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**IEEE Baltimore Section 'Watts New' Newsletter: November/December 2019****'Multiplexing the Signals of the Monumental City'**

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**Happy Holidays from the IEEE Baltimore Section**

Wishing our member families a happy and safe holiday season!

Best Wishes,

IEEE Baltimore Section Executive Committee

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**Contact Details**

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<http://ewh.ieee.org/r2/baltimore/>

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**2020 Baltimore Section Officer Election**[\(Back to Top\)](#)

David Kisak  
Baltimore Section Nominations and Voting

Welcome to the 2020 Baltimore Section Officer Election! I would like to take this opportunity to personally express my sincere appreciation for you being an IEEE member!

Our duty and responsibility is to ensure that your voting rights are protected and you are confident that your vote is accurately cast and tabulated. We will utilize the vTools voting system for the Baltimore Officer elections.

Please view the candidate bios at the following link: <https://site.ieee.org/baltimore/elections/>

Voting will start from 1 November and close at 11:59 PM on 8 December.

Please select one candidate for each position or specify a write-in candidate.

Please don't hesitate to contact David at [dkisak@ieee.org](mailto:dkisak@ieee.org), if you have a question, comment, or complaint regarding your voting experience.

Thank you for voting – your vote counts!

[Vote Here!](#)

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**Enterprise Blockchain for Healthcare, IoT, Energy and Supply Chain - Online Course Series**[\(Back to Top\)](#)

The Baltimore Section of the IEEE in close collaboration with the Continuing Education Committee (CEC) of the Educational Activities Board (EAB) of the IEEE, is organizing and sponsoring a series of online courses for group participation, eligible for CEU credits. The second group course will be offered on January 25th, 2019.

These courses are part of the IEEE eLearning program, and are being offered at a deep discount (regular prices are \$15 for IEEE members, \$5 for Life and Student members, and \$25 for non-members and members of other sections other than Baltimore ; please note that this is a 4-hour course with a lunch break).

Boris Gramatikov, Ph.D.  
Director, Continuing Education Program  
IEEE Baltimore Society

Course descriptions:

**Enterprise Blockchain Overview**

This course module introduces Blockchain for Enterprise with an emphasis on where and how Blockchain will impact corporations. Included is a short review of cryptocurrencies followed by an in-depth review on Blockchain's underlying technological advantages and where best to deploy in industry. A review of smart contracts is included along with the types of blockchain models: public, private and hybrid. The course also highlights the major cloud company offerings on Blockchain for the learner's own project exploration with a familiar service provider.

Instructor: Steve Derezinski

Steve Derezinski consults with major corporations on blockchain strategy and new blockchain ventures. He taught Blockchain Ventures at MIT Media Lab and Babson College, and sits on a number of boards and funding panels. He is an expert reviewer for a Federal Agency's Blockchain Funding and a subject matter expert for large philanthropic foundations in the USA and EU. He holds a BS from MIT and MBA from MIT Sloan.

Publication Year: 2019; ISBN:978-1-5386-8577-8

#### Enterprise Blockchain for Grid Modernization

Blockchain for Grid Modernization and Energy provides an overview of the benefits of Blockchain for grid management, an explanation on how Blockchain for energy works, some key drivers of adoption for energy and the Open Blockchain Energy (OBE) framework for Blockchain adoption to manage modern energy grid networks more efficiently. Finally we highlight the transactive energy model where grids are managed at a more granular level enabling higher efficiencies and better localized utilization of energy networks.

Instructor: Dr. Claudio Lima

Dr. Claudio Lima is an industry thought leader and entrepreneur in Advanced Digital Transformation. Dr. Lima is the co-founder of the Blockchain Engineering Council, or BEC, which is an independent consulting organization and think tank that promotes Blockchain technology. He has a Ph.D. in Electronic Engineering from the University of Kent in the UK. Dr. Lima is the Chair of the IEEE Blockchain Energy Standards Working Group, Vice-Chair of the IEEE Blockchain IoT Standards Working Group, and a Member of the Department of Energy's Pacific Northwest National Laboratory's Industry Advisory Board on Blockchain Cybersecurity.

Publication Year: 2019; ISBN: 978-1-5386-8573-0

#### Enterprise Blockchain for Healthcare

Blockchain for Healthcare Data storage and ID is a complicated topic which is unpacked in this enterprise-level module. Starting with patient identification and through personally identifiable information and onto clinical data, the course reviews blockchain applicability to healthcare data and the current industry adoption of blockchain from startup ICOs to enterprise use cases.

Instructor: Edward Bukstel

Edward Bukstel is CEO of Clinical Blockchain LLC. He has 30 years of clinical data integration, data security, and communications experience. He has successfully licensed systems and services to companies, including international pharmaceutical and managed care organizations. Mr. Bukstel was a founding member of the ASTM E1238 Standard that became integrated into HL7. He has been a national speaker on electronic data interchange and has been a guest lecturer at The Wharton Business School. Mr. Bukstel has written extensively on Blockchain and Healthcare and founded Clinical Blockchain LLC in 2016 to address Patient-Doctor Messaging on a Blockchain Platform.

Publication Year: 2019; ISBN: 978-1-5386-8576-1

#### Enterprise Blockchain for Supply Chain

Blockchain for Supply Chains is a natural combination of two technologies designed for transactions with a shared or common ledger. Often cross-corporation, a supply chain represents a flow of goods and is frequently cross-border. Managing all of the data on a single trusted chain that is updated and retrieved by many participants is a significant endeavor and the course describes how enterprises are adopting Blockchain for this use. Example applications in-use today and best practices are reviewed. Also include are predictions for future supply chain models enabled by Blockchain. Finally some suggestions on common misconceptions about what Blockchains can and can't do for supply chains is explained.

Instructor: Joseph Francis

Joseph Francis is a part of Accenture Consulting's Communications, Media and Technology Practice, based in San Francisco, focused on Strategy, Network, Process, and Resource transformation for a variety of industries, with an emphasis on High-Tech Manufacturing. He is Accenture's thought leader for Blockchain in Supply Chain, and is working on a variety of innovative Blockchain projects with their West Coast client base. His experience is focused in large-scale supply chain transformation of supply chain to meet critical business, customer, and financial objectives, leveraging leading-edge technology, balanced with pragmatic operational experience. With a background in High-Tech Supply Chain, and Supply Chain Research, he also has experience in IT, ERP, Heavy Manufacturing, Petrochemical, Defense, and other areas.

Publication Year: 2019; ISBN: 978-1-5386-8574-7

## Enterprise Blockchain for the Internet of Things

The convergence, opportunities, use cases and challenges of Blockchain and Internet of Things (IoT) are highlighted in this course. First a general understanding of the opportunities and challenges associated with the convergence of Blockchain technology and IoT are covered. Then emerging use cases, projects, and technologies that apply Blockchain and leverage IoT's mutual advantages are explained. The course finishes with an outlook on the future of Blockchain and IoT.

Instructors: David Fragale and Nancy Ranxing Li

David Fragale is the COO of Arwen, a secure trading protocol for cryptocurrencies. David has a background in blockchain as a founder of a blockchain and IoT venture, and PwC where he helped build an early blockchain prototype for the humanitarian aid space as well as advised U.S. Intelligence Community on national security threats related to the rise of cryptocurrencies. David has an MBA from MIT Sloan School of Management where he was a Sloan Fellow in Innovation and Global Leadership.

Nancy Ranxing Li is a Product Manager of Edge Computing and Blockchain at Verizon. Before this new assignment, she managed the IoT Smart Cities products. She lead a team of 30 engineers and marketing and sales reps to launch an IoT Smart Cities product using computer vision and IoT systems. She was awarded Boston May's Best Practice in 2017. Prior to Verizon, Nancy was the first employee of Shell Oil's Boston office. She architected a \$250 Million fault-tolerant system to prevent oil spills in the Gulf of Mexico. Nancy received her Ph.D. from Boston University at the age of 24 as the youngest graduate in program history with 14 publications and 1 patent. She also went to MIT Sloan School of Management to study systems design and management.

Publication Year: 2019; ISBN: 978-1-5386-8575-4

[Learn More](#)

## IEEE Baltimore Section - IAS Student Scholarship [\(Back to Top\)](#)

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Rob Banas

The Institute of Electrical and Electronics Engineers (IEEE) Student Scholarship is funded through donations and fundraising efforts provided by locals Baltimore members of the Industry Applications Society. The award is given annually to the graduating high school senior from the greater Baltimore area who best demonstrates their academic ability and desire to pursue excellence in the electrical engineering community. This is a cash gift of \$1,000 per year for up to four years, and is intended to provide cash assistance for books, materials, IT equipment or other necessary items to complete their college education. Students, once awarded, are required to maintain active full time enrollment in an undergraduate electrical engineering or related curriculum. Annually, students must submit proof of enrollment at an accredited engineering academic institution and proof of student membership in IEEE.

View the application by clicking the link below.

Good luck from the members of the IEEE Baltimore Section - Industry Application Society!

[Learn More](#)

## Advanced Building Power Systems Design [\(Back to Top\)](#)

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Derek Dudgeon  
IEEE Baltimore Industry Application Society

When:

The course will be offered from 6:00 to 9:00 pm on the following nights:  
Tuesdays: January 28th, February 4th, February 11th, February 20th & February 20th.

Thursday: February 25th

Where:

Leach Wallace Associates  
[6522 Meadowridge Road #1](#)  
[Elkridge, Maryland 21075](#)

Course Abstract:

This Course is intended for Electrical Designers, Engineers, Project Engineers, Project Managers, and Electrical Contractors with several years of experience in designing power distribution systems in medium and large buildings. The course

will build on the previous introductory class offered in the winter of 2019, which was based on the National Electrical Code.

This advanced class will examine the more detailed aspects of power system design, including short circuit calculations, voltage drop analysis, overcurrent protection coordination studies, and more advanced power distribution systems. Homework problems will be assigned. Guest instructors may teach topics for which they have a particular expertise. Attendance will be taken and PDH units will be awarded on a pro rata basis.

**About the Presenter:**

Derek Dudgeon, PE is consulting engineer at Leach Wallace & Associates. He graduated from Cornell University with a degree in Bachelor of Science in Electrical Engineering. Mr. Dudgeon is a licensed professional engineer has over 29 years of experience, while specializing in healthcare, institutional and commercial buildings with experience in all aspects of power distribution up through 69 kV Systems.

To learn more about this class and to register click the link below.

[Find Out More](#)

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### **Recap of the 2019 Baltimore Mini-Colloquium (MQ)** [\(Back to Top\)](#)

The Baltimore Chapter of Electron Devices and Solid-State Circuits

Through the support of the IEEE EDS Mini-Colloquium program (MQ), the Baltimore Joint Chapter for Electron Devices and Solid-State Circuits hosted their seventh annual Fall Colloquium on October 9, 2019. The theme for this symposium was "Next Generation Technologies for 5G and Beyond". This one-day event featured a slate of three IEEE EDS Distinguished Lecturers and six presenters from the Baltimore/Washington community; together they represented a diversity of perspectives, with 2 speakers from industry, 3 from government labs/institutions, and 4 from academia. The site of the MQ was the American Center for Physics, near the University of Maryland College Park campus. This morning session was led by Colloquium Chair and Chapter Treasurer Dr. Pankaj Shah from the US Army Research Lab. Afternoon sessions were led by Chapter Chair Dr. Paul Potyra from Northrop Grumman Corporation and Chapter Vice-Chair Dr. Richard Fu. Co-sponsored by the Washington / Northern Virginia Chapter for Electron Devices, the event drew 36 attendees, including 29 IEEE members and 7 non-members. Mirroring the speakers, participants included representatives from industry, government, and academia, including students. Speaker abstracts can be found at the vTools URL listed above.

**Speakers:**

Dr. A. Bandyopadhyay\* (Globalfoundries): "Silicon Technologies for 5G Enhanced Mobile Broadband Radio" (remote participation via Zoom)  
Dr. Paul Lane (National Science Foundation): "Advances in Devices and Circuits for Next Generation Communications"  
Dr. Patrick Fay\* (University of Notre Dame): "Advances in III-N Devices for 5G and Beyond"  
Dr. Mario Miscuglio (George Washington University): "Photonics for Neuromorphic Computing"  
Dr. Mina Rais-Zadeh\* (University of Michigan, NASA JPL): "Phase Change RF to Optical Microdevices"  
Dr. Robert Young (Northrop Grumman): "Development of Third Generation GeTe-Based Phase Change RF Switches"  
Dr. David Meyer (Naval Research Laboratory): "Transition Metal Nitride Materials and Devices for Future RF Electronics"  
Dr. Aristos Christou (University of Maryland): "Crystal Defects in GaN and Diamond Electronics"  
Dr. Pankaj Shah: (Army Research Laboratory): "Transfer-Doped Diamond FETs for Next Gen RF Applications"

[Learn More About Event](#)

## Robot Challenge 2020 Save the Date!

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The members of the Baltimore Section of the Institute of Electrical and Electronics Engineers (IEEE) has organized this annual event to give students a taste of what it's like to be an engineer.

The 24th annual Robot Challenge will be held on April 26th, with the possibility of April 25th.

Keep an eye out for more on this terrific event after the new year!

[Find Out More](#)

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**Institute for Electronics and Electrical Engineers - Baltimore Section - 'Watts New' Newsletter**

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