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<https://r1.ieee.org/maine/>



# The Beacon

IEEE Maine Section Newsletter

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## Announcements

On September 9, **Maine Section’s Joint Communications Society and Computer Society chapter** and the University of Maine are co-hosting a panel discussion on the growing role of artificial intelligence in Cyber Security. See pages 4 and 8 for details. Click [here](#) to register.



Congratulations to **Dr. Francesco Restuccia** of the **Roux Institute in Portland** for having been elevated to IEEE Senior Member on June 26.

**IEEE-USA** is accepting nominations for their **annual awards** until September 15. See page 10 for details.

Balloting for the 2021 IEEE Annual Election will begin on August 16. Info about the candidates will be posted on the [IEEE Annual Election website](#).

Could the Section better serve you and your peers? Please share your thoughts with Membership Development Chair Rich Hilliard by e-mail ([r.hilliard@computer.org](mailto:r.hilliard@computer.org)) or via the Section’s [Contact Webpage](#).

## Upcoming Events

### Accelerating Tech Internships in Maine

*Wednesday, July 28, 11:00 AM to 12:00 PM, via Webex; **Free Registration required***

Tech industry internships are a vital way to help new career professionals step into the industry and shape their education to better serve their future employers. What's involved with establishing technology internships and what can it do for your organization, and the quality and stability of your future workforce? Please join us for a dive into internship mechanics and case studies during this **Maine Technology Users Group (MTUG)** webinar featuring the career and internship experts from **Educate Maine and Project**. Visit <https://mtug.org/mtug-events/2021-07-28-summerwebinar2-tech-internships-in-maine> for more info.



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## Section Officers

### Executive Committee:

Chair: [Ashanthi Maxworth](#)  
 Vice Chair: [Julia Upton](#)  
 Treasurer: [Shengen Chen](#)  
 Secretary: [Ashanthi Maxworth](#)  
 Past Chair: [Betina Tagle](#)

### Affinity Group (AG) & Technical Chapter Chairs:

Women in Engineering AG:  
[Sonia Naderi](#)  
 Young Professionals AG:  
[Matt Dube](#)  
 Communications + Computer Societies Joint Chapter:  
[Julia Upton](#)  
 Electron Device + Solid-State Circuits Societies Joint Chapter:  
[Jifa Hao](#)  
 Engineering in Medicine & Biology Society ME/NH/VT Joint Chapter:  
[Rosemary Smith](#) (Co-Chair)  
 Power & Energy + Industry Applications Societies Joint Chapter:  
[Jesse Shank](#)

### Other Committee Chairs & Positions:

Audit: [Ron Brown](#) & [Ali Abedi](#)  
 Awards and Recognition:  
[Rosemary Smith](#)  
 Educational Activities: [Matt Ring](#)  
 Member-at-Large: [Daniel Spacek](#)  
 Member Development: [Rich Hilliard](#)  
 Newsletter Editor: [David Klein](#)  
 Professional Activities: [Dick Wilkins](#)  
 Public Relations: [Ron Brown](#)  
 Student Activities: [Lauren Mayhew](#)  
 Webmaster and Social Media:  
[Doug Sprague](#)  
 University Faculty Advisors:  
 IEEE Student Branches:  
[Jude Pearse](#) (UMaine)  
[Ashanthi Maxworth](#) (USM)  
 HKN Delta Kappa Chapter: [Ali Abedi](#)

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## Upcoming Events [continued from page 1]

### Spins in Low-dimensional Materials Systems: Transport, Gate-control, and Conversion

Wednesday, July 28, 6:30 PM to 8:00 PM, **Free** via Zoom; find the "join" link on the info page

Transport, control, and conversion of spins in condensed matters are pivotal concepts in [spintronics](#) realized in bulk metallic and semiconducting systems. Now, low-dimensional ultra-thin materials systems are becoming attractive. Magnetics Society Distinguished Lecturer [Masashi Shiraishi](#) of [Kyoto University](#) will provide an overview of the achievements in spintronics, discuss why low-D systems are attractive, and focus on recent investigation to pioneer novel spintronic physics in low-D materials systems. Co-hosted by several [IEEE Magnetics Society](#) chapters. Visit <https://events.vtools.ieee.org/m/276812> for more info.

### Integrated Access and Backhaul for 5G and Beyond

Friday, July 30, 12:00 PM to 1:30 PM, Online; **Free Registration required**

Integrated access and backhaul (IAB) networks allow wireless network operators to inter-connect base stations using radio resources. IAB replaces existing backhaul systems such as fiber optics with flexible wireless connections using the existing 3GPP bands, providing backhaul and existing cellular services in a same node, improving flexibility, and reducing the implementation cost. In this talk, [Dr. Behrooz Makki](#) of [Ericsson Research](#) will review backhauling techniques, and present the main motivations/standardization agreements on IAB. Comparisons between IAB and fiber-connected networks will be discussed, including the robustness of IAB networks to environmental effects. Co-hosted by [IEEE Montréal Section](#) and several [Young Professionals](#) chapters. Visit <https://events.vtools.ieee.org/m/272959> for more info.



### IEEE Maine Section Executive Committee (ExCom) Meeting

Monday, August 2, 5:00 PM to 6:30 PM, via Zoom

All IEEE members are welcome to attend. E-mail [Ashanthi.Maxworth@ieee.org](mailto:Ashanthi.Maxworth@ieee.org) for agenda info, meeting ID, and passcode.

### The Next Opportunity for Engineering Education: Redefining the Model

Tuesday, August 3, 11:30 AM to 1:00 PM, via ON24; **Free Registration required**

A panel of experts will provide tips and guidance on remote learning, and what changing practices may mean for in-person instruction. They will discuss steps to help ease students back into in-person learning and actions that faculty can take to help them reconnect with students. Presented by [IEEE EAB](#) and the [IEEE Education Society](#). Click [here](#) for more info.

### IEEE Electric Ship Technologies Symposium

Tuesday, August 3 to Friday, August 6, Online; see [registration page](#) for fee info

The symposium will focus on commercial and military emerging electric ship technologies. Keynote speakers include [Rear Admiral Lorin Selby](#), U.S. Navy Chief of Naval Research, and [Punter Pierluigi](#), Senior Vice President for Design and Engineering with [Fincantieri's Cruise Ship Business Unit](#). A series of [free electric-ship technology tutorials](#) will be in an interactive online format on Tuesday, July 27 to Friday, July 30, and will be available on-demand after the initial presentation. Sponsored by [IEEE PES](#) and [IEEE Power Electronics Society](#). Visit <https://ests21.mit.edu> for more info.



[Continues Next Page]

## Upcoming Events [continued from page 2]

### Data Science Ensemble: Functional Singular Spectrum Analysis

Thursday, August 5, 4:00 PM to 5:00 PM, **Free** via Zoom; Launch <https://maine.zoom.us/my/usm.datascience> to join

Dr. Mehdi Maadooliat of the Department of Mathematical and Statistical Sciences at Marquette University will introduce a new extension of the Singular Spectrum Analysis (SSA) called functional SSA to analyze functional time series. The new methodology has been developed by integrating ideas from functional data analysis and univariate SSA. The talk will explore the advantages of the functional SSA in terms of simulation results and two real data applications: remote sensing data and a call center dataset. Visit <https://usm.maine.edu/college-of-science-technology-health/data-science-ensemble-functional-singular-spectrum-analysis-mehdi> for more info.



### So How are Things Going? Making the Most of Manager-Employee 1-on-1's

Wednesday, August 11, 2:00 PM to 3:00 PM, Online; **Free Registration required**

The 1-on-1 is an attempt to increase the communications and feedback between manager and employee. In this webinar, **Systems Engineer Paul J. Kostek** looks at how to make the most effective use of one-on-one time as an employee and as a manager. How to raise issues and how to use this as a planning tool for the annual performance review will also be discussed. Hosted by IEEE-USA. Visit <https://events.vtools.ieee.org/m/276486> for more info.



### Virtual Panel: If I Knew Then What I Know Now, Thoughts On Getting Your Career Started

Wednesday, August 11, 6:00 PM to 7:30 PM, via Webex; **Free Registration required**

Panelist will engage in a discussion about the hardest part of the “real” world, how to successfully start your career in their industries, and mistakes they hope you don’t have to make because they made them. Main event to be followed by a Q&A. Hosted by the **New York Section Young Professionals** chapter. Visit <https://events.vtools.ieee.org/m/277069> for more info.



### IEEE International Conference on Autonomous Systems (ICAS)

Wednesday, August 11 to Friday, August 13, Online; see [registration page](#) for fee info

The conference will be a premier international forum for presenting the technological advances and research results in the fields of theoretical, experimental, and applied Autonomous Systems (AS). Originally planned for Montréal in 2020, the conference will be virtual. Co-sponsored by the **IEEE Signal Processing Society (SPS)**. Visit <https://2021.ieee-icas.org> for more info.



### Estimation in Li-Ion Batteries For Sustainable Energy: Challenges And Opportunities

Thursday, August 19, 10:00 PM to 11:00 PM, via Webex; **Free Registration required**

Battery Management Systems (BMSs) manage the charging and discharging of the battery, providing estimates of state-of-charge and health during its use to protect the battery from misuse, ensure safety, and longer duration. In this talk, VTS Distinguished Speaker **Simona Onori of Stanford University** will discuss **Stanford Energy Control Lab's** recent research on advanced BMS using control theory tools, electrochemistry, and hardware validation — specifically, state-of-health estimation using advanced observer design and its battery-in-the-loop validation. Hosted by the **NJ Coast Section joint AP/VT/EMC Societies chapter**. Visit <https://events.vtools.ieee.org/m/277171> for more info.

### EVOPro – The Professional Evolution of You

Wednesday, September 1, 1:00 PM to 4:00 PM, Online; **Free Registration required**

EVOPro will feature impactful keynote speakers and sessions that embrace innovation and fuel creativity. This professional-level event will expand your skill set and knowledge, while supplying useful insights from “Big Thinkers” in industry, to take your career to the next level. The keynote speaker will be **Ashley Stahl**, who switched careers from being a counter-terrorism professional to being a career coach. Hosted by IEEE-USA. Visit <https://events.vtools.ieee.org/m/270404> and <https://evoconference.org/session/evopro-1-sep-2021/> for more info.



[Continues Next Page]

## Upcoming Events [continued from page 3]

### Artificial Intelligence in Cyber Security: Government, Industry, and Academia Perspectives

Thursday, September 9, 12:00 PM to 1:00 PM, via Zoom; **Free Registration required**

The Maine Section's Joint [Communications Society](#) and [Computer Society](#) chapter and the [University of Maine](#) are co-hosting a panel discussion on the growing role of artificial intelligence in Cyber Security. [Dr. Julia Upton](#), Husson University Mathematics and Data Analytics Associate Professor and Maine Joint chapter Chair, and [Dr. Ali Abedi](#), UMaine Associate Vice President for Research and Professor of Electrical and Computer Engineering, will moderate a virtual panel that will include [Retired Rear Admiral Bill Leigher](#), FBI-Boston [Special Agent Scott McGaunn](#), 2021-2023 IEEE Computer Society Distinguished Visitor [Dr. Dan Shoemaker](#), and Principal Technology Liaison for [Phoenix Technologies Ltd.](#) [Dr. Dick Wilkins](#), a recently retired [Thomas College](#) Associate Professor of Computer Science and Cyber Security. For more info and to register, visit <https://events.vtools.ieee.org/m/277980>. Flip to page 8 to see the event flyer.



### Simulating the Performance of Ocean-Observing Imaging Payloads for Nanosatellites

Tuesday, September 9, 6:00 PM to 7:30 PM, via Zoom; **Free Registration required**

Consequences of climate change threaten to have substantial and irreversible negative effects on our oceans, making it crucial to quickly understand and quantify behavioral changes resulting from increased human impact. [Candence Brea Payne](#), a PhD Candidate in the [Space Telecommunications, Astronomy, and Radiation Laboratory](#) at MIT, will discuss how near-continuous, large-scale monitoring from space is revolutionizing methods for monitoring and forecasting ocean behavior. Hosted by the Boston Chapter of the [IEEE Geoscience and Remote Sensing Society \(GRSS\)](#). Visit <https://ieeeboston.org/event/simulating-the-performance-of-ocean-observing-imaging-payloads-for-nanosatellites/> for more info.

### IEEE Maine Section Executive Committee (ExCom) Meeting

Monday, September 13, 5:00 PM to 6:30 PM, via Zoom

All IEEE members are welcome to attend. E-mail [Ashanthi.Maxworth@ieee.org](mailto:Ashanthi.Maxworth@ieee.org) for agenda info, meeting ID, and passcode.

### Sustainable Electronics – From Dumped E-Waste to A Circular Economy: What Is Needed?

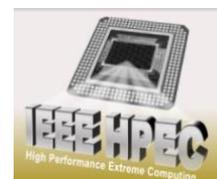
Thursday, September 16, 3:00 PM to 4:30 PM, via Webex; **Free Registration required**

[Professor Mervi Paulasto-Kröckel](#) of [Aalto University School of Electrical Engineering](#) in Finland will discuss the current state and challenges for electronics sustainability. Topics will include legislative proposals on waste and their impact on electronics design and the resulting lifecycles, including the EU's long-term targets on a circular economy. Currently applied reuse and recycling steps and methods for WEEE (Waste Electrical and Electronic Equipment) components and materials will be presented. The talk introduces the Life Cycle Assessment (LCA) methodology and presents two case studies for electronic devices. Environmental impacts of semiconductors and packaging are discussed and the needs for applying Ecodesign principals and recycling improvements to approach carbon neutrality will be highlighted. Hosted by the [Silicon Valley Area chapter of the IEEE Electronics Packaging Society](#). Visit <https://events.vtools.ieee.org/m/261691> for more info.

### 2021 IEEE High Performance Extreme Computing Virtual Conference

Tuesday, September 21 to Thursday, September 23, 2021, Online; see [registration page](#) for fee info

HPEC is the largest computing conference in New England and is the premier conference in the world on the convergence of High Performance and Embedded Computing. Our community is interested in computing hardware, software, systems, and applications where performance matters. We welcome experts and those new to the field. Hosted by [IEEE Boston Section](#). Visit <http://ieee-hpec.org/cfp.htm> for more info.



See the IEEE [Region 1 Calendar \(https://r1.ieee.org/calendar/\)](https://r1.ieee.org/calendar/) and IEEE vTools Search (<https://meetings.vtools.ieee.org/events/search>) for more events.

## Chair's Corner



By Dr. Ashanthi Maxworth

Is it just me or summer goes by very fast? As we are in the heart of summer, I hope you all are enjoying it and looking forward to the beautiful Maine fall.

It is a busy time of the year too. Our Section's Vice-Chair Alisha Chaney stepped down due to her work commitments, and [Julia Upton](#) agreed to be the interim Vice Chair to help us out. Julia is an associate professor of mathematics and data analytics at [Husson University](#) at Bangor Maine. I

want to thank both of them and welcome Julia to our Executive Committee.

For our members, we have number of events coming up (see the Events section of this newsletter). Also, on page 9, you will find synopses on our successful June events. I hope you had a chance to nominate your fellow members for [IEEE R1 awards](#). As always, please don't hesitate to contact us if you have any questions, comments and ideas via our contact form at: at <https://r1.ieee.org/maine/contact/>. Until next time, enjoy your summer and keep in touch. – Ashanthi

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## Acquiring Professional Development Hours

Maine requires licensed Professional Engineers to obtain at least 30 professional development hours (PDHs) during each two-year licensure period.

A list of what sort of courses and activities count toward the PDH requirement can be found at <https://www.maine.gov/professionalengineers/licensing/professional-development-hours>. Additional info on fulfilling the requirement can be found at <http://www.maine.gov/sos/cec/rules/02/322/322c003.docx>.

To supplement this information, University of Maine professor and then-member of the State Board of Licensure for Professionals [Knud E. Hermansen](#) published answers to frequently asked PDH questions in the October 2015 issue of Maine

PE News (Volume 15, Issue 2), which can be found [here](#) and [here](#).

Some of the events and webinars listed each month in the Beacon may be useful in this regard. However, there is no uniform practice on sending out acknowledgement of attendance after events, so you may need to proactively take additional steps.

If you have participated in an [IEEE-USA Webinar](#), you can earn PDHs from IEEE's Educational Activities Department by clicking [here](#) to request a certificate. For other events, consider contacting the host *in advance* to inquire about proof-of-attendance. It is awkward to find out after-the-fact that the host didn't make note of everyone who attended.

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## Social Media Update

This year, the Section started moving forward on launching a social media presence, which had been on the back burner for several years. The Social Media Committee fulfilled ExCom's requirement of preparing a formal written project assessment in April, and received permission to initiate the project

in May. However, that permission came with the caveat of finding a student volunteer to work on the project. The Committee looks forward to finding a student when classes resume in Fall. In the meantime, Doug, David, and Matt are doing some prep work to be ready when a student is available.

## Executive Committee Session

*Editor's synopsis based in-part on draft minutes*

On July 12, the IEEE Maine Section Executive Committee (ExCom) held their monthly session on Zoom.



At the beginning of the meeting, Interim

Section Chair **Ashanthi Maxworth** announced that **Alisha Chaney** has decided to step down as Section Vice-Chair due to her busy work schedule.

**(Ashanthi's Note:** In an email sent to Ashanthi on July 14 after the meeting, **Julia Upton** graciously agreed to serve as Interim Vice-Chair.)

Moving on, Newsletter Editor **David Klein** moved by motion to approve the minutes from the June ExCom meeting, which was seconded by Public Relations Chair **Ron Brown**. The minutes were approved unanimously.

Ashanthi proceeded to her Chairperson's Report. She will be reaching out to the universities in Maine outside of the University of Maine system in an effort to increase student and faculty participation. She specifically mentioned [Husson University](#) which does not have representation on the executive committee at the moment. **(Editor's Note:** having since signed on as Interim Vice-Chair, Julia is an Associate Professor at Husson.)

In addition, Ashanthi mentioned that she will be reaching out to New Hampshire, Boston, and New Brunswick (Canada) sections to increase collaborations between sections. **(Ashanthi's Note:** By the time Ashanthi, who is also Section Secretary, was preparing these minutes, she had reached out to these sections and is awaiting their responses.)

Treasurer **Shengen Chen** presented the Treasurer's Report, informing the committee of Maine Section's closing balance. He said that the new bank uses a different approach to calculate interest and that the interest balance is not as easily accessed as it was

with the previous bank. Since there had been no transactions in the last month, he approximated added interest based on the change in the balance.

Membership Development Chair **Rich Hilliard** brought the attention of the ExCom members to the annual report that needs to be completed by mid-August. Each section is supposed to present a membership development plan for the next year. We are supposed to include our expectations, membership development plan, recruiting and retention of members plan, what initiatives have been taken or are about to be taken, challenges, and what is the complete process.

Rich welcomed the entire Committee to send ideas and thoughts his way via, phone, e-mail, or Zoom. He suggested that if there was interest in doing so, he is open to holding an additional meeting with interested members prior to the next ExCom meeting in August.

Ashanthi encouraged the members to send their comments to Rich. If any comments need to be discussed, she would arrange a separate meeting.

The discussion moved on to outreach through social media. Since Social Media Chair **Doug Sprague** was unable to attend the meeting, David discussed progress on launching a Facebook page. The page has been created, but not yet been made publicly accessible. While waiting for launch, David said that he is looking for Maine EE-related photos for the banner. He added that Young Professionals Chair **Matt Dube** is working on finding a student volunteer to help with website development and outreach activities (as discussed at May's ExCom meeting). It is likely that a student volunteer will not be available until Fall semester.

David mentioned that Doug is looking into whether the unpublished Facebook page can opt-into Facebook's "new page experience." The Section's

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unpublished page was created as a “classic” page, and it was not clear whether the new format is available to us yet. One reason we might want to opt-in (if our page is eligible) is because supposedly the new format offers improved page-view metrics.

The meeting proceeded on to discussing technical activities. The Communications and Computer Science Societies joint chapter Chair **Julia Upton** reported that the chapter is planning a Cyber Security panel discussion for Thursday, September 9 at noon. The panel will be comprised of an FBI agent, a retired rear admiral, and a distinguished computer scientist. Julia will be the moderator. She said that in addition to sending out IEEE notices and flyers, the chapter will be sending out invitations via snail mail.

Responding to a question from Ron, Julia said that the rear admiral will be **Bill Leigher**, the former Director of Warfare Integration for Information Dominance for the U.S. Navy.

PES/IAS joint chapter Chair **Jesse Shank** asked whether the panel will discuss cybersecurity in utilities. Julia responded that each panelist is supposed to give an example on cybersecurity applications and utilities will be one of those. Ron added that an important aspect of cybersecurity is its importance in the healthcare industry.

Professional Activities Chair **Dick Wilkins** offered that he would be happy to volunteer to be a fourth panelist if Julia is willing. Dick has years of experience in computer science and cybersecurity, and mentioned his collaborations with industry and academia. Julia accepted Dick’s offer.

Moving on, Jesse said that the joint PES/IAS chapter has an event with [Aqua Ventus](#) on offshore wind

power in the works. He said that [the ReVision Energy virtual tour and Q&A session on June 24](#) was a huge success with an attendance of 50 members. The event was recorded and David will be adding a link to the recording to the Section newsletter.

Jesse said that the [talk on June 10](#) by [Jarlath McEntee](#) of [Ocean Renewable Power Company \(ORPC\)](#) had nearly 30 registrants, but only about half attended due to the iCal link providing registrants the wrong time. In the future, he recommended that everyone creating an event using IEEE’s online event tools double-check the times set by the “add event to calendar” feature.

Shengen mentioned that we can send the event recording to the registrants so that anyone who missed the event due to the error can view it. Jesse agreed and said that he was planning to do so.

The next agenda item was other business. David asked Jesse and Julia to send him paragraphs on the past and planned events with photos (if any) to be included in the newsletter.

David asked whether he should re-include the ExCom meetings in the newsletter’s events calendar. Dick Wilkins responded that it would be a good idea to include those since any member has the right to join the ExCom meetings if they are interested. David agreed and asked whether Zoom credentials should be included or someone would serve as contact. The consensus was that including a contact to receive meeting credentials would be better. Ashanthi volunteered her e-mail address.

In closing, Ashanthi said that the next meeting will be on August 2, unless we meet before then regarding the Section’s membership development plan.



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Moderated by Julia T. Upton  
IEEE Maine  
Communications/Computer  
Society Chapter Chair



Sponsored by IEEE  
Maine COM/CS Chapter

# UMaine Artificial Intelligence AI in Cyber Security

Thursday, September 9, 2021

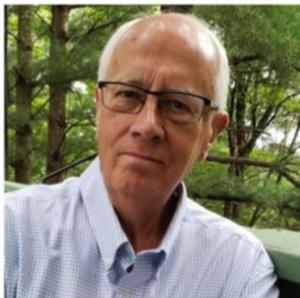
12:00 - 1:00 p.m. EST (live via Zoom)



**William Leigher**  
*Rear Admiral (Retired), United States Navy*



**Scott McGaunn**  
*Special Agent, Federal Bureau of  
Investigation-Boston*



**Daniel Shoemaker**  
*2021-2023 IEEE Computer Society  
Distinguished Visitor*



**Richard Wilkins**  
*Principle Technology Liaison for  
Phoenix Technologies Ltd.*



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## PES/IAS June Events Recap

On June 10, Maine Section's Power & Energy Society (PES)/Industry Applications Society (IAS) joint chapter hosted a presentation by Jarlath McEntee of Ocean Renewable Power Company (ORPC). He discussed their RivGen® Power System operating in Alaska, which is generating electricity from river currents and connects directly into existing remote community grids using smart-grid technology. If a video replay of the presentation becomes available, a link will be added to the Section's website.

On June 24, the PES/IAS joint chapter and Maine Section co-hosted a virtual tour of Revision Energy, followed by a live half-hour question-and-answer

session with the company's co-founder, Fortunat Mueller (PE). He leads the operational side of the company, overseeing design, engineering, and installation operations, and is also lead engineer on new product development. A video replay of the one-hour presentation is available at: <https://fast.wistia.com/embed/iframe/i4yxxvmsah>.



## Member Accolades

Congratulations to the IEEE Maine Section members who recently received patents or were published:

On June 21, in the Proceedings of the 2021 IEEE World AI IoT Congress, IEEE published "Epidemiological Spatiotemporal Data Exploration and Prediction." Maine Section Member **Sudarshan S. Chawathe** is the author.

**ABSTRACT:** This paper addresses epidemiological spatiotemporal datasets such as those reporting the number of cases of infectious diseases over time and by geographical location. It studies methods for exploratory data analysis and for prediction of future cases based on prior data. It emphasizes methods that provide explainable predictions, such as those based on rules and decision trees. These methods are studied in the context of a recently published dataset of weekly Chickenpox cases in Hungarian counties over a 10-year period. As noted in prior work, this dataset exhibits several features, such as seasonality and heteroskedasticity, that make the prediction task especially challenging. This paper describes some results of an experimental study of both the exploratory and predictive aspects.

On July 2, in IEEE Robotics and Automation Letters, IEEE published "Design and Validation of a

Smartphone-based Haptic Feedback System for Gait Training." Maine Section Member **Babak Hejrati** is a co-author.

**ABSTRACT:** This paper presents a novel vibrotactile haptic system controlled by a smartphone that can be used for gait training of older adults. Compared to previous works, the system's modularity as well as its smartphone-based controller and user interface can enhance its usability and promote regular gait training of users during their daily living. Given the prevalence of reduced stride length and speed in older adults, we developed a biomechanical data-driven approach to enable improving those outcomes via modifying their underlying surrogates. A subject study was performed by recruiting 12 young participants (19-39 years) to assess the efficacy of the haptic system and our approach based on biomechanical surrogates. It was found that the participants could significantly increase their thigh and shank extensions (i.e., the surrogates) via the feedback provided by our system, and those increases resulted in higher values of their stride length and walking speed. The results provide a clear proof-of-concept for the developed biomechanics-driven haptic system for gait training of older adults to potentially improve their mobility and living independence.

## IEEE-USA Awards

IEEE-USA is now seeking nominations for its annual awards and recognitions, given in one of three categories: professionalism, technical achievement, and literary contributions to public awareness and understanding of the engineering profession in the United States.



### Professionalism Awards

#### **The IEEE-USA Robert S. Walleigh Distinguished Contributions to Engineering Professionalism Award**

To honor members of the engineering profession for long-term dedicated effort and outstanding accomplishments in advancing the aims of IEEE professional activities in the United States.

#### **The IEEE-USA John Meredith Professional Service Award**

To recognize key individuals for outstanding IEEE-USA volunteer efforts and contributions.

#### **The IEEE-USA Award for Distinguished Public Service**

To honor individuals not currently in the practice of engineering for contributions to furthering the professional goals of IEEE in the United States.

#### **The IEEE-USA George F. McClure Citation of Honor**

To honor individuals who have made exemplary contributions toward achieving the aims of professional activities in the United States.

#### **The IEEE-USA Jim Watson Student Professional Awareness Achievement Award**

To recognize key individuals for their contributions to Student-Professional Awareness Activities in the United States.

#### **The IEEE-USA Entrepreneur Achievement Award for Leadership in Entrepreneurial Spirit**

To recognize a key individual who has been instrumental in furthering both entrepreneurial growth and spirit in the United States.

#### **The K-12 STEM Literacy Committee Educator-Engineer Partnership Award**

To recognize collaborative activities between K-12 teachers and technical professionals who are IEEE members. (This award [was won in 2014](#) by Bangor High School's Cary James and UMaine's Mohamed Musavi).

### Technical Award

#### **The IEEE-USA Harry Diamond Memorial Award**

To honor individuals for distinguished technical contributions in the field of electrotechnology while in U.S. Government Service.

### Literary Award

#### **The IEEE-USA Award for Distinguished Literary Contributions Furthering Public Understanding and the Advancement of the Engineering Profession**

To recognize outstanding journalistic or other efforts that contribute to the enhancement and expansion of the public understanding and the advancement of the engineering profession in the United States.

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For more details or to nominate a deserving colleague, visit: <https://ieeusa.org/volunteers/awards-recognition/>. **Nominations will be accepted through September 15, 2021.**

For questions, please contact Dr. Jason Hui, Region 1 Awards and Recognition Chair at [jason.k.hui@ieee.org](mailto:jason.k.hui@ieee.org).

If you would like assistance preparing a nomination, please [contact the Section's Awards Committee](#).

## Regional Calls for Papers and Proposals

### 2021 IEEE 5G World Forum

The 5G World Forum aims to bring experts from industry, academia, and research to exchange their vision as well as their achieved advances towards future networks of 5G beyond and encourage innovative cross-domain studies, research, early deployment and large-scale pilot showcases that address the challenges of future networks. Physical attendance is not expected nor required for authors and presenters. Hosted by [IEEE Montréal Section](#), [IEEE ComSoc](#), [IEEE Computer Society](#), and [IEEE Future Networks](#).

*Workshop and Special Session Proposal Submission Deadline: Saturday, July 31, 2021*

*Workshop and Special Session Papers Submission Deadline: Tuesday, August 31, 2021*

*Technical Paper Submission Deadline: Tuesday, August 31, 2021*

*Tutorial Proposal Submission Deadline: Tuesday, August 31, 2021*

*Conference: Wednesday, October 13 to Friday, October 15, Virtual with optional in-person in Montréal, QC*

Visit <https://ieeewf-5g.org> for more info.

### 2023 IEEE International Ultrasonics Symposium (IUS)

Present the latest developments in the field of ultrasonics, ferroelectrics, and frequency control. Hosted by [IEEE Montréal Section](#).

*Paper Submission Deadline: Saturday, April 1, 2023*

*Conference: Tuesday, September 5 to Friday, September 8, 2023*

Visit [https://conferences.ieee.org/conferences\\_events/conferences/conferencedetails/51837](https://conferences.ieee.org/conferences_events/conferences/conferencedetails/51837) for more info.

**Search IEEE's Call for Papers Database** of over 1,800 conferences for opportunities to submit abstracts and papers in your field of interest by visiting <https://publication-recommender.ieee.org/home>. Provides key data at a glance, including conference titles, locations, submission deadlines, and conference dates. This search tool can also be used to search over 190 periodicals for non-conference publishing opportunities.

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## Call for Articles and Events

The Beacon and Maine Section website are always looking for content. In particular:

**Events:** Please let us know about upcoming live engineering, science, and professional development events in Maine (preferably at least four weeks beforehand, although we will try to accommodate shorter notice).

**Articles:** We are interested in original technical, professional development, college-life, and Maine-interest articles. Original graphics and photographs are encouraged. Length is flexible.

**Patents and Publications:** Please let us know if you are presenting a paper at a conference, have recently been published in a peer-reviewed journal, or have recently received a U.S. Patent.

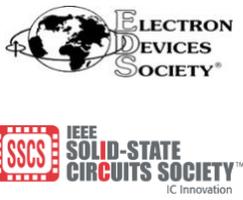
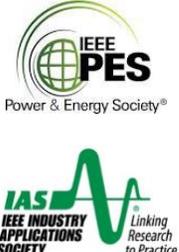
**Newsworthy Stories:** Do you know about something that might be of interest to IEEE Maine Section members that might have otherwise escaped their attention? If it is something that you've seen in media or in a press release, please tell us the source so that we may provide attribution.

**All submissions are subject to editorial review.**

Send submissions by e-mail to [IEEEMaineBeacon@gmail.com](mailto:IEEEMaineBeacon@gmail.com) or via our website's [Contact Page](#).

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## Where to find Us Online

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