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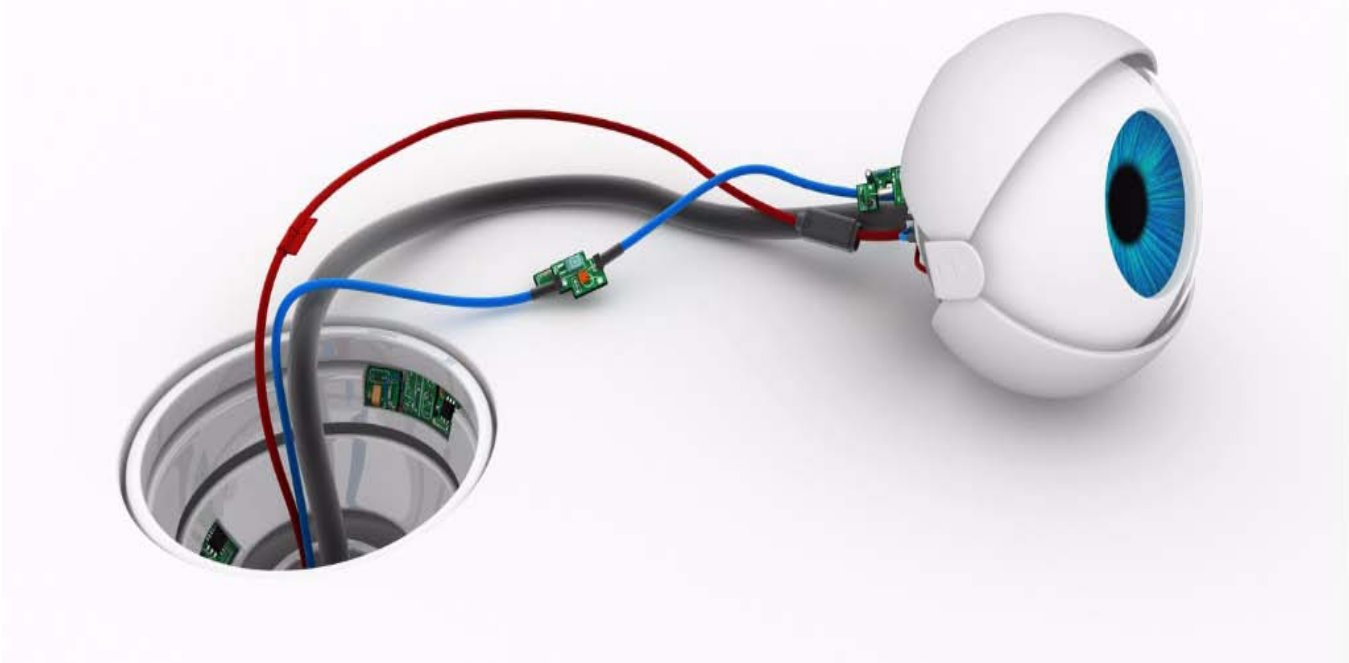

IEEE
Advancing Technology for Humanity

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Who, What, When, Where, and How...but mostly When

by Kevin Flavin, IEEE Boston Section,
Electronics Communications, Chair

The Boston Section has had an Editorial Calendar for years, but we've never shared it with anyone outside the Editorial Board until now. It seems obvious now, but it wasn't until a member of the team suggested that it should be made available to the public, never-mind the rest of the section. So, we are providing on the website on the Advertise With Us page **(http://ieeeboston.org/advertise-ieee-boston-section/)**

For those that don't know what the editorial calendar is or what is does or even why it's important, let's take a step back and explain.

An editorial calendar defines and details the intention of a publication to cover certain themes, and provides an established timeline for participation and completion of the activities for a publication. For example, our editorial calendar defines the themes that are popular within our industries and the schedule to maintain a reasonable publication schedule for the compilation of articles, and other artifacts that make up the periodical. That may sound like a lot but basically, an editorial calendar details the what, the when, and the how for a periodical.

First, the editorial calendar usually only covers a year of activity. Typically, twelve months of coverage is the goal, however, it really depends on the publication. There are editorial calendars that cover multiple years, however those are rarer today because the pace of reader consumption is so fast and voluminous is much greater than ever before.

Second, our editorial calendar is theme based, which means in one month we'll cover Blockchain, for example, and other months, we will cover STEM topics. The idea is that external content providers, e.g. guest articles, slideshows, infographics, will know which month to pitch their ideas to, and for us to solicit content from the thought leaders for those periodicals.

Third, the editorial calendar is built over time. The first one we did, so many years ago, was very light on topics and we sort of stuck to the topics, but not really. It was more of a 'work-the-kinks-out' kind of thing. Something was better than nothing. We now look at other editorial calendars of periodicals within our industries, capturing their schedule, and trying not to conflict with their schedules if possible, but also supporting their calendar and to build upon the momentum of the themes.

Our editorial calendar needs to take our own activities into consideration. For example, the High Performance Extreme Computing Conference **(http://www.ieee-hpec.org/)** is a strong influence on our timeline. We are highlighting this topic leading up to the month of the conference, as interest and attention of the attendees focus on the conference, we will try to provide them related content, articles of interest, news, etc.

In addition, our courses, both online and live courses, will be highlighted within the pages of the periodical, with articles from the speakers, as well as related content to the topic of the course. This part is new for us, and we are trying not to mess something up, but we hope it will be worthwhile to the members, and other readers of our Digital Reflector, as well as the IEEE Boston Section blog **(http://ieeeboston.org/blog/).** Yes, the editorial calendar provides guidance for the blog also.

What does that mean to you, dear reader, you may ask? Well, I am really glad you asked!

You, the reader, will know the topics in advance of the publication, giving you something to keep in your tickler file or to do list to check with that month's issue.

Each issue will include information that may be important to your work or your personal development, or even tools that can help you give your technical minded children challenges (STEM) to advance their knowledge.

Providers will know when to provide information to reach you with the appropriate tools. This saves them time, and gives you a more efficient way to gather information that you need.

A significant intangible is supporting the momentum of a certain topic in the industry to coincide with external or third party activities.

While it is easy to link the Editorial Calendar, it's also worthwhile to highlight the topics we are covering and when. (Remember, these are our intended timing of the topics)

April - Drones
May - 3D Printing
June - Virtual Reality
July - Augmented Reality
August - STEM, Robotics
September - Education, HPEC
October - Artificial Intelligence
November - Holiday, EOY

IEEE Boston Section Online Courses:

(Students have 90 day access to all online, self-paced courses)

Verilog101:Verilog Foundations
Full course description and registration at ,
http://ieeeboston.org/verilog-101-verilog-foundations-online-course/

System Verilog 101: Design Constructs
Full course description and registration at ,
http://ieeeboston.org/systemverilog-101-sv101-design-constructs-online-course/

System Verilog 102: Verification Constructs
Full course description and registration at ,
http://ieeeboston.org/systemverilog-102-sv102-verification-constructs-online-course/

High Performance Project Management
Full course description and registration at ,
http://ieeeboston.org/high-performance-project-management-online-course/

Introduction to Embedded Linux Part I
Full course description and registration at ,
http://ieeeboston.org/introduction-to-embedded-linux-part-i-el201-online-course/

Embedded Linux Optimization - Tools and Techniques
Full course description and registration at ,
http://ieeeboston.org/embedded-linux-optimization-tools-techniques-line-course/

Embedded Linux Board Support Packages and Device Drivers
Full course description and registration at ,
http://ieeeboston.org/embedded-linux-bsps-device-drivers-line-course/

Software Development for Medical Device Manufacturers
Full course description and registration at ,
http://ieeeboston.org/software-development-medical-device-manufacturers-line-course/

Fundamental Mathematics Concepts Relating to Electromagnetics
Full course description and registration at ,
http://ieeeboston.org/fundamental-mathematics-concepts-relating-electromagnetics-line-course/

Reliability Engineering for the Business World
Full course description and registration at ,
http://ieeeboston.org/reliability-engineering-business-world-line-course/

Design Thinking for Today's Technical Work
http://ieeeboston.org/design-thinking-technical-work-line-course/

Fundamentals of Real-Time Operating Systems
http://ieeeboston.org/fundamentals-of-real-time-operating-systems-rt201-on-line-course/

March Chapter Meeting Summary

Entrepreneurs' Network – 6:30PM, March, March 3
Staffing for Entrepreneurial Success
PRE-MEETING DINNER at 5:15 PM (sharp) at Not Your Average Joe's 4C Wayside Rd, Burlington, MA 01803. You have a startup, and you need more people. Where do you start? This panel discussion is exactly for you. Staffing properly can make or break your company. In this dynamic session, we will discuss topics including developing a staffing plan, the benefits of an organizational chart, different types of staffing, and recruiting strategies, identifying and maintaining company culture. And, most importantly how to make the new staff a high performing team. Meeting Location: Microsoft Technology Center, 5 Wayside Road, Burlington, MA 01803. See Page 9.

Communications Society and co-sponsoring Microwave Theory and Techniques Society - 7:00PM, Thursday, March 5
Wireless Healthcare: What have we done, what are we doing, and what is next? - Rick Hampton Partner Health-Care System, Inc., Wireless Technical Architect
This meeting is preceded by dinner with our guest speaker at Bertucci's, 475 Winter St, Waltham, MA at 5:30 PM. Come and join us in a discussion about how healthcare has used wireless technologies in the past, how (and why) things have changed and what is expected for the future. You'll get a peek into the operation of a modern medical center and some of their unique requirements, solutions and challenges. We'll discuss why some obvious connectivity solutions aren't. We'll discuss how new technologies could change the future of healthcare… and what it might take to make them truly successful. We'll even discuss some solutions that will leave you asking, "WHY?" Please come prepared to ask questions, offer insights and share ideas. Meeting Location: Verizon Technology Center, 60 Sylvan Rd., Waltham, MA 02451. See Page 12.

Social Implications and Technology Society, Nuclear and Plasma Science Society (NPS), and IEEE HKN – Kappa Sigma Chapter, and co-sponsoring Geoscience and Remote Sensing Society - 10:30AM, Thursday, March 5
New understanding of storm-time traveling ionospheric disturbances - Dr. Shun-rong Zhang is a Space Scientist at the MIT Haystack Observatory
We will present a GNSS-based TID observational study to provide evidence of (1) concurrent medium-scale TIDs (MSTIDs) and LSTIDs at subauroral and mid- latitudes during the SAPS presence, and (2) the unexpected trans-polar day-to-night propagation of TIDs, suggesting significant dayside auroral impact. We will discuss potential physical processes associated with these observations. These new results help form a global picture of the storm TID propagation. Meeting Location: ISR conference room, 202 Kenny Cottle, Boston College, 885 Centre St., Newton MA 02459. See Page 11.

Life Members – 4:00PM, Wednesday, March 11
At the Intersection of Longevity and Innovation: Research at the MIT AgeLab - Lisa D'Ambrosio, Ph.D., is a Research Scientist at the MIT AgeLab.
Advances in medicine, technology and public health have resulted in unprecedented longevity globally. The growing older adult population represents both challenges and opportunities for individuals, businesses and governments. In this talk, Dr. D'Ambrosio will provide an overview of the MIT AgeLab's perspective on aging and highlight some of the research done and in progress at the lab. The meeting will be held at Meeting Location: MIT Lincoln Laboratory, 244 Wood St, Lexington Massachusetts on Wednesday, March 11th in the Main Cafeteria. See Page 14.

Reliability Society, co-sponsored by Electron Devices Society, and ESDA - 4:30PM, Wednesday, March 11
A New Ionizer Measurement Technology for ESD Class 0 Applications - John Glynn II, Director of Sales, Marketing and Product Development NRD, LLC
Please take note that this event starts at 4:30 PM, 1 hour earlier than our usual start time.
This presentation will center around a comparison of how a CPM (Charged Plate Monitor) historically has been used to calibrate Ionizers and how a new sensor views ionization performance, both in decay time as well as in Ion balance. This new sensor enables simultaneous measurement of these performance parameters. Meeting Location: MIT Lincoln Laboratory, 3 Forbes Road, Lexington, MA. See Page 13.

Entrepreneurs' Network – 6:00PM, Tuesday, March 17
Digital Marketing: Many Options, But Where To Go?
Reach your prospects the way they want with marketing and communication programs. 70% of the buyer's journey is complete before a buyer even reaches out to sales. Buyers don't want to be prospected, or demoed, or closed. The buyer's journey is the process buyers go through to become aware of, consider and evaluate, and decide to purchase a new product or service. Three panelists will show how using a variety of marketing communication tactics will attract prospects and retain your customers. Meeting Location: Draper, Hill Building, One Hampshire St. Cambridge, MA. See Page 15.

Computer Society and GBC/ACM – 7:00PM, Thursday, March 19
Democracy is a design problem - Dana Chisnell
This talk will be webcast on the MIT CSAIL Youtube channel http://www.youtube.com/channel/UCYs2iUgksAhgoidZwEAimmg/live beginning at 7pm.
Every great designed experience starts with the stories of individual humans. At the Center for Civic Design, Dana Chisnell and her team collected thousands of stories from U.S. voters from 2010 to now. The stories revealed two massive gaps in the process. First, people who administer elections and voters have very different mental models of the process of voting. The second gap was between privileged voters and burdened voters. These gaps explained why it's harder than it should be to vote in the U.S. and showed that policies meant to make things better had unintended consequences that actually make it worse. Meeting Location: MIT Room 32-G449 (the Kiva conference room on the 4th floor of the Stata Center, building 32 on MIT maps). See Page 17.

Aerospace and Electronic Systems Society, Geoscience and Remote Sensing Society and co-sponsoring Antennas and Propagation Society, Microwave Theory and Techniques Society, Electron Devices Society, and Education Society – 6:30PM, Tuesday, March 24
An Active Phased Array Technology Demonstrator for Future FAA/ NOAA ATC/Weather Radars – David Conway MIT Lincoln Laboratory (MIT LL) has been working in support of the Multifunction Phased Array Radar (MPAR) program to develop low-cost phased array radar technology. The MPAR effort focused on low-cost phased array technology that could be applied to the FAA and NOAA's National Airspace (NAS) aircraft surveillance and weather forecasting missions. These missions are currently executed with spinning dish-based radars. Given civilian agency budget limitations, MIT LL developed an internal target of $60K/ m2 of radar aperture, a factor of 10 less expensive than starting costs for DOD phased arrays. Meeting Location: MIT Lincoln Laboratory, 3 Forbes Road, Lexington, MA. See Page 18.

Social Implications and Technology Society, Nuclear and Plasma Science Society, and IEEE HKN – Kappa Sigma Chapter and co-sponsoring Microwave Theory and Techniques Society, Antennas and Propagation Society - 6:00PM, Wednesday, March 25

Developing New Technology for Affordable Internet - Ryan Lagoy currently works at Starry, Inc.

Starry is developing and deploying new technology with the goal of connecting billions of people worldwide to affordable, high speed internet. Currently, Starry's internet service is available in 5 different U.S. cities: Boston, LA, DC, Denver, and NYC. This mission is enabled by Starry's advanced multipoint system, which will be reviewed in this talk at a high level. Following the system overview, there will be a general technical discussion of applicable topics including path loss, link budget analysis, and digital predistortion. Meeting Location: Engineering Product Innovation Center, Room EPC 205, Boston University, 750 Commonwealth Ave., Boston, MA 02215.

See Page 19.

Social Implications and Technology Society, Nuclear and Plasma Science Society, IEEE HKN – Kappa Sigma Chapter, and co-sponsoring Geoscience and Remote Sensing and Antennas and Propagation Society - 10:30AM, Thursday, March 26

Analysis of geomagnetic storms and solar eclipse induced ionospheric perturbation and investigation of associated mechanisms - Dr. Olusegun Jonah is a postdoctoral researcher at the MIT Haystack Observatory.

Upper atmospheric variability remains a primary challenge for accurate specification and prediction of ionospheric behavior and a focus of substantial research effort. My seminar will discuss two recent studies addressing ionospheric disturbances related to different driving forces. In the first study, we used multiple instruments and modeling tools to investigate the ionospheric changes during geomagnetically disturbed period, with focus on variations in Traveling Ionospheric Disturbances (TIDs). Meeting Location: ISR conference room, 202 Kenny Cottle, Boston College, 885 Centre St., Newton MA 02459. See Page 19.

Call for Articles

Now that the Reflector is all electronic, we are expanding the content of the publication. One of the new features we will be adding are technical, professional development, and general interest articles to our members and the local technology community. These will supplement the existing material already in our publication.

Technical submissions should be of reasonable technical depth and include graphics and, if needed, any supporting files. The length is flexible; however, a four to five page limit should be used as a guide. An appropriate guide may be a technical paper in a conference proceeding rather than one in an IEEE journal or transaction.

Professional development or general interest articles should have broad applicability to the engineering community and should not explicitly promote services for which a fee or payment is required. A maximum length of two to three pages would be best.

To ensure quality, technical submissions will be reviewed by the appropriate technical area(s). Professional/interest articles will be reviewed by the Publications Committee for suitability.The author will be notified of the reviewers' decision.

The Reflector is published the first of each month. The target submission deadline for the articles should be five weeks before the issue date (e.g., June 1st issue date; article submission is April 27). This will allow sufficient time for a thorough review and notification to the author.

We are excited about this new feature and hope you are eager to participate!

Submissions should be sent to; ieeebostonsection@gmail.com

Entrepreneurs' Network – 6:30PM, Tuesday, March 3

Staffing for Entrepreneurial Success

Location: Microsoft Technology Center, 5 Wayside Road, Burlington, MA 01803

PRE-MEETING DINNER at 5:15 PM (sharp) at Not Your Average Joe's 4C Wayside Rd, Burlington, MA 01803
You have a startup, and you need more people. Where do you start? This panel discussion is exactly for you. Staffing properly can make or break your company. In this dynamic session, we will discuss topics including developing a staffing plan, the benefits of an organizational chart, different types of staffing, and recruiting strategies, identifying and maintaining company culture. And, most importantly how to make the new staff a high performing team.

Agenda:
6:30-7:30 PM - Registration & networking
7:30-7:40 PM - ENET Chairperson's announcements
7:40-7:55 PM - eMinute - Up to 3 Startup companies' presentations
7:55-8:45 PM - 3 expert speakers on the night's topic
8:45-9:00 PM - Audience / Speakers Q & A
9:00-9:30 PM - Final networking includes meeting presenting speakers

A question and answer session follow the presentation, and panelists will be available afterward for responses to individual questions. As with every ENET meeting, you will also get the chance to network with the panelists and other meeting attendees, both before the start of the meeting and afterward.

Panelists:

Neal Fay Vice President of Business Development King & Bishop and Finish Line Staffing
Experienced Board Member with a demonstrated history of working in the staffing and recruiting industry. Strong business development professional skilled in Sales, Customer Relationship Management (CRM), Executive Coaching, Technical Recruiting, and Fundraising.
King & Bishop and Finish Line Staffing provides a comprehensive balance of Human Resource expertise. We work with each company on an individual basis to create unique solutions. We have the resources to develop and implement plans and strategies and work within time and budget constraints. King & Bishop provides Temporary and Direct Staffing in the following disciplines..

Human Resources, Finance, Life Sciences, Clinical, Sales/Marketing, Engineering, Manufacturing, Operations, Med Device, Quality.
Steve Owens, CTO, Founder of Finish Line Product Development Services
Steve has over 30 years of successful product development experience in many different industries and is a sought after advisor and speaker on the subject. Steve has founded four successful start-ups and holds over twenty-five patents. Steve has worked for companies such as Halliburton and Baker Hughes. He has experience in the Internet of Things, M2M, Oil and Gas, and Industrial Controls. Steve's insight into the product development process has generated millions of dollars in revenue for start-ups and small businesses.

Charles T Frampton, Founder and Managing Director WV Consult, LLC
I have been recognized as a proven leader of strategic initiatives both for major firms and start-ups. I have focused on aligning the firm's Vision and Mission with its Organizational capabilities, the Financial realities and each client's unique Value Chain optimization. My work has focused on solving complex problems which generate significant achievement to the financial and operational results.

Moderator:
Michael S. Chester, President, International Manufacturing Consultants, and Past Chairman, Boston Entrepreneurs' Network (ENET)
Mike has co-founded high tech, clean tech, and medical

device startups in both the US and China, and he has obtained non-dilutive funding from the Chinese government. He now advises startups in clean tech, biotech, and manufacturing. Before becoming an entrepreneur, Mike spent 16 years with IBM designing robots and automation, marketing and selling IBM products to manufacturing companies, setting up global operations and supply chains, and founding an IBM consulting organization for manufacturing clients that he grew into a $20M business. He lived in China from 1986-1987 while consulting to companies owned by the Machine Building Ministry and teaching graduate courses at Hunan University.

Mike earned his BS in Electrical Engineering and MS in Computer Engineering from Syracuse University and his MBA from Union College. He is a past Chair of The IEEE Boston Entrepreneurs' Network, has served on the board of APICS Boston, and was a member of the planning committee of the MIT Enterprise Forum for over 10 years. Mike is a frequent speaker at conferences on Global Entrepreneurship, Supply Chains, Manufacturing, and China business. He is judge and mentor to companies competing in the Mass Challenge, Clean Tech Open, and other business plan competitions. Mike and his sons have competed on the TV show Robot Wars with their robotic rabbit, "Bunny Attack."

Co-Organizers:

Kathy Yenke, CSL Sales Xceleration, Outsourced VP of Sales
Fractional CRO/VP Sales, Helping companies achieve breakout Sales Growth, Discipline & Accountability, Leadership, Speaker
Kathy brings over 25 years of sales and sales leadership to help companies unlock their sales potential, improve profitability, and implement comprehensive sales strategies to achieve results. She started her career at IBM as a sales representative and was promoted quickly throughout the organization by delivering outstanding results. Before leaving IBM, Kathy was responsible for a billion-dollar business unit, as the VP of East Sales. After her eighteen-year tenure, Kathy decided to utilize her skills at a start-up, Egenera, followed by a small business, Lighthouse Computer Services. Again, she built high functioning teams, consistently delivering results. In 2016, she formed Sales Catalyst Solutions, Inc. Kathy has an extensive set of sales, marketing, business development, and general management skills which enable her to have a broad perspective and a meaningful impact for start-up and small companies that want to grow

Dan Skiba, President & CEO GOT Interface; Vice-Chair, Boston ENET
As a Product Development Company Executive, I provide strategic leadership in product innovation and managing global teams, delivering award-winning products to the international market. My ability to problem solve, direct the entire product development lifecycle and gain commitment to a common goal have driven faster release of products and market penetration. By building synergies across all Product Life Cycle disciplines, we have delivered products that result in 100% product utilization and seamless integration into customer environments. My skills in optimizing international resources have significantly reduced costs and streamlined production, delivering product excellence.

Directions: Microsoft Technology Center RT 128 / 95 to Rt 3 South to Wayside Rd.

Registration: ENET Member Rate – Free, MDG Member – $15.00, Non-ENET Member Rate – $20.00, Student – $10.00
Reservations: Please register at
https://boston-enet.org/event-3461320/Registration

This meeting is free to ENET members and $20 for non-members. No reservations are needed for the pre-meeting dinner. To expedite sign-in for the meeting, we ask that everyone -- members as well as non-members -- pre-register online. Pre-registration is available until midnight the day before the meeting. If you cannot pre-register, you are welcome to register at the door. Attendees must arrive before 7:30 pm. The entrance is locked after 7:30 pm.

REFRESHMENTS: Snacks and soft drinks will be served at the meeting.

Social Implications and Technology Society, Nuclear and Plasma Science Society (NPS), IEEE HKN – Kappa Sigma Chapter, and Geoscience and Remote Sensing Society - 10:30AM, Thursday, March 5

New Understanding of Storm-time Traveling Ionospheric Disturbances

Dr. Shun-rong Zhang, MIT Haystack Observatory.

Storm-time Traveling Ionospheric Disturbances (TIDs) provide pathway for momentum and energy dispersion from the solar wind-magnetosphere system to various components of the global ionosphere and thermosphere. Large scale TIDs (LSTIDs) are known to be initiated generally in the auroral zone where significant heating is injected, with subsequent propagation away from the source: equatorward into lower latitudes and poleward into high latitudes. This general picture lacks important components in some of the very dynamic regions: at subauroral latitudes where LSTIDs encounter dramatic electromagnetic and ion-neutral coupling forcing provided by the subauroral polarization stream (SAPS); in the polar region where both dayside and nightside auroral heating processes associated with storms and substorms could be significant TID sources. We will present a GNSS-based TID observational study to provide evidence of (1) concurrent medium-scale TIDs (MSTIDs) and LSTIDs at subauroral and mid-latitudes during the SAPS presence, and (2) the unexpected transpolar day-to-night propagation of TIDs, suggesting significant dayside auroral impact. We will discuss potential physical processes associated with these observations. These new results help form a global picture of the storm TID propagation.

Speaker: Dr. Shun-rong Zhang is a Space Scientist at the MIT Haystack Observatory. His research encompasses a wide range of ionospheric and thermospheric topics, and recently has concentrated on the climatology of the upper atmosphere, long term variations, and space weather.

Meeting Place: ISR conference room, 202 Kenny Cottle, Boston College, 885 Centre St., Newton MA 02459.

IEEE Boston Section Social Media Links:

Twitter: https://twitter.com/ieeeboston

Facebook: https://www.facebook.com/IEEEBoston

YouTube: https://www.youtube.com/user/IEEEBostonSection

Google+: https://plus.google.com/107894868975229024384/

LinkedIn: https://www.linkedin.com/groups/IEEE-Boston-Section-3763694/about

Communications Society, and Microwave Theory & Techniques Society – 7:00PM, Thursday, March 5

Wireless Healthcare: What Have We Done, What Are We Doing, And What Is Next?

Speaker: Rick Hampton, HealthCare Systems, Inc.

Verizon Technology Center, 60 Sylvan Rd., Waltham, MA 02451.

This meeting is preceded by dinner with our guest speaker at Bertucci's, 475 Winter St, Waltham, MA at 5:30 PM.

Come and join us in a discussion about how healthcare has used wireless technologies in the past, how (and why) things have changed and what is expected for the future. You'll get a peek into the operation of a modern medical center and some of their unique requirements, solutions and challenges. We'll discuss why some obvious connectivity solutions aren't. We'll discuss how new technologies could change the future of healthcare… and what it might take to make them truly successful. We'll even discuss some solutions that will leave you asking, "WHY?" Please come prepared to ask questions, offer insights and share ideas.

Speaker Bio: Rick Hampton Partner HealthCare System, Inc., Wireless Technical Architect

Rick Hampton is the Wireless Technical Architect for Partners HealthCare System, Inc., Boston, MA. Rick is responsible for the overall coordination of activities relating to the safe, effective and secure use of all wireless communications technologies at Partners HealthCare and its affiliates. This includes selecting and designing state-of-the-art systems, educating staff on wireless technologies, resolving electromagnetic compatibility, interference and health issues, addressing cybersecurity issues and developing policies and procedures. Rick also works with patient safety, industry and regulatory bodies to develop responses to these issues and is heavily involved in developing safety and risk management standards for wireless medical devices.

Rick has a B.S. in Biomedical Engineering from Wright State University, Dayton, Ohio. His healthcare experience includes fifteen years as a paramedic and over thirty years as a clinical engineer in large healthcare companies. His wireless background includes over forty years working with military, commercial, amateur, consumer and medical systems.

Please circulate to interested parties.
Venue Note. This is our venue at the new Verizon Technology Center Campus in Waltham.
The meeting begins at 7 PM at the new meeting auditorium at the Verizon Technology Center. The address is 60 Sylvan Road, Waltham, MA 02451. The entrance is by the far corner – with the picnic tables out front – and not the tower or the new building. It is most easily reached by the West Street entrance.

Important Note: Verizon Technology Center requests the names of the meeting attendees in advance of the meeting. If you plan to attend, please send a note via e-mail with your name to Bhumip Khasnabish at b.khasnabish@ieee.org by Wednesday, March 4th.

The meeting is preceded by dinner at Bertucci's, 475 Winter St, Waltham at 5:30 PM. The speaker will be joining us at dinner. Please let Bob Malupin know if you plan to attend the dinner at Bertucci's. Bob can be contacted at Robert.Malupin@VerizonWireless.com .

Directions to Bertucci's restaurant in Waltham: Take Exit 27B on I95/128, heading west on Winter Street. After exiting, stay all the way to the right and take the first right turn into the shopping plaza.

Directions to Verizon Technology Center (old Verizon Labs location), 60 Sylvan Rd. campus, Waltham, MA 02451: Take Exit 27B on I95/128, heading west on Winter Street. Stay all the way to the right. Verizon Technology Center is 1/2 mile ahead. At the second traffic light, turn left onto WEST ST. and then take the first right (at the Verizon sign) which leads into the Verizon campus. Take the first left. The building and entrance for the meeting are on your right. Note that the entrance to the auditorium area is by the far corner – with the red picnic tables out front – and not the tower or the new building.

Reliability Society, co-sponsored by Electron Devices Society, and ESDA - 4:30PM, Wednesday, March 11

A New Ionizer Measurement Technology for ESD Class 0 Applications

Speaker: John Glynn II of NRD, LLC

T*o view complete details for this event, click here to view the announcement and to register*
Please visit our website at www.ieee.org/bostonrel
Please take note that this event starts at 4:30 PM, 1 hour earlier than our usual start time.

This presentation will center around a comparison of how a CPM (Charged Plate Monitor) historically has been used to calibrate Ionizers and how a new sensor views ionization performance, both in decay time as well as in Ion balance. This new sensor enables simultaneous measurement of these performance parameters.

The presentation will look at Ion Density, ion velocity and how those elements impact the elimination of static charge on surfaces. We are especially focused on low voltage impairments on surfaces and whether the CPM is actually providing the readings that will support the requirements on highly sensitive components. As device sensitivity continues to plummet, these indicators will become increasingly important.

Settling time will also be covered, and how this impacts readings, and what parameters impact the accuracy of the CPM. How settling time affects the time it takes for accurate measurements. We'll also review feedback mechanisms in ionizers and the accuracy of those systems and review the future solutions for assessing compliance with eliminating low static charge environments.

Meeting Location: MIT Lincoln Laboratory, 3 Forbes Road, Lexington, MA
Email event contact: Michael W. Bannan, Chair, michael.bannan@ieee.org

Speaker: John Glynn II of NRD, LLC
John Glynn II, Director of Sales, Marketing and Product Development NRD, LLC
Since joining NRD, LLC in 2016, John Glynn II, Director of Sales, Marketing and Product Development, has

brought his technology and engineering knowledge to drive this leader of ionization solutions toward new innovative and profitable global solutions. As a senior leader, Mr. Glynn is utilizing his sales background, marketing insights, operational oversight, and product development under a single integrated organizational structure. John has proven success with identifying and understanding global markets and customer needs - whether adapting to current products or creating progressive product lines; developing multi-year strategic plans; then leading a unified, cross-functional team from sales, product design and operational processes toward efficient actionable delivery. His leadership with the soon-to-be released Ionmaster QMS™ product line will round out NRD's alpha and corona products and enable NRD toward larger global expansion.

John Glynn II currently resides in Buffalo NY and Boston MA and graduated from Colby College.

Agenda:
4:30PM Networking
4:45PM Light dinner - pizza, salad, and beverages
5:10PM Opening
5:15PM Presentation of Appreciation Plaque to MIT Lincoln Laboratory
5:20PM Announcements
5:30PM Technical Presentation and Q&A
7:00PM Adjournment

The meeting is open to all. You do not need to belong to the IEEE to attend this event; however, we welcome your consideration of IEEE membership as a career enhancing technical affiliation.

Free pizza, salad, desserts, and beverages will be available.There is no cost to register or attend, but registration is required.

Register at; https://events.vtools.ieee.org/m/222421

Life Members – 4:00PM, Wednesday, March 11

At the Intersection of Longevity and Innovation: Research at the MIT AgeLab

Lisa D'Ambrosio, Ph.D., MIT AgeLab

Advances in medicine, technology and public health have resulted in unprecedented longevity globally. The growing older adult population represents both challenges and opportunities for individuals, businesses and governments. In this talk, Dr. D'Ambrosio will provide an overview of the MIT AgeLab's perspective on aging and highlight some of the research done and in progress at the lab. Across the domains of home, caregiving, longevity planning and mobility, the AgeLab focuses on research that contributes to helping people not just live longer but to live better. She will also highlight the role of the Lifestyle Leaders as a research panel and resource in the work of the lab.

Lisa D'Ambrosio, Ph.D., is a Research Scientist at the MIT AgeLab.
At the AgeLab she directs and participates in numerous different projects around understanding and supporting longevity. Her research includes topics as diverse as decision-making around financial planning and preparedness, caregiving, transportation and mobility, and technology use and adoption. She taught social science methods and research design in MIT's Engineering Systems Division (now Institute for Data, Systems and Society) for nearly a decade. She is a contributor to and co-editor with Dr. Joseph F. Coughlin of Aging America and Transportation: Personal Choices and Public Policy. Prior to coming to MIT, Dr. D'Ambrosio was a Research Analyst at the US Department of Transportation's (USDOT) Volpe National Transportation Systems Center. Dr. D'Ambrosio earned her Ph.D. in political science from the University of Michigan, Ann Arbor, and her A.B. from Brown University.

The meeting will be held at MIT Lincoln Laboratory, 244 Wood St, Lexington Massachusetts on Wednesday, March 11th in the Main Cafeteria.

Please use the Wood Street Gate, and follow signs to the Main cafeteria. Refreshments will be available to attendees at 3:30PM and the talk is at 4:00PM.

IEEE Boston Section Social Media Links:

Twitter: https://twitter.com/ieeeboston

Facebook: https://www.facebook.com/IEEEBoston

YouTube: https://www.youtube.com/user/IEEEBostonSection

Google+: https://plus.google.com/107894868975229024384/

LinkedIn: https://www.linkedin.com/groups/IEEE-Boston-Section-3763694/about

Entrepreneurs' Network – 6:00PM, Tuesday, March 17

Digital Marketing: Many Options, But Where To Go?

Draper, Hill Building, One Hampshire St. Cambridge, MA

Reach your prospects the way they want with marketing and communication programs

70% of the buyer's journey is complete before a buyer even reaches out to sales. Buyers don't want to be prospected, or demoed, or closed. The buyer's journey is the process buyers go through to become aware of, consider and evaluate, and decide to purchase a new product or service.

Three panelists will show how using a variety of marketing communication tactics will attract prospects and retain your customers.

Utilizing video is a way to engage your audience on their journey to your business. While the rise of video isn't exactly a secret, it has been traditionally associated with a high barrier to entry, questionable ROI and somewhat heavy investment in terms of time and resources.

Angela Pitter will discuss why businesses need to use videos and provide examples of various types of video focused on your buyer's journey that caters to their needs, and ultimately leads to increased revenue.

Adam Ritchie will share how to bring complex business concepts into the mainstream by pegging them to trends in pop culture. He specializes in the creative and transformative qualities of PR, which can be the foundation for digital promotion.

Jaime Kaufman will outline a major multi-channel marketing program in development at Sanofi involving user research, social listening, SEO, and analytics. As a member of the HubSpot user group, she will show how small companies can take advantage of the powerful marketing automation platform.

The panel discussion will help you to:

Understand the menu of marketing tactics you can choose from to grow your business.
Decide what tools are best for your prospects
Weigh what options will be efficient and cost-effective

Agenda:
6:00-7:00 PM - Registration & Networking
7:00-7:10 PM - ENET Chairman's Announcements
7:10-7:25 PM - eMinute PITCH - up to 3 startups give a 90-second elevator pitch
7:25-8:15 PM - Expert speakers on the night's topic
8:15-8:30 PM - Q & A
8:30-9:00 PM - Final networking, including meeting speakers

Speakers:

Angela Pitter, CEO, LiveWire Collaborative
Angela is Founder and CEO of LiveWire Collaborative, a digital marketing consultancy. LiveWire Collaborative helps business owners and executives to tap into digital marketing solutions that unleash their brand's full potential. She's known for building comprehensive solutions that expand and strengthen customer engagements. Services at LiveWire Collaborative include: Online Strategy Development and Implementation for mid-size businesses, Social Media Training for corporations or organizations, one-on- one Executive Coaching, Social Media Analysis, as well as Facebook Ads and Email Marketing.

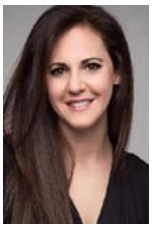
Angela was recently featured on Chronicle's, WCVB-TV social media segment, has spoken at events including the Massachusetts Conference for Women, CWE Women's Business Leaders Conference and General Assembly.

Previously, Angela spent 20+ years in high-tech and brings extensive experience
leading global teams and products to the market. She holds an M.S. in Administration and B.S. in Computer Engineering. Follow her on twitter: @angelapitter

Adam Ritchie, Founder, Adam Ritchie Brand Direction

Adam founded Adam Ritchie Brand Direction in 2007. His practice has attracted clients on four continents, spanning 20 categories from treadmill desks to snack foods and cyber training. He advocates for public relations to drive product development, and seeks to reshape perceptions and the practice of PR from its past as an organization's mouthpiece to its future as an organization's creative engine.

Adam's work with clients has earned him several awards from PRWeek and the Public Relations Society of America.



Jaime Kaufman, Associate Director of Digital Marketing, Sanofi Genzyme

Jaime Kaufman is the Associate Director of Digital Marketing for Rare Blood Disorders at Sanofi Genzyme. Her main goal for 2020 is to lead the strategic creation of an omni-channel digital presence and platform implementation for Rare Blood Disorders.

Jaime has more than 14 years of varied marketing experience which includes digital marketing strategy, marketing automation implementation, website development and management, customer resource management (CRM), media buying and social media strategy. She has a record of substantial impact at Oxford Immunotec, International Data Group (IDG), and the New York Public Library.

Jaime is an active member of Boston's HubSpot User Group, a community of inbound digital marketers that meets quarterly to discuss digital marketing trends and learn about best practices.

Moderator:

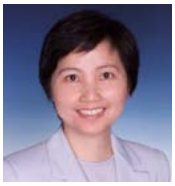
Howard Sholkin, Sholkin Consulting

Howard Sholkin has several decades of marketing communication experience across industry sectors. Since 2018, he has served as President of Newton Community Pride, a non-profit supporting a few dozen events in the city where he is a lifelong resident. In 2014, he formed Sholkin Consulting to deliver digital marketing services to technology and financial services companies. He also served on the adjunct faculty of Boston University and Lasell College for five years.

In 2003, he was hired as director of corporate communications at International Data Group (IDG) where he served Founder Pat McGovern. Sholkin later became director of communication and marketing programs for the CEO of IDG Communications, a global technology media and events subsidiary. IDG brands include Computerworld, PCWorld, Macworld, and CIO. Sholkin has held senior marketing and communication positions at technology product and services companies such as Computervision; Technology Concepts, a subsidiary of Bell Atlantic; Corporate Software; and, Digital Equipment Corp./Compaq. He was a columnist for PR News and for Personal Branding magazine, one of the first publications on social media.

Since 1990, Sholkin has been active in the Public Relations Society of America (PRSA) where he once served as president of the Boston chapter. Currently, he is co-chair of the national PRSA Investment Committee. He serves on the boards of three non-profits: Newton Community Pride, Boston Entrepreneurs Network (ENET) and Temple Shalom of Newton.

Co-organizer



Millie Kwan, President, The WSI Touch

Millie Kwan is Founder and President of The WSI Touch (thewsitouch.com), a digital marketing agency that has been serving small to medium-sized businesses in Greater Boston since 2009. Millie has over 20 years' experience in IT development, management, education and research. She received her Doctor of Business Administration degree from Boston University and M.S. in Computer Science from Washington University in St Louis. She has taught at Babson College, University of Hong Kong and Boston University. She has published research on knowledge management, process redesign and workflow management. In her early career, she specialized in the field of library automation and has led the implementation of various library systems for the University of Rhode Island, the HELIN Library Consortium of Rhode Island, and Washington University in St Louis. Millie currently serves as Chair of Boston ENET.

REGISTRATION:
https://boston-enet.org/event-3461321

PUBLIC TRANSPORTATION: Kendall stop on the Red Line.

LOCATION: Draper, Hill Building, One Hampshire St. Cambridge, MA 02139. The address is One Hampshire St but the entrance is actually on Broadway. Attendees must arrive at Draper Labs before 7pm. Entrance will be locked after 7pm.

REFRESHMENTS: Pizza, salad and soft drinks will be served at this meeting.

COST AND RESERVATIONS: ENET meetings are free to ENET members and $10 for non-members. To expedite sign-in for the meeting, we ask that everyone -- members as well as non-members -- pre-register for the meeting online. If you cannot pre-register, you are welcome to register at the door.

PARKING: Parking Near Draper - Kendall Center Blue, Yellow, and Green Parking Garages. Metered parking is often available after 6pm.

REFUND POLICY: If you cancel your registration before the event, ENET will refund your registration fee in the form of a credit towards a future ENET event.

Computer Society and GBC/ACM – 7:00PM, Thursday, March 19

Democracy is a Design Problem

Dana Chisnell, Center for Civic Design

This talk will be webcast on the MIT CSAIL Youtube channel http://www.youtube.com/channel/UCYs2iUgksAhgoidZwEAimmg/live beginning at 7pm.

Every great designed experience starts with the stories of individual humans. At the Center for Civic Design, Dana Chisnell and her team collected thousands of stories from U.S. voters from 2010 to now. The stories revealed two massive gaps in the process.

First, people who administer elections and voters have very different mental models of the process of voting. The second gap was between privileged voters and burdened voters. These gaps explained why it's harder than it should be to vote in the U.S. and showed that policies meant to make things better had unintended consequences that actually make it worse.

Dana Chisnell relentlessly works across government pushing teams to sincerely care about the needs of the people they're serving through and by design. She does this by asking hard questions to help teams know whether they're working on solving the right problems and solving the problems right.

Dana brings professional design practices to thousands of election officials every year through presentations and workshops on how to improve ballots, voter guides, web sites, and other election materials to ensure voter intent. Her team at the Center for Civic Design was the first to map the experience of American voters. She's now a founder-partner of a new civic incubator working on user-centered policy design at the National Conference on Citizenship (NCoC.org).

This joint meeting of the Boston Chapter of the IEEE Computer Society and GBC/ACM will be held in MIT Room 32-G449 (the Kiva conference room on the 4th floor of the Stata Center, building 32 on MIT maps) . You can see it on this map of the MIT campus.

Up-to-date information about this and other talks is available online at
http://ewh.ieee.org/r1/boston/computer/.

You can sign up to receive updated status information about this talk and informational emails about future talks at http://mailman.mit.edu/mailman/listinfo/ieee-cs, our self-administered mailing list.

Aerospace and Electronic Systems Society, Geoscience and Remote Sensing Society, co-sponsoring Antennas and Propagation Society, Microwave Theory and Techniques Society, and Electron Devices Society – 6:30PM, Tuesday, March 24

An Active Phased Array Technology Demonstrator for Future FAA/ NOAA ATC/Weather Radars

Speaker: David Conway, MIT Lincoln Laboratory

Place: MIT Lincoln Laboratory, 3 Forbes Rd, Lexington, MA 02421, USA

MIT Lincoln Laboratory (MIT LL) has been working in support of the Multifunction Phased Array Radar (MPAR) program to develop low-cost phased array radar technology. The MPAR effort focused on low-cost phased array technology that could be applied to the FAA and NOAA's National Airspace (NAS) aircraft surveillance and weather forecasting missions. These missions are currently executed with spinning dish-based radars. Given civilian agency budget limitations, MIT LL developed an internal target of $60K/ m2 of radar aperture, a factor of 10 less expensive than starting costs for DOD phased arrays. With our industry partner, MACOM, MIT LL developed an S-band 64-element dual-polarization phased array panel with 6 W radiated power per element per polarization. The third generation of this panel was used to build a 76-panel fully polarimetric AESA radar, the MPAR Advanced Technology Demonstrator (ATD). Recently characterized at MIT LL's RF Test Facility, the ATD has an EIRP of 85 dBW, 40 dB boresite directivity, and less than 0.04o beam steering error. The ATD was installed at the National Weather Radar Testbed (NWRT) at the National Severe Storms Laboratory (NSSL) in 2018. This talk will cover the low cost phased array concept; MPAR development history; nearfield chamber test results, installation, and calibration of the 76-panel MPAR ATD; current ATD bring up efforts at the NSSL in Norman, OK; and current and future efforts in phased arrays at MIT LL.

David Conway (M'86) is a senior member of the technical staff at MIT Lincoln Laboratory in the RF Technology Group, where he leads concept, design, and development activities in phased arrays with a focus on materials, topologies, and techniques that reduce array cost. His broader interests include MMIC and beamformer design, thermal management, polarimetric radar, and antenna and radar test and evaluation. Beginning in 2011, he has been the principal investigator on the Multifunction Phased Array Radar (MPAR) program. This effort culminated in the fielding of a 4 meter, 5000 element, fully polarimetric, S-band phased array radar at the National Weather Radar Testbed in Norman, OK. Current efforts are focused on applying low-cost topologies, methods, and materials to higher capability AESA systems.

Prior to joining Lincoln Laboratory, Mr. Conway worked in industry for more than 25 years. His former employers include Hughes Aircraft, ITT, M/A-COM, and Cobham. His efforts during that period included microwave radiator, filter, and beamformer design; communication and radar transmit/receive module design and automated test development; high-power amplifier and multifunction MMIC design; and the design, development, and marketing of a commercial MMIC product line.

Mr. Conway has published seven papers and holds one patent. He has served on the organizational committee for the IEEE Phased Array and System Technology Symposium in 2013. He received an MSEE degree from the University of Southern California and a BEE degree from the Georgia Institute of Technology.

Place: MIT Lincoln Laboratory, 3 Forbes Rd, Lexington, MA 02421, USA.

For more inforamtion contact Eli brooklner,
eli.brookner@gmail.com, or
Francesca Scire Scappuzzo, fscire@icloud.com

Social Implications and Technology Society, Nuclear and Plasma Science Society, and IEEE HKN – Kappa Sigma Chapter, and co-sponsoring Microwave Theory and Techniques Society, Antennas and Propagation Society - 6:00PM, Wednesday, March 25

Developing New Technology for Affordable Internet

Ryan Lagoy, Starry, Inc.

Starry is developing and deploying new technology with the goal of connecting billions of people worldwide to affordable, high speed internet. Currently, Starry's internet service is available in 5 different U.S. cities: Boston, LA, DC, Denver, and NYC. This mission is enabled by Starry's advanced multipoint system, which will be reviewed in this talk at a high level. Following the system overview, there will be a general technical discussion of applicable topics including path loss, link budget analysis, and digital predistortion. The session will conclude with questions.

Ryan Lagoy currently works at Starry, Inc. as the Communications Product Delivery Group Lead, developing and integrating new technology for internet applications. He previously worked at BAE Systems, in the Engineering Leadership Development Program. His interests and experience include systems engineering, RF/Microwave system design, electromagnetic theory and modeling, digital signal processing, and software development.

Meeting Location: Engineering Product Innovation Center, Room EPC 205, Boston University, 750 Commonwealth Ave., Boston, MA 02215

Social Implications and Technology Society, Nuclear and Plasma Science Society, IEEE HKN – Kappa Sigma Chapter, and co-sponsoring Geoscience and Remote Sensing and Antennas and Propagation Society - 10:30AM, Thursday, March 26

Analysis of Geomagnetic Storms and Solar Eclipse Induced Ionospheric Perturbation and Investigation of Associated Mechanisms

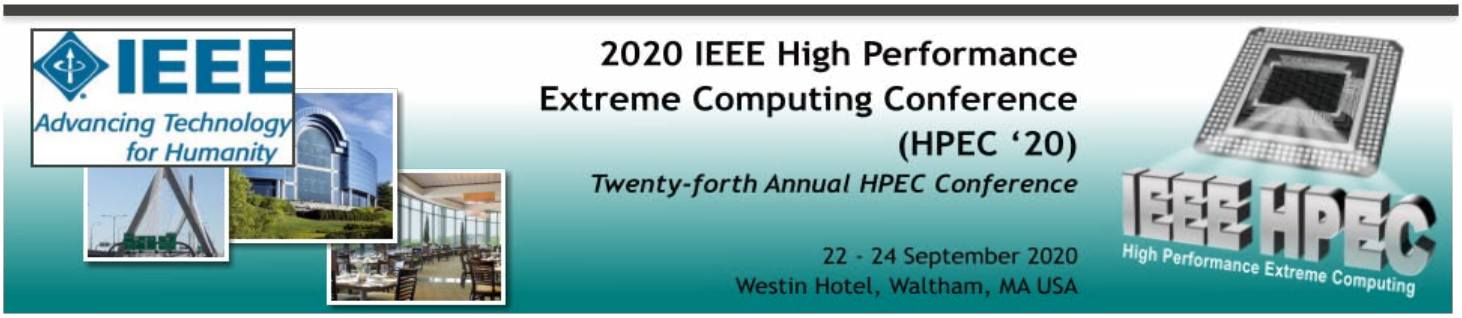
Dr. Olusegun Jonah, MIT Haystack Observatory.

Upper atmospheric variability remains a primary challenge for accurate specification and prediction of ionospheric behavior and a focus of substantial research effort. My seminar will discuss two recent studies addressing ionospheric disturbances related to different driving forces. In the first study, we used multiple instruments and modeling tools to investigate the ionospheric changes during geomagnetically disturbed period, with focus on variations in Traveling Ionospheric Disturbances (TIDs). Our results show how TID behavior varies with different background plasma density during different geophysical conditions. Results also show the transfer of energy and momentum from one hemisphere to another and how TID properties could be substantially affected by storm time background neutral wind perturbations. In the second study, we show that the ionosphere varies significantly during solar eclipse. In a case study of July 2019 solar eclipse that occurred mostly over the Pacific Ocean, our analysis reveals both significant reduction and enhancement of electron density around the EIA (Equatorial Ionization Anomaly) crest and sub-EIA crest, respectively. The increase in the electron density is associated with the enhancement of the fountain effect, vertical plasma drift and electrojet at the magnetic equatorial region while the reduction is a result of the lower photoionization due to the eclipse event. Finally, we found a domineering TEC bite-out near the EIA crest soon after the eclipse onset.

Dr. Olusegun Jonah is a postdoctoral researcher at the MIT Haystack Observatory. He received his Master's and PhD from the National Institute for Space Research in Sao Paolo, Brazil. His research concentrates on ionospheric disturbances, their driving mechanisms, and their effects.

Meeting Location: ISR conference room, 202 Kenny Cottle, Boston College, 885 Centre St., Newton MA 02459.

CALL FOR PAPERS



www.ieee-hpec.org

The IEEE High Performance Extreme Computing Conference (HPEC '20) will be held in the Greater Boston Area, Massachusetts, USA on 22 – 24 September 2020. The HPEC charter is to be the premier conference in the world on the confluence of HPC and Embedded Computing.

The technical committee seeks new presentations that clearly describe advances in high performance extreme computing technologies, emphasizing one or more of the following topics:

- AI / Machine Learning
- Graph Analytics & Network Science
- Advanced Multicore Software Technologies
- Advanced Processor Architectures
- Automated Design Tools
- Big Data & Distributed Computing
- Big Data Meets Big Compute
- Case Studies & Benchmarking of Applications
- Cloud HPEC
- Computing Technologies for Challenging Form Factors
- ASIC & FPGA Advances
- Quantum and Non-Deterministic Computing
- Data Intensive Computing
- Digital Front Ends
- Fault-Tolerant Computing
- Embedded Cloud Computing
- General Purpose GPU Computing
- High Performance Data Analysis
- Interactive and Real-Time Supercomputing
- Mapping & Scheduling of Parallel & Real-Time Applications
- New Application Frontiers
- Open System Architectures
- Secure Computing & Anti-Tamper Technologies

HPEC accepts two types of submissions: 1. Full papers (up to 6 pages, references not included; additional pages can be purchased for $200/page). 2. Extended abstracts (up to 2 pages, references included).	**IMPORTANT DATES**: Submission Deadline: **May 22, 2020** Notification of Acceptance: **July 1, 2020** Camera Ready Deadline: **August 31, 2020**

Preference will be given to papers with strong, quantitative results, demonstrating novel approaches or describing high quality prototypes. Authors of full papers can mark their preference for a poster display or an oral presentation. Presenters who wish to have hardware demonstrations are encouraged to mark their preference for a poster display. Accepted extended abstracts will be displayed as posters. Papers can be declared "student paper" if the first author was a student when doing the presented work, and will be eligible for the "IEEE HPEC Best Student Paper Award." Papers should not be anonymized. All paper and extended abstract submissions need to use the approved IEEE templates. Full paper submissions with the highest peer review ratings will be published by IEEE in the official HPEC proceedings available on IEEE eXplore. All other accepted submissions and extended abstracts are published on ieee-hpec.org.

Vendors are encouraged to sign up for vendor booths. This will allow vendors to present their HPEC technologies in an interactive atmosphere suitable for product demonstration and promotion. We welcome input (hpec@ieee-hpec.org) on tutorials, invited talks, special sessions, peer reviewed presentations, and vendor demos. Instructions for submitting will be posted on the conference web site shortly.

HPEC 2020

SEPTEMBER 22 – 24

DSP for Software Radio

(13 hours of instruction!)

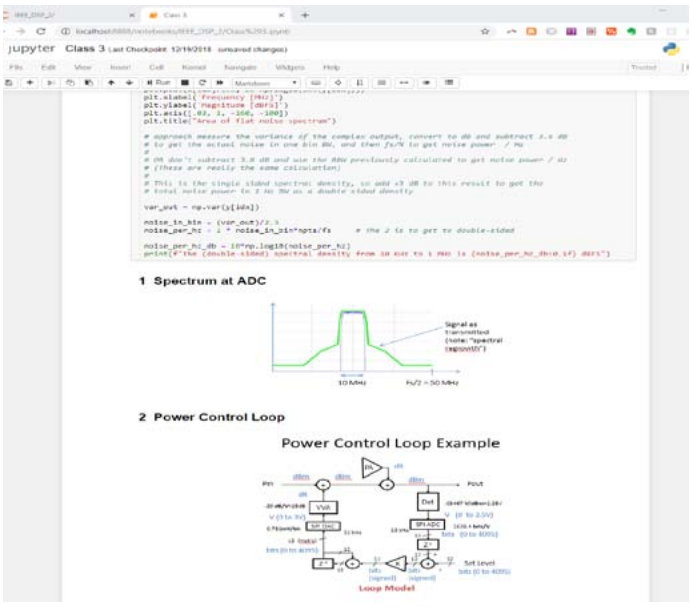
Time & Date: 6:00 - 9:00PM, Mondays, May 4, 11, 18, 26*, June 1 *Note: May 26 is a Tuesday

Location: Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA

Speaker: Dan Boschen

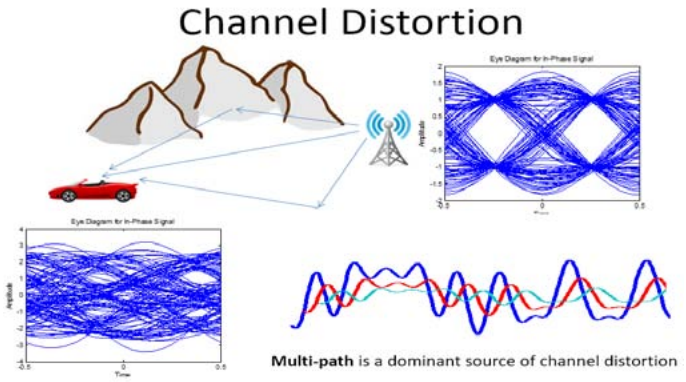
Course Summary

This course builds on the IEEE course "DSP for Wireless Communications" also taught by Dan Boschen, further detailing digital signal processing most applicable to practical real-world problems and applications in radio communication systems. Students need not have taken the prior course if they are familiar with fundamental DSP concepts such as the Laplace and Z transform and basic digital filter design principles. The course title has been changed with some minor additions but this is the same course that was previously taught titled "More DSP for Wireless Communications", with the addition of Python demonstrations using Jupyter Notebooks.



This course brings together core DSP concepts to address signal processing challenges encountered in radios and modems for modern wireless communications. Specific areas covered include carrier and timing recovery, equalization, automatic gain control, and considerations to mitigate the effects of RF and channel distortions such as multipath, phase noise and amplitude/phase offsets.

Dan builds an intuitive understanding of the underlying mathematics through the use of graphics, visual demonstrations, and real-world applications



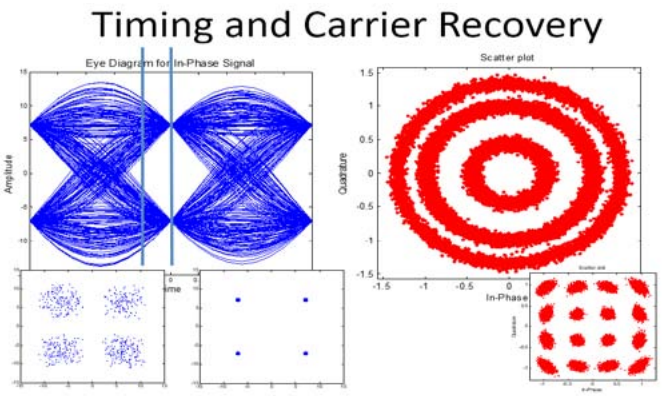
for mixed signal (analog/digital) modern transceivers. This course is applicable to DSP algorithm development with a focus on meeting practical hardware development challenges, rather than a tutorial on implementations with DSP processors.

Now with Jupyter Notebooks!

This long-running IEEE Course has been updated to include Jupyter Notebooks which incorporates graphics together with Python simulation code to provide a "take-it-with-you" interactive user experience. No knowledge of Python is required but the notebooks will provide a basic framework for proceeding with further signal processing development using that tools for those that have interest in doing so.

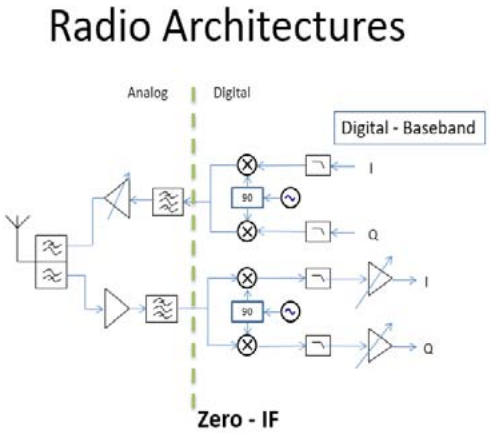
This course will not be teaching Python, but using it for demonstration. A more detailed course on Python itself is covered in a separate IEEE Course "Python Applications for Digital Design and Signal Processing".

Students will be encouraged but not required to bring a laptop to class, and all set-up information for installation will be provided prior to the start of class.



Target Audience:

All engineers involved in or interested in signal processing for wireless communications. Students should have either taken the earlier course "DSP for Wireless Communications" or have been sufficiently exposed to basic signal processing concepts such as Fourier, Laplace, and Z-transforms, Digital filter (FIR/IIR) structures, and representation of complex digital and analog signals in the time and frequency domains. Please contact Dan at boschen@loglin.com if you are uncertain about your background or if you would like more information on the course.



Benefits of Attending/ Goals of Course:

Attendees will gain a strong intuitive understanding of the practical and common signal processing implementations found in modern radio and modem architectures and be able to apply these concepts directly to communications system design.

Topics / Schedule:

Class 1: DSP Review, Radio Architectures, Digital Mapping, Pulse Shaping, Eye Diagrams

Class 2: ADC Receiver, CORDIC Rotator, Digital Down Converters, Numerically Controlled Oscillators

Class 3: Digital Control Loops; Output Power Control, Automatic Gain Control

Class 4: Digital Control Loops; Carrier and Timing Recovery, Sigma Delta Converters

Class 5: RF Signal Impairments, Equalization and Compensation, Linear Feedback Shift Registers

Speaker's Bio:

Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing and developing transceiver hardware from baseband to antenna for wireless communications systems. Dan is currently at Microchip (formerly Microsemi and Symmetricom) leading design efforts for advanced frequency and time solutions.

For more background information, please view Dan's Linked-In page at: http://www.linkedin.com/in/dan-boschen

Decision (Run/Cancel) Date for this Courses is Monday, April 27

Payment received by April 22
IEEE Members $340
Non-members $375

Payment received after April 22
IEEE Members $375
Non-members $415

http://ieeeboston.org/digital-signal-processing-dsp-wireless-communications-radio/

Last Notice Before Course Begins, Please Register Now!!!

DSP for Wireless Communications

(13 hours of instruction!)

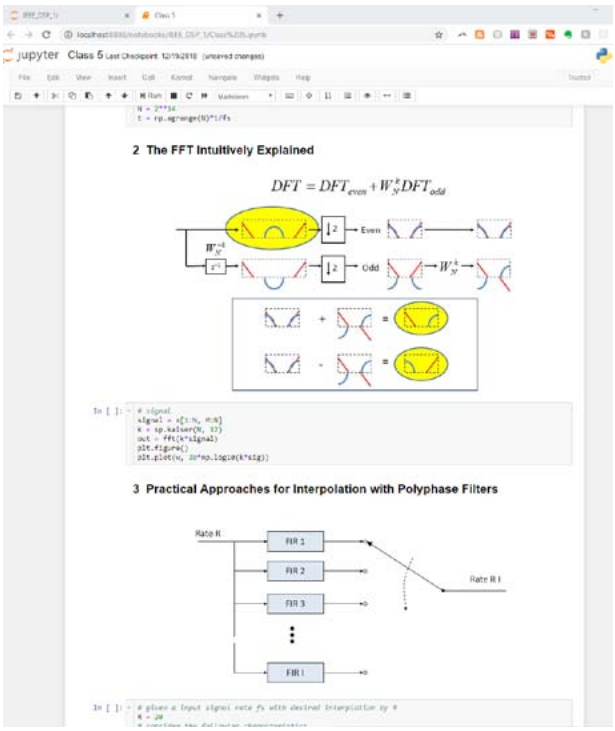
Time & Date: **6:00 - 9:00PM, March 23, 31, April 7, 13, 27 (Note date Changes)**
(March 23, April 13 & 27 are Monday, March 31 and April 7 are Tuesday)

Location: **Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA**

Speaker: **Dan Boschen**

Course Summary:

This course is a fresh view of the fundamental concepts of digital signal processing applicable to the design of mixed signal design with A/D conversion, digital filters, operations with the FFT, and multi-rate signal processing. This course will build an intuitive understanding of the underlying mathematics through the use of graphics, visual demonstrations, and applications in GPS and mixed signal (analog/digital) modern transceivers. This course is applicable to DSP algorithm development with a focus on meeting practical hardware development challenges in both the analog and digital domains, and not a tutorial on working with specific DSP processor hardware.



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This course will not be teaching Python, but using it for demonstration. A more detailed course on Python itself is covered in a separate IEEE Course "Python Applications for Digital Design and Signal Processing".

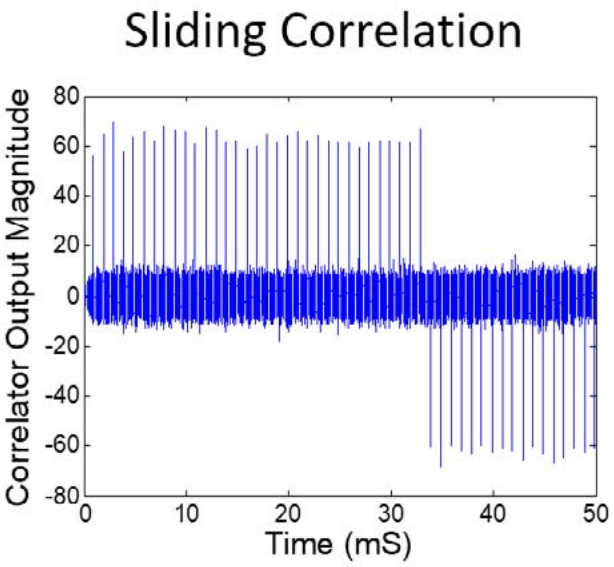
Students will be encouraged but not required to bring a laptop to class, and all set-up information for installation will be provided prior to the start of class.

Target Audience:

All engineers involved in or interested in signal processing applications. Engineers with significant experience with DSP will also appreciate this opportunity for an in-depth review of the fundamental DSP concepts from a different perspective than that given in a traditional introductory DSP course.

Benefits of Attending/ Goals of Course:

Attendees will build a stronger intuitive understanding of the fundamental signal processing concepts involved with digital filtering and mixed signal analog and digital design. With this, attendees will be able to implement more creative and efficient signal processing architectures in both the analog and digital domains.

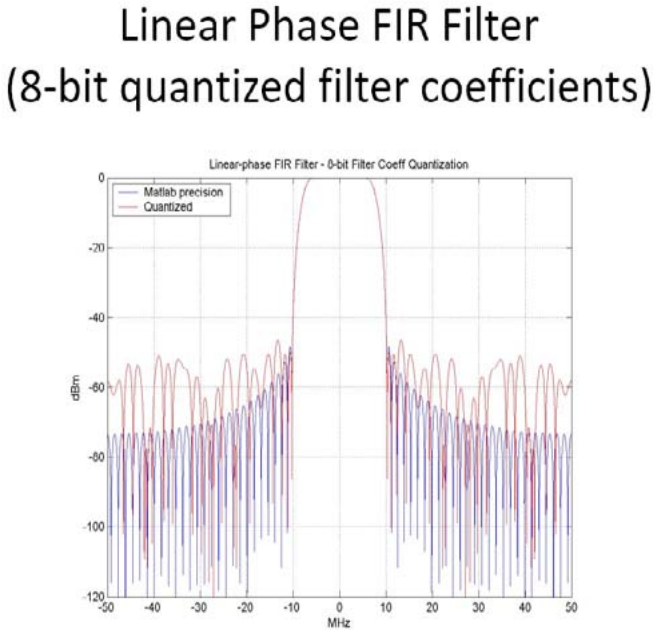


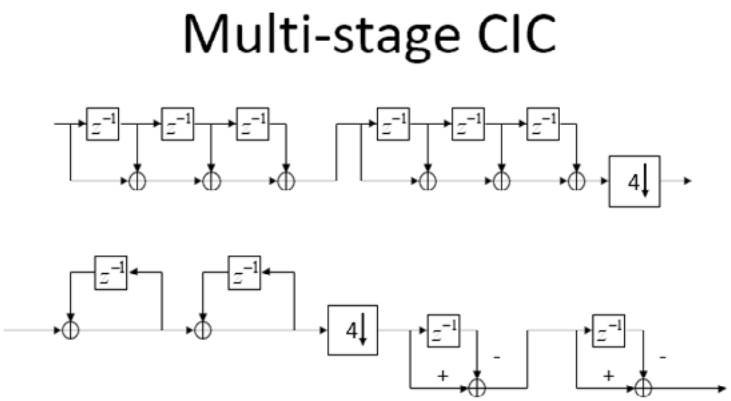
Class 4: Windowing, Digital Filter Design, Fixed Point vs Floating Point

Class 5: Fast Fourier Transform, Multi-rate Signal Processing, Multi-rate Filters

Speaker's Bio:

Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing and developing transceiver hardware from baseband to antenna for wireless communications systems. Dan is currently at Microchip (formerly Microsemi and Symmetricom) leading design efforts for advanced frequency and time solutions.





Topics / Schedule:

Class 1: Correlation, Fourier Transform, Laplace Transform

Class 2: Sampling and A/D Conversion, Z –transform, D/A Conversion

Class 3: IIR and FIR Digital filters, Direct Fourier Transform

Decision (Run/Cancel) Date for this Courses is Tuesday, March 17

Payment received by March 13
IEEE Members $350
Non-members $385

Payment received after March 13
IEEE Members $385
Non-members $420

http://ieeeboston.org/%20digital-signal-processing-dsp-wireless-communications/

Last Notice Before Course Begins, Please Register Now!!!

Python Applications for Digital Design and Signal Processing

(14.5 hours of instruction!)

Time & Date: 8:30AM - 5:00PM, Monday & Tuesday, March 16 & 17
Location: Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA
Speaker: Dan Boschen

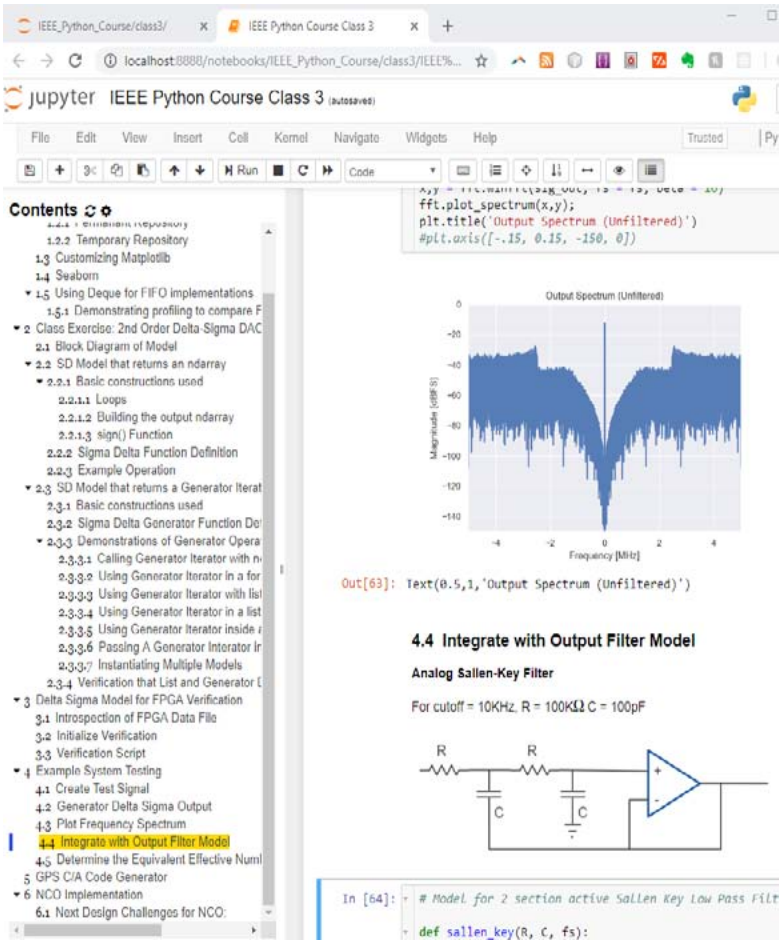
Course Summary

This is a bring-your-own laptop, hands-on course in the popular and powerful open source Python programming language.

Dan provides simple, straight-forward navigation through the multiple configurations and options, providing a best-practices approach for quickly getting up to speed using Python for solving signal processing challenges. Students will be using the Anaconda distribution, which combines Python with the most popular data science applications, and the Jupyter Notebooks for a rich, interactive experience.

The course begins with basic Python data structures and constructs, including key “Pythonic” concepts, followed by an overview and use of popular packages for scientific computing enabling rapid prototyping for system design.

Once a basic working knowledge of the language is established, students will create example designs including a sigma delta converter and direct digital synthesizer both in floating point and fixed point. This will include considerations for cycle and bit accurate models useful for digital design verification (FPGA/ASIC), while bringing forward the signal processing tools for frequency and time domain analysis.



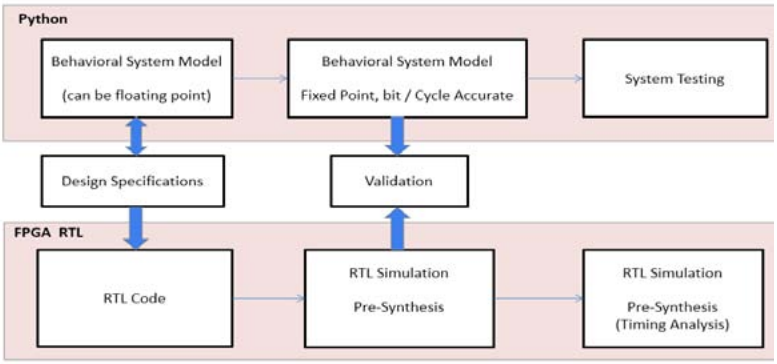
Jupyter Notebooks: This course makes extensive use of Jupyter Notebooks which combines running Python code with interactive plots and graphics for a rich user experience. Jupyter Notebooks is an open-source web-based application (that can be run locally) that allows users to create and share visually appealing documents containing code, graphics, visualizations and interactive plots. Students will be able to interact with the notebook contents and use “take-it-with-you” results for future applications in signal processing.

Target Audience: This course is targeted toward users with little to no prior experience in Python, however familiarity with other modern programming languages and an exposure to object-oriented constructs is very helpful. Students should be comfortable with basic signal processing concepts in the frequency and time domain. Familiarity in Matlab or Octave is not required, but the equivalent operations in Python using the NumPy package will be provided for those students that do use Matlab and/or Octave for signal processing applications.

A laptop (Mac or PC) preconfigured with Anaconda is required; the specific installation instructions will be emailed to students prior to the start of class.

Biography: Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing and developing transceiver hardware from baseband to antenna for wireless communications systems. Dan is currently at Microchip (formerly Microsemi and Symmetricom) leading design efforts for advanced frequency and time solutions.

Python for Verification



For more background information, please view Dan's Linked-In page.

Course Schedule and Topics

Thursday, March 19

8am-8:30am Registration/sign-in, coffee

8:30am-10am - Intro to Jupyter Notebooks, the Spyder IDE and the course design examples including Delta Sigma Converters, GPS Code Generators, and Numerically Controlled Oscillators. Core Python constructs.

15 minute break

10:15am-12:00 pm - Intro to Jupyter Notebooks, continued

45 minute lunch

12:45pm-2:45pm - Core Python constructs, functions, reading writing data files.

15 minute break

3:00pm-5:00pm Core Python constructs, functions, reading writing data files, continued.

Friday, March 20

8:30am-10am - **Signal processing simulation with popular packages including NumPy, SciPy, and Matplotlib.**

15 minute break

10:15am-12:00 pm Signal processing simulation with popular packages including NumPy, SciPy, and Matplotlib, continued.

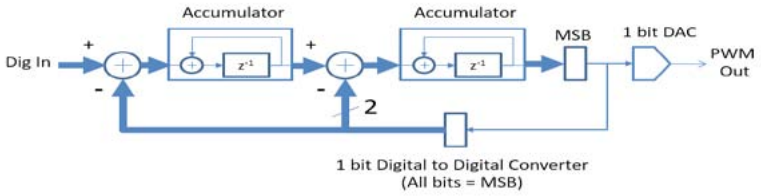
45 minute lunch

12:45pm-2:45pm - Bit/cycle accurate modelling and analysis using the design examples and simulation packages

15 minute break

3:00pm-5:00pm - Bit/cycle accurate modelling and analysis using the design examples and simulation packages, continued, Final questions.

2nd Order Delta Sigma DAC



notes, lunch and coffee breaks included with registration

Decision (Run/Cancel) Date for this Courses is Monday, March 9

Payment received by March 5	
IEEE Members	**$450**
Non-members	**$495**
Payment received after March 5	
IEEE Members	**$495**
Non-members	**$535**

http://ieeeboston.org/%20python-for-signal-processing/

Last Notice Before Course Begins, Please Register Now!!!

Practical Antenna Design for Wireless Products

(12 hours of instruction!)

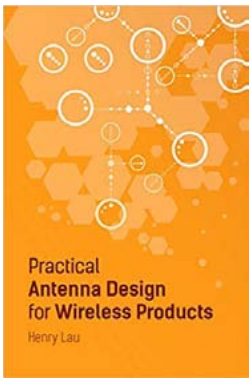
Time & Date: 9:00AM - 4:30PM, Thursday, & Friday, March 5 & 6, 2020
Speaker: Henry Lau, Lexiwave Technology
Location: Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA

INTRODUCTION

To stay competitive in today's fast evolving business environment, faster time to market is necessary for wireless communication products. Playing a critical role in determining the communication range of products, RF design, particularly the antenna design, becomes crucial to the success of the introduction of new wireless products. Competence in advanced antenna designs can definitely strengthen the competitive edge of RF product design or manufacturing companies.

COURSE OBJECTIVES

This 2-day course aims to provide participants with technical insights on the vital aspects of antenna design from a practical and industrial perspective. It covers the fundamental antenna concepts and definitions, specifications and performance of different types of commonly-used and advanced antennas in RF products. Simulation tools will be introduced and discussed. Practical implementation strategies in RF products for optimum antenna performance will also be presented.



A complimentary book - 'Practical Antenna Design for Wireless Products', authored by the Speaker, will be distributed to each participant.

WHO SHOULD ATTEND

Antenna designers, RF designers, wireless product designers, field application engineers, business development engineers and managers, design managers, and related professionals.

COURSE CONTENT

Day 1 (5 March)

Fundamental Concepts

1. Antenna Fundamental
   - Basic types of Antenna
     - Dipole, Monopole, helical, loop, printed PCB
   - Radiation Mechanism
     - Source of radiation
     - Characteristics of radiation

2. Specification and Performance
   - Radiation pattern
   - Antenna efficiency, aperture
   - Impedance and circuit matching
   - Directivity, gain
   - Friis Transmission Equation

3. Antenna Elements
   - Dipole antenna
   - Monopole antenna
   - Multi-band antenna
   - Miniature chip type antenna
   - Loop antenna

Day 2 (6 March)

Advanced Antenna Elements

4. Miniature antenna for portable electronics
   - Patch, inverted-L, inverted-F
   - Meandered line, multi-band

5. CAD Design and Simulation
   - CAD tools
   - Design strategies
   - Limitations

Case studies

Practical implementation strategies

6. How to design good antennas
   Understand the requirements
   Selection of antenna type, size and geometry
   Location and placement

7. Team work with product designers, electronic engineers and mechanical engineers
   Why it matters
   Case studies on designing good antennas

EXPERTISE

Henry Lau received his M.Sc. and MBA degrees from UK and USA respectively. He has more than 27 years of experience in designing RF systems, products and RFICs in both Hong Kong and US. He worked for Motorola and Conexant in US as Principal Engineer on developing RFICs for cellular phone and silicon tuner applications. Mr Lau holds five patents all in RF designs. He is currently running Lexiwave Technology, a IoT and wireless solutions company in Hong Kong and US designing and selling RFICs, RF modules, Radar and IoT solutions. He has also been teaching numerous RF-related courses internationally.

notes, text, lunch and coffee breaks included with registration

Decision (Run/Cancel) Date for this Courses is Tuesday, February 25, 2020

Payment received by Feb. 21
IEEE Members $450
Non-members $485

Payment received after Feb. 21
IEEE Members $485
Non-members $525

http://ieeeboston.org/practical-antenna-design-wireless-products/

Call for Course Speakers/Organizers

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. The IEEE Boston Section, its dedicated volunteers, and over 8,500 members are committed to fulfilling this core purpose to the local technology community through chapter meetings, conferences, continuing education short courses, and professional and educational activities.

Twice each year a committee of local IEEE volunteers meet to consider course topics for its continuing education program. This committee is comprised of practicing engineers in various technical disciplines. In an effort to expand these course topics for our members and the local technical community at large, the committee is publicizing this CALL FOR COURSE SPEAKERS AND ORGANIZERS.

The Boston Section is one of the largest and most technically divers sections of the IEEE. We have over 20 active chapters and affinity groups.

If you have an expertise that you feel might be of interest to our members, please submit that to our online course proposal form on the section's website (www.ieeeboston.org) and click on the course proposal link (direct course proposal form link is **http://ieeeboston.org/course-proposals/** . Alternatively, you may contact the IEEE Boston Section office at ieeebostonsection@gmail.com or 781 245 5405.

- **Honoraria can be considered for course lecturers**
- Applications oriented, practical focused courses are best (all courses should help attendees expand their knowledge based and help them do their job better after completing a course
- Courses should be no more than 2 full days, or 18 hours for a multi-evening course
- Your course will be publicized to over 10,000 local engineers
- You will be providing a valuable service to your profession
- Previous lecturers include: Dr. Eli Brookner, Dr. Steven Best, Colin Brench, to name a few.

Latest Insights in RF Amplifier Design from World's Leading Experts – Fundamentals and Applications

(12 hours of instruction!)

Time & Date: **6 – 8PM, Tuesdays, September 29, October 6, 13, 20, 27, November 3**

Location: **MIT Lincoln Laboratory, 3 Forbes Road, Lexington, MA**

Course summary/overview:
This six week lecture series is intended to give a broad overview of state-of-the-art RF PA techniques with practical aspects for working professionals together with students for future RF PA designers, from fundamentals to applications. It begins with a review of RF power amplifier concepts then teaches handset PA design techniques, issues and solutions faced with designing RF PAs for mobile applications. It also discusses high efficiency amplifier structures with different classes of operation, and other architectures. A high linearity techniques lecture with behavioral modelling will follow. GaAs/GaN MMIC level millimeter-wave amplifier design tutorials and techniques will be lectured including foundry/technology selection, loadpull, loadline analysis and simulations with EDA tools. Lastly, digital perspective transmitters will be presented using GaN technology together with FPGA and ASICs.

Benefits of attending:
This course will give a broad overview of state-of-the-art RF PA techniques with practical aspects to help sharpen current skill sets as well as initiate the RF PA design with better confidence.

Target Audience/who should attend:
RF engineer professionals and prospective RF amplifiers / RFIC design students

Outline

RF Amplifier Basics – (9/29/2020)
by Dr. Nestor Lopez at MIT Lincoln Laboratory

RF Power Amplifier Design for Mobile Applications – (10/06/2020) - by Dr. Douglas Teeter at Qorvo

Digital Transmitter – (10/13/2020)
by Dr. Rui Ma at Mitsubishi Electric Research Labs

High-Efficiency RF Power Amplifiers Architecture – (10/20/2020)
by Dr. Nestor Lopez at MIT Lincoln Laboratory

High Frequency RF Amplifiers MMIC Design with GaAs/GaN pHEMT with EDA tools - (10/27/2020)
by Dr. Youngho Suh at MIT Lincoln Laboratory

Behavioral Modeling and Linearization of RF Power Amplifiers – (11/03/2020)
by Dr. Kevin Chuang at NanoSemi, Inc.

Decision (Run/Cancel) Date for this Courses is Monday, September 21

Payment received by Sept. 15	
IEEE Members	**$195**
Non-members	**$235**
Full Time Students	**$75**
Payment received after Sept. 15	
IEEE Members	**$235**
Non-members	**$255**
Full Time Students	**$100**

http://ieeeboston.org/event/latest-insights-in-rf-amplifier-design/?instance_id=2845

Software Development for Medical Device Manufacturers: An Intensive Two-day Workshop

(13 hours of instruction!)

Time & Date: 8:30AM - 4:30PM, Thursday & Friday, April 2 & 3

Speaker: Steve Rakitin, President, Software Quality Consulting, Inc.

Location: Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA

OVERVIEW

Developing software in compliance with the FDA Design Control regulation, changing FDA guidance documents and latest international standards is challenging. This two-day intensive course provides practical solutions and suggestions for developing software in a manner that meets applicable FDA regulations, guidance documents and international standards, such as IEC-62304:2015. The focus is on interpreting Design Controls for software. Each section of the Design Controls regulation (820.30) is discussed from the perspective of software development. Discussions on key topics such as Software Requirements, Traceability, Design Reviews, Software Verification & Validation and Risk Management (including recently updated standards ISO-14971:2019 and EN-14971:2019) are included. Also discussed are FDA expectations for validation of software development tools and software used in Manufacturing and Quality Systems. Recently issued FDA Guidance Documents on Cybersecurity, Mobile Apps, and Usability are discussed. Interactive group exercises are included to facilitate discussion and learning.

WHO SHOULD ATTEND

Software engineers, project managers, quality managers, software quality professionals, RA/QA staff, and anyone who needs to develop cost-effective processes and procedures that will enable their organizations to deliver high quality software-based medical devices that comply with FDA regulations and international standards. This course is also appropriate for people who are new to the medical device industry. Each attendee receives course notes, access to an extensive collection of reference documents and a training certificate.

COURSE OUTLINE

- **Introduction**
  - Medical Device Definitions – FDA and EU
  - Regulatory Roadmap and FDA/EU Device Classification Schemes
  - FDA Regulations and Guidance Documents for Software
  - Standards – ISO 13485, IEC 62304, ISO 14971, EN-14971, IEC 60601, and IEC 62366-1
  - All Software is Defective
- **Interpreting Design Controls for Software**
  - Software Development Models
  - Design and Development Planning
  - Design Inputs
  - About Requirements… Requirements Exercise
  - Design Outputs
  - Design Reviews
  - Design Verification
- **Software Verification Techniques**
  - Design Validation
- **Software Validation Process**
  - Design Transfer
  - Design Changes
  - Design History File
- **Validation of…**
  - Software Tools used to develop Medical Device Software
  - Software used in Manufacturing
  - Software used in Quality Systems
- **Risk Management**
  - Standards and Regulations

– Terms and Concepts
– Risk Management Process
– Risk Management Tools and Techniques
Fault Tree Exercise
– Data Collection and Analysis
– Documentation Requirements

- **Course Summary**

- **Comprehensive reference materials included**

Steven R. Rakitin has over 40 years experience as a software engineer and software quality manager. He helped write the first IEEE Software Engineering Standard (IEEE-STD-730 Standard for Software Quality Assurance Plans) and worked on revisions to both IEEE Standard 1012-2012 (Software Verification & Validation) and IEEE 730-2014 (Software Quality Assurance). He has written several papers on software quality as well as a book titled: Software Verification & Validation for Practitioners and Managers. He received a BSEE from Northeastern University and an MSCS from Rensselaer Polytechnic Institute. He earned certifications from the American Society for Quality (ASQ) as a Software Quality Engineer (CSQE) and Quality Auditor (CQA). He is a Senior Life Member of the IEEE. As President of Software Quality Consulting, he helps medical device companies comply with FDA regulations, guidance documents, and international standards in an efficient and cost-effective manner.

As President of Software Quality Consulting Inc., he helps medical device companies comply with FDA regulations, guidance documents, and international standards in an efficient and cost-effective manner.

notes, lunch and coffee breaks included with registration

Decision (Run/Cancel) Date for this Courses is Thursday, March 26, 2020

Payment received by March 23
IEEE Members $495
Non-members $535

Payment received after March 23
IEEE Members $535
Non-members $565

http://ieeeboston.org/software-development-medical-device-manufacturers/

IEEE Boston Section Social Media Links:

Twitter: https://twitter.com/ieeeboston

Facebook: https://www.facebook.com/IEEEBoston

YouTube: https://www.youtube.com/user/IEEEBostonSection

Google+: https://plus.google.com/107894868975229024384/

LinkedIn: https://www.linkedin.com/groups/IEEE-Boston-Section-3763694/about

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Instructor Lead Courses*

Practical Antenna Design for Wireless Products
Dates: Thursday, March 5 and Friday, March 6
Time: 9:00AM - 4:30PM

Software Development for Medical Device Manufacturers
Dates: Thursday, April 2nd and Friday, April 3rd
Time: 8:30AM - 5:00PM

Digital Signal Processing for Wireless Communications
Dates: Monday, March 23, Tuesdays, March 31, April 7, & Mondays, April 13 and 27
Time: 6:00PM - 9:00PM

Python Applications for Digital Design
Dates: Monday, March 16 and Tuesday, March 17
Time: 8:00AM - 5:00PM

Digital Signal Processing for Software Radio
Dates: Mondays, May 4, 11, 18 and Tuesday, May 26 and Monday, June 1
Time: 6:00PM - 9:00PM

Latest Insights in RF Amplifier Design from World's Leading Experts - Fundamentals and Applications
Dates: Tuesdays, September 29, October 6, 13, 20, 27, November 3
Time: 6:00PM - 8:00PM

***All Courses are held at the Crowne Plaza Hotel, 15 Middlesex Canal Park Drive, Woburn**

Online Courses

(Each Online Course - 90 day access for registrants!!!)

- **Verilog 101: Verilog Foundations**
- **Systems Verilog 101: (SV101) Design Constructs**
- **Systems Verilog 102: (SV102) Verification Constructs**
- **High Performance Project Management**
- **Introduction to Embedded Linux**
- **Software Development of Medical Device Manufacturers**
- **Reliability Engineering for the Business World**
- **Fundamental Mathematical Concepts Relating to Electromagnetics**
- **Embedded Linux Optimization**
- **Embedded Linux BSPs and Device Drivers**
- **Design Thinking for Technical Work**
- **Fundamentals of Real-Time Operating Systems**

For more information on these courses and other local IEEE activity see our website at www.ieeeboston.org, email: ieeebostonsection@gmail.com, or call 781-245-5405