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Pasco, Pinellas, Polk and  
Sarasota



# The SunCoast Signal

The Institute of Electrical and Electronics Engineers, Inc.

## Florida West Coast Section (FWCS)

Please Check the Website  
Often for **UPCOMING EVENTS**  
(Front Page Right Column)

<https://r3.ieee.org/fwc/>

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## FWCS ELECTION RESULTS - 2022

*The following Individuals were elected for  
the 2023 - 2024 period*

**Chair:** Mr. Michael Mayor, MSE, PE  
**Vice Chair:** Mr. Andrew Seely  
**Secretary:** Dr. Chung Seop Jeong  
**Treasurer:** Mr. Claude Pitts

### PE Corner

Art Nordlinger, PE, Life Senior Member

## Inactive and Retired License Status Explained

It is my hope that all Professional Engineers licensed in Florida will renew their licenses by Feb. 28, 2023. However, some licensees, particularly those who are retired or are no longer using their licenses, may be considering putting their licenses in "inactive" or "retired" status. Before taking that step it is important that the licensee understand the similarities and differences between these license statuses, and the process for status change.

The rules for inactive status are primarily found in Rule 61G15-22.002, Florida Administrative Code, *Licensure Change of Status*. Information and forms may be found on the Board's website at [fbpe.org/licensure/other-forms/](http://fbpe.org/licensure/other-forms/).

A licensee may place their license in inactive status by completing the *Application To change Status from Active to Inactive*, and remitting the fee specified by Rule 61G12-24.001, F.A.C. The Change of Status Fee (Active/Inactive) is currently \$93.75 plus a \$5 mandatory unlicensed activity fee.

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**Next ExCom Meeting**  
**Tuesday, January 3rd, 2023**  
**Google Meet**  
**Register with vTools**

<https://events.vtools.ieee.org/m/338009>

# IEEE FLORIDA WEST COAST SECTION EXECUTIVE COMMITTEE (ExCom)

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**RAS Robotics & Automation Chapter:** Sean Denny,  
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**SP/COMM Signal Processing / Communications Joint Chapter:**  
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**LIFE MEMBER Affinity Group:** Chair Richard Beatie, PE,  
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**STUDENT BRANCH MENTOR:** Vacant

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 USF Power & Energy / Industry Applications  
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## FLORIDA POLYTECHNIC UNIVERSITY / Student Chapter

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**WEB PAGE:** <https://r3.ieee.org/fwc/>

## PE Corner - Continued from Page 1

To maintain a license in inactive status, the licensee must continue to pay the renewal fee each biennium but does not need to take the continuing education hours. Naturally, an engineer may not practice engineering while their license is inactive.

An inactive license may be reactivated by completing the *Application for Change of Status From Inactive to Active*, and submitting the appropriate fee, which is the same as the renewal fee: \$93.75 plus a \$5 unlicensed activity fee. The licensee must demonstrate that they have completed the required 18 hours of continuing education.

Rules for retired status are found in Section 61G15-22.0017, F.A.C., *Application for Retired Status*. Information and the form may be found on the Board's website at the same location noted above. There is no fee associated with this status change. As with inactive status, once in retired status the licensee may no longer practice engineering.

They are allowed to use the designation "Professional Engineer, Retired" or "P.E., Retired." It is important to understand that once a license is placed in retired status it may never be reactivated. If that licensee wanted to again practice engineering they would have to reapply for licensure.

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**THE SUNCOAST SIGNAL**, published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). **Please Note that the SUNCOAST SIGNAL is sent each month to ACTIVE members of the IEEE Florida West Coast Section. So to continue receiving the SIGNAL please keep your membership Active, meaning, renew your membership when it becomes due.** 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.

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## Complementing Silicon Technologies with Graphene for More-Than-Moore Applications

The Florida West Coast Chapter of the Engineering in Medicine & Biology Society is pleased to host Professor Francesca Iacopi; an IEEE Distinguished Lecturer. Please mark your calendar for January 27, 2023.

**Date:** Friday, January 27<sup>th</sup>, 2023

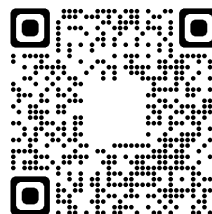
**Time:** TBD

**Location:** USF Campus, Tampa, FL (Room TBD)

Even though the time and room are not confirmed yet, we wanted to get the word out about this upcoming lecture.

Please reference the vTools meeting page (Scan the QR code) for more up to date information and to register: <https://events.vtools.ieee.org/m/337471>

**Note:** *There will be a Tour of the New USF Research Park Building*



Professor Iacopi will discuss her work in the area of epitaxial graphene on silicon carbide on silicon technology and some of its most promising applications. Harnessing graphene's properties on a silicon platform could deliver a broad range of novel miniaturized and in-situ reconfigurable functionalities. Key capabilities for nano-optics and metasurfaces in the MIR are specifically unlocked by the graphene/silicon carbide combination.

Her recent work demonstrated that the sheet resistance of epitaxial graphene on 3C-SiC on silicon is comparable to that of epitaxial graphene on SiC wafers, despite substantially smaller grains. Also, that the control of the graphene interfaces, particularly when integrated, can be a more important factor than achieving large grain sizes. Additionally, that well-engineered defects in graphene are preferable to defect-free graphene for most electrochemical applications, including biosensing. Promising examples of application of this technology in the More-than-Moore domain include integrated energy storage, MIR sensing and detection, and sensors for electro-encephalography for brain-computer interfaces.

Professor Francesca Iacopi has over 20 years' industrial and academic research expertise in semiconductor technologies, with 160 peer-

reviewed publications and 10 granted US patents, spanning interconnects, CMOS devices and packaging. Her research focuses on the translation of basic scientific advances in nanomaterials and novel device concepts into implementable integrated technologies. She is known for her seminal work on the integration of porous dielectrics in on-chip interconnects, and for the invention of the alloy-mediated epitaxial graphene platform on SiC/Si pseudo-substrates. She was recipient of an MRS Gold Graduate Student Award (2003), an Australian Research Council Future Fellowship (2012), and a Global Innovation Award in Washington DC (2014) and was listed among the most innovative engineers by Engineers Australia (2018).

Francesca is a Fellow of the Institution of Engineers Australia, an IEEE EDS Distinguished Lecturer and serves regularly in technical and strategic committees for IEEE and MRS. She is an Elected Member to the IEEE EDS Board of Governors (2021) and serves in the Editorial Advisory Board for ACS Applied Nanomaterials, the Journal of Electronic Materials (Springer), and the IEEE The Institute magazine. She leads the Integrated Nanosystems Lab, in the Faculty of Engineering and IT, University of Technology Sydney. She is an Associate Investigator of the Centre of Excellence in Low-Energy Electronics Technologies (FLEET) and a Chief Investigator of the CoE in Transformative Meta-Optical Systems (TMOS), funded by the Australian Research Council.

**FWCS EMBS Chapter - LabCorp Tour.**

Have you ever wondered what happens to the samples that were taken when your doctor takes a sample for culture or prescribes a blood test, like a CBC-Complete Blood Count, Blood Glucose, or Blood Enzyme tests?

On Wednesday November 16<sup>th</sup> 2022, the Florida West coast Chapter of the Engineering in

Medicine and Biology Society toured the LabCorp facility in Tampa. The tour was well received by the members that attended and we were able to tour the various lab areas to see the high degree of automation that is employed by the facility. The Tampa facility processes over 45,000 samples on a daily .

**John West EMBS Vice Chair, FWCS IEEE**

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***PE Corner - Continued from Page 2***

An application for retired status must be approved by the Board and must be submitted at least 30 days prior to the Board meeting at which it is to be considered. FBPE will approve the retired status provided that the licensee has no pending complaints against their Florida license or any PE license held in another state. This is an important qualifier! In a recent discipline case before the Board, the engineer requested that the case be dismissed and that their license be retired.

The Board responded that under the rules, this path is not allowed, I'm sure to the engineer's chagrin.

There seems to be a misconception that simply not renewing a license will allow it to be placed in inactive or retired status. This is incorrect and may result in some unexpected consequences. If a license is not renewed then it automatically becomes

"delinquent." A delinquent license becomes "null and void" at the next renewal if the situation is not rectified.

In summary, those considering not renewing their license should carefully review the rules regarding inactive and retired status so that they can make an informed decision about which route to take.

They should also understand the consequences of not taking action at renewal time. If you have questions, please contact the Board office.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trend in the profession, IEEE has seminars that will meet your needs. And for the PEs, don't forget that the next renewal is only 2 months away. Better start earning those CEHs now!

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**PES/IAS Planning Meeting**

**January 26, 8:00 am – 9:00 am**

**Village Inn, 215 N Dale Mabry Hwy, TAMPA, Florida, United States, 33609**

**Contact/Questions: Robert Demelo, [robert.demelo@ieee.org](mailto:robert.demelo@ieee.org)**

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**Senior Member Roundup**

**January 28, 2023 - 12pm - 4pm**

**On-Line**

**Contact / Questions: [andrew.seely@ieee.org](mailto:andrew.seely@ieee.org)**

**[hermann.amaya.us@ieee.org](mailto:hermann.amaya.us@ieee.org)**



## An Interview with a Lead Ride Control Engineer at the Walt Disney Company

by Raja Ijlal Sultan

Tina M. Haley has been an IEEE Member for over 20 years and even served as the Vice President of the IEEE society on a collegiate level at the University of Central Florida. Currently, Ms. Haley is working at The Walt Disney Company, Disney Parks Experiences, and Products, where she has served as a Lead Ride Control Engineer for various attractions such as the Millennium Falcon Smugglers Run and Rock N Roller Coaster. Ms. Haley specializes in Ride Philosophy and Design; Ride Installation, Commissioning and Testing; Microelectronic Manufacturing, and Semiconductor R&D. The interview explored the professional life of Ms. Haley, conducted and written by Raja Ijlal Sultan, who is a second-year Computer Science student at the University of South Florida.

Ms. Haley graduated from the University of Central Florida with a bachelor's in Electrical Engineering in 2000 and later went on to pursue her masters in the same field, graduating with a MSEE in 2002. Although Ms. Haley had an early interest in Marine Biology, her interest in designing rides led her on the path to Electrical Engineering.

Ms. Haley's first interaction regarding Walt Disney, the person from which the company started, took place in 3rd grade when she decided to write a book report on Walter Elias Disney. From an early age, Ms. Haley wanted to work at The Walt Disney Company, and it was her perseverance that enabled her to achieve her goal. In 2007, Disney hired Ms. Haley and she has enjoyed a series of progressively larger projects and responsibilities. The attractions that she has touched are too lengthy to list and have spanned all parks (Magic Kingdom, Epcot, Hollywood Studios, Animal Kingdom, Disney Quest).

Ms. Haley's main scope of work is to design, construct, and test to ensure design requirements and safety. She emphasized the seriousness of "no room for error" by pointing out how she is not only "manufacturing smiles", but also has to account for the strictest safety precautions.

According to Ms. Haley IEEE has served as a tool to help her stay connected with her fellow engineering peers. She said that IEEE has helped her keep

in touch with new and emerging technologies in different sectors, allowing her to know "what's on the horizon". She believes the IEEE network is one that helps provide visibility and meaningful connections. Ms. Haley is also a proud member of the IEEE Women in Engineering.

Moreover, Ms. Haley believes that the future is bright for all sorts of attractions, to bring families together and create treasured memories.

### LESSONS LEARNED/ADVICE:

Ms. Haley believes that to be successful, one must be willing to do well beyond average. After having managed over 40 interns, through the years, she said the ones that were invited to stay longer past their internship were the students that took the initiative. It was the students who did not let the fear of failure hinder their learning and growing process; as Ms. Haley used the common quote, "Feel the fear and do it anyway." She expects engineers to ask questions, build relationships, and, most importantly, take ownership of their actions in order to be successful.





## Tour – Amalie Arena IEEE Life Members and Power & Energy Society Home of the Tampa Bay Lightning

**Date:** Friday, January 20, 2023

**Time (EST):** 9 am – noon

**Speaker:** Mr. Steve Butler – Director of Engineering at Vinik Sports Group

**Location:** Amalie Arena - 401 Channelside Dr, Tampa, FL 33602

**Cost:** \$20 Members/\$40 Non-Members/\$10 Students

**CEH Credits:** No CEH's provided for this event.

**RSVP:** <https://events.vtools.ieee.org/m/333487>

\*\*\*Seats are limited to 20 attendees\*\*\*

**Questions:** Richard Beatie - [r.beatie@ieee.org](mailto:r.beatie@ieee.org)

Kayla Allemang - [kallemang@ieee.org](mailto:kallemang@ieee.org)

The IEEE Florida West Coast Section Life Members Affinity Group (LMAG) and Power & Energy Society/Industry Applications Society (PES/IAS), in collaboration with the Vinik Sports Group (VSG) and the Amalie Arena, is bringing to the IEEE community this awesome behind the scenes tour of the Amalie Arena in Tampa Florida. This is a great event for Life Members to get connected with fellow IEEE Members and the community.

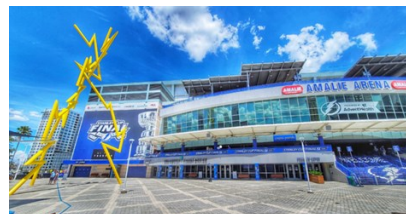
This tour event will be approximately 1.5 hours going through a behind the scenes look at the following:

- ◆ Start at Level 6 (Coors Bar) to get a view of the bowl and looking up at the catwalk. Go over the sport lighting and changes made to enhance the game and achieve energy savings, old system vs. new
- ◆ Take a look at the Tesla Coils and fire them off!!!
- ◆ Tour the AHU Rooms

Level 4 – get a look at the big freight area and get a view of the rock garden, the chiller plant, generator, and high voltage room

Lastly, get a look at the ice plant

Attendees will be responsible for finding their own parking near the arena. Additional information will be provided ahead of the event via email to those registered. There will be a group lunch following the tour with the Life Members Affinity Group and those who attend. Details to follow.





## Protection Systems of Solar Collector Substations

**\*\* Virtual Event \*\***

**Date:** Friday, January 27, 2023

**Time:** 10:00am – 2:00pm

**Speaker:** David Bousot, PE - Fellow - Supervisor of System Security, Relay and Control - TECO

**Location:** Virtual

**Cost:** \$50 members, \$75 Non-Members, \$10 Students

**CEH Credits:** Four (4) CEH's provided for this event. Florida provider #0003849.

**RSVP:** Online at: [https://events.vtools.ieee.org/tego\\_/event/manage/331216](https://events.vtools.ieee.org/tego_/event/manage/331216)

**Abstract:** High penetration of substation grade solar generation fields, during the last few years, have imposed over the electrical power system the need to reevaluate or redefine, in some instances, protection systems. In this seminar, we will present a síntesis of typical substation protection schemes and its related equipment. We'll also review some of the technical particularities of Inverter Based Resources (IBR) and how they interact with the power system. We'll be exploring NERC PRC standards that regulate over solar generation protection and its interconnection with the power system. Finally, some bullet points will be discussed about solar generation at the distribution feeder level, and what its operational particularities are in comparison to the substation grade solar facilities.

- ◆ System protection review. Principles, and equipment: CTs, PTs, relays, DC system, telecommunication and SCADA.
- ◆ Solar generation vs traditional rotating machine generation
- ◆ Solar Stations typical designs and protection schemes

- ◆ NERC PRC standards overseeing solar substations

**Biography:** David Bousot, PE is a Fellow Engineer and currently the Supervisor of System Security, Relay and Control for Tampa Electric (TECO). David has 20 years in the industry and is currently mainly involved with relay settings and system operation troubleshooting in transmission networks 69 kV through 230 kV and generation. Additionally, David worked in substation relay and control design engineering for a total of 3 yrs. Ample experience with fault event recorder operation and fault records analysis. Strong involvement in the technical calculation and compliance documentation for NERC PRC 019-2 and PRC-024, also involved with PRC 001, 002, 004, 023 and 025. Licensed by the Florida Board of Professional Engineers. IEEE member and participant of PES PSRC, including groups D36, C18 and H22. Besides relay and control, David has solid experience with substation power equipment maintenance engineering, and some exposure with distribution maintenance engineering.



## DEMYSTIFYING IMPEDANCE CALCULATIONS Lunch-N-Learn

**Date:** Thursday, Feb 16, 2023

**Time:** 11:45am – 1:10pm (Eastern Time - New York)

**Speaker:** Thomas Blair, P.E., Engineering Fellow, Tampa Electric Company

**CEH Credits:** None

**Course Level:** Intermediate

**Cost:** Members: \$FREE Non-members: \$FREE

**RSVP:** Register at <https://events.vtools.ieee.org/m/330806>

**Location:** On-Line (Virtual)

This IEEE lunch and learn will cover the basics of performing impedance calculations and converting quantities from the P/Q plane to the R/X plane. The level of difficulty of this material is Intermediate. A background in power system analysis and the per unit system will be beneficial.

This lunch and learn will cover:

- ◆ Converting quantities from the P/Q plane to the R/X plane
- ◆ Converting P/Q and R/X quantities from primary to secondary values (as seen from PT and CT)
- ◆ Converting S and Z from one base to another base.
- ◆ Plotting generator P/Q diagram in excel format
- ◆ Plotting generator R/X diagram in excel format
- ◆ Develop 21 & 40 functions for generator protection
- ◆ Plotting 21 & 40 settings in excel format

- ◆ Comparing 21 & 40 settings to generator capability

*A PowerPoint and excel file with example calculations will be provided as part of this lunch and learn session.*

**Presenter: Tom Blair, PE** is an Engineering Fellow with Tampa Electric. He performs electrical system analysis and uses the results to specify electrical equipment ratings, protective relay settings, and electrical system arrangement. Tom has also been adjunct professor in the past at the University of South Florida and has presented courses at the university on topics such as Electrical Machines and Drives, Energy Production Systems Engineering, and the FE and PE (power) exam preparation course at USF. Mr. Blair is a Senior Member of IEEE.





## 2023 Robofest Qualifying Competition Schedule

Event	Date	Time	Venue
2 <sup>nd</sup> Kickoff Meeting	Saturday Jan. 14, 2023	10:00am – 11:00am	<p>Online Zoom link</p> <p><a href="https://us02web.zoom.us/j/82975109038?pwd=ak0vUy9LWG41TEhWbVhFUzF4Z2o1dz09">https://us02web.zoom.us/j/82975109038?pwd=ak0vUy9LWG41TEhWbVhFUzF4Z2o1dz09</a></p> <p>Meeting ID: 829 7510 9038 Passcode: 306588</p>
Robofest 2023 Qualifying Competition	Saturday March 25, 2023	9:00am – 1:00pm	<p>In-Person NIELSEN</p> <p>501 Brooker Creek Blvd, Oldsmar, FL 34677</p>

**Good Morning Robofest Supporters,**  
**Welcome to the FINAL KICKOFF MEETING via Zoom.**

*Robofest is all about Science, Technology, Engineering, Math (STEM), Computer Science,*

*autonomous robots and encouraging students to have fun while learning.*

**Please join us on Saturday morning on Jan. 14<sup>th</sup> at 10am.**

### Meeting Agenda

- 2023 Game mission and **FINAL** rules.  
*This year's game, Supply Chain Challenge will task teams to move, stack and sort objects to the Port, clear obstacles and supply the Store.*
- Exhibition and Parade rules
- Robot Drawing contest (+ Bldg Lego project)
- Fees and Resources for teams
- Call for Volunteers
- Something Special for our 15<sup>th</sup> Anniversary
- Q/A sessions



**Touch-a-Truck!**  
10am-2pm

**FREE**

**ALL AGES**

# STEM EXPLORER FEST

Presented by Pinellas County Schools and the City of Largo

**Saturday • January 21 • 10am-1pm**

The City of Largo is teaming up with Pinellas County Schools to bring you a hands on event that shows families the STEM skills used in the professional field.  
Enjoy crafts, games, demonstrations and more!

**LARGOEVENTS.COM**

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PINELLAS COUNTY SCHOOLS

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<b>Insert / Sheet</b>	\$200	\$260	\$800	\$1,000	\$2,000	\$2,400

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**January 2023 - 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	6	7
		*FWCS ExCom →Page 1				
8	9	10	11	12	13	14
	*Signal Inputs Due End of Day					
15	16	17	18	19	20	21
					*Tour-Amalie Arena →Page 6	*STEM Explorer →Page 9
22	23	24	25	26	27	28
				*PES/IAS ExCom →Page 4	*EMBS... →Page 3 *Protection... →Page 7	*SM Roundup →Page 4
29	30	31				