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**Florida West
Coast Section**

The SunCoast Signal

The Institute of Electrical and Electronics Engineers, Inc.**Vol. 67, No. 7, July 2021**

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PE Corner

Art Nordlinger, PE, Senior Member**The Latest FBPE News**

Businesses of all kinds are beginning a return to pre-pandemic normalcy and the FBPE is no exception. The Board's staff have begun to return to the office, though in a staggered fashion. All staff continue to work part of the week remotely and not all staff are present in the office on any given day. Both FBPE and FEMC Board meetings continue to be held virtually for the time being. At this time remote Board meetings are expected to continue through the end of 2021.

Normally at this time I would be providing a legislative report, as the annual legislative session recently concluded. It would seem that the legislature had other things on their mind than new rules for engineers, or other state regulatory boards for that matter, since nothing of major consequence to the engineering community was passed this session. Naturally there were bills filed whose passage would have impacted the practice of engineering and other licensed groups, but none made it out of committee.

There is a recent, major announcement from the Department of Business and Professional Regulation, the regulatory body under which the FBPE and FEMC operate. Julie Brown, who was recently a member of the Florida Public Service Commission, was appointed Secretary of the DBPR by Governor DeSantis in February. Ms. Brown brings a wealth of knowledge and experience to her new position.

*Continued on Page 2***UPCOMING MEETINGS****EXCOM**

Tuesday, July 6, 2021

Google Meet

Register with vTools

<https://events.vtools.ieee.org/m/274381>

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Electron Devices Joint Chapter:** Jing Wang, jingw@usf.edu
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THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast Section. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due in electronic form by the end of day of the 1st Monday after the ExCom meeting, preceding the issue month. Correspondence to: Michael Mayor, 10006 Cross Creek Blvd., PMB 140, Tampa, FL 33647, michael.mayor@ieee.org, (484) 524-3264

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The executive director of the FBPE and I, as Chair of FEMC, had the opportunity to meet with her recently and share our goals for the engineering community. We welcome Ms. Brown look forward to working together with her and the DBPR to further the interests of PEs in Florida.

As I reported previously, the Fundamentals of Engineering exam and the Professional Engineers exams, administered by NCEES, are moving to an online format. The FE exam did so several years ago and the PE exams have been moving to online in a phased approach. The online exams are given at Pearson Vue Testing Centers and may be taken all year long (versus the previous twice-a-year format). The COVID pandemic has accelerated the move to the online format. The Electrical PE exams moved to online beginning in December 2020, ahead of previously announced schedules. You can see the administration status of individual area-of-practice exams at <https://ncees.org/engineering/pe/>.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trends in the profession, IEEE has seminars that

On Thursday, May 20th 2021 Dr. Jim Anderson, Chair of the IEEE FWCS Computer Society made a successful presentation:

"How To Do 3D Modeling For Fun And Profit"

So what would you make if you could? Just in case you had not noticed, 3D modeling and 3D printing. For just a little bit over \$100 you can buy a 3D printer. Great, now you've got a 3D printer, what are you going to print? If your life is anything like mine, you have 100's of things that you could print if only you knew how. Let's start with drawer handles. How about knobs for devices in your car? Replacement parts for all of the things that have either been broken or lost? Let's agree that if you could 3D print things, then you would be busy doing so. However, there is that stumbling block of just exactly how to create the things that you want to print. Who's got the software to do this and, even if we had it, who knows how to use it? A video of this seminar can be viewed here: <https://youtu.be/ekrr8nqd3Bs>



GRID EDGE TECHNOLOGY: TECO & EMERA TECHNOLOGIES PARTNER ON RESIDENTIAL IMPLEMENTATION OF THE BLOCK ENERGY SMART PLATFORM – LUNCH & LEARN

Date: Thursday, July 8, 2021
Time: 12:00PM – 1:00PM (EST/EDT) – Lunch & Learn
Speaker: Phil Zinck, M.Sc., PE, Senior Electrical Engineer, Emera/Tampa Electric
Location: Online – meeting invitation will be emailed to attendees prior to seminar – Please ensure your email is correct on signup page.
Cost: No Cost for this Seminar
CEH Credits: No CEH's provided for this lunch and learn. Florida provider #0003849.
RSVP: Online at: <https://events.vtools.ieee.org/m/269939>
Questions: Robert DeMelo: robert.demelo@ieee.org

Your local IEEE PES/IAS Chapter is offering this exciting Lunch and Learn:

Abstract: The emergence of microgrids with embedded energy sources ("prosumer") to provide increased reliability and resiliency in the supply of energy to customers is not a new concept. One of the challenges with these systems - in particular, where the energy source is "behind-the-meter rooftop PV" - is the strain it places on the business structure that regulators require utilities to work within as these types of PV systems continue to grow.

Additionally, the "typical" microgrid is an extension of the utility AC distribution network when interconnected to the grid (normal configuration) thus prone to the power quality and resiliency issues that come with the AC grid.

A novel microgrid concept has been developed that addresses these issues and provides additional benefits by utilizing DC as its distribution network, with all energy sources owned and operated by the utility. Tampa Electric has embarked on a Pilot Project to implement such a system. This presentation will walk through a general overview of this novel microgrid concept with a few of its key fea-

tures highlighted, the processes and challenges in the creation of this Pilot Project, and some early lessons learned.

Speaker: Phil is a Senior Member of the IEEE and is Incoming Chair for the Cigre Canada Executive Committee. Phil has a progressive career spanning 33 years with demonstrated experience and expertise in industrial and utility power system design, power system analysis, start-up and commissioning with emphasis on Protection and Control systems and schemes. He has successfully filled various major project contract management and Operations roles with power utilities and engineering consultants including engineering technical support, risk and interface management, QA/QC, site construction and commissioning lead. Most recently Phil was the Emera Contract Lead for the ABB HV_{DC} and HV_{AC} Stations as part of the 500 MW, +/-200 kV Maritime Link Project. Currently Phil is working for Emera Inc, managing the implementation of the first DC Renewable Microgrid into Tampa Electric's residential distribution network.



Building Effective Security for Distributed Energy Resources (DER)

- Date:** Friday, July 23rd, 2021
Time: 4:00PM – 6:00 PM (EST/EDT)
Speaker: Mariana Hentea, PhD, Consultant
Location: Online via Webex (to be shared only after you have a confirmed registration)
Cost: No Cost for this seminar
CEH Credits: No CEH's for this seminar
RSVP: Online at: <https://events.vtools.ieee.org/m/272810>
Questions: Robert DeMelo: robert.demelo@ieee.org

Your local IEEE PES/IAS Chapter has collaborated with IEEE SE Michigan Computer Society to offer the following online Seminar:

Abstract: Securing our energy grid is of the highest critical importance, as many recent events have demonstrated. In this session, Mariana Hentea will be introducing to energy professionals, engineers, etc., about the design, implementation, and maintenance of a security program for distributed energy resources (DERs), smart grid, and industrial control systems.

Anyone who is involved with DERs and provides security, should be up to date and strive to maintain current understanding of the specific requirements of industrial control systems and real-time constrained applications for power systems.

Dr. Hentea will touch upon many topics in this regard.

Speaker: Mariana Hentea earned her PhD and MS in Computer Science, MS in Computer Engineering, and BS in Electrical Engineering. Her research is focused on Smart Grid and DER systems, real-time systems security and performance, network security design and architecture, and use of AI techniques for information security management, security risk management, network management, and process control.

A member of IEEE Standards Association, she promotes Security and Privacy awareness to Engineers, managers, regulators, and consumers. She is a member of IEEE Smart Grid, IEEE Power & Energy Society, IEEE Computer Society, ISC2 and ISSA organizations. Dr. Hentea holds a CISSP certification from ISC2.

So You Are Not A Senior Member Yet??

The month of June was an extremely successful month because we received the responses of many candidates who after reading my article in The Signal and my Eligibility Notification Emails, became interested in being elevated to the rank of Senior Member and we were energized by this response. We had 54 IEEE Members Elevated to Senior Member Rank on this occasion. The demand was so great that we had to set up two separate Interview Sessions two weeks apart to provide our candidates with their interviews.

It just so happens that we have attracted the attention of Region 3 and we invited Sharlene Brown, 2020-2021, IEEE Region 3, Senior Member Elevation Coordinator to a presentation on the workings of our FWCS Senior Member Elevation process which was attended also by Erica Simmons, Jamaica Section Chair. We provided our best efforts and both, Sharlene and Erica were so pleased by

what they saw that Sharlene Brown decided to bring to our elevation interview meeting of June 5th, 20 additional candidates from the Young Professionals group of Region 3.

We processed the entire group with no difficulties although we were short of Senior Member Reference Providers but we were fortunate enough to have the support of Rob Schaaf and Justin Y. Shi from Region 2 and David Gonzalez and Gora Datta from Region 6 Senior Members who volunteered their Saturday time to supporting our effort to elevate our candidates and to whom our deepest appreciation is offered.

However, let us not forget our new Senior Member Candidates. Please join me in congratulating the following new Senior Members of IEEE and extending to them our congratulations and warmest wishes for a continued successful career under their Senior Member Rank:

Balasubramania, M. -YP
Biswas, Sumitra –YP
Bottoms, Stan
Cavanaugh, James
Chambless, Sally
Corson, Phillip
Davis, Roger
Driscoll, James – YP
Ealey, Benjamin – YP
Fadel, Samy, YP
Fineman, Ted P
Govind, Bal – YP

Haman, Abdelwahab – YP
Hanna, Jamers W
Harder, Rene - YP
Heredia, Julian
Irvin, Ronald -
Jayavelu, Nareshkumar, YP
Joseph, Aaron
Karki, Mahesh – YP
Koeneman, Mark
Kurapati, Shyam – YP

Lewis, Jason
Mazundar, Anirban, YP
Mitikiri, Yujendra – YP
Moriano, Pablo – YP
Mullins, Justin – YP
Qiu, Peng – YP
Samadidana, Saeid – YP
Sowada, Roger
Stephenson, Jack
Suresh, Srinivasan – YP
Wang, Min – YP
Wu, Yina – YP

Bruzina, Robert C
Fineman, Theodore
Fitzgerald, Guy
Lee, Virginia
Michael, Peter
Sargolzaei, Arman
Smith, Benjamin
Thomas, Giacomo

NOTE: Missing SM will appear in August Issue

It is important to mention that participation by R3 in our Senior Member program brought us the Life Members to request our assistance, so they wrote to me asking for support of the Life Members in their Senior Member Elevation process, so we have offered to assist them in their Senior Member advancement for Life Members who are interested.

The next meeting of the A&A Review Panel will be on August 8th 2021 and I will announce the Interview meeting dates later. Meantime, please continue to submit your requests for nomination which I will make sure they are processed right away.

Hermann Amaya SM
hermann.amaya.us@ieee.org

STEM: Science, Technology, Engineering and Mathematics

The STEM acronym was introduced in 2001 by scientific administrators at the U.S. National Science Foundation (NSF).

The organization previously used the acronym SMET when referring to the career fields in those disciplines or a curriculum that integrated knowledge and skills from those fields. In 2001, however, American biologist Judith Ramaley, then assistant director of education and human resources at NSF, rearranged the words to form the STEM acronym. Since then, STEM-focused curriculum has been extended to many countries beyond the United States, with programs developed in places such as Australia, China, France, South Korea, Taiwan, and the UK.

STEM Development in the United States

In the early 2000s in the United States, the disciplines of science, technology, engineering, and mathematics became increasingly integrated following the publication of several key reports. In particular, *Rising Above the Gathering Storm* (2005), a report of the U.S. National Academies of Science, Engineering, and Medicine, emphasized the links between prosperity, knowledge-intensive jobs dependent on science and technology, and continued innovation to address societal problems. U.S. students were not achieving in the STEM disciplines at the same rate as students in other countries. The report predicted dire consequences if the country could not compete in the global economy as the result of a poorly prepared workforce. Thus, attention was focused on science, mathematics, and technology research; on economic policy; and on education. Those areas were seen as being crucial to maintaining U.S. prosperity.

Findings of international studies such as TIMSS (Trends in International Mathematics and Science Study), a periodic international comparison of mathematics and science knowledge of fourth and eighth graders, and PISA (Programme for International Student Assessment), a triennial assessment of knowledge and skills of 15-year-olds, reinforced concerns in the United States. PISA 2006 results indicated that the United States had a comparatively large proportion of underperforming students and that the country ranked 21st (in a panel of 30 countries) on assessments of scientific competency and knowledge.

The international comparisons fueled discussion of U.S. education and workforce needs. A bipartisan congressional STEM Education Caucus was formed, noting:

While the goal in the United States is a prepared STEM workforce, the challenge is in determining the most-strategic expenditure of funds that will result in the greatest impact on the preparation of students to have success in STEM fields. It is necessary, therefore, to determine the shortcomings of traditional programs to ensure that new STEM-focused initiatives are intentionally planned.

A number of studies were conducted to reveal the needs of school systems and guide the development of appropriately targeted solutions. Concerned that there was no standard definition of STEM, the Claude Worthington Benedum Foundation (a philanthropic organization based in southwestern Pennsylvania) commissioned a study to determine whether proposed initiatives aligned with educator needs. The study, which was administered jointly by Carnegie Mellon University (CMU) and the Intermediate Unit 1 (IU1) Center for STEM Education, noted that U.S. educators were unsure of the implications of STEM, particularly when scientific and technological literacy of all students was the goal. Educators lacked in-depth knowledge of STEM careers, and, as a consequence, they were not prepared to guide students to those fields.

The findings from several studies on educational practices encouraged U.S. state governors to seek methods to lead their states toward the goal of graduating every student from high school with essential STEM knowledge and competencies to succeed in postsecondary education and work. Six states received grants from the National Governors Association to pursue three key strategies: (1) to align state K-12 (kindergarten through 12th grade) standards, assessments, and requirements with postsecondary and workforce expectations; (2) to examine and increase each state's internal capacity to improve teaching and learning, including the continued development of data systems and new models to increase the quality of the K-12 STEM teaching force; and (3) to identify best practices in STEM education and bring them to scale, including specialized schools, effective curricula, and standards for Career and Technical Education (CTE) that would prepare students for STEM-related occupations.

See STEM Programs at the University of South Florida (USF):

<https://www.usf.edu/education/areas-of-study/middle-grades-stem/programs/>

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July 2021 - Calendar of Events <i>(For more information see Page 1 in this Signal)</i>						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
		*EXCOM Google Meet		*Grid Edge Technology		
11	12	13	14	15	16	17
	*Signal Inputs Due					
18	19	20	21	22	23	24
					*Building Effective...	
25	26	27	28	29	30	31