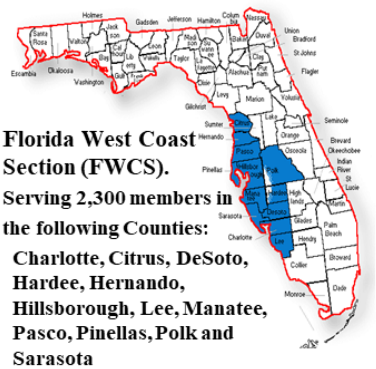


Florida West Coast Section (FWCS). Serving 2,300 members in the following Counties:
Charlotte, Citrus, DeSoto, Hardee, Hernando, Hillsborough, Lee, Manatee, Pasco, Pinellas, Polk and Sarasota

IEEE
Advancing Technology for Humanity

Florida West Coast Section (FWCS)
Please Check the Website Often for UPCOMING EVENTS (Front Page Right Column)
https://r3.ieee.org/fwc/

The SunCoast Signal

The Institute of Electrical and Electronics Engineers, Inc.

Inside the SunCoast Signal

Next ExCom Meeting
Tuesday, March 1st, 2022
Google Meet
Register with vTools
https://events.vtools.ieee.org/m/303463

PE Corner
Art Nordlinger, PE, Senior Member
Renewal Check List

Licensure renewal begins in November for Professional Engineers licensed in Florida. Now is the time to make sure you are prepared for renewal. Here is a short checklist to help you avoid discovering at the last minute that you have a problem.

Continuing Education: All Professional Engineers licensed in Florida must complete 18 hours of continuing education each renewal period. The Board has already received several questions regarding whether they will waive continuing-education requirements due to the COVID-19 pandemic and the cancellation of numerous industry conferences where many PEs earn their continuing education hours. This was discussed by the Board where it was noted that many conferences and live seminars now have virtual options, and that there is a substantial amount of online continuing education content available. As a result, the Board concluded that they would not consider waiving the continuing education requirements. The deadline for completing the credits is Feb. 28, 2023 so there is still ample time to complete the required hours.

On a related note, several PEs audited in the last renewal cycle were found to be out of compliance with the continuing education requirements because the Rules & Laws course that they took was not administered by a continuing education provider approved to present that content by the FBPE. Be sure that the Rules & Laws course that you take meets the Florida continuing education requirements.

Continued on Page 2

PE Corner Cont'd from Page 1

Board emails: If you aren't receiving the FBPE newsletter emails, you may have unsubscribed to FBPE emails. That means you won't receive notifications and reminders regarding renewing your PE license. You can re-subscribe to FBPE emails using the *Re-subscribe to FBPE Emails* form on the Board's website.

License status: Check the status of your PE license at myfloridalicense.com. If it is delinquent, you must pay the renewal fee from the previous renewal period and a delinquent fee before you can renew for the next period. If it is null and void, you will need to have your license reinstated. Information and forms for this are available on the Board's website.

Check your password: Make sure that you can log into your account at myfloridalicense.com. As in past years, you will be renewing your license through this portal provided by the Florida Department of Business and Professional Regulation.

Check your email address and contact information: If you need to update your contact information with the Board, please fill out and submit the online *Change Contact Information* form on the Board's website.

Early-bird renewal: Watch for details on how you can save by renewing early once the renewal period begins in November. Information will be posted on the Board's website and included in the FBPE newsletter.

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 will meet your needs. With the renewal deadline only 12 months away seminar demand is high. Sign up now!

THE SUNCOAST SIGNAL, 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 1st Tuesday of the month, i.e. the ExCom meeting, preceding the issue month. Address all correspondence to: Michael Mayor
michael.mayor@ieee.org, (484) 524-3264

IEEE PES Power & Energy Society®

IEEE Florida West Coast Section

IEEE IAS IEEE INDUSTRY APPLICATIONS SOCIETY

Tour - FPL Manatee 400 MW Energy Storage Facility

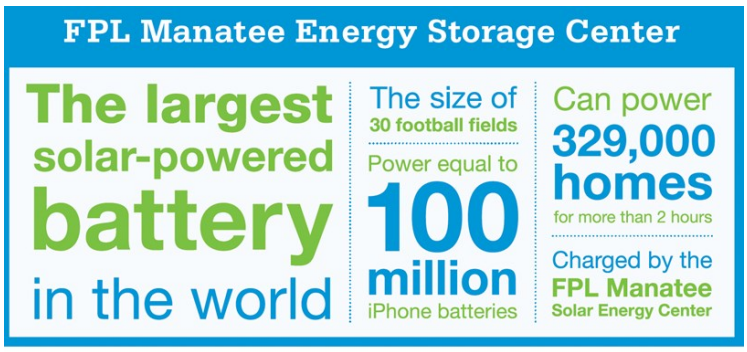
Date: Friday, April 22, 2022
Time (EST): Morning/AM Session – 8:30am – 11:30am OR
Afternoon/PM Session – 1:30pm – 4:30 pm
Speaker: Florida Power & Light (FPL) Storage Facility Site Engineers
Location: FPL Manatee Energy Storage Facility - 19052 FL-62, Parrish, FL 34219
Cost: $30 Members/$60 Non-Members/$10 Students
CEU Credits: No CEU's provided for this event. Florida provider #0003849.
RSVP: https://events.vtools.ieee.org/m/300997 - Morning/AM Session
https://events.vtools.ieee.org/m/301429 - Afternoon/PM Session
ONLY REGISTER FOR ONE (1) SESSION
Seats are limited to 15 attendees per session
Questions: Robert DeMelo - robert.demelo@ieee.org

The IEEE Florida West Coast Section PES/IAS, in collaboration with Florida Power & Light (FPL), is bringing to the IEEE community this awesome tour of the world's largest solar-powered battery storage facility – FPL's Manatee Energy Storage Center in Parrish Florida.

This tour event will consist of 1 to 1.5 hours of classroom instruction going over the site by engineers intimate with the project, covering various engineering and construction topics related to the site. The second part of the event will be a walkdown of the energy storage facility where FPL engineers will be going through the yard, opening an isolated container to go over the battery modules, answer questions, etc.

This should be a really great event and the first in-person tour for the IEEE FWCS PES/IAS since the start of the pandemic in early 2020. Mark your calendars and register for this exciting event.

Please be mindful of required personal protective equipment (PPE). The PPE requirements for the site is long pants, boots, cotton long-sleeve shirt, and hardhat (hardhats will be provided by FPL). Please also be cognizant of the start time when you register as we will be starting promptly on time. If you are not a morning person or are driving a distance, please consider registering for the afternoon/PM session.



PES/IAS ExCom Meeting
Village Inn, 215 Dale Mabry Hwy, Tampa, FL 33609
Saturday, March 19, 8:00 am – 9:00 am

SO YOU ARE NOT A SENIOR MEMBER YET

Hermann Amaya, Founder and Chair
Senior Member Elevation Committee

Greetings to all Members and welcome to the 2022 year of Senior Elevations for FWCS-SMEC.

We have started the new session of the Senior Member Elevation process with a good step by holding the first Candidate Interviews for 2021 on January 29th leading to the first A&A Review Panel on February 19th and we will follow the Admissions & Advancement Committee Schedule for this year as indicated below. In these interviews we had the participation of 23 Senior Member Candidates ranging from Region 3 Life Members, Florida West Coast members.

It is very important is to mention that we had the participation of the Piedmont Section with the presence of Clemson University who became interested in our Senior Member Elevation Program and wanted to have some of their members elevated to the rank by making use of our program. So, we provided training in advance to the actual Interviews and showed them how to conduct these meetings and carry forward the elevation process for them to become independent and perform their Senior Member Elevations. If your Section is interested in setting up their own Senior Member Elevation Program, they may contact me and we will discuss the way we could be of help to do this.

We are now preparing for the next session of the Interview meetings to take place on March 19th 2022 leading to the next A&A Review Panel of April 23rd 2022.

I will be send out the Eligibility Notifications letting those Members that are eligible to advance to the rank of Senior Member that they must get their resume ready in accordance to the established format and send it to me right away so I can schedule you for Interview Meeting and initiate their Nomination a process where Senior Member Elevation Committee of FWCS will ease the difficulty of advancement by providing a Nominator and two additional Reference Providers for each candidate.

The Admissions and Advancement Committee Review Panel meets only six times a year and they have already issued their schedule for 2022, and the A&A Review Panel will meet on February 19th, April 23rd, June 25th, August 13th, October 1st and November 19th to review the applications of all IEEE Candidates that request advancement and I hope yours will be there. The Senior member Candidate Interviews will be programmed based on these dates and will be published in the next issue of the Signal

We wish to extend our appreciation to everyone for your contributions to the Elevation Process. To the Senior Member Reference Providers Team goes our recognition and thanks for without their support our program could not serve the members the way if has done it to this date.

IEEE R3 FWCS aims to kickstart a new program that brings student engineers to interview and subsequently write about the lives and accomplishments of valued members of the community.

For the first entry of many to come (one every month), Grace Perkins (a Junior at the University of South Florida) writes about Tom Beckwith.

Mr. Beckwith attended and graduated from the Case Institute of Technology located in Cleveland, Ohio in 1969. From there, he started a company in the basement of his house with his father, interested in the newly developed technologies related to controls for transformers. (Technology which involved using operational amplifiers and filters to measure waveforms and raise and lower voltages automatically.) It was when his company moved to Florida that they found themselves in the center of the electric power industry working with military grade electronics (avionics), boasting the best quality assurance methods to date.

From 1973 onwards, Mr. Beckwith found his drive when he started designing and developing systems for power plants all over the world. His technology, multifunction protective relay systems, would retrieve phase angle and frequency information at control plants so when engineers would synchronize the signals to remote computers, they could do so with the same reach and efficiency as if they were in person. His designs featured in plants from Utah to Brazil.

Why was this technology so important and groundbreaking? The phase-angle-telemetry signal that was sent and delivered in some cases traveled up two miles across terrain that was remote and difficult to reach in person. This signal would take the sine waves out of the PTs at subsystems, and frequency shift-key a radio transmitter to drive devices in powerplants like voltmeters and frequency meters. In the case of a malfunction, the protective relay system could measure and identify what was wrong at the remote site and make decisions to support the engineers, should they decide that a site needed to be shut down temporarily. Oscillography and microprocessor relays report the progress of the fault onsite and allow the user to track the waveforms timewise using computer algorithms, which are rapid and routed through a digital signal processor and an I/O microprocessor. Then, analysis of the incident and subsequent solutions can occur.

This technology is important to prevent the damage of huge generators. Mr. Beckwith asserts that his design was better than competitors because they were newer, more stable, had all the up-and-coming processing and ancillary component capabilities, and offered a transient protective environment. “The key is to have technology survive reliably”, he says. His company manufactured quality into the process.

Mr. Beckwith believes his company succeeded, despite certain economic struggles of the time, because they switched to digital and synchronizing equipment when the previous technologies became somewhat obsolete. He ensured the sales, design, manufacturing, and testing teams were all in the same room and have a hand in the design process for the new systems. This created synergy between workers and encouraged more innovation than was previously observed. It also accelerated the design process through the creation of a storyline that all the team members could easily follow.

Question: Has IEEE added value to your career?

Mr. Beckwith asserts that throughout his career, IEEE has supported him. Since 1972, he has attended the IEEE power system relay committee. This provided him the opportunity to meet power icons in the industry and learn from them, even when he was young and had less acknowledgment within the industry.

Additionally, this committee provided him with connections and allowed everyone’s designs to be tuned to the future of the industry. He asserts that this group formed tremendous relationships and became like family; they became like colleagues despite not formally working at the same companies. As a young engineer, he learned a lot from engineers that he otherwise wouldn’t have met, which allowed for his multiple contributions to advancements in the industry.

Question: Do you have a prediction about the future of your field?

Mr. Beckwith has noticed that the electric power industry has become politically focused. Renewable energy is an excellent idea, but he emphasizes that it has limitations and issues. He encourages young engineers to acknowledge that wind and solar require storage solutions to fill environmental gaps.

Question: Do you have a recommendation for up-and-coming engineers?

“Find a field that you really love”, he emphasizes. There are so many options in engineering; meet people that are working and see the kind of people that they are. Do you relate to them? When you are initially choosing a field, check the stability of it. The electrical power industry has tremendous growth and potential, including expansions in ‘clean’ energy as mentioned earlier. Mr. Beckwith encourages young engineers to get a job, work hard, and learn from experienced engineers and their own mistakes. He concludes by saying, “The beauty of engineering is that you get to contribute, and that’s how you know you’ve really made it.”

Lignell Awards: Outstanding Teacher Recognition Program

For some years now the IEEE Florida West Coast Section (FWCS) has sponsored the Lignell Award Outstanding Teacher Recognition Program to recognize and honor outstanding contributions by Public High School teachers to pre-college education in Mathematics and/or Science pre-college education This program is open to all individuals teaching classes in Mathematics and/or Science in the public high schools during the current school year.

Adam Ritzenthaler is a chemistry and engineering teacher at Alonso High School in western Hillsborough County. Adam earned his BS in environmental science with minors in chemistry and engineering in 2001 from Wesley College in Dover, Delaware. After working in several science related positions Adam began his teaching career in 2004 at Mountain Ridge High School in Phoenix, Arizona. After finding his love of teaching he earned his M.Ed. in Administration in 2006 and continued his teaching career at Leesburg High School in Leesburg, Fl as well as Chamberlain High School in Tampa before joining the science team at Alonso in 2013. Adam's teaching philosophy is simple: to get students excited about science and engineering and to encourage and guide them to pursue these fields as careers.

Danielle G. Smith is a Tampa native and former student of Hillsborough County Public Schools. Prior to serving as an educator, she studied Biology and Chemistry at Florida A&M University in Tallahassee, FL. There she found her passion for educating young scientists through tutoring and mentoring students in various volunteer organizations catering to underserved youth. Initially, teaching was a role purposed to fill the gap between her college education and the pursuit of a career in medicine, however she quickly realized that education is where she could exercise her passion best. Working with the students at C. Leon King High school for the past two years has been one of Ms. Smith's greatest pleasures in life. Driven by seeing her students succeed, she hopes to continue inspiring young minds for many years to come.

Science, Technology, Engineering and Mathematics (STEM)
A brief history

The field and curriculum of STEM is centered on education in the disciplines of Science, Technology, Engineering and Mathematics.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 United Kingdom.

Development of STEM 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.

STEM education

STEM education experiences are made available in a variety of settings by schools and community organizations as a way of fostering a diverse STEM workforce. In the 2012 report Science, Technology, Engineering and Mathematics (STEM) Education: A Primer, STEM education was defined as: *Teaching and learning in the field of Science, Technology, Engineering and mathematics.*

It typically includes educational activities across all grade levels—from pre-school to post-doctorate—in both formal (e.g., classrooms) and informal (e.g., afterschool programs) settings.

For more information on the University of South Florida (USF) STEM Programs visit:

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

IEEE FWCS
P. O. Box 2610
Valrico, FL 33595-2610

Florida West Coast Section Tampa

NON-PROFIT ORG
U.S. POSTAGE PAID
TAMPA, FL. PERMIT
No. 1197

DATE SENSITIVE MATERIAL DO NOT DELAY

Change of address? IEEE Web Contact Update: http://www.ieee.org/membership/coa.html
Or send address changes including your name, IEEE Member number and all pertinent information to:
IEEE, 445 Hoes Lane, P. O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333
Or Fax your address changes to (732) 562-5445

March 2022 - Calendar of Events *(For more information see "Inside the SunCoast Signal" → Page 1)*

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
		*ExCom →Page 1				
6	7	8	9	10	11	12
	*Signal Inputs Due End of Day					
13	14	15	16	17	18	19
						*PES/IAS ExCom →Page 7
20	21	22	23	24	25	26
27	28	29	30	31		