volume 61 – Issue 7

Contents

Upcoming Events

We have a number of events coming up this month. Be sure to check out the Section Website: **https://r4.ieee.org/sem**
As well as vtools:

IEEE Region 4 - SE Michigan Section Upcoming

Listed below are some of the events, FYI.

Event	Date	Time
Wireless Security in the Age of Ubiquity	06 Jul 2021	06:00 PM
Ch8: AdCom Teleconference	08 Jul 2021	11:00 AM
Grid Edge Technology: Teco & Emera Technologies Partner On Residential Implementation Of The Block Energy Smart Platform	08 Jul 2021	12:00 PM
The Technology Law Issues that Should Keep You Up at Night	09 Jul 2021	04:00 PM
A history of Battery Electric Vehicles (BEV)	13 Jul 2021	05:30 PM
SEM Section ExCom Monthly Meeting (Face-Face)	14 Jul 2021	06:30 PM
Optimizing EMC and RF Test Chamber Design and Performance	15 Jul 2021	05:30 PM
Chapter 1 ExCom Meeting	15 Jul 2021	07:00 PM
Building Effective Security for Distributed Energy Resources	23 Jul 2021	04:00 PM

Note: All times are EST/EDT unless otherwise marked. Accurate at the time of going to press. If any events are missed do kindly bring them to the attention of wavelengths@ieee-sem.org. Thank you!

Chair Person's Column

I'm extremely excited to announce that our Executive Committee will be holding its first in person meeting since January 2021 in July. The meeting will be held at the Engineering Society of Detroit offices in Southfield. We will be following all guidelines for holding in person events and look forward to holding a safe event.

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.

Over the course of the last year, our Chapters and Affinity Groups have held amazing virtual events. This month is no exception. These events have allowed us to reach audiences that wouldn't be able to attend events in person. The events and our group continues to thrive and expend despite the challenges of the last here. Looking forward, I suspect many of our events will have hybrid options or be fully online, but we will still try to have networking and in person events to try and reach everyone's interests.

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

Building DER security

IEEE SE Michigan

Presents

"Building Effective Security for Distributed Energy Resources (DER)"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Securing our energy grid is of the highest critical importance, as many recent events have demonstrated. In this session, Mariana Hentea will be introducing to energy professionals, engineers, etc., about the design, implementation, and maintenance of a security program for distributed energy resources (DERs), smart grid, and industrial control systems. Anyone who is involved with DERs and provides security, should be up to date and strive to maintain current understanding of the specific requirements of industrial control systems and real-time constrained applications for power systems. Mariana will touch upon many topics in this regard.

Speaker Bio:

Mariana Hentea earned her PhD and MS in Computer Science, MS in Computer Engineering, and BS in Electrical Engineering. Her research is focused on Smart Grid and DER systems, real-time systems security and performance, network security design and architecture, and use of AI techniques for information security management, security risk management, network management, and process control. A member of IEEE Standards Association, she promotes Security and Privacy awareness to Engineers, managers, regulators, and consumers. She is a member of IEEE Smart Grid, IEEE Power & Energy Society, IEEE Computer Society, ISC2 and ISSA organizations. Dr. Hentea holds a CISSP certification from ISC2.

At Glance

- **When:**
  Date: July 23rd, 2021
  Time: 4:00 – 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, Education Society Chapters

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/272810

IEEE COMPUTER SOCIETY

IEEE Advancing Technology for Humanity

Technical Activities Report

2021 IEEE SE Michigan Section Geo-unit Status (Till June 30th)									
Ch's & AG's	Ave Tech Mtg. Attend	Ave Tech Mtg Guest	#L31 -Technical	#L31 -Admin	#L31 Professional	#L31 -Other	Geo-Unit Name	# Unreported	Total Mtgs
Cnslt	0	0	0	4	1	0	Consultants Network	0	5
LIFE	0	0	0	0	0	0	Life Members	0	0
WIE	0	0	0	2	2	0	Women In Engineering	4	4
YP	0	0	0	0	0	0	Young Professionals	0	0
1	0	0	0	0	0	0	Circuits & Systems, Signal Proc., Info Th.	2	0
2	40	14	2	1	0	0	Vehicular Technology	0	3
3	103	37	3	0	0	0	Aerospace & Elec. Sys., Communications	2	3
4	29	9	2	0	0	0	Trident (Ant, Elect Dev., uWave, Photo)	0	2
5	32	1	27	4	5	2	Computers	0	38
6	0	0	0	0	0	0	Geoscience & Remote Sensing	0	0
7	40	5	6	1	0	0	Power Engineering, Industrial App.	0	7
8	88	40	9	5	0	0	Electromagnetic Compatibility (EMC)	1	14
9	55	27	1	1	0	0	Power Electronics, Industrial Electronics	0	2
10	4	0	2	1	0	0	Engineering Management	0	3
11	0	0	0	0	0	0	Eng. in Medicine & Biology	0	0
12	0	0	0	0	0	0	Control Systems	0	0
13	37	2	13	1	2	0	Education	1	16
14	0	0	0	0	0	0	Robotics & Automation	0	0
15	69	43	4	0	0	0	Nuclear Plasma Science Society	1	4
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	26	2	2	5	3	1	SEM (Section)	7	11
Tot	542	196	74	25	13	3	NOTE: Highlight Green = Active	18	115
		36%					NOTE: Highlight clear = Concern		

Congratulations to the members and leaders of Chapters 2,3,4,5,7,8,10,13,15 & 17. You have met and in many cases exceeded IEEE goals for hosting technical and professional meetings. That represents the achievement of almost 60% of our Section goals as well.

Our Section still needs to support our Affinity Groups and underperforming technical chapters and societies. I am hoping to reach 100% of our technical meeting goals by this Fall. If you are available and wish to help please contact me at jvmosley@ieee.org. Thank you and have a great 4th of July weekend.

Jeff Mosley
TAcom Chair
IEEE R4 SEM

Giving Feedback

You disagree with something someone above you said or did. How do you tell the person without actually telling them?

Lots of people think they can't give direct feedback when talking to someone at a higher level. I'm here to tell you that that's not true. The ability to speak freely has little to do with titles and more to do with the quality of your relationship. When you're comfortable with people and have mutual trust, you can say (almost) anything, regardless of titles and levels. But that's not the true purpose of today's blog. So I'm going to stick to the topic at hand –what to say when you feel like you can't say very much.

When you don't have the relationship to say what you really think, manage up by asking a question instead. Engage the person in a conversation. At some point during the conversation, you'll be able to say what you think.
For example, you question a decision but don't want to overtly say you question the decision.
Here's how the conversation could go:

"I wasn't involved in the conversations to select our new payroll software. Can you give me a little history? What had us choose our current provider?"

"What software features were important when selecting the software?"

"What problem were we trying to solve that drove the need to make a change?"

"What do you like about the software we picked? What don't you like?"

** Obviously this is meant to be a discussion, not an interrogation. Ask one question at a time and see where the conversation goes. You may ask all of these questions and you may ask only one.

The point is to gather more information. Manage up by seeking to understand before you express an opinion. As the conversation progresses, you might see opportunities to express your point of view.
Here are three suggestions if you're going to practice the technique of asking questions as a way to manage up and eventually give feedback:

1. When you ask a question, come from a place of genuine curiosity. If you aren't truly curious and asking questions is just a technique you found in some blog, it will show.
2. Watch your tone of voice. If you can safely add the words "you dummy" to a question, you have a tone issue.
3. Be patient. Asking questions may feel easier than giving direct feedback, but it also takes more patience and time.

As the conversation progresses, you might be asked for your opinion. Before saying what you think, remember, no one likes to be told that s/he is wrong. And the person you're talking to likely had a hand in making the decision you're questioning. Be careful not to judge. Instead of overtly judging, consider saying something like:

"I think the new system has potential and also has some limitations. Do you want feedback as we use the system and get to know it better?"

"What specifically would you like feedback on? What are you not looking for feedback on?"

"What's the best way to provide input and to whom?"

You can speak more freely when you have the relationship to do so and have permission. Until you have both, earn the right to give feedback by asking questions from a place of genuine curiosity. And only provide your point of view when you're asked and are certain you have all the information to defend your position.

About Shari Harley
Shari Harley is the founder and President of Candid Culture, a Denver-based training firm that is bringing candor back to the workplace, making it easier to give feedback at work. Shari is the author of the business communication book How to Say Anything to Anyone: A Guide to Building Business Relationships that Really Work. She is a keynote speaker at conferences and does training throughout the U.S. Learn more about Shari Harley and Candid Culture's training programs at: www.candidculture.com

Circuits Symposium 2021

IEEE Advancing Technology for Humanity

CAS

2021 IEEE 64th International Midwest Symposium on Circuits and Systems

~~Lansing, Michigan, USA~~ | Aug. 9-11, 2021

Now Fully Virtual & On-line!

Greetings from the IEEE CAS MWSCAS 2021,

We have extended the submission deadlines in response to numerous requests. See Important Dates below.

We warmly invite you to submit original contributions to the 2021 Symposium. *This year's theme is artificial intelligence (AI) and autonomous circuits and systems. Please visit the website mwscas2021.org for current information.*

MWSCAS2021 General Chair
Fathi M Salem
& the Organizing Committee of MWSCAS 2021

Important Dates (submission deadlines)

April 5, 2021 - Special Sessions Proposals

April 12, 2021 - Regular Paper (Lecture & Posters)

May 3, 2021 - Tutorial Session Proposals ((including Live Demos)

May 24, 2021 - Notice of Paper Acceptance

June 7, 2021 - Camera-Ready Paper Due

Circuits Symposium contd.

The IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) is the oldest, and now the flagship, Circuits and Systems symposium. The 64th meeting of the MWSCAS is being hosted by Michigan State University, in East Lansing, Michigan, USA, and technically co-hosted with Wayne State University in Detroit, Michigan, from Aug 8-11, 2021. The MWSCAS 2021 has pivoted to fully virtual symposium to add a sense of certainty. Live presentations will be supported and managed by the convenient CONFlux virtual platform. It will include oral and poster sessions, a student paper contest, keynote addresses, regular and special sessions, and tutorials presented by world experts in wide range of circuits and systems topics.

Prospective authors are invited to submit a full paper (4 pages) describing original work through the on-line submission system for the conference through a link on the MWSCAS 2021 conference web- site. Papers should follow the formatting instructions given in the author's kit on the website. Papers will be accepted for either lecture or poster presentation. Review criteria for both lecture and poster presentation formats are identical; the presentation format will be chosen to facilitate topical session grouping and time constraints. Students are encouraged to participate in the Best Student Paper Award contest. Submissions of demos and proposals for tutorials and special sessions are also solicited. Accepted papers will be published in the MWSCAS 2021 Proceedings subject to advance registration of at least one of the authors at the author rate. All papers published in the MWSCAS 2021 Proceedings will be submitted for inclusion into IEEEXplore.

Moreover, three special issues will be streamlined from papers presented and appearing in the proceedings. Two cutting-edge special issues will be published in the IEEE transactions on circuits and systems (CAS_I and TBioCAS) based on extended versions of selected symposium papers; and a special issue will be published in the Springer Journal of Analog Integrated Circuits and Signal processing also based on extended versions of selected symposium papers.

Chapter 5 Profile

SE Michigan Computer Society Chapter

Welcome to the Southeastern Michigan Chapter of the IEEE Computer Society. IEEE Computer Society members living in the Southeastern Michigan area (which consists of the following Counties: Wayne, Oakland, Macomb, St. Clair, Jackson, Washtenaw, Livingston, Ingham, Eaton and Clinton) are automatically members of this chapter. Our chapter was the fifth technical chapter formed in Southeastern Michigan, and so is called "Chapter V" (i.e. Chapter 5) by the local Section. Our Chapter in its present form was officially created along with the local Section *way back* in 1963.

The Computer Society strives to advance the theory, practice, and application of computer and information processing science and technology and maintains a high professional standing among its members. The Society promotes cooperation and exchange of technical information among its members and to this end holds meetings for the presentation and discussion of technical papers, publishes technical journals, and through its organization and other appropriate means provides for the needs of its members.

Treasurer & Secretary: Ramesh Sethu

Ramesh S, has been with General Motors Global R&D in Warren, MI, where he currently holds the position of Senior Technical Fellow and thrust area lead for model based embedded software. At General Motors, he is responsible for providing technical leadership for research and development in several areas related to Electronics, Control & Software processes, methods, and tools.

Earlier he was in India Science Lab serving as the lab group manager for two research groups on Software and System Verification and Validation. During this time, he led several projects on next generation rigorous verification and testing methods for control software which resulted in proof of concept methods and tools that were piloted on several SW subsystems across different domains like BCM, HVAC and Active Safety.

His broad areas of interests are Rigorous Software Engineering, Embedded Systems and Real-Time Systems. He is the author of several patents and has published more than 100 papers in peer-reviewed International journals and conferences. He is on the editorial boards of the International Journal on Real-Time Systems and Eurasip Journal on Embedded Systems and earlier on IEEE Journal on Embedded System Letters.

Prior to joining GM R&D, he was on the faculty of the department of Computer Science & Engineering at IIT Bombay, for more than fifteen years. At IIT Bombay, he played a major role in setting up a National Centre for Formal Design and Verification of Software. As the founding head of this Centre, he carried out many projects on verification of embedded software, for several Government organizations. He is a fellow of the Indian National Academy of Engineering and was visiting/adjunct faculty of many institutions.

Ramesh earned his B.E. degree in Electronics and Communication Engineering from *Indian Institute of Science, Bangalore* and his PhD degree in Computer Science & Engineering from *Indian Institute of Technology, Bombay*.

Vice Chair: Sharan Kalwani

A seasoned scientific, technical and computing professional, Sharan has spent over 30+ years implementing many new and pioneering technologies from operating systems (UNIX, UNICOS, Linux) , high performance computing (Cray, SGI, compute clusters), engineering applications (CAE simulations), optimization, networking (TCP/IP, Infiniband), programming languages (FORTRAN, C, Julia, Python, JavaScript), operations (ITIL, ITSM), scientific domain (Bioinformatics, High Energy & Particle Physics) and project management. Sharan looks to increase the professional approach of every individual he interacts with. He enjoys teaching, contributing to STEM activities and publishing. He is a senior member of **IEEE**, **ACM**, SIGHPC, Emeritus member of **Michigan!/usr/group** (aka mug.org) and President of **SEMCO** (one of the oldest pioneer computer user groups in Michigan). He has also been a member of several professional societies such as **SAE (Society of Automotive Engineers)**,

SCS (Society for Computer Simulation), **SIAM (Society of Industrial & Applied Mathematics)**, **CMG** (Computer Measurement Group), **USENIX**, **OSA** and **EduCAUSE**. He has also served on several advisory boards, including the IBM Deep Computing Institute External Advisory Board, and IDC (now Hyperion) HPC User Forum User Group. He is also currently the Chair of the IEEE SE Michigan Education Society Chapter since 2018. He is also a published author on the topic: "UNIX and TCP/IP network security" ISBN: 1581430213, (May 1999). Currently he is working hard on writing his next book and elevating his expertise in an emerging new technologies such as a new parallel Software Defined storage system, Julia computing language, data science and machine learning.

He has worked for diverse technology industries such as Cray Research, Silicon Graphics, International Universities (KAUST), Government Scientific Research (Fermi lab) and not surprisingly several automotive companies as well. At General Motors, he helped grow their HPC footprint from a modest handful (112 cores in 1999) to several thousand (17,000 cores actually in 2009), besides making them #1 in this space during his tenure there. He then later on helped to establish research computing at KAUST (Saudi Arabia) from scratch.

Sharan is a much sought after speaker & has delivered numerous technical presentations and tutorials at over 30+ international conferences and technical meetings. He received his Bachelor's degree from the *Delhi College of Engineering* (now called *Delhi Institute of Technology*) – *University of Delhi*. He received his Master's degree in Computer Science from *Wayne State University* in Detroit, Michigan. He was honored with the IEEE-MGA Achievement Award in 2018 (picture on the right) for his numerous contributions to the activities of the entire Section. He is also the current editor of Wavelengths and chairs the Sections PACE as well.

Chair: Subramaniam Ganesan

Subra (as he is better known) has been the Chapter chair since 1995. Subra has been working at Oakland University for the past 32 years. He has more than 40 years of work experience as a Scientist (in a National Lab) and as faculty in several Universities. He was the department chair of Computer Science & Engineering department, Oakland University from 1991-1998. Currently he is a Professor in the Electrical and Computer Engineering Department at Oakland University, USA.

The list of awards he has been graced with is long and distinguished. Most recently he was honored by the IEEE-USA at their annual joint regional meeting of R4-R6 held on February 3, 2018, in San Francisco where he received IEEE-USA's **Professional Achievement Award**. In 2018 he was nominated for the **Engineering Society of Detroit Gold Award**. Back in March 18, 2016, he was recognized by Oakland University's Teaching and Learning Committee and awarded the Certificate of Recognition for "**Teaching Excellence Award**". From outside of the domain, in 2012 April he received the **Lloyd L. Withrow Distinguished Speaker Award** from the SAE (Society of Automotive Engineers). Most recently in March 2021, he was honored at the Engineering Society of Detroit's Gold Awards function for his years of service towards the Chapter. (pictured on the right)

He has published in more than 72 journals, 218 conference publications, 2 book chapters, and 9 books as an author/editor. In addition, he also has 4 patents in the last 5 years and applied for a new patent in April 2016.

He has also been a Keynote speaker for many conferences in 2009-2021. During that time, he delivered Keynote speeches in South Korea, India, Spain, and several regional IEEE EIT Conferences.

Under his supervision, he has graduated 12 doctoral candidates in Computer Engineering topics so far. He is currently supervising 8 Ph.D. students as a main advisor, each of them are right now in various stages of completion.

Event Title	Event Date	Event Category	Event URL
Wireless Security in the Age of Ubiquity	7/6/2021 18:00	Technical	https://events.vtools.ieee.org/m/274509
GRID EDGE TECHNOLOGY: TECO & EMERA TECHNOLOGIES PARTNER ON RESIDENTIAL IMPLEMENTATION OF THE BLOCK ENERGY SMART	7/8/2021 12:00	Technical	https://events.vtools.ieee.org/m/269939
A history of Battery Electric Vehicles (BEV)	7/13/2021 17:30	Technical	https://events.vtools.ieee.org/m/270165
Building Effective Security for Distributed Energy Resources	7/23/2021 16:00	Technical	https://events.vtools.ieee.org/m/272810
Embedded Systems Workshop 2021 - Day 1 and Day 2 (online)	10/23/2021 8:30	Technical	https://events.vtools.ieee.org/m/272116
Embedded Systems Workshop 2021@ONLINE - Day 2	10/30/2021 8:00	Technical	https://events.vtools.ieee.org/m/272141

He is also an external PhD/MS thesis evaluator for Universities at India, Australia, Jamaica, and Germany from 2005-present.

He is serving as the Editor-in-Chief, IJESCE, *International Journal of Embedded Systems and Computer Engineering*; Editor-in-chief, IJSA, *International Journal of Sensors and Applications*, South Korea. Member of Editorial board of *Journal of Computer Science*, JCS, ISSN 0973-292-6. He is the President of ISPE, International Society of Productivity Enhancement and Vice President of ISAM - International Society of agile manufacturing. He is the North American president for ASDF- Association of Scientists, Developers and Faculties international. He is very active in SAE- World Congress by organizing the System Engineering sessions for the past 20 years.

These days he is also the Associate Director, Center for Robotics, Unmanned and Intelligent Systems, at Oakland University. He received his Bachelor's degree in Engineering from *Madras University, Madras* and his PhD from *the Indian Institute of Science, Bangalore.*

2021 Activities/Meetings Done as of June 30th 2021

Event Title	Event Date	Event Category	Event URL
Take a Tour Inside My Private Smart Home	1/19/2021 18:00	Technical	https://events.vtools.ieee.org/m/252153
Inspace.chat: A better zoom replacement?	2/2/2021 20:30	Technical	https://events.vtools.ieee.org/m/255902
New Chips on the Block	2/5/2021 16:30	Technical	https://events.vtools.ieee.org/m/258964
Homi J Bhabha: His Life & Legacy	2/19/2021 18:00	Technical	https://events.vtools.ieee.org/m/264403
MOVIE NIGHT->Celebrating Hedy Lamarr: Actress/Inventor	2/22/2021 18:00	Technical	https://events.vtools.ieee.org/m/262103
MOVIE NIGHT 2 of the week->Claude Shannon: Father of the Information Age	2/23/2021 18:00	Technical	https://events.vtools.ieee.org/m/262110
MOVIE NIGHT 3 of the week->CODE RUSH: The Documentary	2/24/2021 18:00	Technical	https://events.vtools.ieee.org/m/262120
MOVIE NIGHT 4 of the week->REVOLUTION OS	2/25/2021 18:00	Technical	https://events.vtools.ieee.org/m/262126
Micro Tutorial: Internet Security Awareness	3/16/2021 18:00	Technical	https://events.vtools.ieee.org/m/266444
Secure Sourcing of COTS Products	3/23/2021 17:00	Technical	https://events.vtools.ieee.org/m/265634
Clean Energy: Using Supercomputing Simulations to advance our understanding	4/6/2021 16:00	Technical	https://events.vtools.ieee.org/m/269323
The Origins of Silicon Valley: Why and How It Happenedâ€	4/6/2021 18:00	Technical	https://events.vtools.ieee.org/m/267924
Digital Storage and Memory for AI at the Edge	4/13/2021 18:00	Technical	https://events.vtools.ieee.org/m/256647
IEEE 2021 Rising Stars Winner: Combating COVID-19 with technology	5/13/2021 18:00	Technical	https://events.vtools.ieee.org/m/272460
The Pioneers of Computing and The Imposter Syndrome	5/18/2021 18:00	Technical	https://events.vtools.ieee.org/m/256683
Summertime MOVIE NIGHT->Celebrating Nikola Tesla	6/7/2021 18:00	Technical	https://events.vtools.ieee.org/m/269287
Summertime MOVIE NIGHT=>Predictions by the Numbers	6/14/2021 18:00	Technical	https://events.vtools.ieee.org/m/269288
Summertime MOVIE NIGHT=>Divine Discontent: The Life of Charles Proteus Steinmetz	6/22/2021 18:00	Technical	https://events.vtools.ieee.org/m/272380
Summertime MOVIE NIGHT=>The Bit Player	6/29/2021 18:00	Technical	https://events.vtools.ieee.org/m/272381

A peek of the various activities/meetings planned for the rest of 2021

Event Title	Event Date	Event Category	Event URL
Wireless Security in the Age of Ubiquity	7/6/2021 18:00	Technical	https://events.vtools.ieee.org/m/274509
GRID EDGE TECHNOLOGY: TECO & EMERA TECHNOLOGIES PARTNER ON RI	7/8/2021 12:00	Technical	https://events.vtools.ieee.org/m/269939
A history of Battery Electric Vehicles (BEV)	7/13/2021 17:30	Technical	https://events.vtools.ieee.org/m/270165
Building Effective Security for Distributed Energy Resources	7/23/2021 16:00	Technical	https://events.vtools.ieee.org/m/272810
60 years of computing: personal Perspectives	9/2/2021 18:00	Technical	https://events.vtools.ieee.org/m/275176
Introduction to Embedded Systems (part 1) for 1st timers	10/2/2021 8:00	Technical	https://events.vtools.ieee.org/m/275083
Introduction to Embedded Systems (part 2) for 1st timers	10/9/2021 8:00	Technical	https://events.vtools.ieee.org/m/275084
Embedded Systems Workshop 2021 - Day 1 and Day 2 (online)	10/23/2021 8:30	Technical	https://events.vtools.ieee.org/m/272116
Embedded Systems Workshop 2021@ONLINE - Day 2	10/30/2021 8:00	Technical	https://events.vtools.ieee.org/m/272141

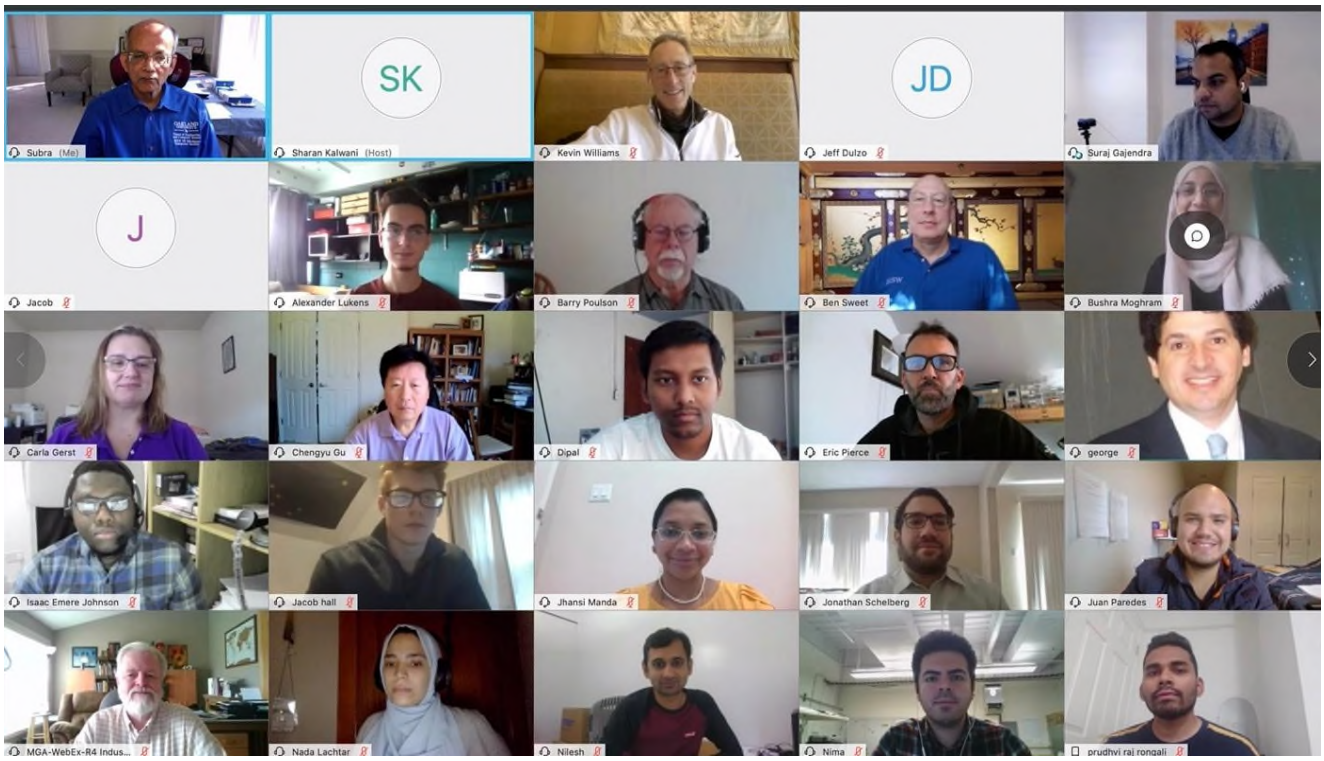
ESW 2021 Organizers

19th Annual Embedded Systems Workshop (ESW) 2021

First a word about the aim of this workshop:
The IEEE Computer Society & IEEE Education Society (both 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. This year's theme is: **"Role of Embedded Systems in Battery Electric Vehicles" (ES in 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. We encourage all to use this opportunity for virtual networking with engineers, industry experts and embedded enthusiasts. To find out more or register – you can check out: *https://bit.ly/embed2021*

Below is a screen snapshot of just one of the many sessions (some of the readers may recognize themselves!)



Putting together such a workshop is never an easy task. We would like to introduce all of the ESW organizers here:

- *Subra Ganesan, Chair*
- *Sharan Kalwani, Vice-Chair*
- *Ramesh Sethu, Benjamin Sweet, Carla Gerst, Nilesh Dudhaia, Praveena Jakkula and Sreeniwas Eeshwaroju*

ESW 2021 Program Committee
esw2021@ieee-sem.org

The bios of Subra, Sharan and Ramesh already appear elsewhere in this edition of Wavelengths, so here is a short introduction to the other team members.

Nilesh Dudhaia

Nilesh is an experienced engineer specializing in FEA (Finite Element Analysis) techniques and methods. He has significant experience in engineering technical support roles, having spent more than 10+ years with Fortune 500 clients for complete CAE project life cycles, i.e. from project execution to project management. He had considerable expertise in multiple domains including Construction machines, Agriculture machines, Industrial Products. These days he enjoys creating Automation, Scripting and Development for CAE software. He recently received a Master's degree in technology management from Oakland University. He keeps up to date with numerous technologies and techniques. .

Carla Gerst

Carla is currently pursuing MS in Mechatronics from Oakland University. She recently received a BSE in Electrical Engineering from Oakland University (December 2017). Additionally, she has a BS in Applied Mathematics from Michigan Technological University (March 1993). At the moment she is working for Faurecia in Auburn Hills. She has been actively involved with both Chapter 5 and the Embedded Systems Workshop sin February 2018. Amongst her many roles are doing Student & Education Liaison work. This helps facilitate communication between the SE Michigan Computer Society Chapter 5 and the university student branches in our region. I'm in the process of connecting with the branches to make sure their contact information is up to date and see if there's anything we can do to help them. She is always excited to work with the university branches, collaborate, develop and strengthen the relationships.

Benjamin Sweet

Ben Sweet has over 30 years of experience in real-time embedded software engineering in the automotive industry. He has worked in various automotive product domains and features, including: Body Control Module, Electric Vehicle Plug-In Charger, Electronic Ignition, Electronic Throttle Body Control, and Audio Amplifier. Ben is named on 13 US Patents (Primary Inventor on 7). Ben also has 24 years of experience teaching as an Adjunct Instructor at Lawrence Technological University, where he taught in the ECE and Math & CS departments. His primary courses were Control Systems, Embedded Systems, and Software Engineering. Ben also helped to develop core curricula in SE and ES. Ben is currently a Principal Course Developer at MathWorks, and is developing and delivering training in MathWorks tools related to Model-Based Development and Control Design Automation. He also enjoys authoring informative and practical works under his LLC, TEKNOWLEDGE, and relaxes by playing guitar. Ben Sweet holds a M.S. in Electronic and Computer Control System from Wayne State University (Detroit, MI), and B.S. I Electrical Engineering from Michigan State University (East Lansing, MI.)

Sreeniwas Eeshwaroju

An electronics engineer and enthusiast and a technical expert in domains like Embedded, Electro-Mechanical, IoT, and A.I., Sreenivas has 14+ years of industry experience. He is currently working as a Principal Engineer at Harman International. In the past he has worked for the Indian defense industry, reputed medical, consumer electronics companies. His team has received national-level awards for innovative design ideas and products. He is known for bringing in new reforms and inventions in every firm he has worked in so far. Always in pursuit of innovating solutions to make the world a better place to live. He has a bunch of publications in IEEE conferences and journals.

Praveena Jakkula

Praveena is an engineer/researcher always in a pursuit to find efficient solutions. She is a Ph.D. candidate and currently researching Wildfire Prediction using AI in the U.S. She has three masters' degrees: Electrical & Electronics Engineering from California State University, Sacramento (2010), Electronics & Computer Engineering from Penn State University (2016), and Information Systems & Engineering Management from Harrisburg University (2019). In addition, she also possesses industry experience in Embedded Systems, Consumer Electronics, Rail Signaling, and Semiconductor domains. Currently, she is working at Intel Corporation, manages a Debug Design Validation team. She is an active member of IEEE, an editorial member at JSCIT, the technical reviewer at DTTC, etc. She has a bunch of IEEE Conference publications and journals. She has recently received a Young Scientist Award.

Sharan Kalwani, Vice-Chair, ESW 2021, Editor, Wavelengths, 2018~2019~2020~2021

Quadratic Equations?

A new way to make quadratic equations easy

Many former algebra students have painful memories of struggling to memorize the quadratic formula. A new way to derive it, overlooked for 4,000 years, is so simple it eliminates the need. [This first appeared in the MIT Technology Review, December 6, 2019. Reprinted by kind permission. Original URL can be found at https://www.technologyreview.com/2019/12/06/131673/a-new-way-to-make-quadratic-equations-easy/]

The ancient Babylonians were a remarkable bunch. Among many extraordinary achievements, they found a now-famous mathematical solution to an unpleasant challenge: paying tax.

The particular problem for the ordinary working Babylonian was this: Given a tax bill that has to be paid in crops, by how much should I increase the size of my field to pay it?

This problem can be written down as a quadratic equation of the form $Ax^2+Bx+C=0$. And it is solved with this formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Today, over 4,000 years later, millions of people have the quadratic formula etched into their minds thanks to the way mathematics is taught across the planet. But far fewer people can derive this expression. That's also due to the way mathematics is taught—the usual derivation relies on a mathematical trick, called "completing the square," that is far from intuitive. Indeed, after the Babylonians, it took mathematicians many centuries to stumble across this proof.

Before and since, mathematicians have found a wide range of other ways to derive the formula. But all of them are also tricky and non-intuitive. So it's easy to imagine that mathematicians must have exhausted the problem. There just can't be a better way to derive the quadratic formula.

Enter Po-Shen Loh, a mathematician at Carnegie Mellon University in Pittsburgh, who has found a simpler way—one that appears to have gone unnoticed these 4,000 years. Loh's approach does not rely on completing the square or any other difficult mathematical tricks. Indeed, it is simple enough to work as a general method itself, meaning students need not remember the formula at all. "The derivation has the potential to demystify the quadratic formula for students worldwide," he says.

The new approach is straightforward. It starts by observing that if a quadratic equation can be factorized in the following way:

$$x^2 + Bx + C = (x - R)(x - S)$$

Then the right-hand side equals 0 when $x=R$ or when $x=S$. Then those would be the roots of quadratic.

Multiplying out the right hand side gives

$$x^2 + Bx + C = x^2 - (R+S)x + RS$$

This is true when (*-B=R+S)* and when *(C=RS)*.

Now here comes the clever bit. Loh points out that the numbers, *R* and *S*, add up to *-B* when their average is *-B/2*.

"So we seek two numbers of the form *-B/2±z*, where *z* is a single unknown quantity," he says. We can then multiply these numbers together to get an expression for *C*. So

$$\left(-\frac{B}{2} + z\right)\left(-\frac{B}{2} - z\right) = \left(-\frac{B}{2}\right)^2 - z^2 = C$$

Then some simple rearranging gives

$$z = \pm\sqrt{\frac{B^2}{4} - C}$$

Which means that the solution for a quadratic equation is:

$$-\frac{B}{2} \pm \sqrt{\frac{B^2}{4} - C}$$

Voilà! That's the quadratic formula.

[The more general version can be derived by dividing the equation $Ax^2+Bx+C=0$ by A to give $x^2+(B/Ax)+(C/A)=0$ and then repeating the above process.]

That's a very significant improvement on the previous method, and Loh shows why with a simple example.

Find the roots of the following quadratic: $x^2 - 2x+4=0$

The traditional method would be to work out values for *A, B,* and *C* and plug them into the quadratic formula. But Loh's approach solves the problem intuitively. The first step is to think that the two roots of the equation must be equal to $-B/2\pm z = 1\pm z$

And because their product must be $C=4$, we can write:

$$1 - z^2 = 4$$

$$z^2 = -3$$

$$z = \pm i\sqrt{3}$$

So the roots are

$$1 \pm i\sqrt{3}$$

Attempting the same problem using the traditional method is much trickier. Go on, give it a go! The new approach is much easier and more intuitive, not least because it doesn't require the formula to be memorized at all.

An interesting question is why nobody has stumbled across and widely shared this method before.

Loh says he "would actually be very surprised if this approach has entirely eluded human discovery until the present day, given the 4,000 years of history on this topic, and the billions of people who have encountered the formula and its proof. Yet this technique is certainly not widely taught or known."

Loh has searched the history of mathematics for an approach that resembles his, without success. He has looked at methods developed by the ancient Babylonians, Chinese, Greeks, Indians, and Arabs as well as modern mathematicians

from the Renaissance until today. None of them appear to have made this step, even though the algebra is simple and has been known for centuries.

So why now? Loh thinks it is related to the way the conventional approach proves that quadratic equations have two roots. “Perhaps the reason is because it is actually mathematically nontrivial to make the reverse implication: that always has two roots, and that those roots have sum $-B$ and product C,” he says.

Loh, who is a mathematics educator and popularizer of some note, discovered his approach while analyzing mathematics curricula for schoolchildren, with the goal of developing new explanations. The derivation emerged from this process.

The question now is how widely it will spread and how quickly. To speed adoption, Loh has produced a video about the method. Either way, Babylonian tax calculators would surely have been impressed.

Reference: arxiv.org/abs/1910.06709 : *A Simple Proof of the Quadratic Formula*

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

Consultants Group Meeting

IEEE SE Michigan Consultants Affinity Group
Invite you to attend
"Technology Law Issues that Should Keep You Up at Night"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Some legal issues involving technology have not changed since the days of mainframes and punch cards. Others are developing at incredible speeds. In this discussion, developing rules involving data privacy, especially cross-border transfers of data, data security and the risks of under secured networks, disclosure obligations of companies, website and ecommerce developments, as well as issues such as scope of agreements and liability issues.

Speaker Bio:
Michael S Khoury is a business lawyer with over 35 years of experience, and focuses his practice on commercial, business and technology matters, software licensing and development agreements, data privacy and security, domestic and international distribution agreements, outsourcing, commercial transactions, general business and corporate law. Michael has been recognized by several groups and publications, including Best Lawyers in America, 2016-21, Best Lawyers Detroit Information Technology Lawyer of the Year 2017, 2019 and 2021, Michigan Super Lawyer, 2006–21, DBusiness Magazine Top Lawyers and Martindale-Hubbell AV Preeminent.

At Glance

- **When:**
  Date: July 9, 2021
  Time: 4 ~ 6 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 Consultants Affinity Group

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/274389

Consultants NETWORK

IEEE Advancing Technology for Humanity

Ubiquitous Wireless Cybersecurity

IEEE SE Michigan Computer & Education Society Chapters
Presents
"Wireless Security in the Age of Ubiquity"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

The talk will be on the development of wireless to the point that we take it for granted, forgetting its origins; and touch on standard attack vectors, good security hygiene and practices to avoid problems such as the DNC and the Colonial Pipeline. We will also touch on the IRAN centrifuge attack. We will NOT talk about methods of hacking.

Speaker Bio:
Daniel M. Devasirvatham (Day Vaa Seer Vaa Dhum), obtained his PhD as a Fulbright Scholar under the auspices of the NASA Goddard Space Flight Center, working on Satellite Communications. He was an internationally recognized pioneer in the field of Microcellular communications for 20 years in Bellcore/Telcordia in NJ, before working with First Responders while a CTO at SAIC in CA, and for the Department of Homeland Security through SPAWAR. He was in Senior Management at the Idaho National Lab, heading the Wireless National User Facility, before retiring. Daniel is a Life Senior Member of the IEEE and a member of the Executive Committee of the IEEE Region 6 Eastern Idaho Section

At Glance

- **When:**
  Date: July 6th, 2021
  Time: 6:00 – 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 SE Michigan Computer Society, Education Society Chapters

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/274509

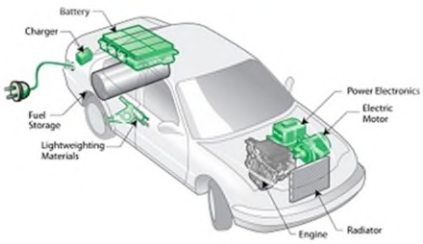
IEEE COMPUTER SOCIETY

IEEE Education Society

IEEE Advancing Technology for Humanity

History of Electric Vehicles

IEEE SE Michigan Vehicle Tech, Computer & Education Society Chapters
Presents
"A History of the Battery Electric Vehicle (BEV)"



IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Electric vehicles first appeared in the mid-19th century. EVs held the land speed record until around 1900. The high cost, low top speed, and short-range of battery electric vehicles, compared to 20th century internal combustion engine (ICE) vehicles, led to a worldwide decline in their use as private motor vehicles; although electric vehicles have continued to be used in the form of loading/freight equipment, etc.

Now in the 21st century, interest in electric vehicles has increased due to growing concern over the problems associated with fossil fuel vehicles, including damage to the environment caused by their emissions, and the sustainability of the current hydrocarbon-based transportation infrastructure as well as improvements in EV technology.

At Glance

- **When:**
  Date: July 13th, 2021
  Time: 5:30 – 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 SE Michigan Vehicle Tech Society, Computer Society and Education Society Chapters

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/270165

IEEE VTS Connecting the Mobile World
IEEE COMPUTER SOCIETY
IEEE Education Society

IEEE Advancing Technology for Humanity

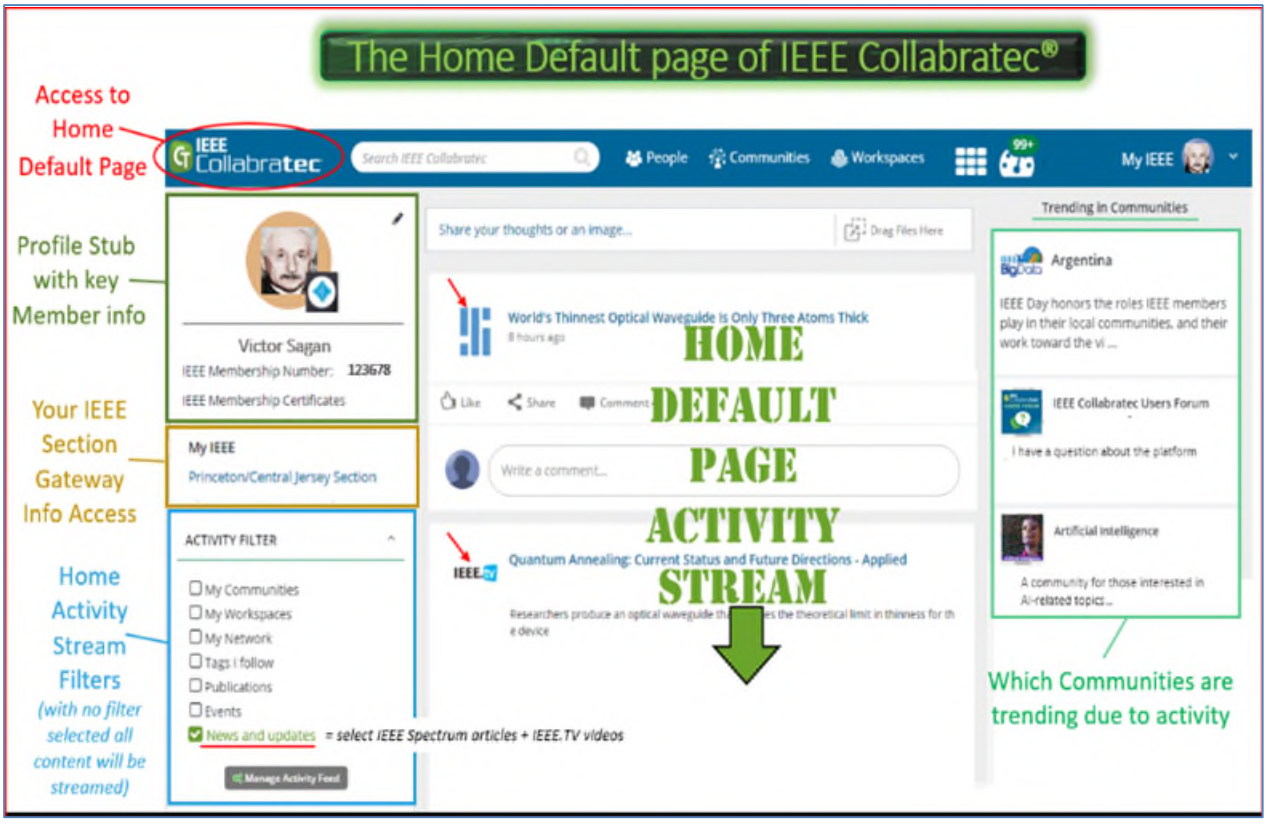
Intro to Collabratec

Back in March of 2021 our chapter held a discussion on IEEE Collabratec website available to IEEE membership. I wasn't that familiar with the site and having our SE Michigan share site to connect and share files with executive committee members, chapter members, and workgroups. I received a letter from IEEE asking the question, "Are you taking advantage of the many membership options IEEE has to offer"? So, I decided it was time to utilize the site and introduce it to our TEMS chapter membership. This article is an overview of some of the tool features. I highly recommend going through the "Collabratec User's Guide" which gives you an in-depth explanation of each tab & section. The site also has very good user video on the tool.

IEEE Collabratec is an integrated online community_where technology professionals can network, collaborate, and create - all in one central hub. You can establish your professional identity to connect and network with verified IEEE members and technology professionals by location or technical interests. Join and Participate in Communities. Work Together in Workspaces: Create, organize, share, and collaborate virtually on projects or articles. Manage Your Library: Create an easy-to-manage library by accessing online tools.

Home default page

The ***Home default page*** is where all users are brought to upon logging on to IEEE Collabratec. This Home page can be accessed at any time by clicking on the upper left IEEE Collabratec logo while in the platform. The top blue bar is ever-present with its available selections and global search bar.

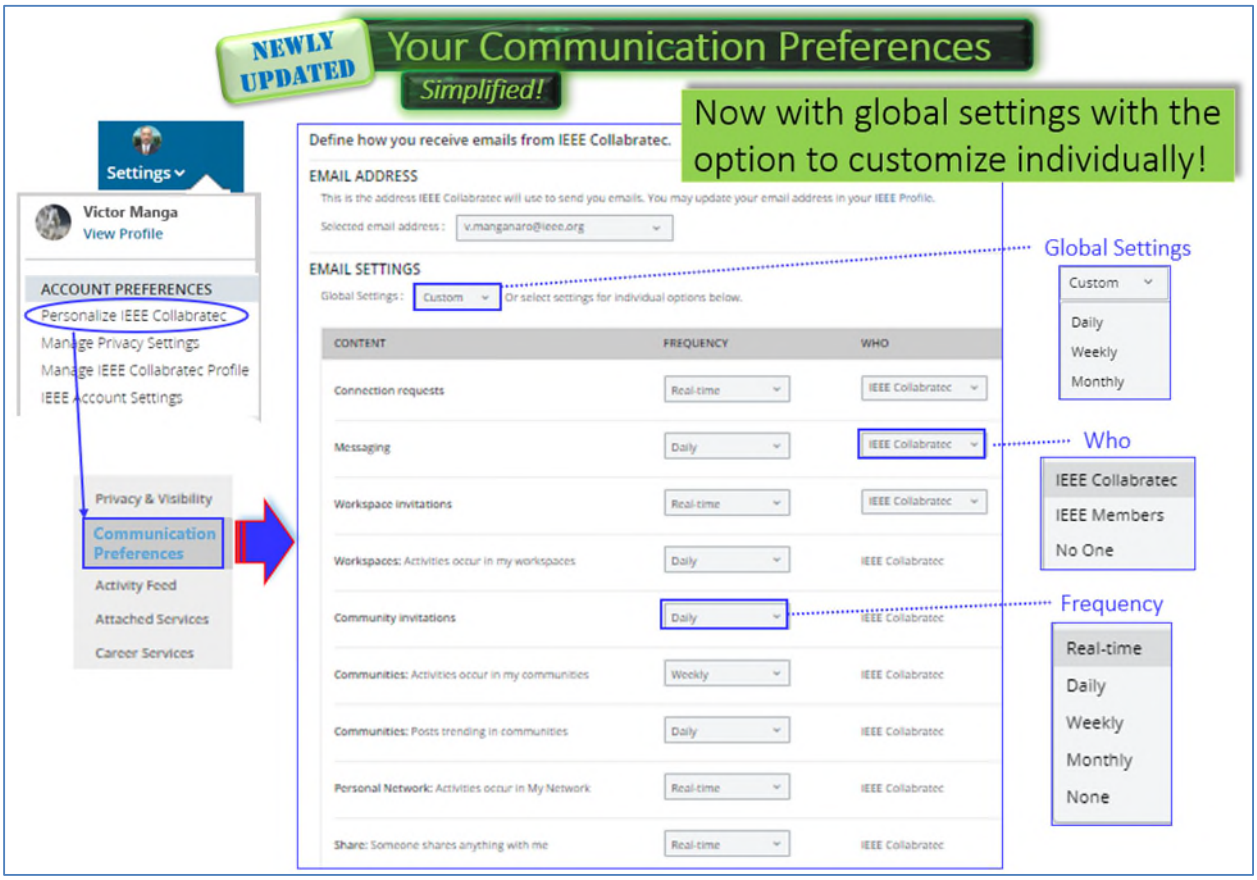


Personalize

You can *personalize* your IEEE Collabratec experience by choosing options which customize the platform to your desired usage. Simply select "*Personalize IEEE Collabratec*" from the drop-down menu under your name and the five settings areas will appear as left navigation tabs.

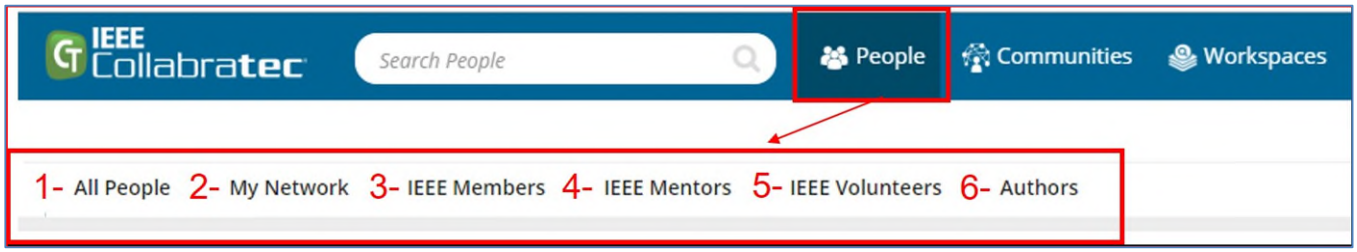
The five "*Personalize*" areas are as follows (*each area below is linkable to the respective settings page*):

1. Privacy & Visibility - determine how others see the various elements of your profile.
2. Communication Preferences - NEWLY SIMPLIFIED: Global email settings with ability to customize individually - specify the frequency of emails received and by who.
3. Activity Feed - customize which activities are streamed via your default home area.
4. Attached Services - connect your existing online storage and services to your IEEE Collabratec account.
5. Career Services - set your mentoring preferences, and job search preferences.



People section

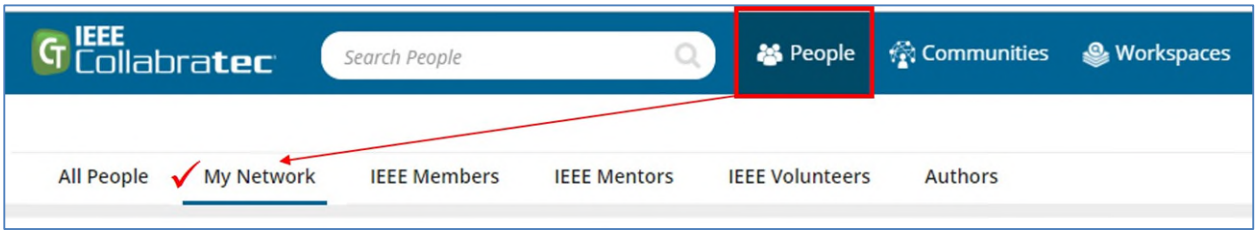
The People section of IEEE Collabratec provides the ability to discover other users using different criteria such as their IEEE Membership/Societies/affiliations, location, education, profession, technical interests, and more.



My Network

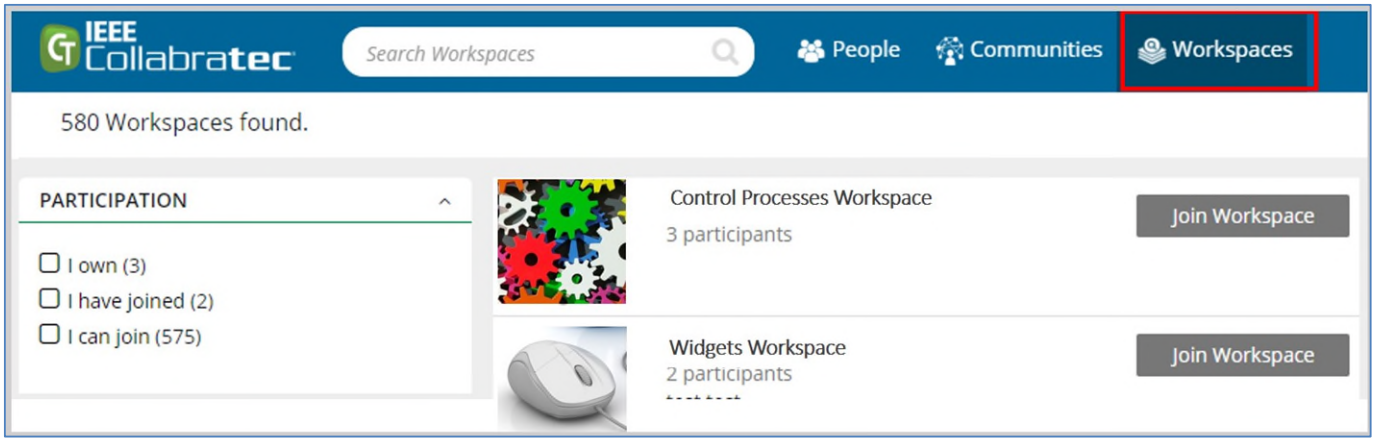
The *My Network* section provides IEEE Collabratec participants with a set of networking tools, including the ability to:

- View the profiles of those in your network.
- Send messages to individuals or groups in your network.
- Search your network by individual's name.
- Find individuals by IEEE membership affiliation and geographic locations.
- Create custom communication networks
- Manage your network by accepting, declining or saving inbound network requests.
- IEEE members may take advantage of mentoring opportunities.



Workspaces

Workspaces (formerly Groups) in IEEE Collabratec are shared collaboration work areas for discussion, planning and brainstorming. Workspaces can be converted to Communities at any time (after review and approval). Members have the ability to create many more workspaces than a non-member. Workspace participants have the ability to create, share, organize content including files as well as comment on that content. Video conferencing via Google Meet (for IEEE Members) is available. Read more below.



Opportunities

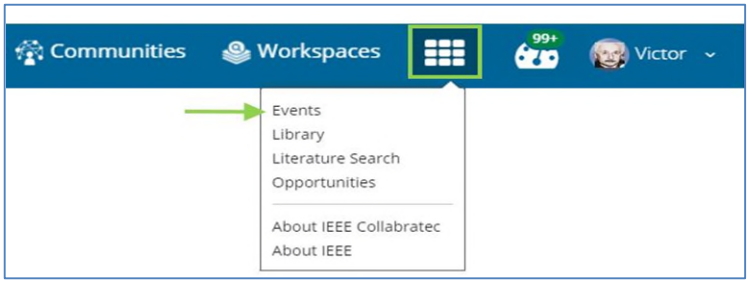
The Opportunities section of IEEE Collabratec provides the ability to find, create and share jobs, projects and more. Selecting employment preferences and uploading your uploading your CV/Resume is now available from the NEW Career Services tab under Personalize IEEE Collabratec (from the drop-down menu under your name).

Features includes:

- Find Opportunities: Using the available multiple filters you can choose the type of opportunities viewed, such as: jobs, projects, tasks, call-for-papers, call-for-speakers, and more. Search job and internship listings that are integrated from the IEEE Job Site. You may also save and share listings and save your search.
- Manage Opportunities: Manage your saved jobs or projects, saved searches, view job details, and apply. Note: Any job application process is currently external to IEEE Collabratec.

Events

The IEEE Collabratec ***Events*** section displays a listing of events retrieved from a variety of IEEE sources. You may search for events using the global search feature at the top of every page or narrow your search in the ***Events*** section by location, event type, date, and sponsor.



Each event page includes:

- Event title, type of event, summary, date, and location with an interactive map.
- Add the event to your calendar.
- Share the event with your IEEE Collabratec network or via email, LinkedIn, Twitter, Facebook, Google+.

Library

The IEEE Collabratec *Library* allows participants to access online tools for research, authoring, project development and collaboration.

The Library allows you to:

- Organize, store, and classify content within personal cloud-based storage.
- Create folders to better organize files.
- Create virtual document groupings called “Research Collections.”
- Develop bibliographies.
- Extract pre-formatted citations.
- Collaborate using PDF annotation tools.
- Discover content through integrated search of IEEE Xplore® and Microsoft Academic, including adding documents to your Library with the IEEE Bookmarklet tool.
- Easily add content from Mendeley and Zotero.
- Create or edit LaTeX documents using IEEE Overleaf, an integrated LaTeX editor.
- Create or edit documents using Dropbox, Google Drive and Microsoft Office 365.

Users Forum Posting Area

This community forum provides IEEE Collabratec users the opportunity to ask questions and provide feedback about their experience with the platform as well as act as a central point of contact for learning about features, functions, and activity within IEEE Collabratec.

I hope you gained some insight on Collabratec tool and begin to take advantage of this tool thru IEEE membership.

Regards,
Ray Sasinowski
TEMS Chapter chair

Embedded Systems 2021

19th Annual Embedded Systems Workshop

October 23 & 30, 2021, 8:30 a.m. to 12:30 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 $10 (IEEE members) and $5 (IEEE Students) 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, Nilesh Dudhaia, Praveena Jakkula, Sreenivas Eeshwaroju and Ben Sweet

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 apply as soon as possible on this link.

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.

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 Society
Chapter: 04 “Trident”(AP03) Antennas and Propagation Society, (CH04050) (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 has changed to its new home, kindly make a note of it! The new home is located at http://r4.ieee.org/sem/ .** The old links will continue to work for some time, but will be changing permanently in the near future.

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

Michigan Institute for Plasma Science and Engineering: Seminars for the 2018-2021 academic year:
http://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://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.

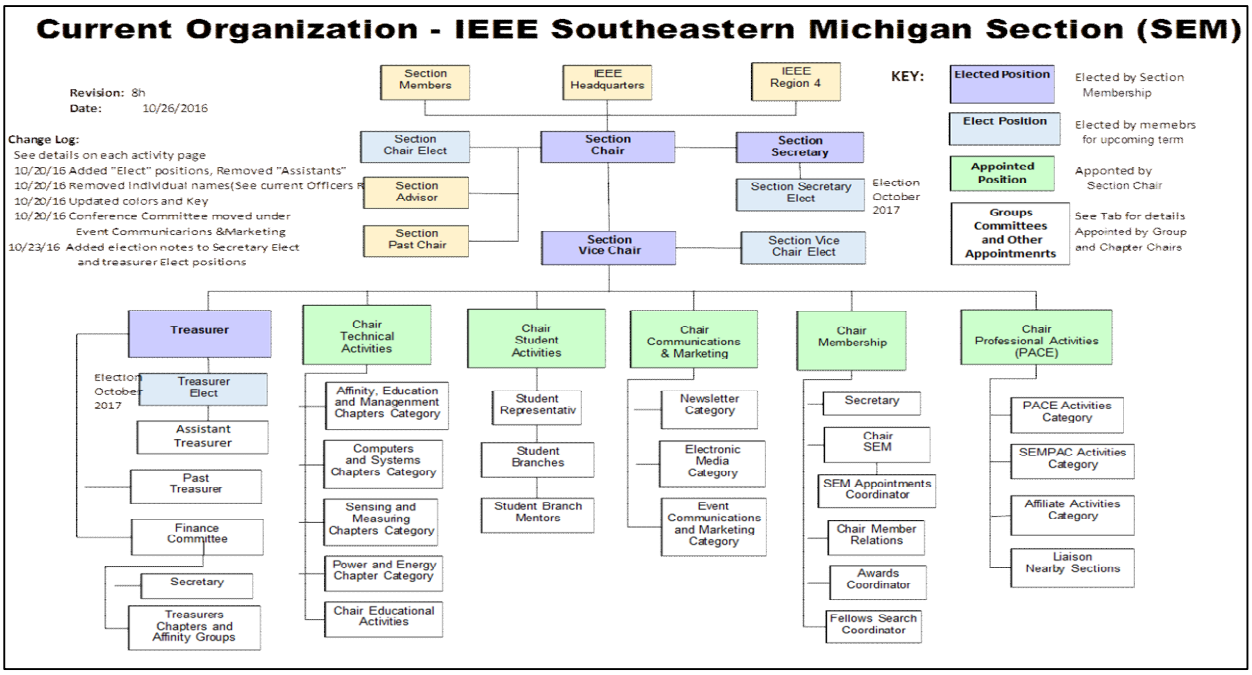
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

ExCom Meeting	*Date & Time*
SEM Section ExCom Monthly Meeting (Face-Face) for July 2021	**7/14/2021 17:00**
SEM Section ExCom Monthly Meeting (Teleconference) for August 2021	8/5/2021 18:30
SEM Section ExCom Monthly Meeting (Teleconference) for September 2021	9/1/2021 18:30
SEM Section ExCom Monthly Meeting (Face-Face) 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

Letters to the Editor

As promised, we have now started a "Letters to the Editor" column. Letters, bouquets, brickbats, suggestions, advice, feedback, opinions may be sent to:

letters@ieee-sem.org

To the Editors of Wavelengths:

Please note that elections for our Section leadership is rapidly approaching with nominations for officers in our Section Executive Committee, as well as in our 'Geo-units' (Chapters and Affinity Groups). Student Branches and HKN Chapters arrange their own elections based on what their leadership considers best.

The first step in the election process is to gather nominations for each office. Everyone in the Section will receive a link to a survey system that will gather the names submitted for each office in all the positions.

Why a survey?
With 4 Affinity Groups, 17 Technical Chapters and the Executive Committee for the Section and the Chair, Secretary, Vice-Chair and Treasurer positions to fill that amounts to (4 + 17) X 4 + 2 = 74 offices! (Note: the '+2' accounts for the Excom (Executive Committee) where we elect half the new officers each year and give them a year of 'training' before they fully 'take office' for 2 years).

With that many offices to fill, and potentially about 2,500 Section members who may either self-nominate, or nominate someone they know, it was decided to use the survey system to help sort through all those nominations.

Some have objected to the survey system in the past. Before we begin using it in 2021, the Nomination & Appointment Committee would like to hear from anyone with a proposal for a 'better' system.

Officers for the Nomination & Appointment Committee may be found on the SEM Webpage at: https://r4.ieee.org/sem/ under the TAB: About SEM as the "Organization Roster". Or directly download the complete PDF from: https://r4.ieee.org/sem/wp-content/uploads/sites/6/2021/04/Organization_Roster_4.6.2021.pdf

Do a quick search for 'Nomination' and our list of officers will show up along with their email addresses. (Change the -AT- to @ and you are good to go.)

Regards,

kw Kimball Williams DE N8FNC
NCE / ARRL #0001247589, FISTS #17391, LICW #160, MIQRP #M-1951, NAQCC # 10610, QRP-ARCI #16639, SKCC #22177,
k.williams AT ieee.org IEEE SEM Section Information Management Coordinator and Curmudgeon at Large
Ph: 313-355-4396 (Note: This phone is only enabled for US and Canadian calls.)
"A friend is not a fellow who is taken in by sham
A friend is one who knows our faults and doesn't give a damn"
--Unknown.

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
cgjohnson@ieee.org
lunnmalcolm@me.com
akio@emcsociety.org

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

IEEE SOUTHEASTERN MICHIGAN – WAVELENGTHS

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		

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

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 "f" button under the top row)

SEM LinkedIn Page
(Select the "in" 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

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

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