Boston Section

Supporting students, working engineers and retirees through professional development, education and resources.

THE Reflector

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NOVEMBER 2024

IEEE Boston Section

ieeeboston.org

IEEE Advancing Technology for Humanity

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To Post or Not to Post...

By Denise Griffin, IEEE Boston Section, Senior Past Chair

Around this time of the year there are a LOT of IEEE conferences. Personally, I'm involved in planning 3 of them taking place between November and January. In each case, one of the biggest challenges is getting people to actually attend. The first step in solving that problem is creating awareness of the event in the first place!

So how do we do that? It used to be by hanging up flyers, crafting newsletters, and building websites. Today - whether we like it or not - it often involves some use of social media. We can still use our other methods but the more popular way to reach audiences is to "POST" the event on LinkedIn, Facebook, Instagram, etc). For some people, especially the younger generation, this all comes naturally. For others it seems like a chore or even downright silly. Personally, I was against Facebook when it launched and then eventually joined in. And today I find it easy to use and I enjoy the collaborative nature of it. I have learned things about my friends and colleagues that I might never have known. I enjoy being able to very quickly let a set of people know about something AND at the same time allow others to chime in WITH comments (hopefully nice ones).

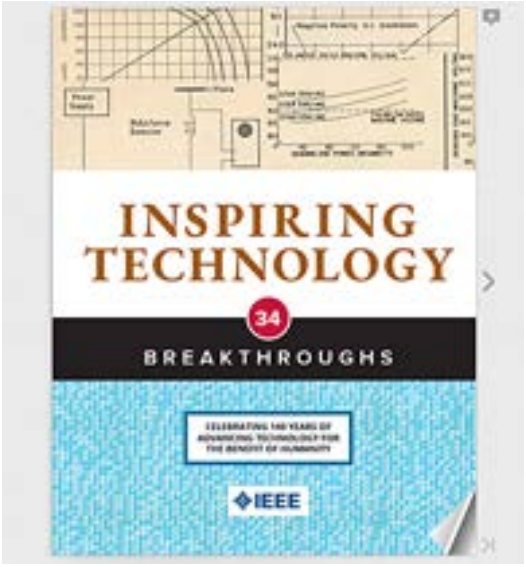
My husband (who is the same age, same university, same degree) strongly dislikes the concept and refuses to use it. And that is OK! I am usually the one who posts our family vacation photos on Facebook. My family and friends have mixed opinions on it. But I will say it has made class reunions, fundraisers, and other events a lot easier to plan! And I am grateful that I can quickly post a note of encouragement, support, or congratulations to someone and maybe make them smile.

At the end of the day, I think my IEEE life would be a lot harder without it. I want to be able to let others in IEEE and beyond know if I am sitting proudly at an IEEE event watching my hero Dr. Karen Panetta receive an IEEE award. I want to be able to share with my technology network that a talented colleague is looking for a job in STEM. And I want to be able to let all of my networks know about the many incredible IEEE leadership, technical, and diversity focused events that I am fortunate to support. I can do that all with a few clicks!!!! Sometimes I share funny cat photos, too!

And that is OK!

Connect with Denise on LinkedIn at:
linkedin.com/in/denisemgriffin

Celebrate IEEE's 140th anniversary with "Inspiring Technology: 34 Breakthroughs" eBook. Explore the innumerable discoveries and groundbreaking inventions that helped build the world we live in.



Read the Book

IEEE SiPS 2024

IEEE Workshop on Signal Processing Systems

4–6 November 2024
Cambridge, Massachusetts, U.S.A.

The 37th IEEE Workshop on Signal Processing Systems (SiPS) is a premier international forum in the area of design and implementation of signal processing systems. It addresses all aspects of architecture and design methods of these systems. Emphasis is on current and future challenges in research and development in both academia and industry.

Program Highlights

Software Implementation of Signal Processing Systems

Hardware Implementation of Signal Processing Systems

Design Methods of Signal Processing Systems

Machine Learning for Signal Processing

Signal Processing Application Systems

Special Sessions

- Quantum techniques in signal processing and machine learning
- Signal processing in communications, navigation and sensing for autonomous systems
- Technologies for next-generation edge AI platforms

Keynote Speakers

Song Han, MIT

William Oliver, MIT

Alexander Wyglinski, WPI

Important Deadlines

Student and Young Professional Funding Application	Oct 7, 2024
Advanced Registration	Oct 20, 2024

Committee

General Chairs
John McAllister, QUB
Joe Cavallaro, Rice Univ.

Program Chairs
Jari Nurmi, Tamere University
Jani Boutellier, Univ. of Vaasa

Finance Chair
Warren Gross, McGill University

Local Organizing Chair
Brian Telfer,
MIT Lincoln Laboratory

ieee-sips.org

IEEE CAS IEEE Signal Processing Society

Consumer Technology Society
Call for Volunteers!

We are currently looking for volunteers who would be interested in pushing forward the mission of the Consumer Technology (CT-S), Boston Chapter. The chapter is looking for volunteers to help organize chapter meetings and help meet the needs of the local CT-S member needs.

The Boston Section is organizing chapters into groups of similar technical interest areas to pool their resources for easier and better chapter collaboration in planning the chapter events.

If you have interest in volunteering for a chapter leadership position or are interested in learning more about what these volunteer positions may entail, please send an email to Karen Safina in the IEEE Boston Section office at, ieeebostonsection@gmail.com

Aakash Deliwala, Chair, IEEE Boston Consumer Technology Chapter

Engineering in Medicine & Biology Society
Call for Volunteers!

We are currently looking for volunteers who would be interested in pushing forward the mission of the Engineering in Medicine & Biology Society (EMBS), Boston Chapter. The EMBS - Boston Chapter was recently approved and we're looking to make a significant impact in the area of Biomedicine, Bioengineering, and Biotechnology in the region. The chapter is looking for volunteers to help organize chapter meetings and help meet the needs of the local EMBS members.

The Boston Section is organizing chapters into groups of similar technical interest areas to pool their resources for easier and better chapter collaboration in planning the chapter events.

If you have interest in volunteering for a chapter leadership position or are interested in learning more about what these volunteer positions may entail, please send an email to Karen Safina in the IEEE Boston Section office at, ieeebostonsection@gmail.com.

Aseem Singh, Marie Tupaj, Co-Chairs, Boston EMBS Chapter

IEEE Boston Section Online Courses:

(Students have 180 day access to all online, self-paced courses)

Electronic Reliability Tutorial Series
Full course description and registration at ,
http://ieeeboston.org/electronic-reliability/

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/

NEW

Reliability Tutorial Series: Electronic Failure Mechanisms
https://ieeeboston.org/event/ieee-ansys-reliability-tutorial-series-electronic-reliability/?instance_id=3635

NEW

Reliability Tutorial Series – Accelerated Life Testing for Electronics Reliability
https://ieeeboston.org/event/ieee-ansys-reliability-tutorial-series/?instance_id=3634

CNET Corner

Do you know you can find a consultant at the Boston Consultants Network (CNET)?

Boston CNET consultants offer a wide variety of consulting services: electrical, hardware, software, IT, regulatory, tech pubs, and many other engineering disciplines.

Check us out at: https://bostonconsultants.org/

Come to an event and see what Boston CNET can do to help you. https://bostonconsultants.org/events

David Connor is a Boston CNET consultant you can find through our member directory. He specializes in regulatory. Are you involved with the FDA regulatory process, CE compliance and other regulatory related matters? Get in touch with David on the CNET website:

https://bostonconsultants.org/Sys/PublicProfile/12961305/1132550

Meet David Connor at Striper Solutions LLC

David Connor is the President of Striper Solutions LLC, providing consulting services for global product development and regulatory compliance. A registered IEEE consultant, David has over 30 years' experience in product development and regulatory compliance for global markets.

Since 2013, Striper Solutions has been a trusted partner for product development, specializing in recent years on the critical area of regulatory compliance. Striper understands the complexities involved and provides immediate access to the specialized knowledge needed to streamline this often-bottlenecked process.

www.striperllc.com
Typical Striper projects include:

- Supporting and directing engineering efforts to obtain product FCC, IC, CDRH, or CE compliance.
- Working directly with Certification Agencies on behalf of the customer to obtain product certification.
- Creation of technical reports, risk analysis, and technical files for compliance.
- Identification and resolution of EMC issues related to RFI compliance.

Striper works directly with our customer's engineering team and can provide additional resources through a dedicated team of associates. Whether you need help navigating the regulatory landscape, overcoming EMC challenges, or ensuring product safety, Striper offers a comprehensive suite of services that pave the way for successful product launches and access to new markets.

IEEE
Advancing Technology for Humanity

IEEE Video Series

A collaborative discussion panel featuring esteemed members from the Institute of Electrical and Electronics Engineers was convened in 2021 to produce educational video presentations that embrace IEEE's mission of advancing technology for humanity.

Among the programs they've produced include "Electric Vehicles: Fun Saving Our Planet", "Greener Power For More Electric Vehicles", "Overcoming Nuclear Fears To Achieve Net Zero CO2 By 2050" and "Achieving a Net Zero Carbon Future", "Green Energy's Economic Progress", and "Net-Zero CO2 with Nuclear, Hydrogen and Geothermal". Projects currently in production include the expansive topic of futurology, with a focus on increasing the efficiency and transformation of aging electrical power generating stations and infrastructure to accommodate nuclear power; reviewing the viability of alternative energy (such as geothermal, wind and solar); and focusing on 'cleaner' fossil fuels that are more environmentally-friendly to slow the rate of climate change.

These shows are produced and directed by Lennart E. Long, IEEE Senior Life Member from the Executive Committee and Past Chair of the Boston Section; Dr. Paul H Carr, BS, MS, MIT; PhD Brandeis U, IEEE Life Fellow; Dr. Ted Kochanski, SB (MIT), Ph.D (U.Texas, Austin), IEEE Global Education for Microelectronic Systems and former Boston Section Chair; and Dr. Ken Laker, B.E. (Manhattan College), M.S. and Ph.D. (New York University), IEEE Life Fellow and past President of IEEE.

The panel is moderated by five-time Boston/New England Emmy Award-winner and television personality and star of "The Folklorist," John Horrigan. These video programs with presentations and discussions can be accessed at the IEEE Boston Section video portal at https://vimeo.com/user18608275.

We are looking for any IEEE members that would like to appear on the program in the role of presenter or discussion expert. Simply reach out to Trina Lorigan at the Boston Section at ieeebostonsection@gmail.com.

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. January 1st issue date; article submission is November 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

IEEE Boston Section Volunteers Wanted!

Are you passionate about technology and eager to contribute to the advancement of your field? The IEEE Boston Section is excited to announce a call for volunteers to join our dynamic team of professionals and enthusiasts. By becoming a volunteer, you'll have the opportunity to collaborate with like-minded individuals, develop new skills, and make a meaningful impact on the local technology community.

About IEEE Boston Section:

The IEEE Boston Section is a thriving community of engineers, researchers, students, and industry professionals dedicated to promoting technological innovation and knowledge sharing. Our section hosts a variety of events, workshops, seminars, and conferences throughout the year, providing members with opportunities to learn, network, and stay updated on the latest developments in their fields.

Volunteer Opportunities:

We are currently seeking volunteers to help on the following committees:

The Fellow and Awards Committee - activities include recommending qualified members of the Section for advancement to Fellow grade and for receipt of the various IEEE (IEEE/Region/MGA/Section) awards. Identifying and building a database of the various IEEE awards available for nomination and searching out qualified candidates, for preparing the necessary written recommendations, and for assembling all required supporting documentation and submit its recommendations directly to the appropriate IEEE body.
Time Commitment: Meets 4 times a year for 1 – 2 hours per meeting (virtual or in person)

Local Conferences Committee - activities include identifying timely topical areas for conference development. Identify champions of these conferences to run the identified conference organizing committees. The section local conference committee is not charged with organizing and executing individual conferences.
Time Commitment: Meets 4 times per year 1 – 2 hours per meeting (virtual or in person)

Professional Development & Education Committee - activities include identifying topics, speakers, and/or organizers for appropriate technical lecture series or seminars. The subject matter should be timely, of interest to a large segment of the membership, and well organized with regard to speakers and written subject matter.
Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)

The Membership Development Committee - activities include actively promoting membership in the IEEE and shall encourage members to advance to the highest grade of membership for which they are qualified. To these ends this committee shall include wide representation within the Section territory, shall maintain lists of prospects and members qualified for advancement, and shall provide information and assistance to preparing applications.
Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)

Student Activities Committee - activities include attracting a broad and diverse group of undergraduate and graduate students to IEEE and to engage them in activities that promote their own professional development as well as the ongoing growth of IEEE. The Student Activities Committee shall include among its members the IEEE Counselors at the universities, colleges, and technical institutes that lie within the Section territory. It shall be responsible for liaison with the Student Branches at these institutions and advise the Executive Committee on all other matters affecting the Student Members of the Section.
Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)

Young Professionals Affinity Group - activities include organizing programs, and initiatives aimed to address the needs of early-career professionals pursuing technology-related careers in engineering, business, management, marketing, and law. This committee is committed to helping young professionals evaluate their career goals, polish their professional image, and create the building blocks of a lifelong and diverse professional network.
Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)

Benefits of Volunteering:

Volunteering with IEEE Boston Section offers numerous benefits, including:

- Networking opportunities with professionals in your field.
- Skill development and enhancement through hands-on experience.
- Contribution to the local technology community and its growth.
- Access to cutting-edge information and discussions.

How to Get Involved:

If you're enthusiastic about technology and want to make a difference, we invite you to join us as a volunteer. To express your interest and learn more about specific roles, please visit our website and fill out the volunteer application form. Our team will get in touch with you to discuss opportunities that align with your interests and skills.

Thank you for considering this opportunity to contribute to the IEEE Boston Section. Your dedication and passion are what drive the success of our community and its impact on the world of technology.

Volunteer Here!

https://ieeeboston.org/volunteer/

Microwave Theory & Techniques and Antennas & Propagation – 12:00 PM, Wednesday, November 6

Circumventing Bounds And Realizing Novel Performance Characteristics Using Time-Varying Antenna Systems

This is a Virtual-only event on Zoom. Link will be sent to registrants.

More details and free registration can be found at https://events.vtools.ieee.org/m/441508

Fundamental physical limits apply to many key antenna performance parameters (gain, Q-factor, efficiency), particularly when device dimensions are small relative to operating wavelengths – the "electrically small" regime. These limitations cannot be exceeded by linear time-invariant (LTI) devices and can manifest as critical bottlenecks for communications and sensing technology.
In this talk, we survey recent work on moving antenna technology away from the classical LTI design paradigm and toward active, non-linear, and time-varying systems. Emphasis is placed on research incorporating time-varying elements into antennas and matching networks with the goal of exceeding physical bounds on LTI antenna metrics. This includes direct antenna modulation (DAM), which treats time-varying antennas and matching networks as active parts of the modulation process, allowing for efficient, extreme instantaneous radiated signal bandwidths from electrically small apertures. Additionally, the co-design of electrically small antennas with parametric pumping networks for broadband, low-noise receive applications will be presented.

Speaker: Professor Kurt Schab,
Santa Clara University School of Engineering

Kurt Schab is an Associate Professor of Electrical and Computer Engineering at Santa Clara University in Santa Clara, CA USA. He received BS degrees in Physics and Electrical Engineering from Portland State University in 2011 and the MS and PhD degrees in Electrical Engineering from the University of Illinois at Urbana-Champaign in 2013 and 2016. From 2016 to 2018, he was a Postdoctoral Research Scholar at North Carolina State University. His work has been supported by various federal agencies and defense organizations, including two ongoing projects under IARPA EQuAL-P. In 2023 he received the IEEE Antennas and Propagation Society Altshuler Prize Paper Award for his co-authored review of computational methods in characteristic mode analysis. His current research portfolio focuses on the intersection of electromagnetic theory, computational methods, and antenna design; particularly in regards to physical bounds and systems involving time-varying media.

Kurt Schab

IEEE AP-S Antennas and Propagation Society / 75TH Anniversary

MTT-S IEEE MICROWAVE THEORY & TECHNOLOGY SOCIETY

Microwave Theory & Techniques Society and Antennas & Propagation Society 5:30PM, Wednesday, Nov. 13

MTT/AP-S Elections and Young Professionals Seminar

Location: Hubble Auditorium, Analog Devices,
1 Analog Way, Wilmington, MA 01887

Please join us at ADI for socialization with appetizers, a technical talk, and officer elections for the 2025-2026 MTT/AP-S Boston Chapter cycle.

Event information and registration can be found at:
https://events.vtools.ieee.org/m/436732

Our visit our website.

Dr. Muhammad Saad Zia will discuss "Effects of Beam Misalignment on the Performance of Millimeter-Wave Cellular Networks". The talk presents an approach to model the effect of beam alignment errors arising due to inaccurate channel estimation and analyze the impact on the system-level performance of a directional millimeter-wave (mm-wave) cellular network. Specifically, by modeling the variance of the beam alignment errors in terms of link parameters and utilizing stochastic geometric techniques, the loss in the achievable signal-to-noise ratio (SNR) and rate coverage of the network is quantified. The talk considers two network configurations: 1) Modeling and analysis of a mm-wave only network with single-user beamforming at the BS and an isotropic antenna at the user, and 2) Extension to a heterogeneous network consisting of sub-6 GHz and mm-wave BSs.

Dr. Muhammad Saad Zia

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.

IEEE Boston/Providence/New Hampshire Reliability Chapter And Co-Sponsored By ESDA NE Chapter – 5:30PM, Wednesday, November 13

COSTLY CONTROVERSIAL ESD MYTHS

There Is No Cost To Register Or Attend, but Registration Is Required at https://events.vtools.ieee.org/m/438543

This Event Has Virtual Attendance Info. Please Visit The Event Page To Attend Virtually.

Location: MIT Lincoln Lab Main Cafeteria, 244 Wood St, Lexington, MA

Please Visit Https://R1.Ieee.Org/Boston-Rl/

There are several common misunderstandings and controversies that can have significant impact on costs, quality and reliability of esd programs. These misunderstandings or “myths” result in costly unnecessary expenditures and/or a compromise of the program integrity. These same myths are often cited by skeptics who do not fully understand the physics involved. Consequently, it is important to identify and dispel these myths.

Latency is a significant reliability consideration that is surrounded with controversy. Some experts will argue that latency is virtually non-existent while others claim that it is the dominant failure mode.

Join us for this highly interactive discussion and learn about latency as well as common myths such as:

Myth: ANSI/ESD S20.20 Is Sufficient For Class 0 Technologies

Myth: HBM Failures Dominate ESD Failures

Myth: Circuit Boards Are Always Less Sensitive To ESD Than Devices

Myth: Airflow Causes Charging

Myth: Humidity Control Is Essential For ESD

Myth: Fieldmeters Make Accurate Measurements On Machines

Myth: Latency Failures Comprise 90% Of ESD Failures

Speakers: Ted Dangelmayer Of Dangelmayer Associates, LLC

Agenda

5:30 PM Pizza, Salad, Soda, And Networking
6:00 PM Technical Presentation
6:45 PM Questions And Answers
7:00 PM 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.

Ted Dangelmayer

Ted Dangelmayer is the president of Dangelmayer Associates, LLC and has assembled an ESD consulting team consisting of the foremost authorities in virtually all ESD areas of both product design and manufacturing. He received the “Outstanding Contribution” award and the EOS/ESD Association, Inc. “Founders” award. He was president of EOS/ESD Association, Inc., chairman of the ESDA standards committee, and general chairman of the EOS/ESD Symposium. He has published two editions of his book, ESD Program Management, numerous magazine articles, and technical papers. Ted holds three patents and is iNARTE certified. He is currently president of the Northeast local chapter of EOS/ESD Association, Inc., a member of the ESDA education Council, and Nominations Committee.

Photonics and Microsystems Chapters: Joint Technical Seminar IEEE Sensors Council Distinguished Lecture Series – 6:00PM, Thursday, November 14

Exploring Natural and Bio-Inspired Photonic Nanostructures as Gas Sensors: From Scientific Curiosity To Unexpected Discoveries and to Societal Impact

Location: MIT Lincoln Labs Forbes Road Cafeteria
Address: 3 Forbes Road, Lexington MA

6:00pm - 6:45pm: Networking Dinner
6:45pm - 7:45pm: Tech Talk

Speaker: IEEE Sensors Council Distinguished Lecturer, Dr. Radislav A. Potyrailo

Please register at: https://events.vtools.ieee.org/m/439737

Tropical butterflies are a bright display of photonic engineering in nature. Their iridescence originates from the interference and diffraction of light within tree-like nanostructures on their scales, inspiring technological innovations in solar cells, displays, fabrics, and other areas. We are inspired by the design principles of these photonic nanostructures to boost performance of gas sensors because existing gas sensors often degrade their performance in complex environments. Thus, new sensing concepts are required to improve sensor selectivity and stability.

In this lecture, we analyze capabilities of natural photonic nanostructures as sensors for detection of different gases and the origins of these capabilities. Our acquired knowledge from studies of these natural nanostructures allows us to develop our design rules to fabricate sensing nanostructures for needed gas selectivity for numerous gas monitoring scenarios at room and high temperatures for industrial, environmental, homeland protection, medical, and other applications. Our design rules for selective gas sensors bring a multivariable perspective for sensing, where selectivity is achieved within a single nanostructured sensing unit, rather than from an array of separate sensors. By utilizing individual nanostructured sensors rather than sensor arrays we also improved sensor stability by eliminating independent aging factors in separate sensors in their arrays. Our existing and new machine learning tools further advanced our sensor designs and performance in multi-gas detection. These new multi-gas sensing capabilities provide an affordable technical solution for monitoring of emissions of greenhouse and other gases in urban and industrial environments. Such technical solution is mathematically not feasible using conventional single-output sensor designs.

The societal impact of these results is in opening opportunities for more proactive developments of several types of multivariable gas sensors in diverse emerging monitoring applications, ranging from urban pollution and industrial safety to medical diagnostics and homeland protection.

Radislav A. Potyrailo is a Principal Scientist at GE Vernova Advanced Research Center. He received an Optoelectronics degree from Kyiv Polytechnic Institute (1985) and a PhD in Analytical Chemistry fromIn diana University, Bloomington, IN (1998). At GE Vernova Advanced Research Center Dr. Potyrailo has been directing programs on designs of physical transducers, sensing materials with multi-response mechanisms, data analytics, and system engineering of microanalytical instrumentation. His passion is to bring innovative sensing systems from laboratory feasibility studies to field validations and commercialization. He is a recent IEEE Fellow (2023) for contributions to sensor technologies for gas differentiation, interference rejection, and drift elimination, covering the whole electromagnetic spectrum of his sensors. Dr. Potyrailo has been appointed as a Distinguished Lecturer of the IEEE Sensors Council for the period 2024-2026.

Radislav A. Potyrailo

Boston Consultants Network – 6:30PM, Tuesday, November 19

Consulting 201 - Advanced Consulting: Running a Consulting Business

This is a Virtual-only event on Zoom. Link will be sent to registrants. Open to the public.

More details and free registration can be found at https://bostonconsultants.org/event-5655487

Networking from 6:30PM - 7 PM.
Meeting starts at 7:00 PM.

If you operate a consulting business you will not want to miss this meeting. It is advanced consulting topics at its best!

Presenter: Larry Nelson, Sr

Having been a technology consultant for over 40 years Larry Nelson Sr has seen many shifts in the business climate. Hopefully you have all seen the first in this series of presentations on what it takes to get started in consulting. This session is a more advanced look at what you can and should do to grow your business and keep it healthy. Larry will show how he has made his consulting business stronger over the years, and how he modified his offerings to keep things moving forward, and protect cash flow during good times and bad.

The 5 major topic categories covered are:

1. General Business Practices including some Truths and Lies

2. Going it alone - The one person shop.

3. Partnerships and associations. How to do more while keeping control and not having to do it all yourself.

4. Working with Agencies. The Good, Bad, and Ugly.

5. Diversification of your business. Adding services to keep a steady cash flow.

We also welcome your questions.

Larry Nelson, Sr.

Larry Nelson has had his own consulting company (Nelson Research) which he had operated since 1980. Larry has published technical articles and created technical training programs for universities as well as Industry.

He has been granted several Patents and is a licensed PE in the state of Massachusetts. He has served as an Expert Witness in several litigations and has advised insurance companies on several cases to determine root cause of failure.He is a Diplomat of Forensic Engineering (DFE) with NAFE. He is a Platinum level consultant with Microchip Corporation and has a broad technical background across many industries.

He is also listed with Parallax and Digikey as a consultant. He has been a long standing member of the Boston CNET and of AICN as well as a founder of the Worcester County Section Consultant Network. He currently serves as a Director on the board of the Massachusetts Society of Professional Engineers.

http://www.Mchipguru.com

http://www.linkedin.com/in/larry-nelson-sr-p-e-dfe-71ab81

IEEE Young Professionals Boston – 5:30PM, Friday, November 22

Young Professionals Networking Dinner - Industry Career Growth

This is an in-person event from 5:30 - 7:30 PM

Location: 135 Seaport Blvd, Boston, MA, 5th Floor Conference Room

This event is free for IEEE members and $10 for non-members. For more information and to register, visit: https://events.vtools.ieee.org/m/442506

Agenda:

Welcoming remarks and introductions

Ad Hoc discussions with industry leaders on young professional career development

Dinner and closing remarks

Speaker - Babak Enayati, PhD, PE

This event will:

• *Facilitate networking opportunities for Young IEEE and non-IEEE members.*

• *Enhance professional development through interactive discussions.*

• *Strengthen ties with local YP Affinity Groups and Sections.*

• *Encourage collaboration with industry representatives and local institutions.*

Babak Enayati received his PhD in Electrical Engineering from Clarkson University, USA in 2009. He joined Luma Energy in 2023 as the Senior Director of Grid Modernization, Renewables and Asset Management. Babak and his team are responsible for creating and implementing a strategy to modernize the Puerto Rico electric power system to meet the reliability and clean energy goals. Prior to joining Luma Energy, Babak worked at New Leaf Energy as the Director of Engineering, where his team provided engineering services for the development of solar, wind and energy storage facilities. Prior to joining New Leaf Energy, Babak worked in the utility industry for 13 years holding various grid modernization engineering and managerial positions.

He joined Institute of Electrical and Electronics Engineers (IEEE) in 2006 and currently is a Senior IEEE Member. Babak served on the IEEE Power and Energy Society Governing Board as Member-At-Large Industry Outreach, and VP of Education. He has chaired the IEEE PES Transmission Subcommittee and Distributed Resources Integration working group. Babak has been a leader in developing IEEE standards by serving as the Vice Chair of the IEEE Std 1547 Standard for Interconnecting Distributed Energy Resources with Electric Power Systems, and IEEE 2800 Standard for Interconnection and Interoperability of Inverter-Based Resources Interconnecting with Associated Transmission Electric Power Systems. Babak is a registered Professional Engineer in the state of Massachusetts.

Babak Enayati

The event's focus on networking and collaboration reflects the commitment to creating a robust ecosystem for Young Professionals to thrive in their careers. The engagement of industry representatives and local institutions ensures that attendees gain insights into current industry trends and potential career opportunities. Overall, this event seeks to contribute significantly to the local Young Professional community's development and foster lasting connections.

Boston Consultants Network – 6:30PM, Tuesday, December 3

Consulting 301 - FDA Medical Device Regulatory Process - How A Consultant Helps Your Company

This is a Virtual-only event on Zoom. Link will be sent to registrants. Open to the public.

More details and free registration can be found at https://bostonconsultants.org/event-5655491

Networking from 6:30PM - 7 PM.
Meeting starts at 7:00 PM.

Presenter: David Connor

The FDA medical device regulatory process will be discussed. You do not have to be familiar with the FDA regulatory process to get benefit from this meeting. This is an overview of the regulatory process and how a consultant will add value, whether you need to implement a regulatory process or have an existing process. Come find out more about the process and where consultants have helped identify mistakes that often occur in this complicated process.

No Prior Knowledge Needed - You do not need to know anything about the regulatory process in order to understand this talk. You do not need to be a consultant. Anyone that wants to gain knowledge about this process should come.

Major Topics Include:
1. What is the FDA regulatory process
-An explanation of the Quality System Regulations (QSR)

2. Understanding Medical Device Risk:
-Class I, II, and II medical devices
-Application of the QSR depends on product risk

3. Major elements of the QSR
-A matrix showing the six major elements of the QSR

4. The 510(k) Premarket Notification:
-Used by the FDA to determine whether a medical device is substantially equivalent to a previously approved device.

5. Common Medical Device Processes Related to Engineering
-ISO 9001 design process
-FMEA, FMEDA, FMEPA: Failure mode analysis as part of the risk analysis process
-Design History File (DHF)
-Corrective Action and Preventive Action (CAPA)
-IEC 62304 Medical Device Software -Software life cycle processes

6. When to Implement a QSR
-Before starting the design process to mitigate risk, adhere to regulatory compliance standards, and ensure efficient development

7. QSR Implementation Strategies
-The system needs to be compliant with FDA rules

8. Areas for Opportunity for CNET Consultants
-Setup of purchased QSR documentation to meet specific operating process of the customer, particularly in the area of design process.
-Direct electrical, mechanical, optical consulting for elements of the device (with understanding of the product risk)
- Mistakes that often occur in the regulatory process

David Connor is a seasoned IEEE product consultant with over three decades experience in product development for domestic and international markets. As president of Striper Solutions LLC, he specializes in product regulatory compliance, guiding businesses through the complexities of regulatory standards and providing solutions for critical EMC and safety product issues.

David Connor