



## Volume 59 – Issue 12

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### 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
<a href="#">The Schwinger Plasma: An Experimental Program to Study the Plasma That Exist Inside the Vacuum</a>	December 4th	3:30 pm
<a href="#">SEM Section ExCom Monthly Meeting (Teleconference) for December</a>	December 5 <sup>th</sup>	12 noon
<a href="#">IEEE SEM Senior Member 'Roundup' &amp; Networking @Oakland University</a>	December 7 <sup>th</sup>	9:00 am
<a href="#">New &amp; Future member networking</a>	December 7 <sup>th</sup>	10:00 am
<a href="#">Chapter 8 AdCom teleconference</a>	December 12 <sup>th</sup>	11:00 am
<a href="#">Chapter 17 officer teleconference</a>	December 13 <sup>th</sup>	12 noon

**Chair's Message****Election time already?!?!**

It's hard to believe that it has already been four years since our last presidential election. Our TVs and favorite websites will soon be overwhelmed with election ads. Were you aware that IEEE has within it a policy group advocating for the engineering profession? As you consider your choices in the upcoming election, it may be worthwhile to check out IEEE resources. [www.ieeeusa.org](http://www.ieeeusa.org)

IEEE-USA is a unit within IEEE (and funded by your dues!) that was formed to support the career and public policy interests of IEEE members. They primarily advocate within the three branches of the federal government to help shape workforce and technology policy.

Spotlight issues include skilled immigration reform, national energy policy, and STEM R&D. IEEE-USA also has committees on artificial intelligence, communications, transportation, energy entrepreneurship, and intellectual property.

There are several ways to get involved with engineering policy with IEEE-USA, including:

- Join one of the organization's many committees to help develop policy papers.
- IEEE-USA holds an annual policy fly-in where IEEE members meet directly with members of Congress in D.C.
- IEEE-USA can help arrange local visits with elected officials to advocate for essential engineering objectives.

- Policy papers on the website can help shape and inform our members of issues.

In the past, Southeastern Michigan has held several IEEE-USA related events. Local volunteers have met with our Senators and Representatives on workforce and transportation policy. We have also held conferences on government relations that featured topics on artificial intelligence and intellectual property. We look forward to again having events that can inform our members on these important issues.

Please do not hesitate to contact me directly if you have any questions around IEEE-USA and the resources that they provide for the benefit of all of our members.

You can also contact our IEEE-USA policy representative directly with any questions or ideas for advocacy. His information is below.

Russ Harrison  
Director, IEEE-USA Government Relations  
[r.t.harrison@ieee.org](mailto:r.t.harrison@ieee.org)  
+1 202 530 8326

David Mindham  
**IEEE SEM Section Chair**  
[dmindham -At- ieee.org](mailto:dmindham-At-ieee.org)

**Officers - 2020**

In the listings below you will find the positions and officer names of our elected leaders for the Section Executive committee, followed by our Affinity Groups, our Technical Society Chapters and finally our IEEE Student Branches.

<b>Executive Committee (ExCom):</b>	
Chair	David Mindham
Chair-Elect	
Secretary	Christopher Johnson
Secretary-Elect	Bhupinder Mavi
Asst Secretary	
V-Ch	Sharan Kalwani
V-Ch-Elect	
Treasurer	Michael Folan
Treasurer-Elect	Colleen Chmielewski
Asst Treasurer	
Section Adviser	Don Bramlett
Past-Ch	Kimball Williams
Standing Committees: *	
Affinity Groups: *	
Chapters: *	

<b>Affinity Groups</b>	
<b>Consultants Network Affinity Group: (CN40035)</b>	
Chair	Ian Hutt
V-Ch	Sharan Kalwani
Secretary	Charles Albrecht
Treasurer	Benjamin Doerr
Past-Ch	Sharan Kalwani
<b>Life Member Affinity Group: (LIFE)</b>	
Chair	Harpreet Singh
V-Ch	Bhupinder Mavi
Secretary	
Treasurer	
Past-Ch	
<b>Women in Engineering Affinity Group: (WIE)</b>	
Chair	Tia Twigg
V-Ch	
Secretary	
Webmaster	
Treasurer	Chaitali Naik
Past-Ch	Kimball Williams
<b>Young Professionals Affinity Group: (YP)</b>	
Chair	Ian Hutt
V-Ch	Colleen Chmielewski
Secretary	Chaitali Naik
Treasurer	Aparna Addada
Past-Ch	

**Note:** This is not the complete listing with the contact e-mail for the officers. To see the full listing, use the SEM Wavelengths website at:

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

Select 'About SEM' and drop down to the Organization Roster for the current officers through the end of 2019, or to the Draft 2020 Organization Roster for the officers who will take command in 2020.

If you notice places where you know someone's name should appear but, is missing or in error, please contact Kimball Williams – Chair of the Nominations & Appointments Committee with the proper information at: [k.williams@ieee.org](mailto:k.williams@ieee.org).

<b>Chapters</b>	
<b>Chapter 01 (SP01) Signal Processing Soc, (CAS04) Circuits and System</b>	
Chair	Robert Adams
V-Ch	
Director (SP Soc)	
Director (C&S Soc)	Kenji Aono
Director (IT Soc)	Jeffrey Dulzo
Secretary	Milad Moosavifar
Treasurer	
Past-Ch	Jeffrey Dulzo
<b>Chapter 02 (VT06) Vehicular Technology Soc</b>	
Chair	Mohamad Berri
V-Ch	Jennifer Dukarski
Secretary	
Meeting & Facility Organizer	Jennifer Dukarski
Treasurer	Eugene Saltzberg
Past-Ch	Lawrence Baczowski
<b>Chapter 03 (AES10) Aerospace and Electronic Systems Soc, and (COM)</b>	
Chair	Patrick Seeling
V-Ch	
Director (AE Soc)	
Director (Com Soc)	
Secretary	
Treasurer	Jeffrey Dulzo
Past-Ch	Malcolm Lunn
<b>Chapter 04 (AP03) AP03 Antennas and Propagation Soc, (ED15) Elect</b>	
Chair	Rebecca Peterson
V-Ch	
Director (AP Soc)	Anthony Grbic
Director (ED Soc)	Fan-hsuan Meng
Director-Tech (MTT Soc)	Najme Ebrahimiseraji
Director (Photonics Soc)	Somin Eunice Lee
Secretary	Navid Barani Lonbani
Treasurer	Xiuzhang Cai
Past-Ch	Kimball Williams
<b>Chapter 05 (C16) Computer Soc</b>	
Chair	Subramanian Ganesan
V-Ch	Sharan Kalwani
Secretary	S Ramesh
Treasurer	Ashok Prajapati
Co-Treasurer	S Ramesh
Director: Admin & Member Development	Nzar Alholou
Director: Technical Activities	Sharan Kalwani
Director: Software Activities	Ashok Prajapati
Director: Auto relations Liaison	S Ramesh
Tech activities Co-ordinator:	Jesus Salvador Almanza Garcia
Student & Education Liaison	Carla Gerst
Industrial Liaison	S Ramesh
Webmaster	Sharan Kalwani
Past-Ch	Subramanian Ganesan
<b>Chapter 06 (GRS29) Geosciences and Remote Sensing Soc</b>	
Chair	Leland Pierce
V-Ch	Adib Nashashibi
Secretary	Mostafa Zaky
Treasurer	Michael Benson
Past-Ch	Adib Nashashibi
<b>Chapter 07 (PE31) Power Engineering Soc, (IA34) Industrial Applicat</b>	
Chair	Looja Tuladhar
V-Ch	Chaitali Naik
Director (Tech Activity)	Chaitali Naik
Director (Pwr Eng)	Looja Tuladhar
Director (Ind Appl)	Binaya Joshi
Secretary	Binaya Joshi
Treasurer	Chris Nelson
Past-Ch	David Mindham

## Officers – 2020 – Continued:

Chapters Continued	
<b>Chapter 08 EMC (EMC27) Electromagnetic Compatibility Soc</b>	
Chair	Scott Lytle
V-Ch	Akio Fujimaki
Director(Prof Activity)	Akio Fujimaki
Director(Tech Activity)	Candace Suriano
Director(Awards)	James Woodyard
Director(Communications)	Scott Lytle
Director(Marketing)	Steve Tomba
Secretary	Steve Tomba
Treasurer	Matthew Feusse
Past-Ch	Dennis Barberi
<b>Chapter 09 (IE13) Industrial Electronics Soc, (PEL35) Power Electronics Soc</b>	
Chair	Sridhar Nalla
V-Ch	
Director(IndElect)	
Director(Pwr Elect)	
Secretary	
Treasurer	
Past-Ch	
<b>Chapter 10 (TEM14) Technology and Engineering Management Soc</b>	
Chair	Mark Robinson
V-Ch	Raymond Sasinowski
Secretary	David Werden
Treasurer	Kellee Christensen
Past-Ch	David Werden
<b>Chapter 11 (EMB18) Engineering in Medicine and Biology Soc</b>	
Chair	Maurice Snyder
V-Ch	
Secretary	Yan Yan
Treasurer	
Past-Ch	Maurice Snyder
<b>Chapter 12 (CS23) Control Systems Soc</b>	
Chair	
V-Ch	Khalid Rahman
Secretary	
Treasurer	
Past-Ch	Rajeev Verma
<b>Chapter 13 (E25) Education Soc</b>	
Chair	Sharan Kalwani
V-Ch	
Secretary	Nizar Alholou
Treasurer	
Past-Ch	Richard Johnston
<b>Chapter 14 (RA24) Robotics And Automation Soc</b>	
Chair	Grant Kruger
V-Ch	
Secretary	Jonathan Berent
Treasurer	Chan-Jin Chung
Past-Ch	ALI EYDGAHI
<b>Chapter 15 (NPS05) Nuclear Plasma Sciences Society</b>	
Chair	Nicholas Jordan
V-Ch	
Secretary	
Treasurer	
Past-Ch	
<b>Chapter 16 (CIS11) Computational Intelligence Soc, (SMC28) Systems Soc</b>	
Chair	Jeffrey Dulzo
V-Ch	
Director(CI Soc)	
Director(SMC Soc)	
Secretary	
Treasurer	
Past-Ch	Osman Ahmed
<b>Chapter 17 (NANO42) Nanotechnology Council</b>	
Chair	Randy Boone
V-Ch	
Secretary	Wen Li
Treasurer	Amar Basu
Past-Ch	Wen Li

<b>Student Branch:</b>	
<b>University Of Detroit-Mercy: (STB00531)</b>	
Chair	
V-Ch	
Secretary	
Treasurer	
Faculty Counselor	Michael Santora
Mentor	Jennifer Dukarski
Mentor	Don Bramlett
<b>Michigan State University: (STB01111)</b>	
Chair	
V-Ch	
Secretary	
Treasurer	
Graduate Advisor	Thassyo Pinto
Faculty Counselor	Premjeet Chahal
Mentor	Shiu Chan
Mentor	Philip Fanson
<b>University Of Michigan-Ann Arbor: (STB01121)</b>	
Chair	
V-Ch	
Secretary	
Treasurer	Kyle Bartley
Faculty Counselor	Laura Balzano
Mentor	Michael Anthony
<b>Wayne State University: (STB02251)</b>	
Chair	
V-Ch	
Treasurer	
Secretary	
ESFB Rep	
Student Advisor	
Corp Com Ch	
Web-Admin	
Seminar Coordinator	
Faculty Counselor	
Faculty Mentor	Weisong Shi
Mentor	
<b>Lawrence Technological University: (STB03921)</b>	
Chair	Naim Shandi
V-Ch	Carrieann Towne
Secretary	Amar Dabaja
Treasurer	Amar Dabaja
Faculty Counselor	Jaber Nabih
Mentor	Benjamin Sweet
Mentor	Don Price
<b>Oakland University: (STB06741)</b>	
Chair	Marwan Oro
Secretary	
V-Ch	Neven Nizar
Treasurer	Joshua Creech
Faculty Counselor	Amanpreet Kaur
Mentor	Neven Nizar
Mentor	Michelle Knight
Mentor	Sharan Kalwani
Mentor	Daniel Alo
Mentor	OSAMAH RAWASHDEH
<b>Eastern Michigan University: (STB11091)</b>	
Chair	David Menard
Secretary	
V-Ch	
Treasurer	
Faculty Counselor	ALI EYDGAHI
Mentor	
<b>University Of Michigan-Dearborn: (STB94911)</b>	
Chair	Aaron Ustes
V-Ch	
Secretary	
Treasurer	David Liang
Webmaster	
Faculty Counselor	Stanley Baek
Mentor	
Mentor	Kimball Williams



## ESW 2019 Report

### Embedded Systems Workshop 2019 Report

The Embedded Systems Workshop was held on October 19th, 2019 at the new (relatively speaking) Engineering Center, in the largest Lecture hall – room 116, on the Oakland University campus. This was the 17th year that this event has been continuously held and hosted by Subra Ganesan, Professor at Oakland University's Department of Electrical & Computer Engineering.



#### 1) Attendees of the 2019 ESW event

This in itself is rather remarkable, as the event which was pioneered by Subra, who has provided stewardship largely on his own (of course with support of various sponsors) over the past 16 years. During the last 3 years he did have a lot of help from a much larger organizing committee, drawn from the Computer Society local chapter (aka Chapter V), which consisted of Sharan Kalwani (Vice Chair), Ashok Prajapati (Secretary), Ramesh Sethu (Automotive Liaison), Carla Gerst (Chapter University Liaison), and Benjamin Sweet (ESW Member at Large). The planning for this event began in earnest from August 2019 onwards requiring many regular face to face and online meetings, as well as using a number of technology tools (such as the IEEE G Suite and Zoom.us) to assist in making things run smoothly, on time, and on budget.

ESW 2019 had over 180 folks register right up to the last day (October 17th), including a few walk-ins as well. The event had 5 major sponsors, chief among them were [Intrepid Control Systems](#), [Beningo Embedded Group](#), [Infineon](#), [Zenuity](#) and DataSwing LLC. The organizers were all on site at 7am setting things up and everything went 100% according to schedule, including breaks, lunch and conclusion at 4:30 PM, with clean up and tear down accomplished by 5 PM. ESW 2019 is also happy to report that they have approximately 68% fulfillment of the feedback & survey forms distributed at the event, which as many old hands of audience/member survey work will note, is a very good percentage return. Results are still being compiled at the time of writing this report, but expect (or feel free to remind us) a summary later in these columns.

We had eight technical presentations in all, 100% by practicing industrial professionals. These ran up to 45 minutes each, including Q&A. Most of the speakers

stayed on after the talks as several of them had tables where they could engage in follow up conversations with many of the attendees.



#### ESW 2019 Event/Program Book

A high quality program book was also produced and made available to all who came to the event. This year the committee also attempted to make video recordings on several of the sessions in the hope of preserving and making available the knowledge shared for future members of the chapter. Instrumental in this regard was Arpan Rughani, who patiently captured as much as he could of the “moving targets” <insert wry smile here>. The presentation PDF documents were made available to those who attended. One needs to attend the workshop in order to receive them.



#### 2) ESW 2019 Registration Table

Speaking of members, the registration desk was largely manned by Carla Gerst with superb support and assistance by all of the committee members working in rotation.



#### 3) Chapter V membership desk

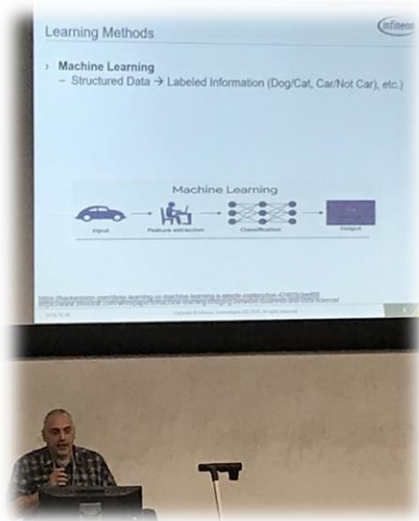
Chapter V also distributed numerous flyers on the benefits of becoming an IEEE member, including membership forms, and IEEE as well as Computer Society swag to help gain mind share of potential volunteers and future engineers & leaders. Indirectly due to his leadership and ongoing support, this activity propelled Sharan Kalwani, Vice Chair to now also assume a key role with the Section's membership Development Committee.

The day started off with Joao Silva of Garmin talking about the complexity of software in this area.



**4) Joao Silva, Chief Software Architect of Garmin**

That was followed by Atilla Bulmus and Cuau Rimaldi of Infineon, who both gave an interesting talk on how AI & Deep Learning is making its way into Embedded Systems today.



**3) Infineon presentation on**

### *AI in Embedded Systems*

After a short laptop change over, we had Jacob Beningo give a deep detailed talk on secure development using the ARM Cortex platform.



**5) Jacob Beningo on Secure Development**

Then just after the first Coffee/Chai break, we were honored to hear from Jeremy Mangas (Oakland University Alum) now with Zenuity, give a talk on what it takes to develop Embedded Systems.



**6) Jeremy Mangas of Zenuity**

Immediately following Jeremy was Srinivas Koneru of ZF, who gave a short overview of the industry standard AUTOSAR (Automotive Open System Architecture) which is a worldwide development partnership of vehicle manufacturers, suppliers, service providers and companies from the automotive electronics, semiconductor and software industry.

By this time everybody was ready for lunch and networking. We also held several raffle draws for door prizes – such as books, controllers, special occasion ESW 2019 coffee mugs, etc.

Post lunch we had a local leading company in the Automotive Networking solutions, Dave Robins of Intrepid Control Systems, talk about issues in Autonomous Driving, sensors and how to make embedded systems better. He covered a lot of ground, so clearly there is a great deal of activity and opportunity ahead in this field!



## Autonomous Sensors + Better Embedded Systems

Dave Robins, Founder & CEO  
daverobins@intrepidcs.com

VIDEO TESLA V10



INTREPID  
CONTROL SYSTEMS  
www.intrepidcs.com



### 7) Dave Robins of Intrepid CS

Appropriately enough this was bracketed by Ms Jhansi Manda, Software Team from Valeo, with a talk about ISO 26262 and critical aspects, recovery and resilience in systems, for compliance with this standard.



### 8) Ms Jhansi Manda of Valeo

We were very fortunate this year to not only have Ms Jhansi but also Ms Meg Novacheck of JD Power – two leading ladies of the automotive world, give very well received talks to the assembled audience. Ms Novacheck's talk shed light on a little considered aspect by engineers in the field, which was how embedded systems are perceived by the end user. I recommend all practitioners review that talk, it may make the difference towards wide spread acceptance of challenging embedded systems, for example in the autonomous world.



### 9) Meg Novacheck of JD Power

This was followed by our now popular Chai/Coffee/Snacks break, during which many folks engaged the speakers in discussions in between bites of vegetarian/chicken/turkey sandwiches. Also several folks interacted in the hallway where the sponsor tables were located (strategically placed between the talks and the food)



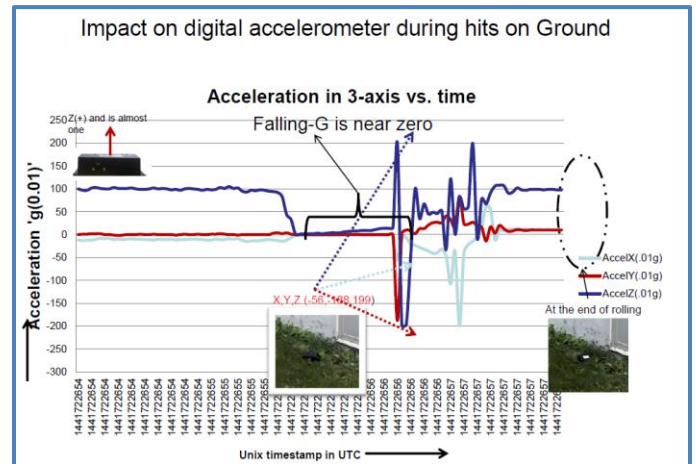


### 10) Fruitful interactions among the attendees

The late afternoon session began with a real world project integrating IoT with real time tracking by Professor Subra Ganesan. Clearly while the technical aspects are there, IoT imposes many more demands on the final product, especially the critical sections of algorithms employed in this world. This was for many an illuminating talk.

The talk touched upon many industry practices, as they have to deliver critical products and are faced with daily

methods to help prove their work will stand up to rigorous requirements of the development timeline, costs, and investment of the project.



### 11) Real Time tracking of IoT

The final session was delivered by Bill VeenHuis of NVIDIA, who spoke on the Jetson, a very low cost (\$99) entry level platform, which gives both experienced and new professionals, students and researchers a great way to create software for embedded systems, autonomous driving, machine learning and intelligent systems. The software for this is available to all for no cost and is compatible across the current line of systems using NVIDIA. The best kicker was – NVIDIA was gracious enough to donate a Jetson as the Grand Prize Raffle!



### 12) Bill VeenHuis of NVIDIA

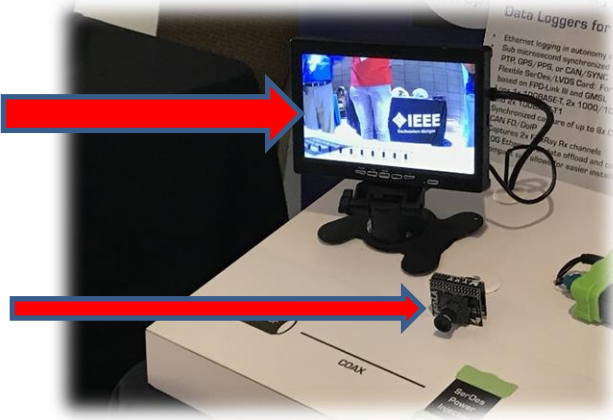
Several attendees found this a very refreshing addition to the roster of talks. To help round off things, these



days it is hard not to find conversations often straying into the hot topic of AI.



**13) Intrepid CS Table Display**



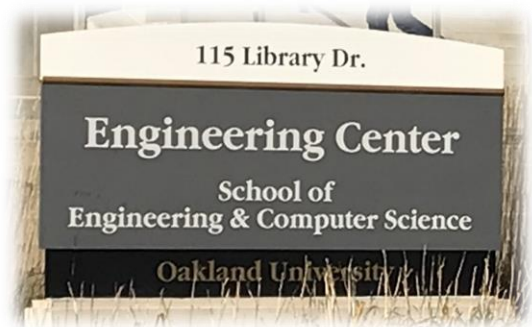
**14) Intrepid CS AV camera focused on the IEEE table in realtime via Automotive Ethernet protocols!**

All throughout the day, several raffle/door prizes were given away to randomly chosen attendees. These included Cypress controller boards and the grand prize was as mentioned earlier – NVIDIA Jetson, won by Sreenivas Eeshwaraju from Harman, who ironically was one of the late last minute registrations! This is just a small example of what one could have missed, if they gave this event a bye. By the way Sreenivas has promised to share his experiences using the Jetson, at next year's conference.



**Sreenivas Eeshwaraju:**  
**Grand Prize winner of**  
**NVSection OfficersIDIA**  
**Jetson**

Lest we forget, we would like to also thank the volunteers for sharing several pictures (select ones posted in this article) and Kevin Taylor for helping out with the registration/membership desk.



**15) ESW19 Event Location**



**16) ESW19 Venue**

See you all next year!



**Sharan Kalwani**  
**Vice-Chair**

**SE Michigan Computer Society Chapter, (Chapter 5)**  
[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)

## ESW 2019 Speakers/Topics

School of Engineering and Computer Science

OAKLAND  
UNIVERSITY™

# Embedded Systems Workshop 2019

Engineering Center Room 116

October 19<sup>th</sup>, 2019Co-Sponsors: Intrepid CS, Zenuity, Infineon  
& Beningo Embedded Group

- |  |                               |
|--|-------------------------------|
| 1) Registration and Coffee   | 8:00 - 8:25 AM                |
| 2) Welcome by Dr. Subra Ganesan & Sharan Kalwani   | 8:30 AM                       |
| 3) <b>Keynote:</b> <i>"Managing In-Vehicle Embedded Infotainment System Growth: A Complexity Problem"</i> , Joao Silva, PhD, Garmin Industries                       | 8:35 – 9:10 AM                |
| 4) <i>"The 1st step into HW supported Automotive AI – System Modelling in Microcontrollers"</i> , Attila Bulmus & Cuau Medina Rimoldi, Infineon Technologies America | 9:15 – 9:55 AM                |
| 5) <i>"Getting Started with Secure Software Development for Embedded Applications"</i> , Jacob Beningo, Beningo Embedded Group                                       | 9:55 – 10:30 AM               |
| <b>**Coffee/Tea Break, Raffle for Door Prizes, Networking</b>  | <b>10:30 - 10:40 AM</b>       |
| 5) <i>"Driving progress: A team-based, systems approach to development"</i> , Jeremy Mangas, Zenuity   | 10:45 – 11:20 AM              |
| 7) <i>"Classic AUTOSAR Layered Software Architecture"</i> , S. Koneru, ZF  | 11:25 – 11:55 AM              |
| <b>**Drawing for Door Prizes**</b>   | <b>12:00 noon to 12:55 PM</b> |
| <b>Complimentary Boxed Lunch from all sponsors. Networking Session</b>   |                               |
| <b>Sponsors Informal Job/Career opening information</b>  |                               |
| 8) <i>"Embedded Systems is great. But ya know what would make it better?"</i> Dave Robins, Intrepid CS   | 1:00 – 1:40 PM                |
| 9) <i>"Software Design for Functional Safety"</i> , Jhansi Manda, Valeo  | 1:45 – 2:20 PM                |
| 10) <i>"Embedded System Quality"</i> , Meg Novacek, JD Power   | 2:25 – 3:00 PM                |
| <b>**Coffee/Tea Break, Raffle for Door Prizes, Networking, etc.</b>  | <b>3:00 – 3:15 PM</b>         |
| 11) <i>"Innovation from Embedded to Automotive"</i> , Bill VeenHuis, NVIDIA  | 3:20 – 3:55 PM                |
| 12) <i>"Real Time tracking and IoT"</i> , Prof Subra Ganesan, Oakland University   | 4:00 – 4:40 PM                |
| <b>Drawing for Door Prizes **Final Raffle/Grand Prize ~ NVIDIA Jetson Platform**</b>   |                               |
| 13) <i>"Closing Remarks and Vote of Thanks"</i>  | <b>4:45 - 4:50 PM</b>         |

## Chapter V Annual Report

*The IEEE Southeast Michigan Computer Society Chapter is one of the largest societies in the SEM section. We had a huge flurry of activity this year, very much in tune with the last 3 years.*

### 17th Annual Embedded Systems Workshop 2019

IEEE SEM Computer Society and Oakland University held the 17th edition of this one-day (free) workshop on Embedded Systems on Saturday, October 19th, 2019 from 8:30 AM till 4:30 PM EDT/EST. This workshop was open to all engineers and students. The aim was to disseminate knowledge, directly benefitting the IEEE members, and at the same time to improve the technology skills pool, indirectly boosting the Michigan economy.

Speakers and experts from the embedded systems industry gave several practical presentations and were also available for discussions and networking throughout the day. In addition to the technical presentations, there were industry information displays and professional recruitment tables. We also had a practically endless supply of coffee/Chai, assorted cookies, doughnuts, petite croissants, and apple & strawberry filled strudels, thus keeping the energy and enthusiasm levels high throughout the day.

The ESW 2019 Program and Organizing Committee consisted of Subra Ganesan (Chair), Sharan Kalwani, Ashok Prajapati, Ramesh S, Carla Gerst and Ben Sweet. For any questions regarding this workshop please feel free to contact the Program Committee at: [esw2019@ieee-sem.org](mailto:esw2019@ieee-sem.org)

We also announced that next year's edition, the 18th Annual Embedded Systems Workshop 2020, will be also taking place at Oakland University, so preparations for that event are already starting.

### Technical Meeting Reports

Practically every month we had a technical meeting held on a huge variety of topics. These are listed below in chronological sequence, so you can view them.

- 1) *The intractable data storage headache – how to solve it, January 24<sup>th</sup>, 2019*
- 2) *Fixing the TCP/IP transport problem, February 7<sup>th</sup>, 2019*
- 3) *The hype behind "AI", February 28<sup>th</sup>, 2019*
- 4) *Electrically small antenna design for communication and direction finding, March 19<sup>th</sup> 2019*
- 5) *Laser-based novel fabrication process for low-cost, high power RF/Microwave devices, March 20<sup>th</sup>, 2019*

- 6) *Wireless system on swarm drones, March 21<sup>st</sup>, 2019*
- 7) *Disruptive Technology Development in Computational Electromagnetics & Tunable Antennas, March 28<sup>th</sup> 2019*
- 8) *1st Micro-Controller Debug Hands on Workshop 2019, March 30<sup>th</sup>, 2019*
- 9) *Invited Speaker Talk: AI and Cybercrime, April 11<sup>th</sup>, 2019*
- 10) *Intrepid Tech Day 2019, April 30<sup>th</sup>, 2019*
- 11) *2019 IEEE SEM Spring Section Conference - "The Next Big Thing", May 2<sup>nd</sup>, 2019*
- 12) *The various and wonderful laws of computing or Rules of Thumb maybe? September 11<sup>th</sup>, 2019*
- 13) *Cryptocurrencies and the economy at large, September 18<sup>th</sup>, 2019*
- 14) *IoT Security – A Comprehensive Life Cycle Framework, September 30<sup>th</sup>, 2019*
- 15) *IEEE Day @Oakland University, October 1<sup>st</sup>, 2019*
- 16) *Machine Vision Demos, November 21<sup>st</sup>, 2019*

We would like to thank Oakland University for extending their support to the chapter in this regard.

To all our CS chapter local SE Michigan members, do feel free to contact us and actively participate in similar future activities.

**We are planning future talks on many other technical topics in 2018, so do share your thoughts, ideas and suggestions.**

Sharan Kalwani  
Vice-Chair

SE Michigan Computer Society Chapter, (Chapter 5)  
[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)



## Member Elevation FYI



In advance of the Senior Elevation event, an article which discusses the elevation 'round up'. This is done in anticipation of the potential number of inquiries on the status of those applications. Here is the general outline of what you can do, and you can check on this (online):

1. Login in to your IEEE.org portal
2. Locate the Senior member area.
3. Scroll down till you locate the "Track Status of Application and References"
4. Review Senior Member Status Report; and finally
5. Notification of Result

Reproduced here are relevant sections for your perusal.

### *Track status of application and references*

Once your application has been received and is in the Submitted and Pending Referrals or Submitted and Pending Review status, your name will appear on the Senior Member Status Report. Please allow about five to seven business days after submission for this to occur, as reports are not updated automatically upon submission. You can also sign in to your application at any time and view the status. (Applications in "Draft" are not posted to the web.)

After your application has reached the **Complete** stage (applications in Word or PDF) or Submitted and Pending Review, it will be scheduled for review at the next available Senior Member Elevation Review Panel. This must occur at least ten days prior to the Review Panel meeting to allow ample time for processing.

### *Notification of results*

You will receive a congratulatory letter and email if you have been approved or an email notification as to whether you have been deferred or denied.

About two weeks following a review panel meeting, an update report with the names of the newly elevated Senior members is published on the web as well as sent electronically to individual subscribers and group mailing lists comprised of Section chairs and newsletter editors.

Approved applicants will:

- Have their name posted in the newly elevated Senior members report after all applicants have been notified
- Receive a formal letter confirming grade elevation after approval
- Receive a wood-and-bronze commemorative plaque and a voucher for up to US\$25, which can be used to join a new IEEE Society of your choice
- Request for employer to be notified using the employer notification form

Denied or Deferred applicants will normally be asked to submit additional documentation in support of their application. This generally means the committee was unable to ascertain whether all the requirements have been met. Failure to document relevant dates of positions or details of how your experience is to be considered significant are frequent reasons that applications are deferred. The meaning of job titles varies from company to company and may not be sufficient to confirm significant performance. For example, if you were a Team Leader, describe the size and scope of the projects worked on. Once further documentation has been submitted, the application will be sent for reconsideration at the next available A&A Review Panel.

Applicants who have resubmitted information and are still not elevated after multiple panel reviews have the right to an appeal of the decision through the Appeal Committee. The Appeal Committee is comprised of the Vice President of Member and Geographic Activities, the Vice President of Technical Activities, and the Vice President of Educational Activities. Appeals are not automatic and must be requested by the applicant.

The Appeal Committee shall review documentation submitted to the Review Panel and make a determination to uphold or overturn the Panel's decision. The applicant is allowed, but not required, to send along further documentation in support of his/her case. For example, if the Review Panel determined that the applicant had only nine years of professional experience, it may be helpful to provide a calculation of how you meet the requirement. Overlapping work and education experience will not be counted in both categories. If that is not sufficient for any inquiries, suggest they phone the IEEE

Contact Center at (1 800 678 4333) for assistance.

***Sharan Kalwani,***  
***Chair, Membership Development Committee***  
***Editor, Wavelengths,***  
***December 2019***

## Senior Elevation!

**IEEE SE Michigan Section**  
Presents  
**"Senior Membership Elevation Round Up"**



IEEE Southeastern Michigan Section will reprise its Senior Member Round up event, at Oakland University on December 7th, 2019 between 9 AM and 1pm in the Dodge Hall. Senior Member Reviewers will assist interested member candidates with at least 10 years of experience in their profession.

The way it works is:

At least a 10 years of significant experience with BS degree needs be established to initiate the senior membership elevation. (A PhD is considered to be 5 years of significant experience and a master degree is considered to be 2 years of significant experience. The remaining 5 (with PhD) to 8 (with MS degree) years of significant experience should be established from the member experience in his/her profession to initiate and submit applications for Senior Member Elevation)

There is no cost to becoming a Senior Member, and this step is a necessary prelude to seeking the IEEE 'Fellow' level. For a complete description of the Senior Member process and its benefits, see the link at:

[http://www.ieee.org/membership\\_services/membership/grade\\_elevation.html](http://www.ieee.org/membership_services/membership/grade_elevation.html)

To sign up for "Elevation" Time Slot, please register on this site for the event and bring your resume, and relevant supporting materials.

*We also invite the newly minted IEEE members to join us. Bringing Senior members of the Section and new members together should create a wonderful opportunity for cross-generation networking. New & Senior Members are requested to also register and invite potential new members who may benefit from joining the IEEE.*

#### At Glance

- **When:**  
Date: Dec 7<sup>th</sup>, 2019  
Time: 9:00am – 1:00 pm
- **Where:**  
Room 236/237, Dodge Hall  
Oakland University  
Rochester, MI 48309
- **Parking:**  
118 Library Drive  
Oakland University  
Rochester, MI 48309
- **Energy Sources:** Soda Pop, water, Vegetarian pizza or Turkey Sandwiches
- **Audience:** All Eligible Members, Senior members and Potential Members

-----  
**Sponsored by**  
**IEEE**  
**SE Michigan Section**  
**Membership Development**  
**&**  
**Region 4**

### Pre-Registration Required!

<https://events.vtools.ieee.org/m/207662>



## Origins of Silicon Valley

*"The Origins of Silicon Valley: Why and How It Happened"*

A report by Sharan Kalwani

This talk was arranged by our Section Chapter TEMS and took place on May 21st at the University of Michigan's Ann Arbor North campus, where the new building of the EECS department is located.

The talk was delivered by Paul Wesling, formerly with Hewlett-Packard or HP (now retired), who is an IEEE Life Fellow, as well as past Communications Director, and quite active in the IEEE SF Bay Area Council.

What followed was a very fascinating account of the origins of what we now know as Silicon Valley (SV) (there is now even a TV show of the same name). Often we picture folks like Steve Jobs, Steve Wozniak with their garage startup or Hewlett Packard with their humble beginnings. However the innovative culture began well before that – going back to the turn of the 20th century (i.e. the 1900s) and the introduction of the telegraph and ham radio. Pioneer names such as Cyril Elwell, a Stanford grad who in 1909 started Federal Telegraph in Palo Alto, Lee de Forest who invented many many things, such as the oscillator, amplifier, continuous wave radio, the audion, or folks who demonstrated wireless radio communication from San Francisco to Honolulu in 1912! Yes, that was the birth of entrepreneurs and Venture Capital folks or "angel investors", as well as incubation centers such as Stanford University, a key institution that realized getting involved with encouraging young brilliant minds to explore and break new ground, produced lots of fruit, even when when faced with clear hostility and look down upon "vibes" from the East Coast.

Element #1 of the SV culture: One of the earliest radio stations was started by a Stanford engineering student – Charles "Doc" Herrold (broadcasting's forgotten father) in 1909, sending out voice and music, under the title "San Jose calling", which later became FN, then SJN, then KQW (founded also KLIV) and now KCBS (740 AM and 106.9 FM). Soon afterwards the story of Otis Moorhead, who established Moorhead Labs to make amateur & vacuum tube gear, but a patent lawsuit soon put him out of business, but the rebel/maverick profile had become established by then.

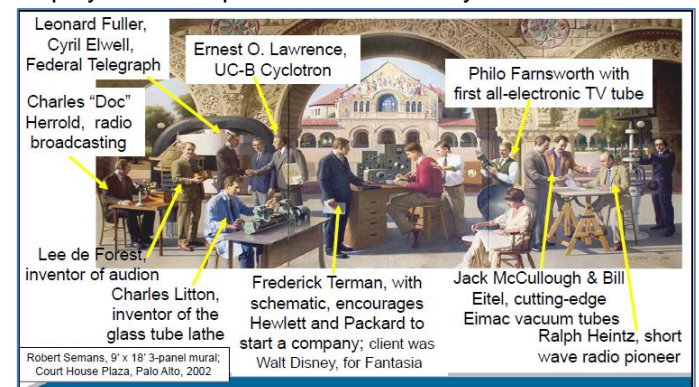
Element #2 of the SSV culture: The second aspect was the influx of independent private wealth plus World War 1 – when the Navy need technology to help "push" ship to ship communications. This brought in a huge deluge of activity and money to the SF Bay area. The name of Charles Litton, Bill Eitel and Jack McCulloch immediately pops up. Through family and friends, ham

radio, close collaboration, no differentiation of background, education, etc., sort of formed the nucleus of SV culture and provided the early nudge to the later "boom". This was also instrumental in producing folks like Fred Terman, Herbert Hoover, Roland Marx, George Branner, Jack Franklin – who all relished working together, setting the template for bigger things – something even they did not imagine. Finally thru massive growth, ups and then later downs (recession/depression), a rebuild started and Eitel-McCulloch started Menlo Park finance/capital firms, a precursor to the modern day VC. Free exchange of technical, commercial information, in order to reduce risk, improve chances to succeed, perhaps behind their thoughts was "a rising tide will lift all boats" approach.



### The Klystron Device

Soon WW 2 arrived at the United States door step and the US needed radar. Along came the famous **Klystron** device, which could operate at high frequencies and voltages. Thus the SF Bay area/Stanford became a hotbed of electronics activity and led to many electronics companies being set up and introducing several of the employee centric policies we see today.



### The Mural at Sheridan & Birch

If we now fast forward to the 1950s, we have the invention of the transistor by William Shockley and others. Shockley was raised in Palo Alto and his invention went on to replace vacuum tubes, so when he returned to Caltech, where he started Shockley



Transistor Company in Mountain View area. It was from there that the famous 8 people who he worked with for a couple of years, left him and went on to form Fairchild Semiconductor with venture capital funding. This was the seminal event which led to the snowballing effect we still see in action today. Several more innovative inventions followed – such as the “planar process” for creating the semiconductor products – a very key moment indeed.

### The Planar Process

It all happened here ...

At original Fairchild Semiconductor plant on Charleston Road, Palo Alto



But that was just the beginning – Gordon Moore (of the famous Moore's Law) and Bob Noyce – both left Fairchild to start Intel with venture capital from Arthur Rock. They created the first microprocessor in 1971. By the 1960s, the modern day Silicon Valley was now truly born!

### The Fairchildren: Formation of Intel

- Gordon Moore and Bob Noyce
  - Left Fairchild in 1968 to form Intel
  - To focus on memory ICs
  - Venture capital (Arthur Rock)
  - First microprocessor in 1971



Paul Wesling then highlighted a major difference in the cultures that demarcated the whole landscape. Basically in the East Coast, the focus was always on large, vertically integrated corporations, who seemed to depend/thrive in protecting existing status quo and were slow to adapt to technology changes.

### Where is “Silicon Valley”?

"A map of **Silicon Valley** in 2013, which originally just included the Santa Clara Valley from Gilroy to Palo Alto. Today it is a **metaphysical space** stretching from San Jose to San Francisco and Berkeley."

*A History of Silicon Valley*, p. 264



In SV – there was a clear 180 degree shift: things were highly fragmented, decentralized, nimble and engineering driven. One of the facets was a highly dense packed geographic area of small and medium sized firms which drew from the common work force, supported each other and did not even have a non-compete clause! This in turn fostered the organic growth of hobbyists, collaboration (a valued word!) sharing, cutting edge entrepreneurs, local universities, role models, etc.

[A personal observation: One person I met from the SV described it to me this way. Often after work, folks would meet in local watering holes or gathering spots, bars, etc. If one learned about a failed foray, instead of commensurating, the typical response usually would be something like: “So what are you working on next?”]

### How Different are We?

- “In Silicon Valley, great ‘collaborators’ are prized; in Washington, DC, they are hanged. When they say ‘collaborator’, they mean ‘traitor’; here [SV], they mean ‘colleague’.”  
Thomas Friedman, *NY Times*, Jan 13, 2013
- It's our **attitude** in Silicon Valley:  
“**Failure** is a **feature**, not a bug.” “Move Fast, Break Things”
- “America **innovates**, China **duplicates** and Europe **regulates**.” Jeremy Warner
- Yoda: “Do or do not — there is no **try**.” full commitment

### Silicon Valley's view of itself!

Paul finally described what are the current hotbeds of activity today in SV, but of course there is always much more going on.

### Defining Characteristics for SV

- Competition **and** cooperation
- Often hobby-focused (for start-ups)
- Small, dynamic start-ups, companies
- Fluidity and flexibility (ability to “pivot”)
- Egalitarian: parking, offices, “open door” policy, 20% time, Friday beer busts, employee-focus
- Large pool of entrepreneurs, technologists  
... and other cultural, management factors

FYI: The slides can be found here:

**Reviewing the Good Ol' Days**  
... how Silicon Valley became the hub of technology development ... *and STAYS that way* ...

Download the slides and reading list (6 MB) at:  
**[pwesling.com/docs/1905c-wesling.pdf](http://pwesling.com/docs/1905c-wesling.pdf)**

This lecture is mounted on **Stanford's YouTube channel**:  
On SmartTV, search YouTube for "**stanford silicon valley**"

For other Silicon Valley Technology History Talks/Interviews:  
**[www.SiliconValleyHistory.com](http://www.SiliconValleyHistory.com)**  
**[p.wesling@ieee.org](mailto:p.wesling@ieee.org)**

He did recommend an eclectic list of literature which one could go thru if the talk piqued anyone's interest.

For further reading:

- i. *Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970*, Christophe Lecuyer
- ii. *Fred Terman at Stanford: Building a Discipline, a University, and Silicon Valley*, Stewart Gillmor, 2004, ISBN 978-0804749145
- iii. *The Tube Guys*, Norm Pond, 2008, ISBN 978-0-9816923-0-2
- iv. *The HP Phenomenon: Innovation and Business Transformation*, Charles H House & Raymond Lewis Price
- v. *The Man Behind the Microchip: Robert Noyce and the Invention of Silicon Valley*, Leslie Berlin, 2005
- vi. *Decoding Silicon Valley: The Insider's Guide*, Jonathan C. Baer and Michelle E. Messina, 2016, ISBN 978-0-9973624-0-4
- vii. For those who don't have time to read, but prefer something on NetFlix: *Something Ventured*, 1h 24m, 2001 SXSW Best Documentary Award

ZF Employment Ad

A recruitment advertisement for ZF. The background is a blue-tinted image of a man with a beard wearing Google Glass. He is looking down at a tablet he is holding. Overlaid on the image are glowing, semi-transparent wireframe diagrams of automotive components, including a transmission and suspension parts. In the top right corner is the ZF logo, which consists of the letters 'ZF' inside a circle. The text 'WHAT'S NEXT?' is written in large, bold, white capital letters. Below it, 'JOIN ZF' is written in smaller white capital letters, with a red dotted line and arrow pointing from the 'Q' in 'NEXT?' to 'JOIN ZF'. Further down, another blue dotted line and arrow points from 'JOIN ZF' to a block of text. The text reads: 'WORK AT THE FOREFRONT OF AUTOMOTIVE INNOVATION WITH ZF, ONE OF THE WORLD'S LEADING AUTOMOTIVE SUPPLIERS.' At the bottom right, the URL 'ZF.COM/CAREERS' is displayed in blue capital letters.

**ZF**

# WHAT'S NEXT?

JOIN ZF

WORK AT THE FOREFRONT OF  
AUTOMOTIVE INNOVATION WITH ZF,  
ONE OF THE WORLD'S LEADING  
AUTOMOTIVE SUPPLIERS.

[ZF.COM/CAREERS](http://ZF.COM/CAREERS)



## Future City 2020

### IEEE-SEM SECTION SPECIAL AWARD JUDGES NEEDED FOR JANUARY 2020 FUTURE CITY COMPETITION

by Don C. Bramlett, PE, LSMIEEE, FESD, FMSPE – IEEE-SEM Section Advisor

This is the twentieth year that IEEE-SEM will provide a dedicated team of judges and a special professional organization award for the project having the most innovative application of electro-technology in the design of a city in the future. Judging for the 2020 Michigan Regional Future City Competition will be on Tuesday, January 28, 2020 at the Suburban Collection Showplace in Novi, just off I-96 on Grand River between Novi Road and Beck Road. Orientation and breakfast for judges will start at 7:30 am. Judging will be from 9:00 AM to 11:00 AM, followed by lunch. A complimentary continental breakfast and lunch are provided that day for the judges. This pleasurable and fulfilling task only takes half a day.

The theme in 2020 for the Future City Competition is “Clean Water: Tap into Tomorrow”. The student teams will design a water resilient city prepared to address a wide range of risks including drought, flooding, population change, natural and manmade disasters and economic recession. The team’s challenge is to choose

a threat to the city’s water supply and design a resilient system to maintain a reliable supply of clean water.

This is one of the premier pre-university programs for energized middle school aged students. Please volunteer to be among those to comprise the team of IEEE-SEM Section special award judges. I encourage anyone who has an interest in the science and math education of our youth or an interest in pre-university education programs to consider being a judge at the Michigan Regional Future City Competition. IEEE Student Branch members as well as regular IEEE members have found this to be a fulfilling experience in past years. As a judge myself in previous years, I have found the experience of talking with the students, finding out their interests and observing their projects/presentations to be very rewarding. So come out and spend the morning with us as we meet with some of the potential engineers, scientists and city planners of the future.

If interested in more information concerning being a member of the team of judges for the IEEE-SEM professional award at the Michigan Regional Future City Competition, contact Don Bramlett at cell (313) 608-6223, or at home at (734) 591-1452 or by email at [d.bramlett@ieee.org](mailto:d.bramlett@ieee.org).

**Construction Bee:****Active Attenuator Construction Bee**

Stan Briggs – K8SB, will be conducting a Construction Bee to satisfy the many requests to build his **universal active attenuator**. (Photo at right.)

The attenuator is a powerful tool for use in radio direction finding and amateur radio 'Fox Hunts' and will work with any radio receiver.

**Date:** Saturday February 1, 2020

**Time:** 9:00 am to noon

**Location:** Trenton Faith United Method Church, 2530 Charlton Rd, Trenton, MI 48183

All parts and components to build the attenuator, including the enclosure, will be provided ready for attendees to solder and assemble their own units. Each unit will be tested / demonstrated to verify correct operation at the conclusion of the program.

**Note:** *Attendees must bring their own soldering equipment*

(Soldering Iron—15 watts, solder, needle nose pliers, etc.)



Registration / Order is required by **January 15, 2020**

Advance registration is required via the Motor City Radio Club website at:

Or, use: <http://www.w8mrm.net/event-3603333>

Or the QR Code at the right.

Fee: \$25.00 in advance to Motor City Radio Club via the club website (above).

Or... \$28.00 in cash, at the door.

*There is no charge for attending the construction bee. The fee will pay for attenuator only.*



[bre.is/vxY2pDks](http://bre.is/vxY2pDks)

*components and parts*



**Stan Briggs, K8SB**, was first licensed in 1953 as WN8MPD and W8MPD. Stan was active in the Kalamazoo Amateur Radio Club while attending Western Michigan University. He joined the Motor City Radio Club after obtaining a Physics teaching position in Wyandotte, MI in 1958. Stan taught Electronics at Henry Ford Community College in Dearborn, MI starting in 1973 and was the trustee of the college club station K8EEH until his retirement in 1999.

Stan consults in technical training in automotive instrumentation and testing.

Stan held the ARRL leadership positions as Emergency Coordinator for Wayne County and the Section Communications Manager for one term in 1978-79. K8SB operates on all bands and holds down a regular net control slots on the Michigan QMN CW net. He operates QRP on a regular basis and still enjoys Field Day. Stan's XYL is WB8AFO, Oldest daughter is WB8WGP, 2nd oldest daughter is KB2EHU and his son holds his old call; W8MPD. He has been doing Radio Direction Finding since the mid-1950s.

**Section Matters****Joint Chapter Meetings: A Painless Way to Keep Current**

Engineering, as are most disciplines in the world, is evolving. Electrical engineering is evolving very rapidly. How many of today's EEs know the function of a suppressor grid or the task of a 6SN7? Software was the domain of mathematicians and the occasional scientist. Solid state was the domain of physicists and chemists. The challenge for today's engineer is to stay apace with rapid technological advancements.

IEEE has Sections that focus on EEs staying current in their field and exploring other areas through a variety of ways, including conferences, meetings and courses. IEEE SEM has all of these available. Since there is a finite amount of time to attend meetings, conferences and take courses, the challenge is to become more efficient in staying current and expanding one's networks of contacts and interests. Holding joint meetings with other Chapters is an easy solution. Joint Chapter meetings lighten the administrative burden while reducing the cost for each Chapter. A joint meeting can allow exploration of an area that is a complimentary field of interest, or is one you always wanted to know about. What better way to do this than by having a joint meeting?

Chapter officers should contact one (or more) of their fellow Chapter officers to explore scheduling a joint meeting. Chapter members should let their officers know which Chapters they would like to join with for a meeting. Joint meetings are easy, reduce administrative burden and expenses, and can even be fun. Joint meetings are a painless way to expand everyone's horizon.

*Joe Giachino*

**Section Focus**

The IEEE SEM Section Officers have reaffirmed the Mission and Goals of the section with the guidance of the Region 4 leadership. The Mission and Goals conform to those of IEEE worldwide.

You have probably seen the Mission and Goals before. However, it is important to keep these clearly in mind and remind ourselves often that this is what we are about and what we are trying to accomplish.

**Section Mission**

Inspire – Enable – Empower and Engage Members of IEEE at the local level.

For the purpose of:

- Fulfilling the mission of IEEE to foster technological innovation and excellence for the benefit of humanity,
- Enhancing the members' growth and development throughout their life cycle, and
- Providing a professional home,

**Section Goals**

- Increase member engagement,
- Improve relationships with and among members,
- Increase operational efficiency and effectiveness, within the section and its interfaces,
- Enhance collaboration – serve as the local face of IEEE to the community,
- Increase membership, and
- Ensure the collection of appropriate information necessary to assist the IEEE to become a data driven organization.

It is now the task of the section leadership to guide and coach all section officers and elements to focus their activities on achieving those goals



The year 2019 has been both a good and lukewarm year for PACE. For those who may be new to the IEEE SE Michigan Section, the role/purpose of PACE (**P**rofessional **A**ctivities **C**ommittee for **E**ngineers) is to assist our members in career related aspects. Our Section has identified five major areas:

- 1) help promote a professional environment for employed engineers
- 2) improve the professional status of the engineer and public's awareness of the engineering profession
- 3) improve the accessibility of local courses, lecture series, and refresher courses for professional engineering registration
- 4) increase the public's understanding of the role of electrical technology toward enhancing the, quality of life and
- 5) provide job search assistance to unemployed engineers.

To this end, we have had several professional development offerings during the course of 2019. These were short tutorials on:

[illegible][illegible]

We held several instances of these, in order to accommodate the different schedules for those who expressed interest. All of these were half day sessions, held on Saturdays during the summer times. We also announced courses on Soft Skills as well as Leadership Tutorials, but we were disappointed that very few signed up to participate in these, so they had to be canceled. We anticipate trying again in 2020.

If you have a need for similar or related workshops, do directly get in touch with us.

Sharan Kalwani  
Chair  
SE Michigan PACE  
[sharan.kalwani@jeec.org](mailto:sharan.kalwani@jeec.org)

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

Consultants Network Affinity Group: (CN40035)

Life Members:

Young Professionals:

Women in Engineering:

Chapter: 01 (SP01) Signal Processing Society,  
 (CAS04) Circuits and Systems Society and  
 (IT12) Information Theory Society

Chapter: 02 (VT06) Vehicular Technology Society

Chapter: 03 (AES10) Aerospace and Electronic Systems Society and  
 (COM19) Communications Society

Chapter: 04 "Trident" (AP03) Antennas and Propagation Society,  
 (ED15) Electron Devices Society,  
 (MTT17) Microwave Theory and Techniques Society,

Chapter: 05 "Computer" (C16) Computer Society

Chapter: 06 (GRS29) Geosciences and Remote Sensing Society

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

Chapter: 08 "EMC" (EMC27) Electromagnetic Compatibility Society

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

Chapter: 10 (TEM14) Technology and Engineering Management Society

Chapter: 11 (EMB18) Engineering in Medicine &amp; Biology

Chapter: 12 (CS23) Control Systems Society

Chapter: 13 (E25) Education Society

Chapter: 14 (RA24) Robotics And Automation Society

Chapter: 15 (NPS05) Nuclear Plasma Sciences Society

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

Chapter: 17 (NANO42) Nanotechnology Council

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

University Of Detroit-Mercy: (STB00531)

Michigan State University: (STB01111)

University Of Michigan-Ann Arbor: (STB01121)

Wayne State University: (STB02251)

Lawrence Technological University: (STB03921)

Oakland University: (STB06741)

Eastern Michigan University: (STB11091)

University of Michigan-Dearborn: (STB94911)

**Curated & Formatted By**

**Sharan Kalwani,**  
**Editor, Wavelengths,**  
**2017-2018-2019**

## Non-IEEE 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 changing 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 e-Wavelengths:

[www.e-wavelengths.org](http://www.e-wavelengths.org)

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 IEEE Local Meetings:

<http://www.e-wavelengths.org/>

## Other Happenings

Here are some of the non-IEEE events 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.

Send details to: [wavelengths@ieee-sem.org](mailto:wavelengths@ieee-sem.org)

**Michigan Institute for Plasma Science and Engineering:** Seminars for the 2018-2019 academic year: <http://mipse.umich.edu/seminars.php>

**Model RC Aircraft**  
<http://www.skymasters.org/>

**Model Rocketry**  
<http://team1.org/>

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

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

**Robots**  
<http://www.therobotgarage.com/about-us.html>

**Science Fiction Conventions**  
<https://2019.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 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 Eric George, the section secretary at: [eric.george.us@ieee.org](mailto:eric.george.us@ieee.org) and request to be placed on the distribution list for a monthly copy of the agenda and minutes.

More meeting details are available on the next page of this newsletter.

### Other Meetings:

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

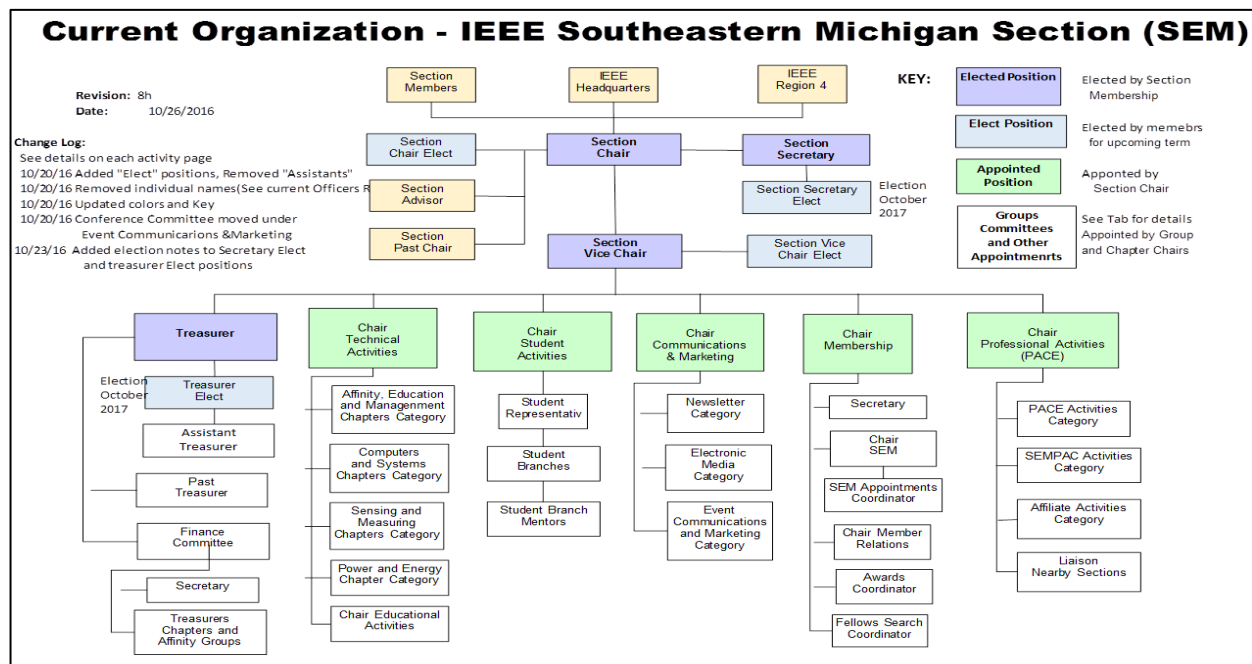
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to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

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

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

Eric George - SEM Asst. Secretary

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



**ExCom Meeting Schedule**

Below is the 2019 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 2019 meetings. Or, link your personal calendar to the SEM Web calendar.

**ExCom: Meeting Schedule for 2019:**

~~F2F, Wednesday Jan 9, [New Officers Meet and Greet]~~

~~Teleconference, Thursday Feb 7~~

~~Teleconference, Wednesday March 6~~

~~F2F, Thursday, April 4~~

~~Teleconference, Wednesday May 1~~

~~Teleconference, Thursday June 6~~

~~F2F, Wednesday July 10 [Moved for the 4th of July]~~

~~Teleconference, Thursday August 1~~

~~Teleconference, Wednesday September 11; Vtools link <https://events.vtools.ieee.org/m/202560>~~

~~F2F, Thursday October 5; Vtools link <https://events.vtools.ieee.org/m/203338>~~

~~Teleconference, Wednesday November 6; Vtools link <https://events.vtools.ieee.org/m/203339>~~

Teleconference, Thursday December 5; <https://events.vtools.ieee.org/m/203340>

**Note:** All IEEE Members are welcome at any IEEE meeting, at any time but, please register so we can be sure to accommodate you.

**Eric George**  
**SEM Secretary**

## Editor's Corner

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

Comments and suggestions may be sent to the editorial team at [wavelengths@ieee-sem.org](mailto:wavelengths@ieee-sem.org)

OR

[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)

[nilesh.dudhaia@ieee.org](mailto:nilesh.dudhaia@ieee.org)

[k.williams@ieee.org](mailto:k.williams@ieee.org)

We rely on our officers and members to provide the 'copy' that we finally present to readers of the newsletter. The **Wavelengths Focus Plan and Personal Profiles** plan shown in the matrix below is presented to ensure coverage of section activities and events.

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

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

### Editors:

We are always looking for members interested in helping to edit the newsletter. The process is always more fun with more people to share the duties. Having more participants and contributors also helps us keep the newsletter interesting.

### Heads Up

We are contemplating making the submissions of articles and events for the Wavelengths, a little easier and a little more inviting. Ideas are of course welcome and to this end, we are toying with setting up a little "newsletter portal". Stay tuned for some news on that end!

### Join the Team:

If you feel you might like to join the team, or would like to train with us, please contact one of us at:

[wavelengths@ieee-sem.org](mailto:wavelengths@ieee-sem.org) OR any one of the following:

[sharan.kalwani@ieee.org](mailto:sharan.kalwani@ieee.org)

[nilesh.dudhaia@ieee.org](mailto:nilesh.dudhaia@ieee.org)

[k.williams@ieee.org](mailto:k.williams@ieee.org)



*Wavelengths Annual Publication Plan for Articles*

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

*Wavelengths Annual Publication Plan for Personal Profiles*

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



**Web & Social Sites****SEM Website**

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

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

**Section Website Event Calendar**

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

**SEM Facebook Page**

(Select the “” button under the top row.)

**SEM LinkedIn Page**

(Select the “” button under the top row.)

**SEM Officers:**

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

**Section Officers****Section Chair (Interim)**

David Mindham

**Section Secretary**

Eric George

**Section Vice-Chair**

Nevrus Kaja

**Section Treasurer**

Michael Folian

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

Don Bramlett

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

Christopher Guirlanda

**Chair Finance**

Nevrus Kaja

**Chair Membership Development**

Sharan Kalwani

**Chair Nominations & Appointments**

Kimball Williams

**Chair Professional Activities (PACE)**

Sharan Kalwani

**Chair Student Activities**

Mel Chi

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

Jeffery Mosley



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

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Engineers  
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A. Intelligent  
B. Funny  
C. Attractive  
✓ All of the Above

### Advertising Rates

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

[http://www.ieee-sem.org/ewavelengths/?page\\_id=181](http://www.ieee-sem.org/ewavelengths/?page_id=181).

Please see the information listed on the site, and contact our web editor of e-Wavelengths, Nevruz Kaja, for further details.

### Leadership Meetings

#### SEM Executive Committee Monthly Teleconferences:

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

#### SEM Executive Committee Face-to-Face Meetings:

- Once every Qtr. Find the location, and Registration at:  
<https://meetings.vtools.ieee.org/main>

#### SEM Standing Committee Meetings:

#### SEM Affinity Group Meetings:

#### SEM Technical Society/Chapter Meetings:

#### SEM University Student Branch Meetings:

- Meeting schedules are announced on SEM Calendar  
<http://r4.ieee.org/sem/>  
(Select the "SEM Calendar" button in the top row.)
- Registration for all at:  
<https://meetings.vtools.ieee.org/main>