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**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.

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PE Corner

Art Nordlinger, PE, Life Senior Member

IEEE Needs You!

Our local IEEE section and its affinity groups is unique in terms of the number of seminars, tours and other educational opportunities that are offered. Some of these allow professional engineers to earn continuing education hours that are required by most states for license renewal. With the wide variety of companies and industries in our area comes a vast pool of expertise in so many areas of engineering. Many of you are experts in your particular field, and IEEE has opportunities for you to share your expertise.

You may be aware of the continuing education requirements for PEs, but you may not be aware that, in general, a course with sufficient technical content to qualify for granting continuing education hours to participants need not be taught by a PE. Section 61G15-22.002 of the Florida Administrative Code defines what educational activity can qualify for credit: *“Any qualifying course or activity with a clear purpose and objective which will maintain, improve, or expand the skills and knowledge relevant to the licensee’s area of practice.”* However, a licensee need only take four hours of continuing education in their area of practice. The remaining twelve hours *“... may relate to any topic pertinent to the practice of engineering...”* (61G15-22.001(1)). IEEE puts on many educational opportunities that easily meet these requirements.

Cont'd on Page 2

**Next ExCom Meeting
Tuesday, February 4, 2025
Google Meet
Register with vTools**

<https://events.vtools.ieee.org/m/450340>

**IEEE FWCS ExCom**

CHAIR: Michael Mayor, michael.mayor@ieee.org
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EMBS Engineering in Medicine & Biology Chapter:
 Sylvia Thomas, sylvia@usf.edu
PES/IAS Power & Energy/Industry Applications Joint Chapter:
 Chair, Kayla Allemang, kalleman@ieee.org
RAS Robotics & Automation Chapter: Chair Sean Denny,
 venner20@ieee.org.
SP/COMM Signal Processing / Communications Joint Chapter
 Chair, Michael Ramalho, PhD, mar42@cornell.edu
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WEB PAGE: <https://r3.ieee.org/fwc/>

PE Corner (Cont'd) from page 1

You may be thinking that your area of expertise is very specific and that it won't qualify for continuing education since it's not many people's "area of practice". For one, area of practice is broadly defined. For example, though your area of expertise may be LEDs used in zero gravity environments, your area of practice can be defined as electrical engineering. Lots of engineers may be able to count a course that you are teaching as applicable to their area of practice. And second, even if they can't, they can count it toward the twelve hours they must take in a pertinent engineering topic.

There is an added bonus, in addition to the satisfaction of sharing your expertise with your colleagues, if you are a PE teaching a qualifying seminar. The first time you teach the seminar, you get double the number of continuing education hours that are awarded to the students! And if you update it and teach it again a few years later, you can get double credit for teaching the updated course.

As I previously noted, IEEE does a lot in terms of continuing education and with your help, we can do a lot more. Please contact your IEEE officers for more information on how you can share your expertise with your colleagues by teaching an IEEE seminar.

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.

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.

Contact: michael.mayor@ieee.org
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Modern SCADA Systems: Design, Security, and Troubleshooting

- Date:** Friday, February 14
Time: 10:00 AM to 3:00 PM (EST/EDT)
Speaker: Mike Cunningham – Qualus, Principal Engineer
Location: Seminole Electric Cooperative, Inc. – 16313 N Dale Mabry Hwy Tampa, FL 33618
Cost: Members: \$100; Non-Members: \$200; Students: \$10
CEH Credits: Four (4) CEHs
RSVP: Online at: <https://events.vtools.ieee.org/m/451530>
Questions: Kayla Allemang - kallemang@ieee.org

Abstract: This seminar provides an in-depth introduction to SCADA systems, covering approximately two (2) hours of foundational knowledge on their architecture and functionality. Attendees will explore the role of SCADA systems, current development trends, and advancements in securing these systems, including design, installation, and testing best practices. Key topics will include the integration of fiber optics, IEC 61850, and enhanced CIP Security measures, all of which significantly influence modern SCADA system design and implementation.

For the remaining time, the session will transition to practical troubleshooting and testing techniques. Instructors will demonstrate how to connect with RTUs (specifically SEL-RTACs) and various relays, identifying and addressing common issues that hinder successful SCADA system deployment. Participants will engage in interactive demonstrations to uncover subtle nuances in troubleshooting methods, fostering a deeper understanding of effective implementation strategies.

Mike Cunningham has over 40 years of experience in the communications engineering field. Starting as a Senior Engineering Manager in product development and design with an AT&T Paradyne Corporation (a Bell Labs company), to extensive experience with Progress Telecom (a Carrier's Carrier) in the high-volume carrier business, including working on 2 different Library of Congress projects in North Carolina and 1 ARRA funded project in Florida. The last 18 years he has been consulting on projects within the power industry.



Mr. Cunningham is a Communications Engineering Consultant/Project Manager with a proven leadership record and extensive industry experience in fields of power systems communications, SCADA, telephony, fiber optic broadband, computer systems, power, grounding, engineering services and new product development/support. Creatively driven to resolve issues. He is a Principal Engineer with a proven ability to plan, organize, manage and control costs. Consistently has received awards at presidential level for innovative work.



USF 2025 Power Forum

February 3, 2025 | USF Marshall Student Center Ballroom

Conference Overview

This conference will bring industry professionals, researchers, and students together to discuss recent advancements in power systems and energy solutions research at USF and industry innovations.

We invite your company to send representatives to table and potentially be an invited presenter at this exciting event! Please contact our general chair for more details on how to register for or sponsor this event.

Tentative Schedule

Activity	Time
Welcome & Registration	10:30am - 11:00am
Faculty Introductions	11:00am - 12:00pm
Company Introductions	12:00pm - 1:00pm
Lunch Speakers	1:00pm - 2:00pm
Networking and Tabling	2:00pm - 3:00pm
Graduate Student Poster Session	3:00pm - 3:30pm

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Grad Students Poster Session

Dr. Zhixin Miao

Dr. Lingling Fan linglingfan@usf.edu

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UNIVERSITY of
SOUTH FLORIDA





DISCOVER ENGINEERS WEEK

Tampa Bay E-Week Banquet

This premier event brings together local leaders and engineering professionals to recognize the outstanding achievements of Engineers, Science Teachers, Math Teachers, and Students in our community. Additionally, awards will be presented to outstanding engineers, as well as local engineering students excelling in their engineering related studies and Young Professionals. The banquet also features the Lignell Awards. These awards, named after a former Chairman for the Institute of Electrical and Electronics Engineers (IEEE), are given to local High School educators who are performing outstanding work in the instruction of the STEM topics (science, technology, engineering and math). The organizers of the event recognize the important role these individuals play in encouraging students to pursue technological degrees in college. The banquet is a combination of efforts by all the Engineering Societies of West Central Florida. This event brings together professionals in all fields from all around Tampa and Florida's west coast.

DATE: Thursday, February 20, 2025

TIME: 4:30 - 6:30 PM Networking & Exhibition
6:30 - 9:00 PM Dinner Program & Awards

LOCATION:  **BRYAN GLAZER FAMILY**
522 N. Howard Ave
Tampa, Florida 33606

“Eyewitness to NASA Human and Robotic Explorers + NASA Sew Sister to the Stars”

Keynote Speaker: Dr. Ken Kremer



Dr. Ken Kremer is a Pharmaceutical Research Scientist, Space Journalist, and Founder/Managing Editor of *Space UpClose*. Based near the Kennedy Space Center in Titusville, FL, he is an expert on human and robotic spaceflight, particularly Mars. Dr. Kremer frequently appears as a space commentator on major TV and radio outlets such as ABC, NBC, CBS, BBC, and Fox News. His work, including articles, Mars imagery, and space photography, has been widely published in major media like NASA, Scientific American, and National Geographic. He holds 17 US patents, over 30 scientific publications, and has written more than 1500 space articles. Dr. Kremer has also been awarded NASA's Curiosity medallion for his contributions to science outreach and Mars panoramas.

Register at : www.tbewb.org





Speaker Level Sponsorship (1 only) \$2000 Donation

- ◆ Front Row Center Table with Speaker at Your Table
- ◆ Company logo displayed on signage at the event.
- ◆ Receives up to 10 tickets
- ◆ Presents the Lignell Award.
- ◆ Receives recognition at Speaker Sponsor level on event slideshow & program.
- ◆ Receives recognition and link to website on the TBEWB website. Information about company and special acknowledgement will be made on the website.
- ◆ Display Table in Reception Area

Platinum Level Sponsorship \$1500 Donation

- ◆ Company logo displayed on signage at the event.
- ◆ Receives up to 10 tickets to the awards banquet
- ◆ Receives recognition at Platinum Sponsor level on event slideshow & program.
- ◆ Receives recognition and link to website on the TBEWB website. Information about company and special acknowledgement will be made on the website.
- ◆ Display Table in Reception Area

Gold Level Sponsorship \$1200

- ◆ Company logo displayed on signage at the event.
- ◆ Receives up to 5 tickets to the awards banquet.
- ◆ Has company logo displayed at Gold Sponsor level on event slideshow & program.
- ◆ Receives recognition and link to website on the TBEWB website.
- ◆ Display Table in Reception Area, (if space available)

Silver Level Sponsorship \$900

- ◆ Company logo displayed on signage at the event.
- ◆ Receives up to 2 tickets to the awards banquet.
- ◆ Has company logo displayed at Silver Sponsor level on event slideshow & program.
- ◆ Receives recognition and link to website on the TBEWB website.

Bronze Level Sponsorship \$750

- ◆ Receives display table to present company products during the Pre-Dinner Social.
- ◆ Receives recognition at Bronze level in program and on the TBEWB website
- ◆ Receives up to 1 ticket to the awards banquet

Vendor Level Sponsorship \$500

- ◆ Receives display table to present company products during the Pre-Dinner Social.
- ◆ Receives recognition at Vendor level in program and on the TBEWB website

Society or Company Sponsor Table \$900 Early Bird (\$1000 after 1/31/25)

- ◆ Receives up to 10 tickets to the awards banquet

Note that all donations may be tax deductible. FIN # 13-1656633

COMPANY/SOCIETY SPONSORSHIP

For more information please contact:

Tara Kivett, PE, E-Week Chair, FES Pinellas
Tara.Kivett@MyClearwater.com

Please make checks Payable to:

IEEE FWCS
8334 Lagerfeld Drive
Land O Lakes, FL 34637



GE/ITI Clearwater Instrument Transformer & Capacitor Facility

- Date:** Friday, April 4, 2025
Time: 9:00AM – 1:30PM (EST/EDT)
Speaker: Ryan Alkire – GE Vernova
Location: GE/ITI Clearwater Factory - 1925 Calumet St, Clearwater, FL 33765
Cost: \$20 Members/\$40 Non-Members/\$10 Student Members
CEH Credits: Two (2) CEHs
RSVP: Online at: <https://events.vtools.ieee.org/m/460948>
Seats are limited to 30 attendees
Questions: Kayla Allemang - Kallemand@ieee.org
Nicole Ouelette – ouelletten@usf.edu
Raymond Walker - rwalker4531@floridapoly.edu

The IEEE Florida West Coast Section Power & Energy Society/Industry Applications Society (PES/IAS), in partnership with GE Grid Solutions, invites you to an exclusive tour of the GE/ITI Clearwater Instrument Transformer Facility. This facility is GE's primary manufacturing site for instrument transformers rated below 69 kV, producing over 500,000 dry-type transformers annually for utility and industrial applications. This event will feature two key components:

Classroom Session (2 hours):

Gain a deeper understanding of instrument transformers, including what sets them apart, their various types, applications, and how to interpret nameplate data. The session will also explore their role in the industry's future and include an introduction to capacitors.

Factory Tour (1.5 hours):

Experience a guided walk-through of the factory floor, observing key processes such as component production, core manufacturing, transformer winding, casting, and final testing. As a special addition, the tour will include a brief visit to the capacitor production area, located in the same facility.

A complimentary lunch will be provided following the tour.

Participants are required to wear safety shoes and safety glasses. The facility does have safety shoe covers available, but supplies are limited, please include during registration if you will need a shoe cover + shoe size. Hearing protection will be provided at the necessary locations. Additional information regarding parking and other instructions will be provided ahead of the event via email to those registered.

Ryan Alkire is a Senior Engineering Manager for GE Vernova. In this role, he manages a team of engineers whose key responsibilities are designing, maintaining existing designs, and supporting production for the instrument transformers manufactured in Clearwater. Prior to his current role, Ryan obtained his Bachelor of Science in Electrical Engineering from the University of South Florida and holds a Master of Science in Engineering Management from USF. Ryan has been an IEEE member for 10 years

TRANSFORMERS

A **transformer** is a device used to change the voltage of electric power. Power plants generate power at a low voltage, but power needs to be at a very high voltage for the long trips down the wires from the generator to your house. At a residence the voltage of the power has to drop back down again so that it will not be dangerous and so appliances will not be blown out. A transformer allows the power to change voltages from place to place.

In 1831 **Michael Faraday** discovered the principles that make transformers possible.

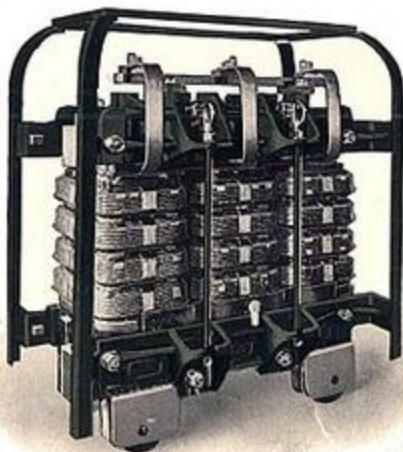
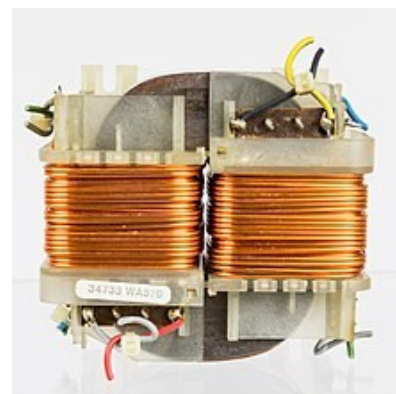
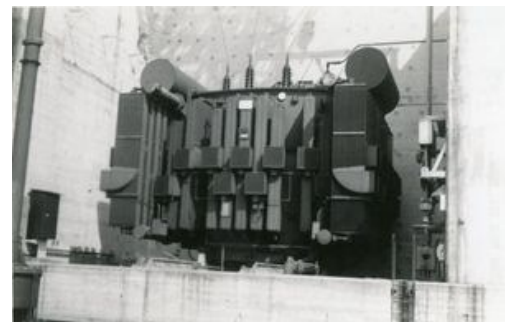
Using an induction ring Faraday discovered that an electric current flowing through one wire could have the effect of creating or “inducing” an identical current in a nearby wire. This only happens when the voltage is changing—such as when the power is snapped on and the voltage rises from 0 to its peak.

The reason for the induction of a current in a nearby wire is that every flow of current in a wire results in the creation of a magnetic field around the wire. A second wire placed nearby, within that field, is influenced by the magnetism. As the field expands or collapses, it acts on the electrons in the second wire and creates a new flow of current. Winding the wire into coils makes the device more compact, and wrapping the coils onto an iron bar or ring concentrates the magnetic field in a small area.

In 1881, in Paris, Lucien Gaulard and John Dixon Gibbs demonstrated the first commercially successful transformer. In 1886, William Stanley would build upon Gaulard and Gibbs' idea to provide alternating current electrification to offices and stores on Main Street in Great Barrington, Massachusetts.

We use the name transformer because it is used in alternating current systems to raise or lower voltages. Alternating current creates a fluctuating magnetic field as it flows in a wire. If the number of turns in the first coil is lower than in the second, then higher voltage will be induced in the second coil. If the first coil has many turns, then the “secondary” voltage will be lower.

Electric power systems use this principle to raise the voltage produced by a generator or dynamo to a high level, such as 100,000 volts or higher. At this high voltage, electricity can travel hundreds of miles along transmission wires without being significantly diminished. Near a residence, another transformer does just the opposite: it makes voltage usable by lowering it back down to 120 volts in the United States (220 volts in Europe).



Florida West Coast Section - Upcoming Events Summary - Year 2025

Date / Location/Time	Organization	Description Website	V and/or P*	Contact email
Tue. Feb. 4 8:00 pm - 9:00 pm		Careers in Technology - Eamon J Wall, Esq. https://events.vtools.ieee.org/m/456313	V	
Thu. Feb. 6 6:30 pm - 7:30 pm		FWCS Computer Society Monthly Meeting https://events.vtools.ieee.org/m/460418	V	Antra Malhotra antra.malhotra@ieee.com
Tue. Feb. 11 8:00 pm - 9:00 pm		Careers in Technology - Rui Li, PhD https://events.vtools.ieee.org/m/456316	V	
Fri. Feb. 14 10:00 am to 3:00 pm	PES/IAS	SCADA Systems, Design, Security Seminole Electric Cooperative 16313 N Dale Mabry Hwy, Tampa, FL 33618 https://events.vtools.ieee.org/m/451530	P	Kayla Allemang kalleman@ieee.org
Tue. Feb. 18 8:00 pm - 9:00 pm		Careers in Technology - Alvin Chin, PhD https://events.vtools.ieee.org/m/456323	V	
Thu. Feb. 20 4:00 pm - 9:00 pm	Florida West Coast Section	Tampa Bay Engineers Week Banquet Bryan Glazer Family JCC 522 N. Howard Ave. Tampa, FL 33606 https://events.vtools.ieee.org/m/450908	P	Jessica McRory jmcrrory@arehna.com
Thu. Feb. 27 12:00 pm - 1:00 pm		PES/IAS Excom https://events.vtools.ieee.org/m/450340	V	Kayla Allemang kalleman@ieee.org
May 19-22	IEEE FWCS University of Tampa Computer Society	Fog and Mobile Edge Computing https://emergingtechnet.org/FMEC2025/	P	Muhammad Al-Abdullah mal-abdullah@usf.edu
	IEEE FWCS Computer Society	Modern Computing Networking and Applications https://mcna-conference.org/2025	P	
	IEEE FWCS Computer Society	Intelligent Cybersecurity Conference https://icsc-conference.org/2025	P	
May 26-30	IEEE Biometrics Council Computer Society	IEEE 19th International Conference on Automatic Face and Gesture Recognition https://ieee-biometrics.org/conferences/flagship/fg/	P	Shaun Canavan scanavan@usf.edu

*Attendance: V: Virtual --- P: In Person - V & P: Virtual and In Person

SunCoast Signal Advertising Rates

Size	1 Month		6 Months		12 Months	
	Member	Non-Member	Member	Non-Member	Member	Non-Member
Business Cards	\$25	\$35	\$120	\$150	\$210	\$252
1/4 Page	\$40	\$52	\$190	\$380	\$335	\$402
1/2 Page	\$75	\$98	\$360	\$450	\$630	\$756
3/4 Page	\$110	\$143	\$530	\$663	\$925	\$1,110
Full Page	\$140	\$182	\$670	\$838	\$1,175	\$1,410
Insert / Sheet	\$200	\$260	\$800	\$1,000	\$2,000	\$2,400

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 Or Fax your address changes to (732) 562-5445

February 2025 - Calendar of Events (For more information see "Inside the SunCoast Signal" → Page 1)

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		*Careers in Technology ->Page 9		*Tampa Bay Eng. Week Banquet ->Page 5		
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		*Careers in Technology ->Page 9		*FWCS PES/IAS ExCom ->Page 9		