The Valley Megaphone

Newsletter of the Institute of Electrical and Electronics Engineers, Inc., Phoenix Section
April, 2016
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In this Issue of the Valley Megaphone:
Table of Contents

(Please Click on the heading below to go directly to that page)

IEEE Phoenix Section on-line updates can be found at http://sites.ieee.org/phoenix/ and on LinkedIn at:http://www.linkedin.com/groups?gid=2765918 and on Facebook at: https://www.facebook.com/IEEEPhoenixSection

Please send announcements for the *Valley Megaphone* to Wei Xu at Wei.Dr.Xu@ieee.org for inclusion in the Section Calendar.

All meetings announced in the Phoenix Section Megaphone or on the Phoenix Section Calendar are open to everyone (IEEE members and non-Members)

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The Valley Megaphone is the newsletter of the Phoenix Section of the Institute of Electrical and Electronics Engineers. It is published monthly and reaches about 4000 members. Submit articles, advertisements, and announcements to Surinder Tuli at the above email address. Deadline for announcements and advertisements is the third Friday of the month prior to publication. Advertising Rates: Full page: $200, 3/4page: $125, ½ page: $75, 1/3 page: $50, 1/4 page: $25. Change of address/email? Call toll free 1-800-678-IEEE. Please allow 6-8 weeks. Section Web Page is http://sites.ieee.org/phoenix/

U – News

(for Student Members)

Updates of Student Advisors and Committee Members

Each Student Branch noted on the right side of this page should review current information on Advisors and Student Committee Members and forward to my attention within this week, as we are reviewing contacts for reporting and activities including Student Monthly Meetings.

S. Diane Smith
602-749-4601
sdianesmith@computer.org
Student Activities Chair

Update from DeVry Phoenix-Engineering Student Branch

The IEEE Student Branch and Computer Society at DeVry University, Phoenix are co-sponsoring and co-managing with the University a Science Technology Engineering and Math (S.T.E.M.) exhibit at the 2015 Arizona State Fair. We have a 24 x 48 foot space that will house various high school and collegiate STEM projects often representing Capstone activities. In addition, four STEM workshops will be conducted by the students: Cyber Security ("Can You Hack It?"); personal computer repair ("DIY Computer Fixes"); beta-test student designed simulations ("Would you like to play a game?"); and breadboard kit building ("Make your own Night Light" and "Hidden Buzzer"). The static displays will be visible the duration of the Fair. The workshops are scheduled and published and will occur on the four weekends of the Fair. Section members and their families and friends are invited to stop by the exhibit and join us in the fun at the Arizona State Fair!

Roger S. Gulledge
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Update from IEEE Power and Energy Society (PES) ASU Student Chapter

The IEEE PES ASU Student Chapter conducted the following events in March 2016:

1. Field visit to SRP Foothills Training Substation – 25 students visited the SRP Training Substation. SRP engineers were there to explain the operation, use, and importance of multiple devices located in the substation yard.

2. Joint luncheon with the IEEE PES Phoenix Section (held at ASU) – Dr. Arun Phadke, famous for his work on the Phasor Measurement Unit, delivered a lecture on the development and importance of PMUs in today's power system. Lunch was served. An attendance of 106 was registered with both students and professionals from the industry attending.

3. Field visit to APS Training Substation – 12 students visited the APS Training Substation. Engineers from APS were there to explain the operation, use, and importance of multiple devices located in the substation yard. To ensure maximum benefit to students, different set of students visited the APS substation in comparison to the set of students who visited the SRP Training Substation.

4. Members from our ExComm volunteered for ASL workshops.

In the following month, we have the following events planned:

1. Technical talk by Dr. Mahesh Morjaria from First Solar – Dr. Morjaria is the VP of Systems Development at First Solar and leads a team that is responsible for development of Balance of Systems and grid integration capability for utility-scale PV plants. The title of his talk will be Moving Solar Forward: Grid Integration Challenges and Opportunities.

2. Attend the PSLF User's Group Meeting – PSLF, developed by General Electric (GE), is one of the most widely used software for conducting power system studies. This year, GE is going to conduct their annual PSLF User's group meeting in Phoenix. After discussion with GE, 5 students from our chapter will be attending this meeting in April.

The members of our ExComm have remained unchanged as we felt it would be better for us to hold our positions till the end of the year in order to maintain the momentum of the chapter.

We can be reached on Facebook, LinkedIn or email:
Facebook: https://www.facebook.com/ASUIEEEStudentChapter/
LinkedIn: https://www.linkedin.com/groups/8437949
Email: ieeepes.asu@gmail.com

Nikita Singhal
Deepak Ramasubramanian
Co-Chairs, IEEE PES ASU Student Chapter

Upcoming Conferences in Region 6

Hello IEEE Student Members!

2016 IEEE Women in Engineering International Leadership Conference (2016 WIE ILC), which will be held 23-24 May, 2016, in the capital of Silicon Valley, San Jose, California, USA.

2016 IEEE 66th Electronic Components and Technology Conference (ECTC) will be held on May 28-Jun 5, 2016 will be held at Las Vegas, NV on May 31 – Jun 3, 2016

2016 15th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm) will be held at Las Vegas, NV on May 31 – Jun 3, 2016

2016 IEEE International Conference on Image Processing (IEEE ICIP) will be held at the Phoenix Convention Center, Phoenix, AZ on September 25-28, 2016.

4th Annual IEEE Conference on Technologies For Sustainability, will be held in Phoenix, AZ between October 9th and 11th, 2016.

No Limits

There are limits to physical resources. There are limits to time and space (regardless of how many universes there are). But to the prepared mind, there are no limits to knowledge and imagination. This is what allows us to continue developing new insights into the way the world works and to develop new technologies that utilize these insights.

We can accomplish amazing things with a reasoned optimistic attitude. There is more to be learned than has ever been learned. There is more to do than has ever been done. There is a greater need than ever before for those who know how to make things and do things, the engineers. There is work to do, and you are the people who have the knowledge and experience to do it.

In today's world it is difficult to work for one company for all of your life. Company's change and people regularly move from one employment to another. It is also not uncommon to spend some time working as a consultant, either full or part time. More than ever before, having a network of contacts and sources and continuous education can help you continue to work and contribute.

You may not be able to stay with one employer for all your life, but you can remain an IEEE member, no matter your employment situation. The IEEE is the largest professional organization in the world and can provide you with continuing education to keep your technical and management skills sharp. It also provides you with networking opportunities as well as insurance and other services than can be important if you find yourself running your own business.

Our goal in 2016 is to reverse the trend of annual declines since 2001 in Region 6 IEEE membership. We want you to remain a member of the IEEE and hope that you can help us get fellow members to renew. For that reason we are planning to repeat the membership retention micro-volunteering activity that we started last year (email to sign up for participation is given below). There is much for us to do and we need you to help us make these things happen.
Retaining student and young professional members is a key element in our drive to increase IEEE membership in the region. We are offering a new service to our members, MentorNet, that allows experienced IEEE members to connect with student members and help us retain student members and young professionals (mentors may also learn a thing or two from the younger members). We will provide a link to participate in this program in the February Region 6 enotice.

Recognizing our members' achievements and contributions is another important element in member retention. This year we will be promoting senior member advancement in the Region and plan to exceed our 2016 senior membership advancement goal—we came close in 2015. We will also be spending more money on PACE activities in the region that provide networking and other opportunities for regular members and student members and also supports STEM events for future members. We plan to get more engaged in Maker Faires and other STEM and technical hobbyist activities in 2016. Our efforts in humanitarian activities are expanding and the IEEE can provide you with ways to work with others to use technology to benefit humanity.

Below are some links to get involved in IEEE Region 6 activities that will increase our membership and enrich our community.

Email to join the Region 6 membership retention campaign in 2016: Chris Wright (wright.c@ieee.org)

Sign up link to volunteer for IEEE Region and Section activities on the Region 6 web site: http://ieee-region6.org

Senior membership advancement (we need senior members to help other senior members advance)
Science Technology Engineering and Math (STEM) activities for K-12 students and hobbyists in the region and local sections such as Maker Faires, Future Cities and First Robotics
Humanitarian activities in the region and in local Special Interest Groups in Humanitarian Technology (SIGHT)
Other IEEE Region 6 initiatives
We hope that you remain a member of the IEEE and join us to create a vibrant professional organization that meets your needs and advances technology for humanity!Tom Coughlin

Director, IEEE Region 6
tom@tomcoughlin.com

2016 IEEE International Conference on Image Processing (IEEE ICIP)

Phoenix Convention Center, Phoenix, AZ,
25-28 September 2016.
Website: 2016.ieeeicip.org

IEEE ICIP 2016 is the event for researchers, developers, product creators, educators and students who want to share, learn about, and advance the state-of-the-art in the areas of image/video processing, image/video communications, computer vision, computational imaging, and visual technologies based applications.

IEEE ICIP attendees include more than 1000 experienced researchers/developers including educators, engineers, computer scientists, and students, providing great networking and recruiting opportunities.

Important Dates:
Special Session and Tutorial Proposals: November 16, 2015
Paper Submissions: January 25, 2016
Visual Technology Innovation Award Nomination: March 31, 2016
Visual Technology Showcase Submission: May 15, 2016

IEEE ICIP 2016 highlights:

- nominate an individual or team for the Visual Innovation Award by 31 March 2016: This Award was created to recognize pioneers of transformative technologies and business models in areas within the technical scope of IEEE ICIP. The Award showcases innovations that have had great impact on human experiences with technology or are anticipated to do so in the near future. The Award Committee consists of well-known industry executives, visionary entrepreneurs, and scholars.

- maximize the visibility of your work via free open preview: Papers accepted to ICIP 2016 will (upon author approval) be available in their final accepted format on IEEE Xplore, freely accessible and downloadable by all in their final format from Aug 20,2016 through September 30, 2016.

- maximize your networking and career connections: attendees will be given the opportunity to upload their CVs to be shared among interested recruiters for full-time, part-time, and consulting job opportunities. These CVs will be made available through a password-protected searchable platform to ICIP 2016 supporters/recruiters.

- experience state-of-the-art visual technology products and prototypes at the ICIP'16 Visual Technology Showcase. IEEE ICIP 2016 will feature a Visual Technology Showcase where technology creators and developers can present live demos of recent visual technologies and prototypes. *Participants who are interested in demoing their technology should submit a description of the technology at the IEEE ICIP 2016 website by 15 May 2016.*

- attend presentations, tutorials, and training courses by experts in the areas of image/video processing, image/video compression, computer vision, computational imaging, biomedical imaging, and other topics within the scope of IEEE ICIP 2016.

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Registration Chair
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Universidade de Brasilia

The 23rd IEEE International Conference on Image Processing (ICIP) will be held in the Phoenix Convention Centre, Phoenix, Arizona, USA, on September 25 - 28, 2016. ICIP is the world's largest and most comprehensive technical conference focused on image and video processing and computer vision. In addition to the Technical Program, ICIP 2016 will feature an Innovation Program focused on vision technologies and fostering innovation and networking. The conference will feature world-class speakers, tutorials, exhibits, and **a vision technology showcase**.

Topics in the ICIP 2016 Technical Program include but are not limited to:

Filtering, Transforms, Multi-Resolution Processing
Restoration, Enhancement, Super-Resolution
Computer Vision Algorithms and Technologies
Compression, Transmission, Storage, Retrieval
Computational Imaging
Color and Multispectral Processing
Multi-View and Stereoscopic Processing
Multi-Temporal and Spatio-Temporal Processing
Video Processing and Analytics
Authentication and Biometrics
Biological and Perceptual-based Processing
Visual Quality Assessment
Scanning, Display, and Printing
Document and Synthetic Visual Processing
Applications to various fields

New initiatives at ICIP 2016 include:

1) Open preview for accepted papers on IEEE Xplore; 2) Visual Innovation Award (individual or team nominations due by 31 March 2016 at conference website); 3) Support for reproducible research; 4) Support for CV uploads on the ICIP site for full-time, part-time, and consulting job opportunities; 5) Visual Technology Showcase (submission due by 15 May 2016). For more details on these and other new initiatives at ICIP 2016, visit 2016.ieeeicip.org and connect now on the ICIP 2016 social media to get automatic updates about the various deadlines, sessions and events.

Paper Submission:

Prospective authors are invited to submit full-length papers at the conference website, with up to four pages for technical content including figures and references, and with one additional optional 5th page for references only. Submission Instructions, templates for the required paper format, and information on "no show" policy are available at **2016.ieeeicip.org**.

Tutorials, Special Sessions, and Challenge Sessions Proposals:

Tutorials will be held on September 25, 2016. Tutorial proposals should be submitted at the conference website and must include title, outline, contact information, biography and selected publications for the presenter(s), and a description of the tutorial and material to be distributed to participants. For detailed submission guidelines, please refer to the tutorial proposals page. Special Sessions and Challenge Session Proposals should be submitted at conference website and must include a topical title, rationale, session outline, contact information, and a list of invited papers/participants. For detailed submission guidelines, please refer the ICIP 2016 website at **2016.ieeeicip.org**.

Important Deadlines:

Challenge Session Proposals: October 30, 2015

Special Session and Tutorial Proposals: November 16, 2015
Notification of Special Session and Tutorial Acceptance: December 18, 2015

Paper Submissions: January 25, 2016
Notification of Paper Acceptance: April 30, 2016

Visual Inovation Award Nomination: March 31, 2016

Visual Technology Showcase Submission: May 15, 2016
Notification of Visual Technology Showcase Acceptance: May 30, 2016

Revised Paper Upload Deadline: May 15, 2016
Authors' Registration Deadline: May 15, 2016


World's FIRST
Visual Innovation Award
Call for Nomination: The Award recognizes pioneers of transformative technologies and business models that have had great impact on human experiences or are anticipated to do so in the near future. The Award Committee consists of well-known industrial executives,visionary entrepreneurs, and scholars. Nominations are to be submitted online no later than 31 March 2016. The nominations will be forwarded to the Award Committee for selection of finalists who will be presented with their award at IEEE ICIP 2016. Please visit 2016.ieeeicip.org for more information and for the online submission form.
Nominate your favorite visual innovation TODAY! Details can be found at http://2016.ieeeicip.org/VisualInnovationAward.asp
Important Dates:
31 March 2016: Deadline for nominations
15 June 2016: Finalists announced
Award Committee
Giles Baker SVP Dolby Labs
Nikhil Balram CEO Ricoh Innovations
Hanno Basse CTO 20th Century Fox
Achin Bhowmik VP Intel
James Brailean Managing Partner Karmel Capital
Bill Dally SVP nVidia
Robert Gove VP Synaptics
Hsiao-Wuen Hon Chairman of ARD Microsoft
Kevin Jou CTO MediaTek
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Matthew Mengerink VP Google
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Raj Talluri SVP Qualcomm
Martin Vetterli President Swiss NSF NRC
Susie Wee CTO Cisco
Lina Karam Professor Arizona State
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Haohong Wang General Manager TCL
Khaled El-Maleh Sr. Director Qualcomm
Jeff Bier President, Embedded Vision Alliance
IEEE
2016.ieeeicip.org
ICIP 2016 Sept 25-28 Phoenix

IEEE Components, Packaging and Manufacturing Technology Society
Phoenix Chapter

2015 Executive Committee for CPMT Chapter for IEEE-Phoenix Section

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Website Co-Chair			

Tentative Schedule for Monthly Seminars

Date	Topic	Speaker
Jan. 20, 2016	Understanding and Managing the Key Cost Drivers in PCB Design to Optimize Performance and Cost	Marc Licciardi
Feb. 17, 2016	Roadmaps As We Approach The End of Moore's Law Scaling	Dr. Bill Bottoms
Mar. 23, 2016	System Level IC Packaging - An Overview of the Technology	Mike Kelly
Apr. 27, 2016	**Design for Signal Integrity in a "Material" World**	**Chudy Roosevelt Nwachukwu,Intel Corp.**
May. 18, 2016		
Jun. 15, 2016		
Jul. 20, 2016		
Aug. 17, 2016		
Sep. 21, 2016		
Oct. 19, 2016		
Nov. 16, 2016		
Dec. 14, 2016		

SP-COM Phoenix Chapter

Please join our Google Group!

Please join our increasingly popular Google group to get the most up-to-date information about the society's activities. We have now over 50 members who are availing of this facility. Email traffic is thin, and used only to send meeting notices. No spam !

https://groups.google.com/d/forum/ieee-sp-com-phoenix-chapter

In addition, we continue to post meeting notices on IEEE vtools at (https://meetings.vtools.ieee.org/main)

Phoenix Chapter of the IEEE Computer Society

April, 2016

News

Please note: beginning in 2016 we are holding our meetings on the **second** Wednesday of the even numbered months.

Meetings

Our April chapter meeting will be held at DeVry University, Phoenix Campus. DeVry is located at 2149 W Dunlap – about a mile east of I-17 on Dunlap. We are pleased to announce that Hal Berghel, an IEEE Distinguished Speaker, will be returning. He has presenedt to our chapter in the past. Hal will be talking about Stuxnet, its ramifications and aftermath. Hal's presentations are always excellent.

Beyond Stuxnet
Hal Berghel, FACM, FIEEE

Stuxnet (Operation Olympic Games) was a cyber-kinetic attack authorized by George W. Bush at the tail end of his administration, and sustained by Barack Obama. While Stuxnet may be the first highly successful state-launched cyber-attack on a sovereign nation. the most important part of its legacy may be political rather than technological. The speaker will present Stuxnet in both a technological and political framework, and draw conclusions from the Stuxnet experience that will indicate the trajectory of cyber weaponry.

Bio:

Hal Berghel is currently Professor of Computer Science at the University of Nevada, Las Vegas where he has previously served as Director of both the Schools of Computer Science and Informatics, and as Associate Dean of the College of Engineering. He created and directed the first CyberSecurity degree programs (Bachelors, Masters and PhD) in Nevada in 2005. This program became an NSA Center for Academic Excellence two years later. He was the founding Director of the Identity Theft and Financial Fraud Research and Operations Center and CyberSecurity Research Center. His research interests are wide-ranging within the binary and digital ecosystem, ranging from logic programming and expert systems, relational database design, algorithms for non-resolution based inferencing, approximate string matching, digital watermarking and steganography, and digital security and privacy. Since the mid-1990's he has applied his work in digital security to law enforcement and intelligence gathering, particularly with respect to digital crime, digital money laundering, information warfare and trusted identities. His research has been supported by both industry and government for over thirty years. His most recent work in secure credentialling technology was funded by the Department of Justice. In addition to his academic positions, Berghel is also a popular columnist, author, frequent, talk show guest, inventor, and keynote speaker. For nearly fifteen years he wrote the popular Digital Village column for the Communications of the ACM, and has written the Out-of-Band column for IEEE Computer since 2011, and has chaired the editorial panel of the Aftershock column in Computer since its inception in January, 2016.

Berghel is a Fellow of both the Institute for Electrical and Electronics Engineers and the Association for Computing Machinery, and serves both societies as a Distinguished Visitor and Distinguished Lecturer, respectively. He has received the ACM Outstanding Lecturer of the Year Award four times and was recognized for Lifetime Achievement in 2004. He has also received both the ACM Outstanding Contribution and Distinguished Service awards. He is also the founder and owner of Berghel.Net, a consultancy serving government, business and industry. Berghel is a member of the Nevada Technology Crimes Advisory Board and Chairs the Nevada Privacy Subcommittee.

The dates for the remaining meetings in 2016 are

- June 8th
- August 10th
- October 12th
- December 14th

All meetings begin at 6:00 pm and end at 9:00 pm. The venue locations vary as we try to balance venues between the east side of the valley and the west side.

We are seeking volunteers for assistance in the operation of the chapter, from program acquisition to meeting preparation to the officer positions. If you are interested in volunteering, please let one of the officers noted below know via email.

Visit the CS Chapter website for the latest information: http://ewh.ieee.org/r6/phoenix/compsociety/.
For brief announcements regarding upcoming events we are also on Twitter: @IEEECS_PHX

If you would like to suggest a topic or speaker for any of our future meetings, please contact one of the chapter officers:

Chair	Jerry Crow	jerry.crow@computer.org
Vice-chair	Dr. Brad Morantz	bradscientist@ieee.org
Secretary	Audrey Skidmore	askidmore@computer.org
Treasurer	Diane Smith	sdianesmith@computer.org
Webmaster	Audrey Skidmore	askidmore@computer.org

IEEE Power and Energy Society
Phoenix Chapter
http://www.ewh.ieee.org/soc/pes/phoenix/

April 2016 Luncheon Meeting

Date: Thursday, April 21, 2016

Time: 11:30 - 11:45 am: Registration
11:45 am: Lunch
12:00 pm: Program

Location: Bobby Q's map (note location)

Speakers: Rebecca Davidson, Salt River Project

Topic: How developed economies are providing service learning expertise to under developed countries to assist in meeting GHG emission goals set during UNFCCC Paris Agreement.

Cost: $8.00 (No cost if you are a college student)

Reservations: Contact Monica at (602) 470-0400 or submit your name here.
Reservations deadline is NOON on Wednesday, April 20th, 2016.
If you have already registered for this luncheon but need to cancel, click here.

Abstract:

Each year, the United Nations brings together 196 member states from around the globe to work on addressing the environmental harms associated with the emissions of greenhouse gases (GHG). This annual meeting, known as the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) brings developed and developing country together to negotiate climate solutions for the global good. After many years of COP negotiations, a monumental agreement was finally adopted in 2015 in Paris, France, that memorializes a renewed commitment by the entire world to reduce GHG emissions. In this new Paris Agreement, every country in the world is expected to put into place its own Nationally Determined Contributions (NDC), and when counted together is expected to "hold the increase in global average temperature well below 2C". In moving toward this goal, developing countries often point to the historic responsibilities developed countries hold in the creation of the current levels of CO2 in the atmosphere. Ultimately it is the developing countries that bear the brunt of the global harms while having little capacity to adapt or recover. This equity issue is a hotly debated topic at the COPs, with far reaching implications. Inasmuch, developing countries are setting NDCs that are largely conditional on assistance from developed countries. So how will we ultimately meet the global temperature goal without finance and technology assistance across the developing world? This talk will highlight Rebecca's experience in tracking progress on the Paris Agreement from her perspective as a Vermont Law School (VLS) Observer Delegate. The VLS delegation provided 'Service Learning' expertise to the 'Least Developed Country' of Myanmar. Learn about Myanmar's economic hardships, how the country is leveraging its forest resources and proactively participating at the UNFCCC global negotiations. Also explore the next steps to come as the world aims to implement the Paris Agreement and implications for the developed and developing worlds.

Biography:

Rebecca Davidson is a Senior Water Rights Analyst at Salt River Project (SRP). Rebecca works on issues associated with water policy and management, and the development of strategic partnerships and programs that protect water supplies for SRP shareholders while also promoting conservation of watershed resources. Prior to SRP, Rebecca worked for the Arizona Game and Fish Department, and has experience in federal land planning, wildlife management, environmental regulations, and endangered species biology and monitoring. Rebecca has a Bachelor of Science in Environmental Science from NAU, and a Masters in Environmental Law and Policy from Vermont Law School. In her spare time, Rebecca enjoys exploring different places, playing Uno with her daughter, and tagging along with her VLS Professor to United Nations global climate negotiations.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

WAVES AND DEVICES - Phoenix Chapter

Meeting Free & Open to Non-IEEE Members

6:00 to 7:30PM, Wednesday, April 20, 2016

Arizona State University
Engineering Research Center, ERC490
551 E. Tyler Mall, Tempe, AZ

Exploring GaN-Based RF Power Amplifiers for Commercial Applications

Jennifer Kitchen, Ph.D., Assistant Prof. of Electrical Engineering, Arizona State University

Abstract: The future generation of wireless communications is progressing towards ubiquitous software radios that cover multiple communications standards. Within the majority of these wireless devices, the power management subsystem and the RF power amplifier consume over 60% of the total transmitter power, and remain the bottleneck for designing programmable, frequency agnostic transmitters. For narrowband frequencies of operation, there has been significant research into the integration of high-efficiency transmitters and PAs on silicon using polar architectures, adaptive biasing, and linearization of switched-mode PAs. Unfortunately, irrespective of the PA architecture, silicon integrated PAs have not achieved the frequency agility and output powers required for most commercial handset applications.

Gallium Nitride (GaN) process technology is a strong candidate for implementing frequency agile PAs with high efficiency. To date, GaN devices have been used for high-performance linear amplifiers, mostly in military applications. But, with recent advancements in integrated circuit (IC) development on GaN material, this process technology may allow for RF power ICs in low-cost commercial products.

This seminar explores the realization of previously proposed transmitter [PA] linearization and efficiency-enhancement architectures, such as envelope tracking, polar modulation, and digital PAs, using GaN process technologies. The benefits and challenges with integration of these PAs on GaN are discussed with respect to low-cost implementation for commercial handsets and picocell base station applications.

Biography: Jennifer Kitchen (S'02-M'07) received her Ph.D. degree in Electrical Engineering at Arizona State University, Tempe, AZ, in May of 2007, where she specialized in efficiency enhancement and linearization techniques for RF power amplifiers in wireless transmitters. While at ASU, from 2003-2006, Jennifer interned for the RF power amplifier handset product group at Motorola, Inc., and Freescale Semiconductor. In 2007, Jennifer became the Arizona Design Center Manager for a startup company, Ubidyne, Inc., that aims to revolutionize wireless base stations by producing a digital antenna-embedded radio solution using digital beamforming. In 2009, Jennifer joined ViaSat, Inc., as head of the IC (Integrated Circuit) design team within the Advanced Microwave Product Group. Her group focused on designing low-power integrated transceivers for SATCOM; among other chipsets for military applications. Dr. Kitchen joined ASU as an Assistant Professor in 2013. Her research focuses on RF IC design for wireless communications as well as efficiency-enhancement of power management and RF power amplifier circuits using III-V materials.

For more information https://meetings.vtools.ieee.org/m/39187, or contact:

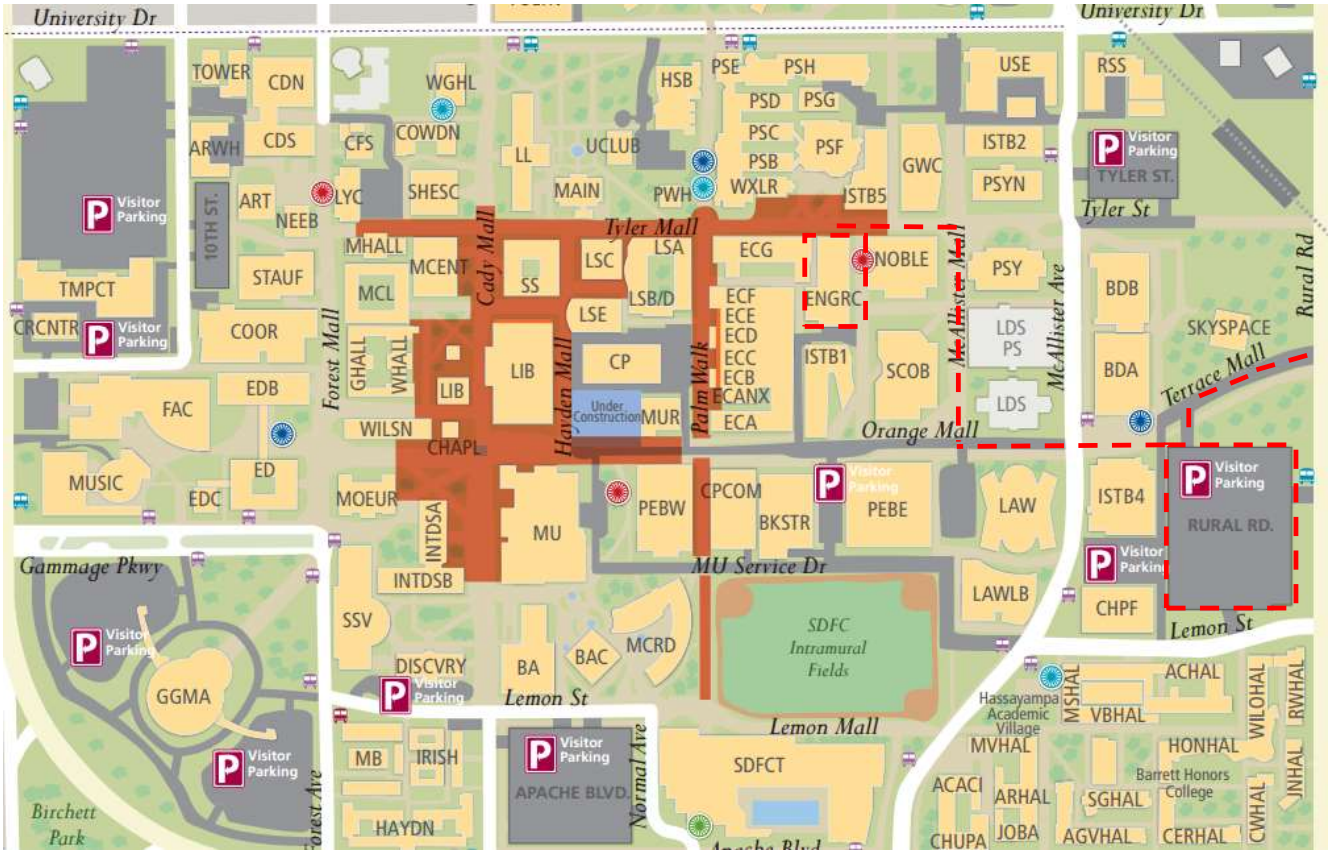
Steve Rockwell (WAD Chapter Chair) (480) 241-9891 steve.rockwell@ieee.org
Curtis Scott (WAD Chapter Vice-Chair) (623) 703-9177 curtis.scott.us@ieee.org
Trevor Thornton (WAD Chapter Secretary) (480) 965-3808 t.thornton@asu.edu

Date: **Wednesday, April 20, 2016**

Time: **6:00-7:30 PM Presentations (Pizza will be served following the Seminar)**

Location: Engineering Research Center, ERC490, Arizona State University,
551 E. Tyler Mall, Tempe, AZ

Engineering Research Center – ENGRC – Room 490
Building is next to the Noble Science Library



INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

WAVES AND DEVICES - Phoenix Chapter

Meeting Free & Open to Non-IEEE Members

6:00 to 7:30PM, Wednesday, May 11, 2016

Arizona State University
Goldwater Center, GWC487
650 E. Tyler Mall, Tempe, AZ

RF Aspects of Magnetic Resonance Imaging

Robert Caverly, Professor of Electrical Engineering, Villanova University, Villanova, PA

Abstract: Magnetic Resonance Imaging (MRI) scanners are an important diagnostic tool for the medical practitioner. MRI provides a non-invasive means of obtaining high contrast images of soft tissues and to obtain real-time images of the cardiovascular system and other dynamic changes in the human body. MRI scanners rely heavily on a number of topical areas of interest to Electrical Engineers: image processing, high speed computing and RF (radio frequency) systems and components. This presentation will focus on some of the RF aspects of the MR process and MR scanners. A primer on the physical phenomenon behind magnetic resonance will start the presentation and include a discussion of the origin of the MR signal. The need for the high static magnetic field (B0), the use of gradient coils for MR signal spatial encoding, simple RF pulse sequences and how they are used in image construction will be covered. This MR image construction process and the control of the various steps that manipulate the atomic nuclei to generate the final MR diagnostic image put demanding constraints on RF equipment capabilities and these will be discussed, along with a high-level overview of the various components making up conventional MRI systems. This high-level overview will include a look at various examples of transmit and receive RF systems and examples of transmit and receive coils that make up MR scanners and system diagrams for both the RF transmit and receive paths. The talk will then narrow in scope to look at how these RF coils are modeled and controlled in both transmit and receive states and how these components are used for transmit/receive switching and patient and equipment protection.

Biography: Dr. Robert H. Caverly received his Ph.D. degree in electrical engineering from The Johns Hopkins University, Baltimore, MD, in 1983. He has been a faculty member at Villanova University in the Department of Electrical and Computer Engineering since 1997 and is a Full Professor. Previously, he was a Professor for more than 14 years at the University of Massachusetts Dartmouth. Dr. Caverly's research interests are focused on the characterization of semiconductor devices such as PIN diodes and FETs in the microwave and RF control environment. He has published more than 100 journal and conference papers and is the author of the books Microwave and RF Semiconductor Control Device Modeling and CMOS RFIC Design Principles, both from Artech House. An IEEE Fellow, Dr. Caverly is currently an Associate Editor of the IEEE Microwave Magazine and a member of the HF-VHF-UHF Technology (TC-17) and Biomedical Applications (TC-10) Technical Committees of the MTT Society.

For more information https://meetings.vtools.ieee.org/m/38906, or contact:

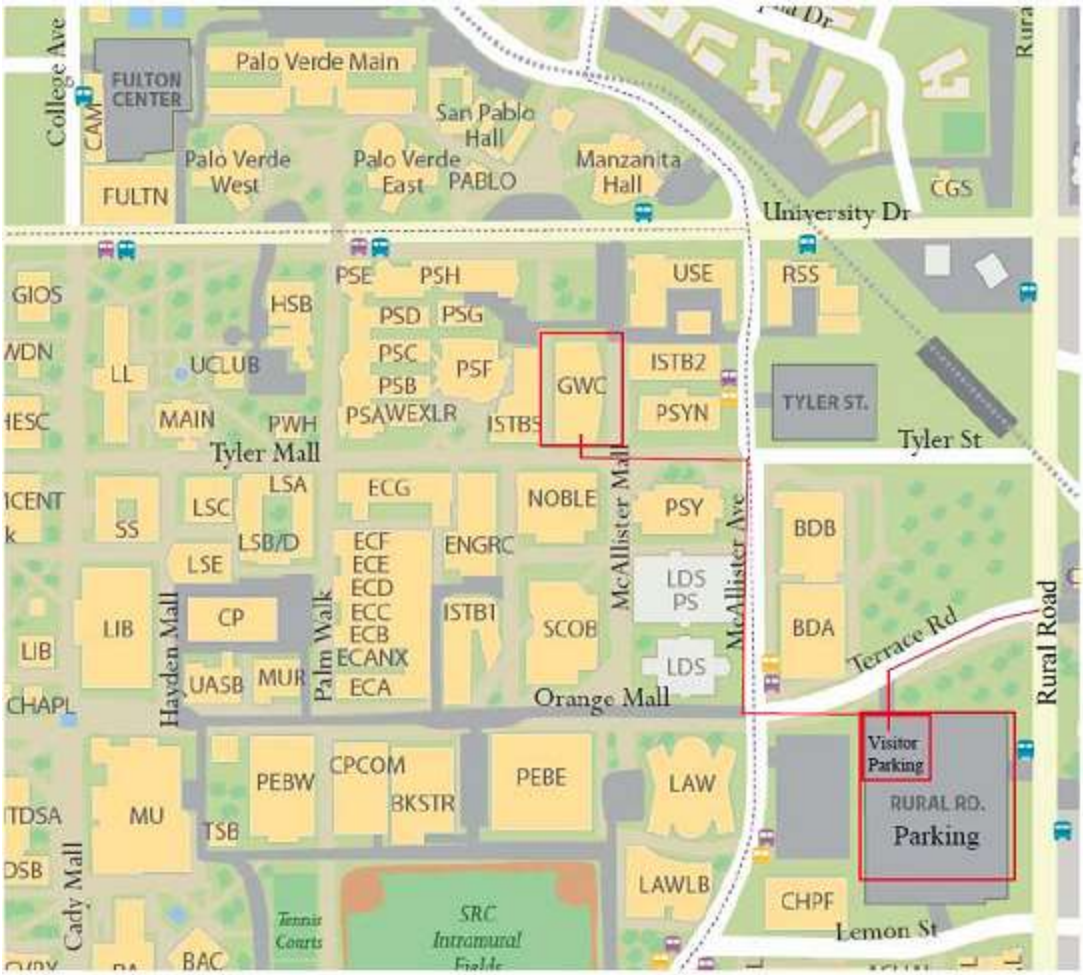
Steve Rockwell (WAD Chapter Chair) (480) 241-9891 steve.rockwell@ieee.org
Curtis Scott (WAD Chapter Vice-Chair) (623) 703-9177 curtis.scott.us@ieee.org Trevor Thornton (WAD Chapter Secretary) (480) 965-3808 t.thornton@asu.edu

Date: **Wednesday, May 11, 2016**

Time: **6:00-7:30 PM Presentations (Pizza will be served following the Seminar)**

Location: Goldwater Center, GWC487, Arizona State University, 650 E. Tyler Mall, Tempe, AZ

Goldwater Center – GWC – Room 487
Building is across from Noble Science Library



Phoenix Section Life Member Affinity Group

Technical Presentation and Administrative Meeting

Meeting May 16, 2016

Program Presentation: CMOS Digital Microwave

Abstract. Microwave and millimeter-wave functions have traditionally been implemented by deeply experienced RF design (and test) experts using specialized distributed design techniques, discrete components, and custom fabrication processes. Conventional wisdom has been that these functions cannot be implemented in standard, high volume digital CMOS processes. However, someone forgot to tell the analog design community that they couldn't do this in standard CMOS. Unprecedented advances in analog-to-digital (ADC) and digital-to-analog (DAC) converter techniques have combined with CMOS fabrication technology's continual ability to follow Moore's law to create smaller and faster "digital" FET transistors. Sample rates for today's shipping CMOS ADCs and DACs exceed 65Gsamples/sec (sps) with talk of >100Gsps just around the corner. This allows ADCs and DACs to be placed closer and closer to the antenna enabling traditional micro- and millimeter-wave operations like mixing, filtering, down conversion, multi-input/multi-output (MIMO) antenna channels, and beam forming to be implemented with digital techniques. In addition, once in the digital domain, operations like dual polarization, linearization, and adaptive equalization become feasible allowing much higher levels of performance and functionality than have ever been achieved with traditional microwave techniques. Applications include next generation cell phones, microwave links, wireless access, radar, satellite communication, etc.
This talk will summarize advanced CMOS process technologies and common techniques for CMOS implementations of >65Gsps ADCs and DACs along with specifications typically achievable from these converters. A few "digital microwave" applications will be highlighted which are enabled by the availability of ultra-high speed data converters. Digital signal processing techniques for converting direct sampled RF spectrum to baseband signals will be discussed along with considerations for CMOS ASIC implementations. High speed analog functions follow a very different design flow than large (100M+ gate) digital design flows. This talk will conclude with a discussion of the major issues and approaches for merging high speed analog and digital design flows to create single chip, mixed-signal "digital microwave" systems-on-a-chip.

Speaker: Scott Powell. Dr. Powell has 30 years experience in the semiconductor industry building and leading cutting edge design teams in all aspects of complex DSP, communications systems, and high speed ASIC design. He earned a Ph.D. degree in Electrical Engineering from the University of California, San Diego, in 1993. His accomplishments include over 60 issued and pending patents, 29 journal and conference publications, and more than 10 ASIC products in high volume production. Dr. Powell has started and sold a semiconductor startup, was Sr. Director of the Ethernet PHY group at Broadcom leading a multi-national team to become the dominant market leader with over 40 tapeouts, and was VP Engineering at ClariPhy executing on a >200M gate mixed-signal coherent optical PHY ASIC going to production with A-revision silicon. Dr. Powell is most recently VP ASIC Engineering at Jariet building and leading a team to create digital microwave products.

NOTE MEETING STARTS AT 11 AM

Meeting Agenda:

11AM: Attendee introductions
11.05 Lunch
11:20 AM: Program Presentation
12:20 Discussion of LMAGs survey and possible tours.
12:45 Admin. Meeting / Officers

Where: SRP's **PERA Club Bighorn Room**,
1 East Continental Drive, Tempe, AZ
Continental is West of 68th St., ½ mile south of McDowell Road
Enter the Private PERA Club and follow drive to large parking lot. Big Horn is small building at South East corner of lot.
When: Monday MAY 16, 2016 **- 11:00am – 1:00pm**, Registration fee is $15. This fee will include lunch provided by the PERA Club.

Lunch: TBD

RSVP: Please advise Ronald Sprague r.sprague@ieee.org if you plan to attend so accounting for lunch is possible.

Technical Presentations: The Program Chair is seeking suggestion from members for future presentations. Any ideas of interest are open for consideration. Please contact Barry Perlman Program Chair at barry.perlman@gmail.com.

About IEEE Phoenix Section Life Member Affinity Group: The IEEE Phoenix Section Life Member Affinity Group was organized to enable IEEE Life Members to retain active IEEE associations, contribute to the social good in their communities, advance IEEE's professional interests and enjoy each other's company.

Activities: Technical meetings scheduled the 3rd Tuesday of February, May, October, and December. Elections are held at the December meeting.

Future Technical Meetings: All meeting are scheduled at the SRP PERA CLUB. It is suggested you put these dates on your calendar to attend the meetings.

- Monday May 16, 2016***** **NOTE THIS IS A CHANGE. This is a MONDAY**
- Tuesday October 18, 2016
- Tuesday December 20,2016

The Officers are as indicated below.

Officers:

Chair	**Leslie Daviet II**	**lesdavietii@cs.com**
Vice Chair	**Jim Tang**	**JFTANG@cox.net**
Secretary	**Tom Lundquist**	**tom.lundquist@ieee.org**
Treasurer	**Gary Frere**	**gary.frere@gmail.com**
Membership	**Rao Thallam**	**Rao.Thallam@gmail.com**
Facilities	**Ron Spraque**	**r.sprague@ieee.org**
Program	**Barry Perlman**	**barry.perlman@gmail.com**
Past Chair	**Barry Cummings**	**abarrycummings@gmail.com**

IEEE Phoenix Section News

IEEE Phoenix Section Officer Terms

At the November 3, 2015 Executive Committee (ExCom) meeting of the IEEE Phoenix Section officers and representatives of the affiliated Chapters and Affinity Groups, a decision was made to change the term of IEEE Phoenix Section Officers from one year to two years in accordance with the bylaws the Phoenix Section operates under. The rationale of this decision included operational efficiency and effectiveness of individuals being in a position for two years and thus more able to implement improvements; program continuity and planning; and improved section operations.

Per the Phoenix Section website (http://sites.ieee.org/phoenix/about/section-bylaws/), the Phoenix Section is "required to operate in accordance with IEEE Constitution, Bylaws, Policies, and the MGA Operations Manual." Per Section 9.4.F.7.b. of the MGA Operations Manual:

- "The term of office for all officers shall be one or two years. A Section must define the officer term as one or two years and record it in its local operating procedures document; if the officer term is not recorded in the local operating procedures document, it shall be two years. An individual may continue in the position until a successor has been duly elected and takes office."

There may be times when an individual is unable to serve for two years in a position so annually the Nominating Committee will confirm with each officer their willingness and ability to serve in the specific position for the second year of their term. If someone needs to drop out after their first year or be replaced, the Nominating Committee will identify replacements and place them on the ballot for election. Typically, the officer succession plan is to request individuals serving as officers to progress through the various positions but this is not a requirement.

The purpose of this notice is to record the decision reached regarding Phoenix Section Officers serving two year terms. Please contact any of the Phoenix Section Officers if you have questions or input. Thank you.

Executive Committee Meeting

No meeting of Executive Committee in July & August

Normal meetings are on first Tuesday of the month from 6:00 PM to 8:00 PM
The Airport Hilton Phoenix,
2435 S 47th St. Phoenix, AZ 85034, (480) 894-1600.

2016 Executive Committee

Chair:	Bruce Ladewig
Vice Chair:	Surinder Tuli
Secretary:	Vivek Gupta
Treasurer:	Mahesh Shah
Past Chair:	Barbara McMinn

Executive Committee Meetings

Date: First Tuesday of every month, except July and August
Time: 6:00 – 8:00 p.m.
Location: Hilton Phoenix Airport, 2435 South 47th Street, Phoenix, AZ 85034

IEEE Phoenix Section: Calendar of Activities

For any questions and inputs regarding the calendar of activities, please contact Dr. Surinder Tuli, Vice Section Chair, at Surinder.tuli@gmail.com.

April 2016

Student Industry Mixer
MicroMouse registrations due to Southwest Area: TBD.
Nominating Committee formed for election of next year's Section officers
-At least three members that are not Section officers (Chapter officers okay)
April 23 SW Area Meeting (Here in Phoenix, at ASU!)
Membership development

May 2016

Need to determine how much money needs to be transferred from the Investment Account
Start advertising for Student Scholarships
Student Branch reports to IEEE HQ and Student Activities Chair due: May 1 or within 2 months of term ending but no later than September 1.
Submitting the online form qualifies for the annual Student Branch rebate program. Student Branches will receive a combined payment of the Student Branch rebate/allotment, which is based on membership statistics as of December 31. The rebate is $2 per Student member, and the allotment is either $50 (for Branches with 49 or fewer members) or $100 (for Student Branches with 50 or more members).
Call for Nominations issued by Nominating Committee
Student papers due May.

IEEE Senior Member and Fellow Grade

IEEE Phoenix Section Membership Development would like to nominate eligible IEEE Members from the Section to Senior Member and Fellow Grades. Please review the requirements at www.ieee.org for eligibility.

Eligible candidates are requested to send in their resumes to Dr. Vasudeva P. Atluri, Membership Development Coordinator, at vpatluri@ieee.org and Dr. Bruce Ladewig, Section Chair, at bruceladewig@ieee.org for consideration.

Phoenix Section LinkedIn Group

If you are interested in professional networking and shared Section related updates & discussions join the IEEE Phoenix Section Group on LinkedIn. Signing up only takes minutes and is free. A job board is available as well.

You can also go to IEEE Phoenix Section LinkdIn page by clicking button on the IEEE Phoenix Section home page

IEEE Phoenix Section Ventures into Social Media

You can access the web page three ways:
Use the URL: https://www.facebook.com/IEEEPhoenixSection

Click on the Facebook logo link from IEEE Phoenix section home page.
Search for IEEE Phoenix Section from your Facebook page.

We need following help.

1. Each of you access the IEEE Phoenix Section Web page and click on "Like" hyperlink.
2. Go on the Friends section of the page and "Invite Your Friends." Once your click on Invite button, it will get your email contact list. Your facebook contact list will already be populated with your Facebook friends and you can simply click the Invite button next to their name. Please invite as many friends as you can.
3. Provide me the contents for posting on a regular basis - meeting/ event announcements, Event pictures, Videos.
4. Start some discussion topics under - Status section.

IEEE Membership Grade Advancement

IEEE Phoenix Section Executive Committee encourages all to apply for advancement in membership grade to Senior Member and Fellow Grade. Please review the requirements at www.ieee.org. Please contact IEEE Phoenix Section Membership Development Chair, Dr. Vasudeva P. Atluri, at vpatluri@ieee.org for additional information.

Enhanced Senior Member Application Launched

Effective 29 July 2011, IEEE Admission and Advancement launched a new Senior Member Application. The new application includes numerous enhancements, based on feedback from volunteers and members, including:

- New user friendly format / design
- Secure environment (need IEEE Web account)
- Ability to save application in “draft” form
- Ability to upload resume or Curriculum Vitae (up to 3 MB)
- Applicant can view application online
- Applicant can view status of requested reference forms
- References will be notified by email to provide applicant reference
- References will have the ability to view their completed reference form(s)
- Real time application status

The goal is to provide prospective Senior Members with an easy to use and intuitive interface, while streamlining internal operations at the same time. View the new Senior Member application.

IEEE Member’s Benefits

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Leverage the benefits your IEEE Membership offers to advance your career. Upload your resume/CV and complete your employment preferences to be discovered by organizations seeking talent. Employers are looking for qualified candidates to fill their open technology positions. Navigate to the "Opportunities" tab to:

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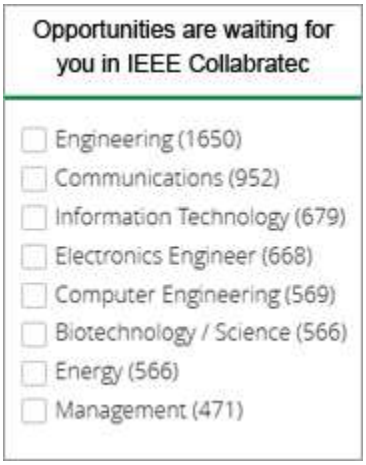

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Visit the Member Discounts page at www.ieee.org/discounts to discover this added perk of IEEE Membership.

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IEEE members can take advantage of special deals this month from our hardware program partners, Lenovo and Dell:

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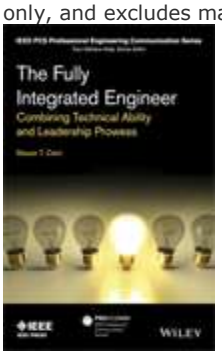

The Fully Integrated Engineer: Combining Technical Ability and Leadership Prowess
Steven T. Cerri
ISBN: 978-1-118-85431-0, March 2016, Wiley-IEEE Press
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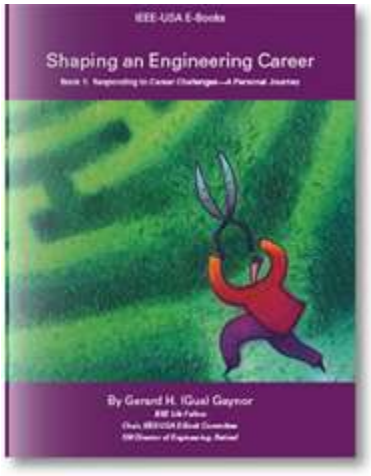
Free IEEE-USA eBook Offered as Special Benefit to IEEE Members

As a special benefit of IEEE Membership through 15 April, IEEE-USA is offering a free eBook,***Shaping an Engineering Career Book 1: Responding to Career Challenges-A Personal Journey***, written by Gerard H. Gus Gaynor.



The *Shaping an Engineering Career* series documents the personal history of selected engineers, and describes their journeys in transitioning from entry-level employees to technology professionals or managers. The purpose of this series is to identify the different circumstances that technology professionals have encountered in building their careers, and to provide some guidance to others about what is required to build a successful career in technology, or related disciplines.

In *Book 1: Responding to Career Challenges--A Personal Journey*, Gaynor gives a short history of his roots, starting with his life during the Great Depression, and sharing how his interest in being an engineer actually began during that time, at age seven. This eBook contains what Gaynor calls a lifetime of challenges, and what he has learned from each of those challenges - from his first job painting storm sashes - to his entrepreneurial ventures - and on to his career at 3M.

DOWNLOAD

Members can download *Shaping an Engineering Career Book 1: Responding to Career Challenges-A Personal Journey* for free through 15 April 2016. Sign in with your IEEE Account, add the book to your Cart, and enter the promo code **MARCHFREE** at checkout.

In April, IEEE-USA eBooks will offer *Engineers Working with Teachers, A Handbook for Bringing the Excitement of Engineering, Science, Technology, Invention, and Creativity into the Classroom*, by Harry T. Roman.

Roman shares his experiences working with teachers and students, using presentations, demonstrations and team-based competitions to stimulate their interests and career choices.

IEEE-USA Partners with the United States Patent and Trade Office (USPTO)

IEEE-USA has an exciting announcement for engineering entrepreneurs, intrapreneurs and other IEEE members interested in the United States patent process. IEEE-USA has partnered with the United States Patent and Trade Office (USPTO) to educate members about the national and international patent process.

The first series of webinars which we have dubbed*Understanding the Patent Process* will focus on reviewing the how to of filing for a patent. The series began on 17 March 2016 with *Patents an Overview Provisional and Nonprovisional Utility Patent Application.* Utility patents are the most commonly filed-for patent because they protect a vast range of inventions and discoveries. Attendees will also learn what a provisional application does, if it is right for them, and how to file one. Watch the archived version.

The next webinar in the series is *What's the Process? Forms, Fees, Office Actions, Rejections and Allowances.* This session will take attendees into the prosecution process and discuss terminology, forms, and fees. The final webinar in the series will be *Copyrights - What's copyright Got to Do with it?* This session will help attendees learn the basics of copyright and recognize copyright in their businesses and in their everyday world. Inventors who focus on technology and running a business will learn valuable information from this session delivered by on the USPTO's experts in copyright law.

IEEE-USA and USPTO will continue to partner on webinars throughout 2016. Please check out those future topics on the IEEE-USA webinar page.

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Golf balls	Baseball hat
Golf umbrella	Travel umbrella

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- Refer your colleague via the online form.
- Your referral will receive an email inviting them to join at a 25% discount off first-year membership dues, and will receive benefits through 31 December 2017.
- Your referral will provide your IEEE member number when he or she joins.
- Within 1-2 weeks after your referral joins, you will receive an email confirming your recruiting success, including a link which allows you to select your IEEE-USA merchandise item.
- You will receive a separate email for each new member you recruit.

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Volunteers needed for IEEE Awards

The IEEE Awards Board seeks new volunteers to serve on its award selection committees and Awards Board standing committees to assist with managing the recipient nomination and selection process for IEEE Medals, Technical Field Awards, and Recognitions, the highest awards IEEE presents on behalf of the IEEE Board of Directors.

To apply to serve on an award selection committee or as a member of one of the following Awards Board's (AB) committees, visit the IEEE Awards Board Nominations and Appointments Web page.

- AB Awards Review Committee
- AB Planning and Policy Committee
- AB Finance Committee
- AB Presentation and Publicity Committee
- AB Joint Awards with National Societies Committee
- Medals Council
- Technical Field Awards Council
- Recognitions Council
- Medal, Technical Field Award, Recognition selection committees

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