



Wavelengths

SEM Calendar

Volume 56 – Issue 4 April 2016

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*Wavelengths Newsletter is produced by IEEE volunteers for SEM Members.
Archive: <http://sites.ieee.org/sem/>
Select: "Wavelengths"*

Section/Chapter Meetings, Webinars:

CH4 -4/4 Lecture on "The Wonderful World of Nonlinearity: Modeling and Characterization of RF and Microwave Circuits"

[\(more\)](#)

CH4 & CH8 – 4/7 Lecture on “An Introduction to Free-Field Measurements of Wireless Devices in Reverberation Chambers: A general overview of wireless tests in RCs” [\(more\)](#)

Ch5 – 4/9 Workshop on IOT [\(more\)](#)

Ch7 – 5/24 University of Michigan Battery Lab Tour [\(more\)](#)

Conferences and Seminars:

CH5 – 4/9, 16, 23 Hands-on Training: Fundamentals of Embedded Software Design, Open to full time students only [\(more\)](#)

SAE Congress – 4/12 Automotive Electronics, Hardware Design Engineering and Development [\(more\)](#)

SEM – 4/19 Spring 2016 Section Conference on Cybersecurity [\(more\)](#)

CH9 – 5/5 EMC Fest '2016 [\(more\)](#)

Career Development:

Consultants Group -4/13 Consultants Affinity Group Spring Networking Event [\(more\)](#)

Positions Available:

SEM list is available at link [\(more\)](#)

Chair's Message**Change Happens:**

Wavelengths is changing its format. This issue is an example of how our editors are looking toward the future. The goal is for this newsletter to be more relevant and newsworthy. Please see a greater explanation on page #3.

Busy Spring:

There are many activities planned by Chapters, Affinity Groups and our Section this spring. You are encouraged to attend, participate and volunteer.

Spring Conference:

Tuesday evening April 19 is our Section Spring Conference. Please register early attendees and food. Please see details on page #12. You can learn more about the conference at www.ieee-sem.org and click on the "SEM Spring Conference" tab at the upper left of the web page.

H-1B Visa Concerns:

May I please draw your attention to page #9, H-1B Visa Petition. Please consider your opinion on this matter and either support the petition or let Russell Harrison know your concerns.

Volunteering:

The benefits of volunteering include, but are not limited to, building your network, growing your social skills, building your leadership skills and mentoring others with your knowledge. To volunteer, please contact leaders in the areas of your interests (www.ieee-sem.org and click on "About SEM" tab) or contact Kimball Williams our Chair of Nominations and Appointments at k.williams@ieee.org. Please volunteer, you will find the experience interesting and rewarding.

I look forward to hearing from you and seeing you at our events. As always, your ideas and suggestions are encouraged and welcome.

Robert Neff
IEEE SEM Section Chair
RLNeff1@gmail.com

April Fools Moment

A reward of 500 microfarads has been offered for information leading to the arrest of Hopalong Capacity. This unrectified criminal escaped from a Weston standard cell where he had been clamped in ions awaiting the Gauss Chamber.

He is charged with the murder of his Aunt Enna and his Uncle Con Denser, as well as the induction of an 18-turn coil named Millie Henry, who was found choked and robbed of valuable joules. He is armed with a carbon rod and is a potential killer. Capacity is also charged with driving a DC motor over a Wheatstone bridge and refusing to let the band pass.

If encountered, he may offer series resistance. The Electromotive Force spent the entire night searching for him in a magnetic field where he had gone to ground. They had no success and now believe he has returned ohm via a short circuit.

He was last seen riding a megacycle with his friend Eddy Current who was playing a harmonic. Charges against Hopalong Capacity are being considered under those pertaining to Ohm's Law.

If seen, repeat him immediately, remember he is totally amped up and due to zap his present appearance may be totally shocking.

Contributed by Kimball Williams

On-Line Newsletter!

From the SEM calendar on page one you see that the Wavelengths newsletter is changed, from the March issue the transition to e-Wavelengths is starting. April is a transition and the format is starting to emulate what will be an online document.

One of constant struggles being waged in this digital age is the need to keep everyone in large, diverse organizations informed of time sensitive and/or critical events. This shows up in our monthly newsletter when we learn of events of interest to our members only a few days before the event or after the monthly publication date has passed and the current issue already released into your hands.

Following the lead of the successful ["e-grid"](#) on-line publication used by the IEEE San Francisco Bay Area Council, we are currently nearing the final planning stages of converting our monthly 'published' PDF newsletter into a 'Live' on-line version that will present as 'up to the minute' information on local activities as possible.

However, we don't want to lose the monthly 'summary' publication. The plan is to 'capture' those elements that record what happened during the last 30 day period and 'lock' it in a PDF format that can continue to be our 'monthly newsletter' and social record of what has happened, while still giving everyone the most current new information possible.

If you are interested in being part of this evolution of SEM please see page 17 for our e-Wavelengths contacts and reply to us to participate. Your

contributions are and response to format, suggestions are welcome.
ml

Farewell Willow Run:

One of the earliest sites for the evaluation of electronic products for unwanted electromagnetic radiation was the University of Michigan Radiation Laboratory under the direction of Dr. Val Lipa. The lab was located at in and near Building 2214 on the Willow Run airfield at:

8501 Beck Road
Belleville, Michigan 48111

On Friday, August 21st, 2015 many Southeastern Michigan IEEE

more complete understanding of Electromagnetic Compatibility testing.

Building 2214 (Val's lab) is being closed down this month. The University elected not to make repairs to fix a flood in the basement area, and is quickly moving Val out of Building 2214 and over into Building 2227 (formerly JEF, currently Willow Run Test Labs - WRTL) for the remainder of this year. Val's lab building was scheduled to be demolished in the Fall, and Val will join WRTL in leaving the Willow Run site entirely for our new test facility in Brighton early in 2016.

Prior link to the test facility is: <http://www.wrtest.com/>



members gathered to say a fond farewell to a site many of us had known since the early 1960's.

Many EE's in our Section began their careers with an introduction to Val, and a visit to the laboratory to begin to climb the learning curve toward a



CH 4 & 8 Free Field Measurements Meeting

Kate Remley of NIST

Topic: **An Introduction to Free-Field Measurements of Wireless Devices in Reverberation Chambers**

Abstract

When the antenna is integrated into the body of a wireless device, as it is for cell phones and many other portable devices, performance testing is typically done under free-field conditions. In this overview presentation, we will discuss free-field characterization of some key wireless-device parameters by use of reverberation chambers. Measurements in reverberation chambers must be averaged over a sufficient number of samples in which the modes of the chamber are randomized or "stirred." We will discuss recent research on the use of these chambers for testing devices that transmit modulated signals.

**Biography:****Biography**

Kate A. Remley (S'92-M'99-SM'06-F'13) was born in Ann Arbor, MI. She received the Ph.D. degree in Electrical and Computer Engineering from Oregon State University, Corvallis, in 1999.

From 1983 to 1992, she was a Broadcast Engineer in Eugene, OR, serving as Chief Engineer of an AM/FM broadcast station from 1989-1991. In 1999, she joined the RF Technology Division of the National Institute of Standards and Technology (NIST), Boulder, CO, as an Electronics Engineer. She is currently the leader of the Metrology for Wireless Systems Group at NIST, where her research activities include development of calibrated measurements for microwave and millimeter-wave wireless systems, characterizing the link between nonlinear circuits and system performance, and developing standardized test methods for RF equipment used by the public-safety community.

Dr. Remley was the recipient of the Department of Commerce Bronze and Silver Medals, an ARFTG Best Paper Award, and is a member of the Oregon State University Academy of Distinguished Engineers. She was the Chair of the MTT-11 Technical Committee on Microwave Measurements from 2008 - 2010 and the Editor-in-Chief of IEEE Microwave Magazine from 2009 - 2011, and is the Chair of the MTT Fellow Committee.

Email: kate.remley@nist.gov

Address: Boulder, Colorado, United States

**When**

Date: 07-April-2016

Time: 05:30PM to 07:30PM (2.00 hours)

All times are: US/Michigan

[Add Meeting to Calendar](#)

Where

1301 Beal Avenue Building: University of Michigan - Ann Arbor
 Parking Lot NC20 Room Number: EECS 1200
 Ann Arbor, Michigan
 United States 48109-2122

Who

[Email meeting contact...](#)

More

No Admission Charge.

University of Michigan Battery Lab Tour

University of Michigan Battery Lab Tour

Join us for a tour of the University of Michigan Battery Lab Tour.


Dedicated in Fall 2013 and newly open for business, the Battery Fabrication and Characterization User Facility is a space developed in cooperation with the Michigan Economic Development Corporation and Ford Motor Company. This lab enables industry and university researcher collaboration on developing cheaper and longer lasting energy-storage devices in the heart of the U.S. auto industry. The new facility — for prototyping, testing and analyzing batteries and the materials that go into them — promises to be a key enabler for Southeast Michigan's battery supply chain. It will bring together materials scientists and engineers, as well as suppliers and manufacturers, to ease a bottleneck in battery development near the nation's automotive capital. The new lab will be available for any firm to use. It will also allow students to use state-of-the-art equipment while working closely with experts. The Energy Institute envisions the new facility as a safe zone for non-competitive collaboration.

When

Date: 24-May-2016

Time: 05:30PM to 06:30PM (1.00 hours)

All times are: US/Eastern

 [Add Meeting to Calendar](#)

Where

2301 Bonisteel Blvd

Ann Arbor, Michigan

United States 48109

Who

[Email meeting contact...](#)

More

No Admission Charge.

Agenda

5:15 P.M.: We'll meet at Battery Lab. Parking is free after 5 PM, but can be tricky. Parking maps are available on UofM's website.

5:30 P.M.: Tour starts

Once the tour ends, people that are interested can meet at Jolly Pumpkin in Ann Arbor for dinner/networking.

https://meetings.vtools.ieee.org/meeting_registration/register/38354

Seminar: EMC Test Setup

**NORTH AMERICAN
AUTOMOTIVE WORKSHOP 2016**

KEYNOTE TALKS

MAGNA ELECTRONICS

"Automotive EMC Test Setup Grounding
Dissimilarities"

Andrew R. Macko
*Electromagnetic Compatibility Technical Specialist,
Chief Engineering Group*

GM

"Using Electromagnetic Simulation for
Developing Automotive EMC Design Guidelines"

Scott Piper
EMC Engineer

TEXAS INSTRUMENTS INCORPORATED

"Power Switch Technology in EMC"

John Rice
Power Systems Engineer, Senior Member Technical Staff

FORD MOTOR COMPANY

"Automotive Radar Application"

John F. Locke
Technical Specialist, RF & Antenna Subsystems

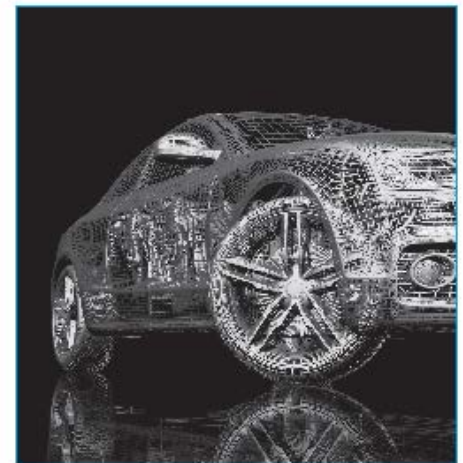


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**CST ANNOUNCES
NORTH AMERICAN
AUTOMOTIVE
WORKSHOP 2016**



4th May, 2016
Dearborn, Michigan
United States

CH4 Lecture on Modeling Non Linearity of RF Circuits**Dr. José C. Pedro** of University of Aveiro**Topic: The Wonderful World of Nonlinearity: Modeling and Characterization of RF and Microwave Circuits**

Despite the many studies that have been undertaken to understand the wonderful world of nonlinearity, most undergraduate electrical engineering programs are still confined to linear analysis and design tools. As a result, the vast majority of microwave designers still cannot profit from the significant technological advancements that have been made in nonlinear circuit simulation, active device modeling and new instrumentation for performance verification. So, they tend to conduct their designs relying on experience, empirical concepts, and many trial and error iterations in the lab.

This talk will reveal the ubiquitous presence of nonlinearity in all RF and microwave circuits and the recent efforts made to understand, model, predict, and measure its diverse manifestations. We aim to bring microwave engineers' attention to newly available techniques, and attract researchers to pursue further studies on this scientifically exciting topic. Starting with some elementary properties of nonlinear circuits (like nonlinear signal distortion, harmonic generation, frequency conversion and spectral regrowth), we will show that nonlinearity is present in all wireless circuits, either to perform a desired signal operation or as unintentional distortion. In this way, we will show how oscillators, modulators or mixers could not exist without nonlinearity, while power-amplifier designers struggle to get rid of its distortion effects. After this theoretical overview, we will introduce some recent advancements in nonlinear microwave circuit analysis tools and illustrate different types of models that are currently being used to represent and predict device, circuit, and system performance. Finally, we will focus the talk on the key metrics that are used to characterize nonlinear behavior, as well as newly developed lab instruments and their ability to assess device performance.

**Biography:**

José C. Pedro received the diploma, doctoral and habilitation degrees in electronics and telecommunications engineering, from University of Aveiro, Portugal, in 1985, 1993 and 2002, respectively. From 1985 to 1993 he was an Assistant Lecturer at University of Aveiro, and a Professor since 1993. Currently he is a Full Professor at the same University, and a Senior Research Scientist at the Institute of Telecommunications. His main scientific interests include active device modeling and the analysis and design of various nonlinear microwave circuits, in particular, the design of highly linear multi-carrier power amplifiers and mixers. He is the leading author of Intermodulation Distortion in Microwave and Wireless Circuits (Artech House, 2003), has authored or co-authored more than 200 papers in international journals and symposia, and served the IEEE in the Portuguese MTT/AP/ED Joint Chapter, the MTT-11 Technical Committee and as a reviewer and Associate Editor for the MTT Transactions and reviewer for the MTT-IMS and the EuMC. Prof. Pedro has served his university department as the Coordinator of the Scientific Council and as the Department Head. Prof. Pedro received the Marconi Young Scientist Award in 1993 and the 2000 Institution of Electrical Engineers (IEE) Measurement Prize. In 2007 he was elected Fellow of the IEEE for his contributions to the nonlinear distortion analysis of microwave devices and circuits. Currently, he is an IEEE MTT-S Distinguished Microwave Lecturer.

When

Date: 04-April-2016
 Time: 05:30PM to 06:30PM (1.00 hours)
 All times are: US/Eastern

 [Add Meeting to Calendar](#)

Where

1301 Beal Ave
 University of Michigan - North Campus
 Ann Arbor, Michigan
 United States

Building: EECS Building
 Room Number: 1005

[Click here for Map](#)

Who

[Email meeting contact...](#)

More

No Admission Charge.

https://meetings.vtools.ieee.org/meeting_registration/register/38302

EMCFest 2016

The Southeastern Michigan EMC Chapter
Proudly Presents:
EMCFest '2016

“The Bruce-Lee Show”

A Tutorial and Exhibition
With Honored Guest Speakers

**Bruce Archambeault
&
Lee Hill**

Thursday, May 5, 2016

At

Embassy Suites 19525 Victor Parkway,
Livonia, MI 48152 Ph.734-462-6000

IEEE Electromagnetic Compatibility (EMC) Society.

EMCFest'2016 Home Page:

<http://www.emcfest.org>

Register On-Line!

Bruce Archambeault and Lee Hill are both well known to the EMC community as experts in the areas of EMC modeling and EMC Field problem resolution. Both also lecture and teach EMC classes in the industrial and academic environment.

Program Outline -- Thursday May 5, 2016

6:00	Vendor Table Setup (till 8:30)
7:30	REGISTRATION & EXHIBITS CONTINENTAL BREAKFAST
8:30	Bruce: The Ground Myth: The term "ground" is probably the most misused and misunderstood term in EMC engineering, and in fact, in all of circuit design.
10:00	Break & Exhibits
10:30	Lee - Mastering the 4 Noise Paths for Fast, Efficient EMC Troubleshooting
12:00	LUNCH
1:00	Bruce: Decoupling PCB's for EMC and Functionality in the Real-World
2:30	Break 7 Exhibits
3:00	Lee – EMC Troubleshooting tools and techniques for emissions and immunity
4:30	Ice Cream Reception
5:00	Close of EMCFest



Bruce Archambeault, is an IEEE Fellow, an IBM Distinguished Engineer Emeritus and an Adjunct Professor at Missouri University of Science and Technology. He has taught numerous seminars on EMC and Signal Integrity including Oxford University. He is the author of “PCB Design for Real-World EMI Control” and lead author of “EMI/EMC Computational Modeling Handbook” and published numerous papers.

EMCFest'2016 Home Page:

<http://www.emcfest.org>

Register On-Line!



Lee Hill, MSEE MS&T, is Founding Partner, SILENT Solutions LLC since 1992. Lee and business partner, Randal Vaughn, provide EMC troubleshooting services, design reviews, and EMC courses worldwide. Lee teaches EMC at University of Oxford and also a graduate EMC course at Worcester Polytechnic Institute (WPI) in Worcester, MA

FEE SCHEDULE

IEEE Members, Registered before April 24	\$50
Non IEEE Members, Registered before 24	\$75
Full –time Students with copy of valid Student I.D.	\$25
Unemployed / Retired IEEE Member	\$25
CEU Certificate Only	\$25
All Registrations after April 24 th	\$100

H-1B Visa Petition:

From: **Russell Harrison** <r.t.harrison@ieee.org>

Date: Sun, Jan 24, 2016 at 2:37 PM

Subject: IEEE-USA Petition Needs Support

To: Russell Harrison <r.t.harrison@ieee.org>

IEEE Leaders:

Many of you have seen the article in Insight about IEEE-USA's new attack on the H-1B visa program.

(<http://insight.ieeeusa.org/insight/content/policy/255071>)

In brief, we believe that the use of H-1B visa to replace American workers represents intentional discrimination against Americans because of their citizenship - which is illegal under the law.

As part of this effort, we have created an online petition asking the U.S. Attorney General to launch an investigation into H-1B outsourcing. We already have 200 signatures on the petition, but we need more.

The petition can be found here: https://www.change.org/p/attorney-general-of-the-united-states-stop-h-1b-discrimination-against-americans?recruiter=460476742&utm_source=share_petition&utm_medium=copylink

Please take a moment to add your name to the petition. In politics, numbers matter. The more names on the petition, the more likely it will generate a response. We believe that the law is on our side, but the U.S. Department of Justice is a busy place. It will take many voices to get their attention.

After you have signed, please send this e-mail to anyone else you think might be willing to help.

Thank you for your help. This should only take you a minute or two to do, but could have a profound impact on the H-1B visa program.

Russ

--

Russell Harrison
Director, Government Relations

IEEE-USA
2001 L St, NW: Suite 700
Washington, DC 20036
(202) 530-8326

Amp Up Your Career:



SAVE THE DATE!!

COMPES Professional Development Conference
Coalition of Minority Professional Engineering Societies

Where:



1 Energy Plaza, Detroit, MI 48226

When: Saturday April 23, 2016

Registration @ 7:30am

Conference @ 8am – 4pm

Catered lunch

Theme: “Amp Up Your Career”

Including: Exciting Technical Topics, Soft Skill Development, and How to Take Risks in Your Career.

Benefits to All:

- Network with our target attendance of 200+ professionals
- Opportunity to attend breakout sessions on technical topics
- Access to resources to aid in career planning and development

Benefits to Volunteers and Corporate Sponsors:

➤ *Volunteers:*

- Network with a diverse core planning team
- Gain experience planning a large scale event

➤ *Corporate Sponsors:*

- Opportunity to further train and support diverse workforce
- Support minority engineering societies through COMPES PDC

Internet of Things Seminar

Agenda

There will be two presentations:

1. Internet of Things (IoT): Foundations to Applications, by Kumar Yelamarthi, Ahmed Abdelgawad, Central Michigan University, Mt Pleasant, MI 48859
2. Challenges in Sensors and Computing for Internet of Things by Professor Subra Ganesan, Oakland University

Profs. Kumar Yelamarthi and Ahmed Abdelgawad, of Central Michigan University

Topic: Internet of Things (IoT): Foundations to Applications

Abstract

Internet of Things (IoT) is the network of physical objects or “things” embedded with electronics, software, sensors, and network connectivity. It enables the objects to collect, share, and analyze data. The IoT has become an integral part of our daily lives through applications such as public safety, intelligent tracking in transportation, industrial wireless automation, personal health monitoring, and health care for the aged community. IoT is one of the latest technology that will change our lifestyle in coming years. Experts estimate that as of now, there are 25 billion connected devices, and by 2020, it would reach to 50 billion devices.

The workshop aims to introduce a practical low-cost IoT system. The foundations of IoT will be discussed throughout real examples. Challenges and constraints for the future research in IoT will be introduced. Moreover, research opportunities and collaboration will be offered for the audiences. Workshop highlights include:

History and definition of IoT

Vision and enablers of IoT

The evolution of the IoT

Architecture and building blocks of an IoT system

- o Sensing nodes
- o Embedded processing units
- o Communication system (wired and wireless)
- o Software to automate tasks

Current challenges in IoT

- o Connectivity
- o Power management
- o Security
- o Complexity

Risks in IoT implementation

- o Privacy
- o Cybersecurity
- o Liability

Demonstrations of different IoT frameworks

- o Utilizing Arduino microcontrollers to obtain weather information from the internet
- o Automate sending of reminders and alerts through Gmail.
- o Automate posting tweets under certain conditions
- o Automated logging data from sensors to Google spreadsheets
- o A custom low-power multi-tier IoT framework for implementation in diverse applications

Prof. Subra Ganesan of Oakland University

Topic: Challenges in Sensors and Computing for Internet of Things.

Abstract:

In this presentation, challenges in IOT implementation, advances in wireless sensors with RFID technologies, body health sensors, mobile agent based intelligent communication, role of hand held mobile devices, high speed low cost and high performance data routers with cloud based computing, availability of cheap PC boards like Arduino are covered.

Some of the challenges and available solutions for reliable communication, lower cost high performance sensors and computing devices, data security and ability to handle huge volume of data are also discussed.

When

Date: 09-April-2016

Time: 09:00AM to 01:00PM (4.00 hours)

All times are: US/Eastern

 [Add Meeting to Calendar](#)

Where

Building: School of Engineering and Computer Science (SECS)
301 Engineering Center 2200 N. Room Number: Room DH 203
Squirrel Road
Rochester, Michigan
United States MI 48309-4401

https://meetings.vtools.ieee.org/meeting_registration/register/39053

2016 Spring Conference



SPRING CONFERENCE

Tuesday Evening, April 19, 2016

BURTON MANOR

27777 Schoolcraft Road, Livonia, Michigan 48150

Meeting Agenda:

4:00 PM – 4:30 PM Doors open for poster setup and registration
4:30 PM - 5:00 PM Registrations / Posters / Networking
5:00 PM – 5:30 PM Poster Presentations
5:30 PM – 6:30 PM Breakout Technical Sessions (2 Speakers per session)
6:30 PM – 6:55 PM Open Forum Q & A (moderated with all speakers)
7:00 PM – 7:45 PM Dinner
7:45 PM – 8:30 PM Keynote Speech
8:30 PM – 8:45 PM Awards and Recognition



Keynote Presentation: **BUILDING TRUST INTO NETWORKING**

Robert Moskowitz

Independent Security Consultant
Chair IEEE 802.15.9 working on MAC security
for 802.15.3e and 802.15.15.7

Technical Tracks on Cyber Security in:
Communications, Networking & Critical Infrastructure (Protection/Terrorism)
Consumer Electronics
Transport & Aerospace

Conference Website: www.ieee-sem.org/spring

ESD Events

IEEE Southeastern Michigan Section maintains a supporting membership as an Affiliate with the Engineering Society of Detroit (ESD), and supports many of its activities.

We try to publish ESD events that we feel our members may want to attend. Below is a listing of some of the ESD events planned for 2016:

The Engineering Society of Detroit's (ESD) Professional Engineer Licensing Review Courses

Since 1941, The Engineering Society of Detroit has successfully prepared thousands of candidates for the State licensing exam in a variety of disciplines ranging from civil and environmental to mechanical and electrical engineering. You'll learn in a small classroom-like setting from instructors who have first-hand knowledge of the course material. Let ESD's 70-plus years of experience help prepare you to pass the exam on your first try.

FE (Part I) Review Course February 3 – April 9, 2015

The Fundamentals of Engineering (FE) Part I Review Course provides 84 hours of instruction in engineering fundamentals for candidates planning to take Part I of the Professional Engineers Exam.

The classes are held Tuesdays and Thursdays from 6-9 p.m. and on Saturdays (morning or afternoon depending on discipline) at ESD headquarters in Southfield. The Saturday sessions start on February 14, 2015.

PE (Part II) Review Course February 14 – March 28, 2015

The Principles & Practice of Engineering (PE) Part II Review Courses consists of 28 hours of

instruction, on seven half-day Saturday sessions, focusing on problem solving techniques needed for the Professional Engineers (Part II) exam.

All classes are held on Saturdays at ESD headquarters in Southfield. The civil engineering course meets 8:30 a.m. – 12:30 p.m. Mechanical, environmental and electrical courses are 1 – 5 p.m. The state exam will be held on April 17, 2016.

For more information or to register:

Visit www.esd.org or contact Fran Mahoney at 248-353-0735, ext. 116, or fmahoney@esd.org.

Engineering SMARt Michigan Program

ESD's Engineering SMARt Michigan program is a rigorous, hands-on science, math, architecture and technology (SMARt) project in which high school students design energy-efficient homes.

Through a series of learning modules, students will be introduced to the basics of energy, alternative energies, and the energy grid, in an atmosphere of fun activities and team building. They will apply these concepts to create real-life solutions by working in teams to design a house. The culmination of the program is a presentation of their team-designed house at a competition between all participating schools where they will vie for scholarships and other prizes.

What role do mentors play?

Volunteer mentors are a critical element to the success of the program and are needed to help teach and coach in the classroom. There are two groups of mentors - Energy Module and Presentation Module.

What is the time commitment for a mentor?

The 15 week program gets underway in late January and finishes up in late May at the competition. Energy Module mentors are asked to teach a minimum of one class period per week for two weeks. Presentation Module mentors are assigned to a school and asked to teach a minimum of one class period per week for eight weeks. Efforts will be made to schedule multiple Presentation Module mentors at each school in order to ensure at least one mentor is in the classroom each week. Mentors can volunteer for one or more schools.

Interested in mentoring?

For more information on mentoring or to volunteer, contact Jasmine Sisson, PE, at sisson@pbworld.com.

Other Coming 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.

SEM Web Calendar:

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

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

SEM Web Meetings:

<http://sites.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

However, since our IEEE members tend to have eclectic interests, we want to give everyone a heads up for some of the non-IEEE events that may be of interest.

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 the particulars to lunnmalcolm@me.com

An announcement may be placed in the newsletter.

Links:

Michigan Institute for Plasma Science and Engineering:

Seminars for the 2015-2016 academic year:
<http://mipse.umich.edu/about/seminars.htm>.

Below are links to local SEM Clubs engaged in technical hobbies as well as links to sites that may be useful for locating clubs in the area.

Amateur Radio Clubs in Southeastern t Michigan

(This is a fairly comprehensive listing of all the 'Ham' clubs in SEM.)

<http://www.wa2hom.org/ham-radio-clubs-in-se-michigan/>

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/ea/ea-chapters/find-an-eaa-chapter>

Robots

<http://therobotgarage.com/about-us.aspx>

Science Fiction Conventions

<http://www.conclavesf.net/>

Mad Science

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

ESD PE Review Class

www.esd.org

Makers Faire:

<http://www.thehenryford.org/events/makerFaire.aspx>

Executive Committee

The SEM Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2016 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://sites.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 David Mindham, the section secretary at: dmindham@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

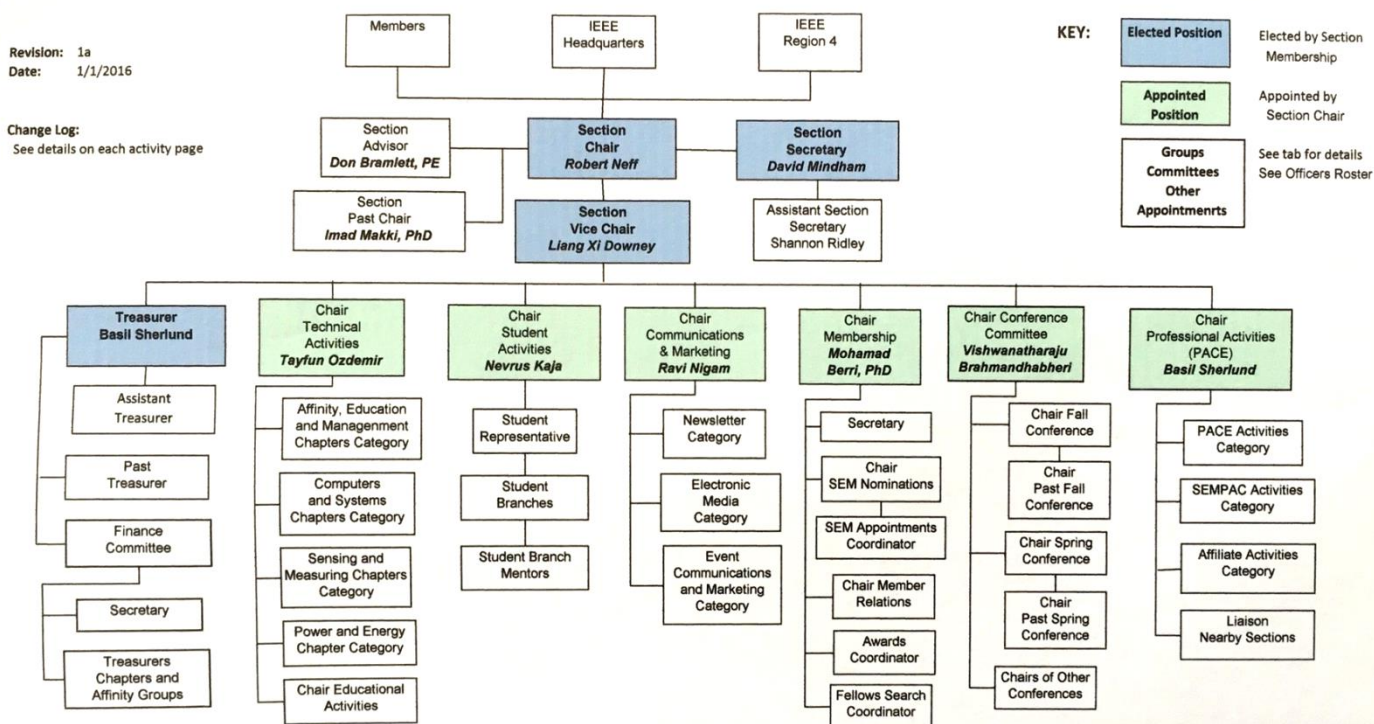
other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to send meeting information to our webmasters for posting on section's calendar.

More detailed information on meetings may be found by using the IEEE meetings site. This may be found through the IEEE SEM Website: <http://sites.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.

David Mindham - SEM Secretary

Current Organization - IEEE Southeastern Michigan Section (SEM)



Download the complete SEM Organization Chart, in PDF format, from the SEM Website at:

www.ieee-sem.com

Then, click on "About SEM" Tab, then, click on "Current Officers"

SEM Mission & Goals**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 with 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 (...**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.

SEM Monthly Meetings**Scheduled Meetings:**

The regular meetings of the SEM Leadership (Executive Committee) are scheduled well in advance to allow everyone to place them in their personal planning calendars, and then defend those dates against encroachment. *(Not always possible.)*

Two types of Monthly meetings are normally scheduled:

Monthly Teleconference / WebEx as well as:

Quarterly Face-to-Face (F2F). See schedule below.

Note: All IEEE meetings are 'Open' for all members to attend.

The only caveat is that you please register using the specific meeting form on the vTools site at: <https://meetings.vtools.ieee.org/main>

Registering will ensure there is sufficient space, refreshments and support for attendees.

**Teleconference Schedule
(held from 12-1 p.m.):**

Thursday	May	5th
Wednesday	June	1st
Wednesday	August	3rd
Thursday	September	1st
Thursday	November	3rd
Wednesday	December	7th

F2F Meeting Schedule:

Wednesday	April	6th
Thursday	July	7th
Wednesday	October	5th
Wednesday	January(2017)	4th

More information for F2F meetings will be emailed in a timely manner before the meeting dates.

Contact **David Mindham** the SEM Section Secretary at:

dmindham@ieee.org

for more information.

Also consider checking for additional information as the meeting dates

approach at the SEM website (<http://sites.ieee.org/sem/>). The links to the SEM Facebook or LinkedIn pages on the SEM website may also be checked for updates.

All the normally scheduled meetings of each of the other section chapters, affinity groups etc. are listed each month in the vTools area of our SEM website at:

http://ewh.ieee.org/r4/se_michigan/calendar1.php

The information is for:

Standing Committee Meetings
Affinity Group Meetings
Technical Chapter Meetings
University Student Branch Meetings

Calendar Schedule:

Meetings are also announced on the SEM Calendar web page

<http://sites.ieee.org/sem/>
(Select the "SEM Calendar" button in the top row.)

Note: Often meetings of the Executive Committees of Chapters and Affinity Groups (and standing committees, of course) are listed only in the SEM Calendar page, since it is felt that most members would not wish to sit through administrative meetings.

However, if this type of meeting is just your 'cup of tea', then contact the officers of the unit that is conducting the meeting, and ask to be 'linked' into their teleconference, SKYPE, Google Hangout, or WebEx meeting. They will be happy to have you as a participant.

Many volunteers become interested in section activities when they get a chance to attend a monthly meeting and 'peek under the hood' to find out how the machinery of the section actually runs. It can be a rewarding experience.

David Mindham
SEM Section Secretary.
dmindham@ieee.org

Editors Corner

Previous editions of Wavelengths, the monthly newsletter of IEEE-SEM, may be found on the IEEE-SEM website at: <http://sites.ieee.org/sem/>. Click on the "Wavelengths" button in the top row of selections. Comments and suggestions may be sent to the Technical editor at lunnmalcolm@me.com. The full e-Wavelengths team is shown below in chart. We also recommend a cc to the chair of the Communications and Marketing Committee, Ravi Nigam at: rnigam154934mi@comcast.net.

We rely on our officers and members to provide the 'copy' that is presented to our readers.

The **Wavelengths Annual Publication Plans for Articles and Personal Profiles** are 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 members to share the duties, and help keep the newsletter alive and lively by providing alternative points of view.

Review:

Each month Jim Woodyard reviews the current issue, adding more "formal" English and correcting typos Jim likes to work in the background but, a special thank you is deserved for his continuous efforts and dedication to the quality of the publication. Thank you Jim!

Join the Team:

If you feel you might like to join the team, or would like to train with us, Contact: k.williams@ieee.org

Annual Publication Plan for general Articles

Month	AG's	Ch's	Ch's	SB's	Specal 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	GOLD Award
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!		Humanatarian	
Dec		12		U/D-M	IEEE-Com Apmts.	Fall Conference	Happy Holidays	

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	

e-Wavelength Producdtions	
<i>Editor in Chirf</i>	Nevrus Kaja
<i>Mkting & Publicity Manager</i>	Michael Miller
<i>Technical Editor</i>	Malcolm Lunn
<i>ListServ Operations</i>	Christopher Johnson
<i>Advitity Updates</i>	Kimball Williams
<i>Publications Review</i>	James Woodyard



Web & Social Sites

SEM Website

<http://sites.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".

SEM On Line Community

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

Section Officers

Section Chair

Robert Neff

Section Secretary

David Mindham

Section Vice-Chair

Liang Xi Downey

Section Treasurer

Basil Sherlund

Standing Committees:

Section Adviser

Don Bramlett

Chair Communications & Marketing

Ravi Nigam

Chair Conferences

Raju Brahmandhabheri

Chair Educational Activities

Chaomin Luo

Chair Finance

Nevrus Kaja

Chair Membership

Mohamad Berri

Chair Nominations

Kimball Williams

Chair Professional Activities

Basil Sherlund

Chair Student Activities

Nevrus Kaja

Student Representative

Maoxu Liu

Chair Technical Activities

Tayfun Ozdemir

Past Section Chair

Imad Makki



IEEE Southeastern Michigan

Visit Us on the Web at:

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

Leadership Meetings

All IEEE members are welcome to join us at any regularly scheduled meeting:

Advertising Rates

SEM Website & Newsletter

Advertising Rates / Month:

Our readers specify & purchase a wide range of electronic components, equipment and services.

Our sponsors come from industry, education, and nonprofit organizations.

Full page \$500,

Half page \$250

Quarter page \$125,

Eighth page \$65.

SEM Executive Committee Monthly Teleconferences:

1st Wednesday or Thursday of Each Month @ Noon

Check the Section Web Calendar at:

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

(Select the "SEM Calendar" button in the top row.)

SEM Executive Committee Face-to-Face Meetings:

1/Qtr. Usually held at U/M-D Fairlane Center

Registration at:

<https://meetings.vtools.ieee.org/main>

SEM Standing Committee Meetings:

SEM Affinity Group Meetings:

SEM Technical Chapter Meetings:

SEM University Student Branch Meetings:

Meeting schedules are announced on SEM Web Calendar

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

(Select the "SEM Calendar" button in the top row.)

Registration for all at:

<https://meetings.vtools.ieee.org/main>