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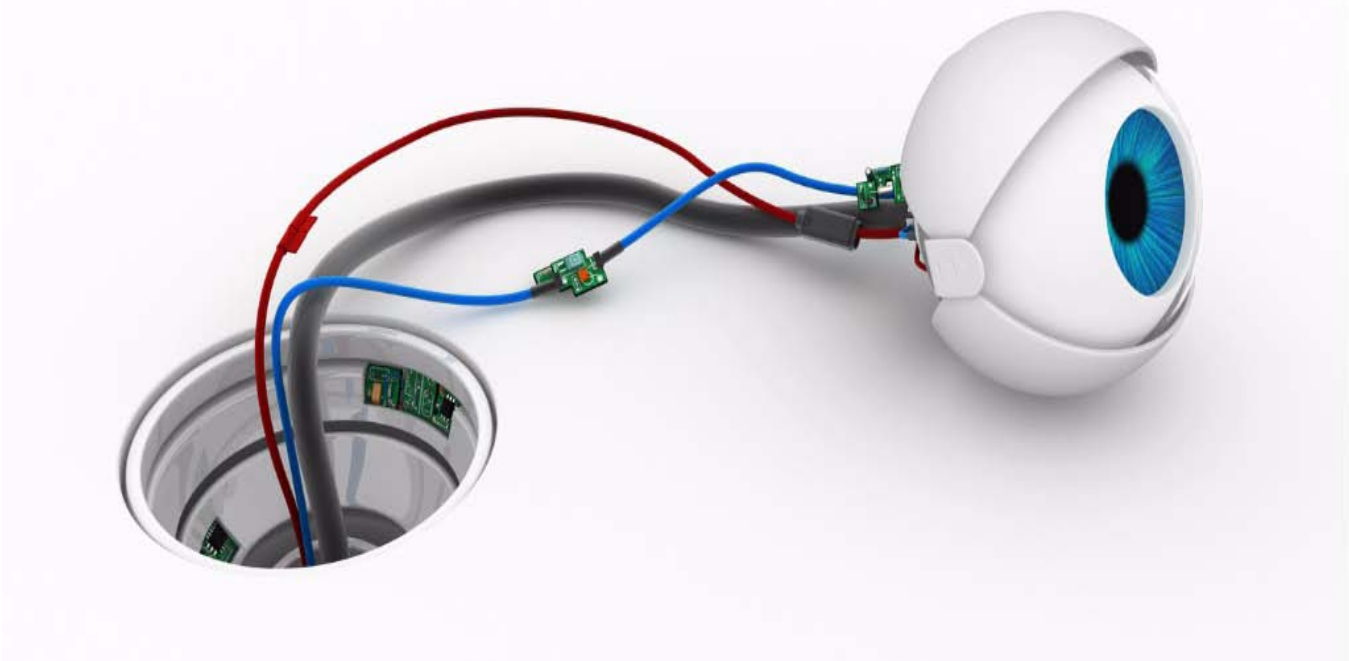

IEEE
Advancing Technology for Humanity

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The top "OMG!" Impacts on Education that College Students are Experiencing during Covid-19.

By Dr. Karen Panetta, IEEE Reflector Editor, IEEE Fellow,
Dean for Graduate Education, Tufts University

Covid-19 has forever changed society and education is certainly among one of the many arenas that is going to evolve out of this experience. As a Dean, I made it my mission to determine how to best support students during this crisis. It was important that I heard the concerns directly from the students themselves. I initially convened a virtual town-hall and had hundreds of students online ready to engage with me. Unfortunately, our session was virtually-bombed by jerks screaming obscenities and hatred speech. That experience was not going to deter me, rather it made me more determined to engage students and advocate for them.

To gauge the impact of this crisis on college students, I sent out a survey to all of our students asking questions about the impact of Covid-19 on their educational experiences. Normally, I am lucky if I receive a 20% response rate to any survey. For this survey, I received an 82% response rate!

Every educational institution has had to move all education online. Since, today's students are digital natives, moving to online instruction really didn't freak them out as much as it did for the thousands of institutions and professors who had to scramble to learn, implement online platforms and port their lectures and office hours to occur virtually. The top OMG! issues outcomes from the survey were more about the loss of students' educational environments conducive to learning and studying. Here is the ranked summary of the survey's top findings.

1. The top challenge reported was finding a quiet distraction free place for students to listen to lectures and to do their work.
Students are now home with other siblings trying to do online education, and parents who are trying to work remotely from home. Simply finding a conducive space to learn is a challenge.

2. Access to robust and reliable communications. Even students with internet access cited experiencing network slowdowns and competition for bandwidth in their own homes, since other family members are all online at the same time.

3. Stress from unhealthy domestic living situations. Not everyone has great supportive families at home and students openly shared that being home subjected them to more abuse or witnessing family members be victims of domestic violence and verbal abuse.

4. Food insecurity. Students living away from home who can't go home to be with their families found it difficult to get access to healthy foods. Many students cited outrageous price increases at local markets, which required students to take health risks to take public transportation to reach other grocery stores with more affordable prices.

5. Loss of job offers and summer internships. Schools and Colleges have committed to helping students graduate on time, yet students who were recently excited to graduate are now having their job offers rescinded in record numbers. Graduation is now a death sentence because it comes with an uncertain future that has students feeling like they are being thrown to the lions. With no financial support in sight, especially for international students who can't return back to their home countries, students are concerned they will be destitute and homeless. Students who had planned on starting new college programs in the fall of 2020 are now in a catch-22 situation. Many students stated that they are considering holding off on attending college next fall, because they don't know if their families will financially be able to afford it, yet, these students also have no jobs.

Staying home with no job and nothing to do is one of the

most devastating waste of human resource potential for our country and the world!

6. Students are now responsible for helping out with home schooling siblings or responsible for home-schooling their own children. This has impacted students' ability to put emphasis on their own education. Students cited that classes that are offered asynchronously have been a tremendous help in this regard.

7. The loss of peer cohorts, social interactions and the freedom to engage in social, physical and entertainment activities. Students routinely cited being depressed.

8. The loss of the ability to participate in hands-on laboratories, conduct experiments and research has robbed the richness of the learning experience from many programs, especially for the STEM disciplines and students at research institutions.

The goal of this article was to bring awareness to the top educational related issues students are experiencing. It is in no way intended to state that anything on the list is more important than the health and well-being of our people Many of our students have lost loved ones to the virus and they feel like life has them under siege. I hope this article provides some timely insights and that our educational institutions and government leaders will keep these perspectives in mind as we work together to survive from this pandemic and come out stronger as a community.

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

May Chapter Meeting Summary

Entrepreneur's Network – 7:00PM, Tuesday, May 5
Sustaining Your Early Stage Life Science Company during the COVID-19 Pandemic crisis
ENET and MDG (The Medical Development Group) are pleased to present a **Joint Webinar** addressing the most profound medical development of recent memory. We are living through a medical pandemic that dwarfs any medical issue of the past 100 years. Not only does it threaten the health of every American, it threatens the economic foundation of our society, and that of the entire world. There is no greater priority than preserving our lives and our way of life. For the joint membership of ENET and MDG, that means sustaining our businesses during this financial and medical crisis. This webinar gathers outstanding thought leaders whose positions have brought the issues raised by current events into especially sharp focus. They will outline their thoughts and be available for questions and discussion. Meeting Location: Webinar. **See Page 8.**

Entrepreneur's Network – 7:00PM Tuesday, May 19
Bringing University Research to Market
Universities are excellent sources of cutting-edge science and technology – the kinds of innovations that can form the basis for important, novel commercial products. One of the ways to commercialize academic assets is through a licensing deal with an established company. However, this is ENET – we're all about entrepreneurs.
While academic research often is the source or inspiration for innovative projects and products for start-ups in life sciences and tech fields, the transition from ivory tower to successful product launch comes with a laundry list of challenges. Tonight's panel will offer insights that help to identify and to surmount the challenges, from determining the commercial viability of an idea, to understanding the essential steps on the path to success. Meeting **Location: Webinar**. **See Page 11.**

Computer Society and GBC/ACM – 7:00PM, Thursday, May 21
Will voting by mail save democracy? - Dana Chisnell
One of the most important civic traditions of the United States is voting in person at the polls on Election Day. Ask any New Englander about voting "absentee", and you're likely to hear the person say that's for people who are too ill to get to the polling place. Well, we're now in a time where even if every voter isn't sick with Covid-19, they could be carrying it. There's more interest than ever in making it easy for everyone to vote by mail. Seems like an obvious and simple thing to do. But is it? Hear from Dana what a rapid conversion to all vote-by-mail looks like, what some of the challenges are, and how it may actually disenfranchise some voters. **Meeting Location: Webinar.** **See Page 13.**

"How are you" is the leadership opportunity of this moment

By Carol Salloway

This COVID-19 era that we are all submerged in is turning everything on its head, including the professional façade that we project in the world. We are now getting a window into everyone's humanness by being "zoomed" into peoples' homes where their full lives happen. We're seeing pets, children, clutter, art work – more real life is available to view and connect with.

In that same vein, the greeting "how are you" seems to have taken on a more earnest tone and slower pace. We are all going through dramatic experiences, and there is a lot to ask about. Suddenly, "How are you" is not a throw away question. Now, we want to stop and listen to the answer.

The leadership opportunity is to make good use of these moments. People need to know that we are tuning into their situation and that we care. During a crisis, a good leader has an opportunity to create connections that can translate into deep bonds post-crisis.

Empathy is what is called for and it has never been needed more than now.

As an executive coach, I hear many leaders describing their experience of the last several weeks as being on a roller coaster. Their team members are on that same wild ride. We're all living with full-on uncertainty. In our brains, uncertainty is experienced as a threat and sends us into "fight or flight". We all know that when we are triggered into this survival reaction, we don't have access to our higher level thinking.

When physical distancing is added on top of uncertainty, emotions are even more heightened. Our brains secrete oxytocin, also called "the love hormone", when we feel connected to others. With the isolation, people are experiencing oxytocin deprivation.

Empathy, even a brief connection, can help calm the fight/flight reactions. At the same time, it can provide a dose of oxytocin and reduce the experience of isolation. Put simply, empathy is listening to the other person with both our mind and our heart. At a practical level, it means deeply listening to what they are feeling and what is important to them in this moment. And then letting the person know that we have tuned into their experience and "get" what they are describing.

We are all born with empathy wiring. We've all had the experience of being moved by a character in a movie; we "get" what they are going through. That's empathy.

Even though it is not a complex skill, it is an underused one. There are a few limiting mindsets that get in the way of putting empathy into action.

- Limiting Mindset: We are generally uncomfortable when people describe feelings of frustration, anxiety, sadness, fear and other "negative" feelings. We tend to want to help or problem solve. We may try to give some advice, encouragement, words of comfort or other ways to make their "bad" feelings go away.

Alternative mindset: feelings are real and they have a purpose; they are a source of information about what important need or value is not being met. We can understand the core values or needs of others because we all share them; they are universal.

- Limiting Mindset: The belief that it is 'getting too personal' to ask about or acknowledge someone's feelings.

Alternative mindset: Never before has the whole world experienced a same crisis at the same time with such magnitude. We are all humans in this crazy period, experiencing a wide range of similar feelings, along with a stark awareness of how fundamental values or needs are not being met. We are all talking about our feelings and personal experience with our family and friends. If ever there was a time to acknowledge the presence of feelings at work, especially when work is from home, the time is now.

- Limiting Mindset: The idea that having an 'empathy conversation' takes too much time.

Alternative mindset: People are longing to be seen and heard and just a few minutes of focused attention can be profoundly impactful.

Here are 5 steps toward making an empathic connection. Since this conversation is likely happening at a distance, visual meetings can be helpful to establish eye contact. Research shows that eye contact is a key ingredient for the brain to produce oxytocin.

1. Ask "how are you", and really, really listen. Pause before responding to their answer, to allow space for the person to fully share their experience.

2. Notice the feelings they are expressing, and perhaps not expressing. Try to read between the words.

3. Imagine what is really important to them in this moment.

4. Acknowledge by letting them know that you have heard and understand what they are expressing. An acknowledgment example is: "I can hear how difficult and exhausting it is right now trying to juggle all of the needs of your team, your family and taking care of yourself."

5. Encourage them to share more so they really feel heard.

COVID-19 is disrupting all aspects of life and some transformation will surely come out of this upheaval. One long-term shift is the opportunity for leaders to be more authentic and more connected to the human beings we lead.

A common greeting in the Zulu tribe is "Sawubona". It means "I see you, you are important to me and I value you". With empathy, our Western greeting of "how are you" could be transformed into this same moment of connection, long after the crisis has passed.

Carol Salloway is an Executive Coach at Performa Consulting Group. She can be reached at carolsalloway@performagroup.com or 781-710-7529.

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.

Entrepreneurs' Network – 7:00PM, Tuesday, May 5

Sustaining Your Early Stage Life Science Company during the COVID-19 Pandemic crisis

ENET and MDG (The Medical Development Group) are pleased to present a Joint Webinar addressing the most profound medical development of recent memory.

Use this link to pre-register:
https://bit.ly/ENET2915w
(Please note capacity is limited so pre-registration is necessary)

We are living through a medical pandemic that dwarfs any medical issue of the past 100 years. Not only does it threaten the health of every American, it threatens the economic foundation of our society, and that of the entire world. There is no greater priority than preserving our lives and our way of life. For the joint membership of ENET and MDG, that means sustaining our businesses during this financial and medical crisis. This webinar gathers outstanding thought leaders whose positions have brought the issues raised by current events into especially sharp focus. They will outline their thoughts and be available for questions and discussion.

On May 5, from 7 TO 8:45 pm EST, ENET and MDG will present this critically important webinar, addressing existential problems facing early stage medical start-up companies in this financial melt-down. We will consider the question: In order to enhance your company's survivability, what are the choices you must make to live and fight another day? Our panel consists of two serial entrepreneurs, one specializing in medical devices, the other in biotech; three attorneys, one who heads his firm's COVID-19 task force, a second who focuses on representing the needs of early stage medical companies and the third whose expertise is in Federal support being offered under recent Federal Legislation and response. Our moderator is ENET's chair emeritus who has published two articles on COVID-19 work force reduction and maximizing unemployment benefits for employees laid off or reduced in hours.
The webinar is free.

Agenda:
7:00 - 7:10 PM - ENET Chairperson's announcements
7:10 - 7:15 PM – MDG President's announcements
7:15 - 7:25 PM – eMinute Pitch - Up to 2 Startup companies' presentations
7:25 - 8:25 PM - 5 expert speakers on the night's topic
8:25 - 8:45 PM – Audience Q and A to the speakers
(all times are USA Eastern Daylight time)

Speakers:

Dr. Amar Sawhney, CEO of Instylla, Inc.
Dr. Sawhney has founded six companies, which account for over 1,600 jobs created and over $1.5 billion in reenue to date. He helps foster entrepreneurship by mentoring young innovators and creating companies through Incept, a medical device incubator.

His company, Instylla, focused on embolic therapies for hypervascular tumors and control of hemorrhage. He was previously the Founder and CEO of Ocular Therapeutix, Augmenix, Confluent Surgical, and the technology founder of Focal and Access Closure. Dr. Sawhney's innovations are the subject of over 120 issued and pending patents in biomaterials and bio-surgery. His inventions include several "first of a kind" surgical sealants and spacers to be approved by the FDA including ReSure Sealant for ophthalmology, DuraSeal for neurosurgery, FocalSeal for Lung surgery, Mynx for femoral puncture sealing, and SpaceOAR for prostate cancer radiotherapy. Amar and his partner Fred Khosravi, have also created Incept LLC, which provides a platform to support other healthcare entrepreneurs.

Dr. Sawhney has been recognized by several awards including being named the "Champion of Change" by the Whitehouse and "Outstanding American by Choice" by the US Citizenship and Immigration Service, Dr. Sawhney's companies and inventions have touched over 5 million patients and have created over 2000 jobs to date.

Dr. Sawhney holds an M.S. and a Ph.D. in Chemical Engineering from the University of Texas at Austin and a B. Tech. in Chemical Engineering from the Indian Institute of Technology, New Delhi.
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Colin J. Zick, Partner, Foley Hoag, LLP, Co-Chair, of the law firm's Healthcare Practice, Privacy and Data Security Practice and COVID-19 Taskforce.

Colin J. Zick, partner with Foley Hoag LLP, Co-Chair of the firm's Data Privacy & Security and Healthcare practice groups, and its COVID-19 Task Force. His law practice is focused on health care and compliance issues, and often involves the intersection of those two subjects in investigations, administrative proceedings or litigation. His work has a particular emphasis on compliance issues related to life sciences, pharmaceutical and medical device companies, laboratories, and provider organizations. This compliance work includes helping clients establish and maintain effective compliance programs. He counsels clients ranging from the Fortune 1000 to start-ups on issues involving information privacy and security, including compliance with state, federal and international data privacy and security laws and government enforcement actions (including GDPR and EU-US Privacy Shield, CCPA, HIPAA and other U.S. federal and state data privacy and security laws, privacy policies, cloud security, cyber insurance, the Internet of Things, and data breach response). Colin also defends clients in disputes alleging kickbacks, overpayments, and billing and coding problems. Colin is ranked as one of the Best Lawyers in America® for Healthcare and for Privacy and Data Security Law, ranked by CHAMBERS USA as one of Massachusetts' leading health care lawyers since 2010, and he has been selected by his peers as a Massachusetts "Super Lawyer" since 2004.
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Benjamin M. Hron, Partner and Business Attorney, McCarter & English, LLP.

Ben's law practice focuses on representing companies on general corporate matters, debt and equity financing, mergers and acquisitions, securities law compliance and joint ventures. Ben also represents private equity and venture capital funds, angel investors and financial institutions in connection with the financing of public and private companies. Ben serves as outside general counsel for a number of his clients, advising company management on legal issues ranging from day-to-day matters to large strategic initiatives. He also coordinates and supervises the work of experts in other practice areas when appropriate. In addition to working with established companies, Ben has extensive experience working with entrepreneurs and startups, often getting involved when a business is still in its infancy and helping guide the founders through the formative early stages of their company's development. The experience of co-founding and growing his own law firm, VC Ready Law Group, which he ran from 2009 to 2011 prior to joining McCarter, has helped Ben better understand and address the issues facing many of his clients. Ben was co-chair of the Securities Law Committee of the Boston Bar Association from 2013 to 2015 and co-chair of the BBA's Venture Capital and Emerging Companies Committee from 2015 to 2017. From 2011 to 2017 he hosted a McCarter & English seminar series for entrepreneurs at the Cambridge Innovation Center. Ben is a graduate of Harvard Law School.
https://www.linkedin.com/in/bmhron/

Leslie J. Williams, Entrepreneur, Executive, Board Member, Mentor: Former Founder, President & CEO ImmusanT; BoD at Ocular Therapeutix

Ms. Williams has more than 25 years of industry experience in healthcare, management, commercial product development and marketing. In 2010 she founded ImmusanT, Inc., which subsequently acquired the assets of Melbourne, Australia based Nexpep. ImmusanT completed a reference merger post Phase 2b in December, 2019. Prior to founding ImmusanT, she was President & CEO of Ventaira Pharmaceuticals, a significant player in the pulmonary drug delivery market. Ms. Williams' prior pharmaceutical industry experience includes commercial positions at INO Therapeutics, Merck and GlaxoSmithKline, and drug-delivery and -monitoring experience at Datex-Ohmeda (formerly Ohmeda, Inc.). She was a venture partner at Battelle Ventures and serves on the Board of Ocular Therapeutix, Inc (NASDAQ: OCUL) and served on the Boards of Hepregen Corporation, CDI Bioscience, and on the Board of The Capital Network (TCN). She currently serves on the Advisory Board of Life Science Cares and is on the Executive Board of the University of Iowa School of Pharmacy. She also serves on the Editorial Advisory Board of Life Science Leader as well as The Journal of Advanced Therapies and Medical Innovation Sciences. Ms. Williams holds an MBA from Washington University, John Olin School of Business, and a BS degree with honors in nursing from the University of Iowa. Before entering industry, she was a critical-care nurse at Duke University, Medical College of Virginia and at the University of Iowa.
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Aaron T. Kriss, Partner and Tax Attorney, Gesmer Updegrove LLP

Aaron handles all things tax, heading the firm's tax group and supporting the firm's other practice groups. Aaron spends much of his time helping clients structure their organizations, develop equity compensation plans, navigate complex tax rules pertaining to mergers and acquisitions and IP-related issues, and understand the federal, state, and international tax implications of various transactions. Aaron also focuses on state and local tax audits, federal tax controversies, the tax aspects of real estate transactions, and tax issues pertaining to fund formation and administration. He approaches all tax-related questions from a business and "common-sense" perspective, opting for the most simple and efficient solution that fits a clients' business goals rather than an overly complicated plan that, while tax efficient in the short-run, may cause more business headaches down the road. Prior to joining Gesmer Updegrove, Aaron has worked as an attorney at Day Pitney LLP and Withers Bergman LLP, focusing primarily on tax issues relating to private companies and high-net worth individuals and entrepreneurs. Aaron is a graduate of University of Virginia Law School.

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Co-Organizer and Moderator

Robert A. Adelson, Principal, Business and Tax attorney, Adelson & Associates, LLC. Chair Emeritus, Boston Entrepreneurs' Network (ENET).

Rob has been an attorney for over 30 years specialized in business, tax, stock and options, employment, contracts, financing, trademarks and intellectual property. Rob began as an associate at major New York City law firms before returning home to Boston in 1985 where he has since been a partner in small and medium sized firms before joining Engel & Schultz LLP where he was a partner from 2004 to 2019. When the senior partners retired, he moved his law practice to his own firm. Rob represents entrepreneurs, start-ups and small companies, independent contractors and employees and executives. Rob is a frequent speaker on business law topics and author of numerous articles published in Boston Business Journal, Mass High Tech and other publications, plus more than twenty articles since 2016 on executive employment topics published by CEOWorld magazine. He has been named among the "Top 20 Boston Startup Lawyers" by ChubbyBrain.com, a website that provides tools for entrepreneurs. Rob has been on the ENET Board since 2002, was Vice Chair 2005-2009, and ENET Chairman 2009-2019. He was also a Co-Founder and Board member of the 128 Innovation Capital Group (2004 -2015). In 2016, he received the IEEE USA Professional Achievement award for "extreme dedication to the entrepreneurship community." He holds degrees from Boston University, B.A., summa cum laude, Northwestern University (Chicago), J.D., Law Review, and New York University, LL.M. in Taxation.

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Co-Organizer

Peter N. Madras, M.D., Lecturer, Institute for Medical Eng and Science, MIT, President, Medical Development Group of Boston (MDG)

Dr. Madras, a graduate of McGill Medical School is a retired transplant and vascular surgeon and Associate Prof. at Harvard Medical School, a founder of two companies and board member of a number of start-ups. He is currently lecturer in the Institute for Medical Engineering and Science at MIT and President of the Medical Development Group (MDG). During his practice, Dr. Madras was member and Chairman of the Massachusetts Board of Registration in Medicine. He served for ten years as Medical Director for Grace Biomedical in the development of a liver support system and an artificial pancreas. He has authored 80 papers and holds 3 patents. Prior to his surgical career, Peter was Director of the Medical Group at Avco Everett Research laboratory which brought to market the first mechanical cardiac assist device, the intra-aortic balloon. This group was spun off to form five different medical companies, the largest of which is Abiomed.

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Register Here: https://bit.ly/ENET2915w

Entrepreneurs' Network – 7:00PM, Tuesday, May 19

Bringing University Research to Market

Location: Webinar
Register: @ https://boston-enet.org/page-42102

Universities are excellent sources of cutting-edge science and technology – the kinds of innovations that can form the basis for important, novel commercial products. One of the ways to commercialize academic assets is through a licensing deal with an established company. However, this is ENET – we're all about entrepreneurs. While academic research often is the source or inspiration for innovative projects and products for start-ups in life sciences and tech fields, the transition from ivory tower to successful product launch comes with a laundry list of challenges.
Tonight's panel will offer insights that help to identify and to surmount the challenges, from determining the commercial viability of an idea, to understanding the essential steps on the path to success.

Agenda
7:00 - 7:10 PM - ENET Chairperson's announcements
7:10 - 7:20 PM - eMinute - Up to 3 Startup companies' presentations
7:20 - 8:20 PM - 3 expert speakers on the night's topic
A question and answer session will follow the panel discussion, 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.

Panel

Roy Wallen, CEO TendoNova Corporation
Roy Wallen leads TendoNova Corporation, a development-stage medical technology company that is addressing shortcomings in treating chronic tendon pain. He has over 30 years of experience in bringing new medical technologies to market and expanding clinical applications for existing markets. Roy's broad experience includes work in large, global companies and start-ups, including one IPO, in domestic and international markets.
https://www.linkedin.com/in/roywallen/

J. Peter Fasse, Principal at Fish & Richardson P.C.
Peter Fasse is a Principal in the Boston office of Fish & Richardson, and has been working at Fish since 1987. Peter has two B.S. degrees from MIT, in Life Sciences and Bioelectrical Engineering. His practice emphasizes client counseling, opinion work, and patent prosecution in a wide variety of technologies, with an emphasis on healthcare, medical devices, and other biomedical fields plus various "green" technologies. Peter helps clients from start-ups to multinationals to develop competitive worldwide patent strategies and to establish solid and defensible patent portfolios. He performs competitive patent analyses, identifies third-party patent risks, and provides patentability and freedom-to-operate opinions. Peter also has experience in opposing and defending patents before the European Patent Office and in U.S. litigation and post-grant proceedings. Peter has experience in various fields including medical therapeutics, diagnostics, devices, imaging, microfluidic systems, RNAi and CRISPR therapeutics, dendritic cell- and DNA- based vaccines, liquid biopsy, engineered AAV systems, next generation sequence analysis, cell culturing and bioprocessing, nanoparticle and vector-based delivery, wind and solar power, optics, and lasers.
https://www.linkedin.com/in/peter-fasse-2207911/

Sofia Braag-Ankeny, Principal, Office of Business Development and Innovation, University of Massachusetts Medical School
Sofia is responsible for search and evaluation of new technologies at the university, working with inventors to evaluate, market and partner academic inventions via direct out- licensing opportunities or through company creation. A Swedish native, Sofia joined UMass Medical School in 2007 from University of Florida, into the lab of Dr. Terence Flotte, a pioneer in the field of Gene Therapy, where she co-authored several papers around immunomodulatory gene therapy for Cystic fibrosis and other pulmonary disorders. Sofia also served as the Managing Editor for the Journal Human Gene therapy and Human Gene Therapy Methods for 4 years.

In 2010 Sofia earned an MBA in management from As-

sumption College, with a full scholarship from the Marcus Wallenberg Foundation. She then transitioned from the bench into a role helping to establish a new BD office at the Medical school. Sofia holds a M.S. in Medical Biology and a B.S. in Clinical laboratory Medicine, from. Linkoping University, Sweden

In addition to her role at UMass Medical School she sits on the board of the Swedish American Chamber of Commerce, working to help introduce Swedish businesses into the US market, validate product/market fit and make meaningful business introductions.
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Moderator

Lucie Rochard, Liaison for Scientific & Entrepreneurial Initiatives, Innovation Services, MassBio
Lucie joined MassBio in June 2017 as Liaison for Scientific & Entrepreneurial Initiatives, Innovation Services, to strengthen partnership and collaboration with academic institutions and organizations. Prior to joining MassBio, Lucie did her postdoctoral research at MGH, studying craniofacial development, identifying critical molecular pathways for embryonic patterning. Lucie holds a Ph.D. from the University of Rennes, France. Lucie is committed to giving as quickly as possible patients' access to new medicine by connecting scientists - innovators, from both inside and outside of academia.
https://www.linkedin.com/in/lucierochard/

Meeting Organizer

Roger Frechette, Life Science Business Executive / Entrepreneur / Mentor – NEPAssociates, LLC
My daily purpose is to exercise an innate drive to transform ideas and projects into life-changing commercial assets. In the life science business, this is the long game, requiring boundless energy and creativity, coupled with knowledge, experience, and patience.

In my consulting work, I help clients as a business adviser or on-demand, fractional executive. I leverage an extensive global network and insights derived from >20 years of experience in business development, calibrated with an extensive science background. My career has encompassed success as a business executive, project and strategic alliance manager, entrepreneur, and also as a scientist, including leadership of discovery/preclinical development teams resulting in successful drug candidates NUZYRA (omadacycline) and SEYSARA (sarecycline), FDA approved Oct 2018.
https://www.linkedin.com/in/rogerfrechette/

eMinute PITCH Presentations will be given at the start of each meeting. These 90-second elevator-style presentations enable early-stage startup entrepreneurs to gain experience in presenting a summary of their business plans to expert panels and audiences.

IEEE Boston Section Social Media Links:

Twitter: https://twitter.com/ieeeboston

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

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

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

Computer Society and GBC/ACM – 7:00PM, Thursday, May 21

Will Voting by Mail Save Democracy?

Dana Chisnell

Register at Eventbrite to get a link that will allow you to log in using zoom

One of the most important civic traditions of the United States is voting in person at the polls on Election Day. Ask any New Englander about voting "absentee", and you're likely to hear the person say that's for people who are too ill to get to the polling place. Well, we're now in a time where even if every voter isn't sick with Covid-19, they could be carrying it. There's more interest than ever in making it easy for everyone to vote by mail.

Seems like an obvious and simple thing to do. But is it? Hear from Dana what a rapid conversion to all vote-by-mail looks like, what some of the challenges are, and how it may actually disenfranchise some voters.

Dana is a pioneer and thought leader in civic design, bringing deep experience to that space. After working with banks, insurance companies, and tech companies for decades to improve experiences for their customers and workers, Dana takes that knowledge to the government space. She has applied this work in dozens of states, and advised election commissions in other countries. In 2019, Dana was named one of the world's most influential people in digital government by Apolitical. She teaches design in government at the Kennedy School of Government at Harvard University.

This joint meeting of the Boston Chapter of the IEEE Computer Society and GBC/ACM will be online only due to the COVID-19 lockdown.

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.

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.

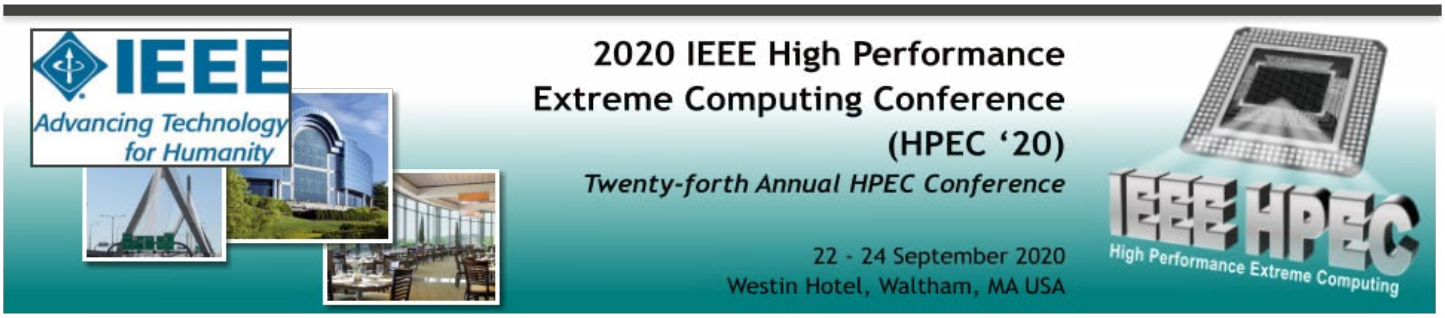
Professional development or general interest articles should have broad applicability to the engineering community and should not explicitly promote services for which a fee or payment is required. A maximum length of two to three pages would be best.

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

CALL FOR PAPERS



www.ieee-hpec.org

A note from the HPEC Committee:

WeIEEE HPEC will have virtual conference options that will allosw safe participation and full publication in IEEE Xplore.

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
- Cyber Analysis and Secure Computing

HPEC accepts two types of submissions:	**IMPORTANT DATES**:
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).	Submission Deadline: **Jun 19, 2020** Notification of Acceptance: **Aug 1, 2020** Camera Ready Deadline: **Aug 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.

DSP for Software Radio

(13 hours of instruction!)

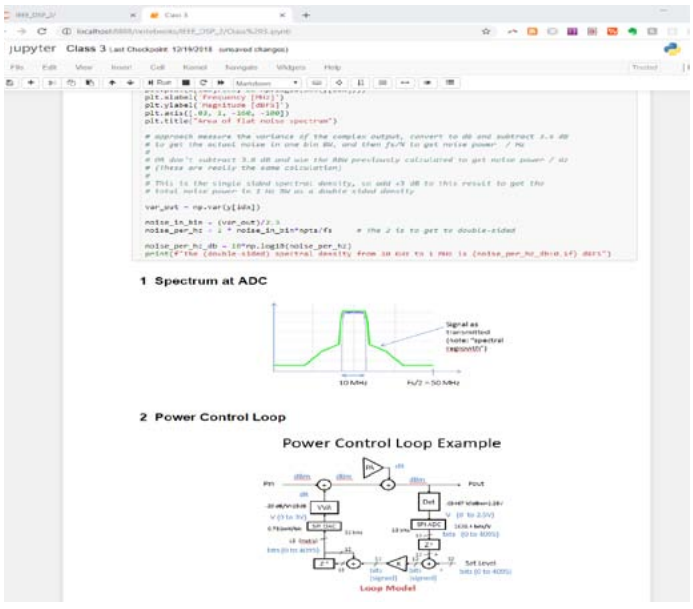
Time & Date: **Postponed until Fall 2020, Exact dates TBD**

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

Speaker: **Dan Boschen**

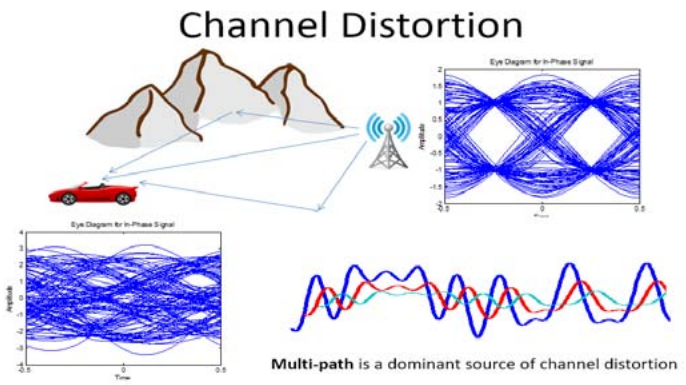
Course Summary

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



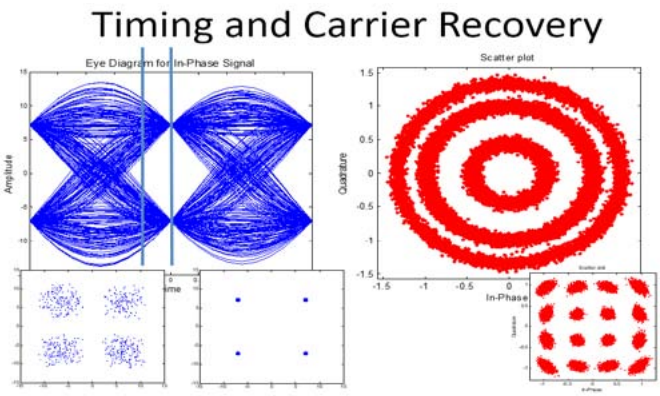
for mixed signal (analog/digital) modern transceivers. This course is applicable to DSP algorithm development with a focus on meeting practical hardware development challenges, rather than a tutorial on implementations with DSP processors.

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.

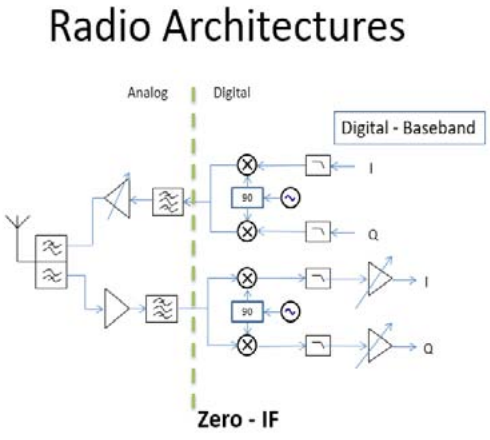
This course will not be teaching Python, but using it for demonstration. A more detailed course on Python itself is covered in a separate IEEE Course "Python Applications for Digital Design and Signal Processing".

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 TBD

Payment received by TBD	
IEEE Members	**$340**
Non-members	**$375**
Payment received after TBD	
IEEE Members	**$375**
Non-members	**$415**

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

DSP for Wireless Communications

(13 hours of instruction!)

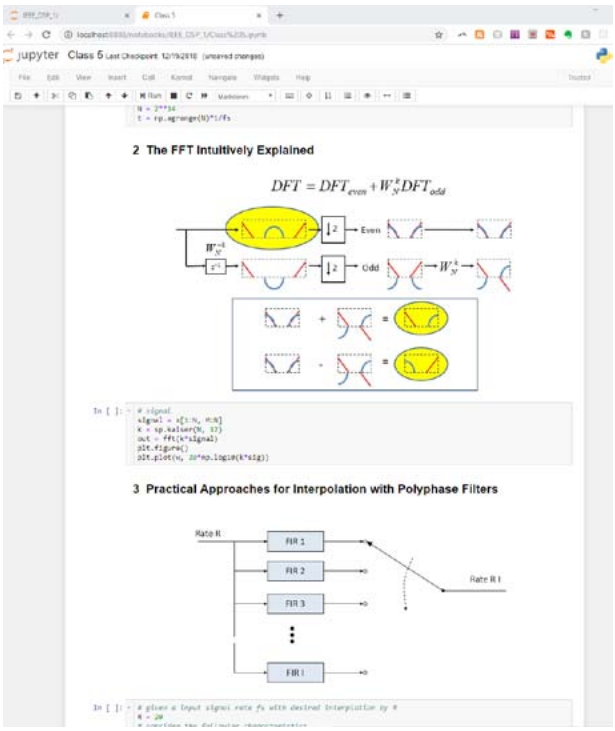
Time & Date: **Postponed until Fall 2020, Exact dates TBD**

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.



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".

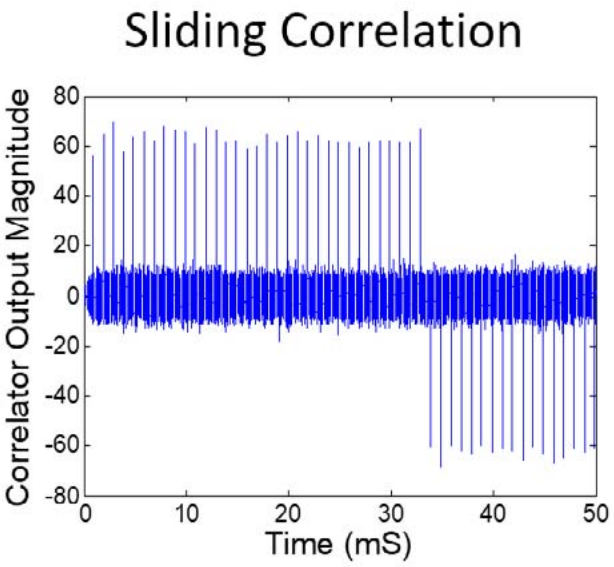
Students will be encouraged but not required to bring a laptop to class, and all set-up information for installation will be provided prior to the start of class.

Target Audience:

All engineers involved in or interested in signal processing 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.

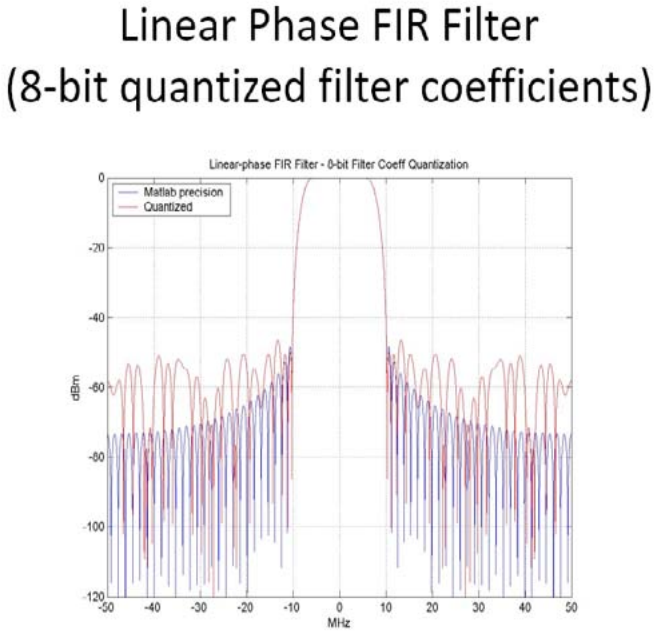


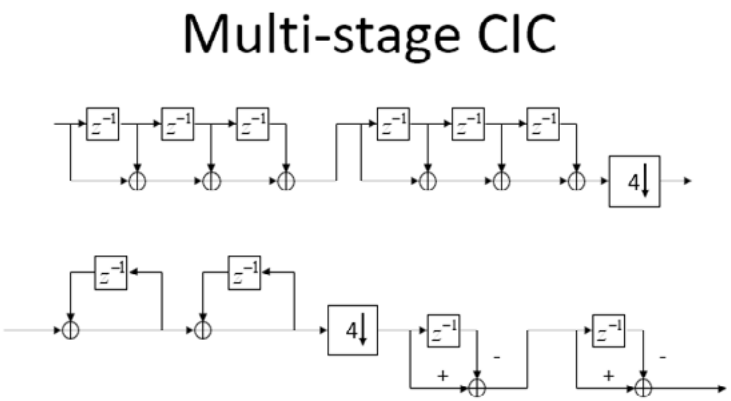
Class 4: Windowing, Digital Filter Design, Fixed Point vs Floating Point

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 TBD

Payment received by TBD
IEEE Members $350
Non-members $385

Payment received after TBD
IEEE Members $385
Non-members $420

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

Python Applications for Digital Design and Signal Processing

(14.5 hours of instruction!)

Time & Date: **Postponed until Fall 2020, Exact dates TBD**
Location: **Crowne Plaza Hotel, 15 Middlesex Canal Park Road, Woburn, MA**
Speaker: **Dan Boschen**

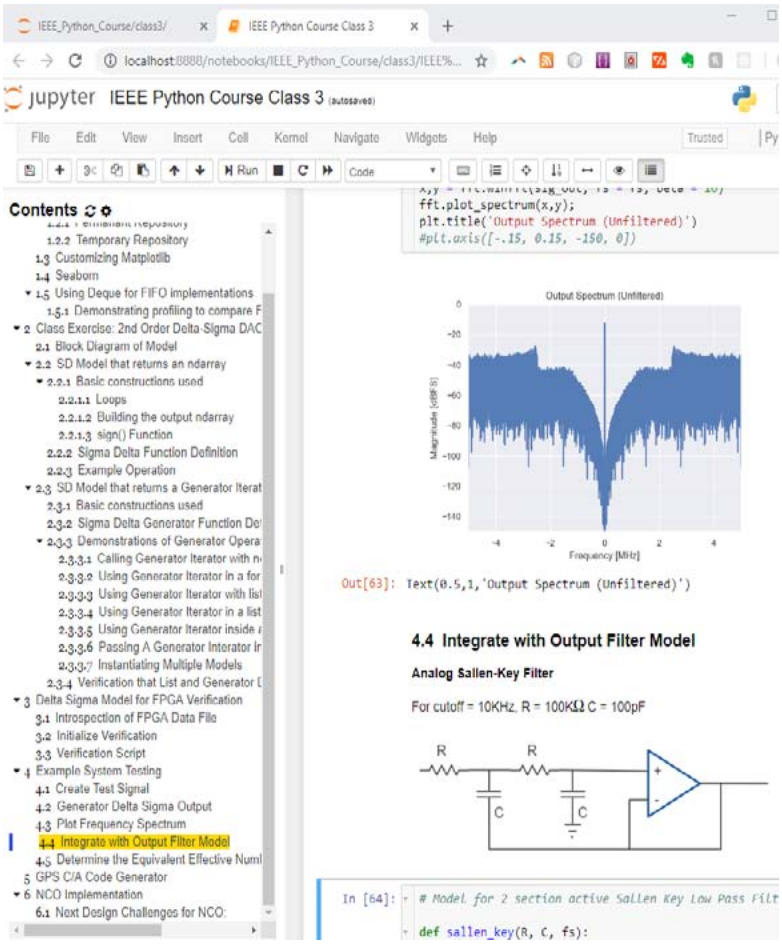
Course Summary

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.

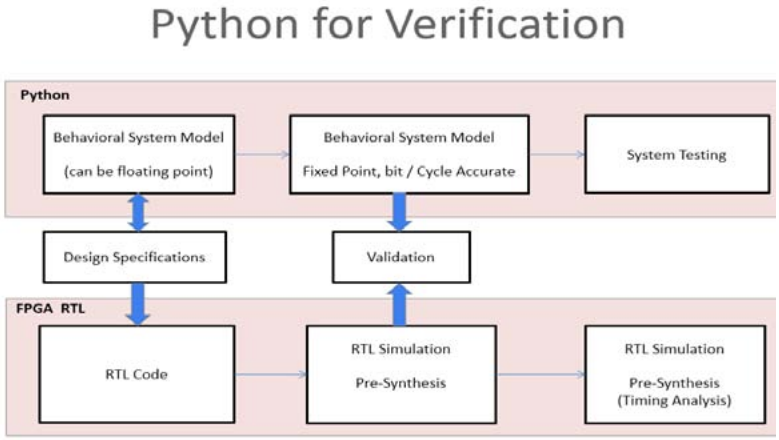


Jupyter Notebooks: This course makes extensive use of Jupyter Notebooks which combines running Python code with interactive plots and graphics for a rich user experience. Jupyter Notebooks is an open-source web-based application (that can be run locally) that allows users to create and share visually 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.



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

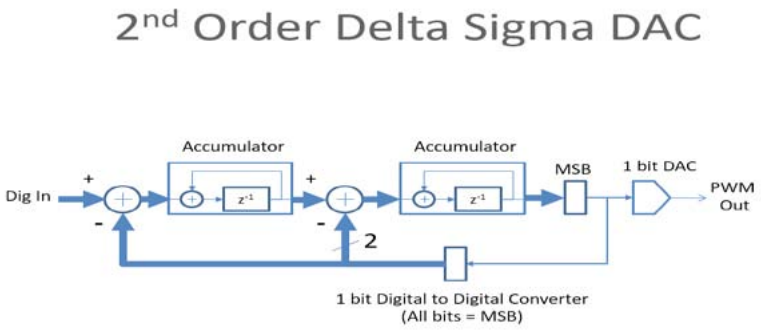
10:15am-12:00 pm Signal processing simulation with popular packages including NumPy, SciPy, and Matplotlib, continued.

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.



notes, lunch and coffee breaks included with registration

Decision (Run/Cancel) Date for this Courses is TBD

Payment received by TBD
IEEE Members $450
Non-members $495

Payment received after TBD
IEEE Members $495
Non-members $535

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

Software Development for Medical Device Manufacturers

Web-based Course with live Instructor!

(12.5 hours of instruction!)

Times & Dates: 1:00 - 4:PM EDT; April 28, 30, May 5, 7

Speaker: Steve Rakitin

This course will be presented with a live instructor using web-meeting software. The course content will be covered in 4 sessions presented over four days.

COURSE SUMMARY

Developing software in compliance with the FDA Design Control regulation, changing FDA guidance documents and latest international standards is challenging. This 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 requirements for validation of software development tools and software used in Manufacturing and Quality Systems. Also discussed are recent FDA Guidance Documents on Cybersecurity, Mobile Apps, and Usability.

THIS COURSE IS INTENDED FOR…

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.

COURSE MATERIAL

Course notes, access to an extensive collection of reference documents and a training certificate will be provided.

COURSE OUTLINE

This course will be presented with a live instructor using web-meeting software. The course content will be covered in 4 sessions as described below. Please note that duration of each session may slightly change depending on the number of questions posed to the instructor.

AGENDA

SESSION 1 – Regulatory Context
Duration ~3 hours with one 15 min break
This session will cover key regulatory requirements for medical device software in the US and EU.

Regulations and Guidance:
• FDA Medical Device Regulation (21 CFR Part 820 – specifically, design controls)
• EU Medical Device Regulation
• FDA Guidance Documents:
o Guidance for Content of Pre-market Submissions for Medical Devices Containing Software
o Off-the-Shelf Software Use in Medical Devices
o General Principles of Software Validation
o Content of Premarket Submissions for Management of Cybersecurity in Medical Devices
o Policy for Software Device Functions and Mobile Medical Applications
o Applying Human Factors and Usability Engineering to Medical Devices
• International Standards:
o ISO 13485:2016 Medical Devices – Quality Management Systems

o IEC 62304: 2015 Medical Device Software – Software Lifecycle Processes
o ISO 14971: 2019 Application of Risk Management to Medical Devices
o EN 14971: 2019 Application of Risk Management to Medical Devices
• Off-the-Shelf (OTS) Software and Open Source software (SOUP)
• Discussion: All Software Is Defective…

SESSION 2 – FDA Design Controls and IEC 62304 – Part 1 Duration ~2.5 hours with one 15 min break

This session will cover FDA Design Controls and IEC 62304 requirements for medical device software.
• Design and Development Planning
o How does Agile Development fit?
o Medical Device Software Lifecycle Processes
• Risk Management
o FDA Levels of Concern
o IEC 62304 Software Safety Classification
• Software Requirements
o Techniques for Removing Ambiguity from Requirements
• Software Architecture and Design
• Software Design Changes

SESSION 3 – FDA Design Controls and IEC 62304 – Part 2 Duration ~2.5 hours with one 15 min break

This session will cover Software Verification and Validation requirements.
• Software Implementation
• Software Verification
o Technical Reviews
o Static Analysis
o Unit and Integration Testing
• System Testing
• Software Validation Testing

SESSION 4 – Software Tool Validation and Risk Management Duration ~2.5 hours with one 15 min break

This session will cover Software Tool Validation and Risk Management requirements.
• Software Tool Validation
o Deciding which tools need to be validated
o Validation approach for software tools
• Validation of Manufacturing Software and Quality System Software
• Risk Management Using Fault Tree Analysis (FTA)
o Review of ISO/EN 14971:2019 Requirements
o Example of Fault Tree Analysis and Failure Modes Effect Criticality Analysis (FMECA)

Course Cancellation and Refund Policy: Requests for online course cancellations must be received 3 business days prior to the course date for a full refund. Once course materials have been shared with a participant, a cancellation request cannot be accommodated.

About the instructor…

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.

Decision (Run/Cancel) Date for this Courses is Thursday, April 23

IEEE Members	**$285**
Non-members	**$345**

http://ieeeboston.org/event/live-course-software-development-for-medical-device-manufacturers/?instance_id=2862

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

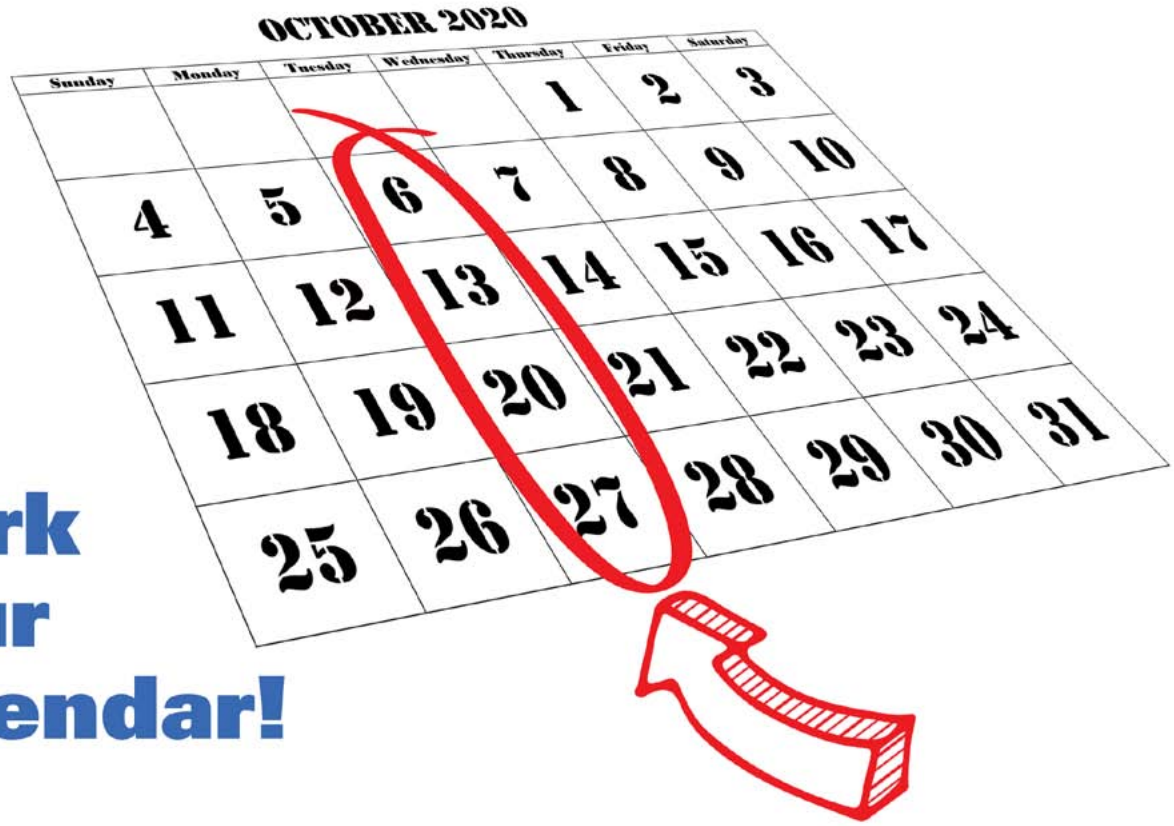
High Frequency RF Amplifiers MMIC Design with GaAs/GaN pHEMT with EDA tools - (10/27/2020)
by Dr. Youngho Suh at MIT Lincoln Laboratory

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



Mark Your Calendar!

4 FOCUSED TRACKS WITH FREE SEMINARS ON:

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Oct. 6
5G/IoT/ Automotive

Oct. 13
PCB/ Interconnect Design

Oct. 20
Signal Integrity/ Power Integrity

Oct. 27
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WWW.EDICONONLINE.COM

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 ,
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