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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.

PE Corner
Art Nordlinger, PE, Life Senior Member
Why Become A Professional Engineer?

Chapter 471 of the Florida Statutes defines the practice of engineering and the titles associated with it. Chapter 471.003(1) states, “No person other than a duly licensed engineer shall practice engineering or use the name or title of “licensed engineer,” “professional engineer,” or any other title, designation, words, letters, abbreviations, or device tending to indicate that such person holds an active license as an engineer in this state.” The next paragraph goes on to define what engineering activities don’t require a PE license.

I have been fortunate to have the opportunity to speak with college juniors and seniors about professional licensure. The reaction I get often depends on the student’s major and future goals. Most civil and structural engineering students, and some others as well, understand that they won’t be able to practice their trade without a PE license. Many, if not most, electrical engineering students plan to practice in areas, like manufacturing or circuit design for example, where a PE license isn’t required. And many have not been exposed to the concept that certain areas of electrical engineering require a license, where others don’t.

As a result, it can be a bit of an uphill battle to convince an electrical engineering student that sometime close to their graduation, while the material is still somewhat fresh, they should take what might be the longest and hardest exam that they have taken to date. And that they should pay more than one-hundred dollars in order to be allowed to do so.

Continued on Page 2
Continued from Page 1

Though nearly every junior and senior engineering student is certain what their future career path will be, few prove to be correct as their careers progress. For those that find that they need to have a PE at some later time, it is a difficult, and often impossible, task to re-learn the varied material necessary to pass the Fundamentals of Engineering and Professional Engineer exams while working full time. This may at some point restrict the engineer’s career path. Experience has shown that there are many advantages to having a PE license. Even those that don’t need to have a PE to advance in their career can find it useful. When applying for a job or a promotion, having passed the PE or having a PE can help set that person apart from the pack. It can help to show an employer that this person is willing to “take it to the next level”. Interestingly, in some businesses where a PE is not strictly required for practice, licensure is listed as a “desirable” or even required to attain higher level engineering positions.

Regardless of a student’s engineering major or future plans, they should be encouraged to take the first step and take FE exam around the time of graduation. This can help to set them apart from their peers. They never know when they might need it. Those of you in contact with newly-graduated engineers, some of who may of recent be working for you or around you, encourage them to take the FE exam as soon as possible.

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 renewal only 8 months away seminar demand is high. Sign up now!
STEM Champion:

Sean Patrick Denny graduated with a Bachelor of Science in Computer Science from Eckerd College in St Petersburg in 1997. Shortly became member of IEEE Computer Society as his career began. Due to employment transitioning in 2004, Sean joined the Florida West Coast Section and attended regular meetings based in Tampa and became to get involved. In 2005, he was asked to attend the "Teacher In Service Training" (TISP) in Atlanta to train Teachers. From 2006 to 2011, Sean built a communication with local educators by attending the Florida Engineering Educator Conference annually at the University of Central Florida in Orlando. He also sent a monthly email noting requests to promote TryEngineering.org and its lesson plans.

A volunteer IEEE Member, usually a retired engineer would go to the local In Service Professional Study Days, Great American Teach-In Days, and Science Fairs. Surveys, Articles, and Photos collected proved the "Technological Literacy" was improved by offering engineering opportunities. Sean helped promote Outstanding High School Teachers to receive the Lignell Award at the annual Tampa Bay Engineers Week Banquet starting in 2007 and continues to the present.

The FWCS awarded the 2010 Engineer of the Year to Mr. Denny at the Banquet in 2011. The IEEE Education Board held a TISP Symposium in Tampa May 2012. ExCom Members Jim Howard, TISP Founder Doug Gorham, Ralph Painter, Ken Fiallos, and Sean Denny each gave presentations.

Former Pinellas County Schools Secondary Science Supervisor Rose Mack also provided a great presentation on how the IEEE is vital to local teachers. in 2022, IEEE Education approved Sean's to elevate his responsibilities as an Education Ambassador known as "STEM Champion." Last year, we met the two events of the St Pete College Energy Fair (September 2022) in Clearwater and the STEM Explorer Fest (January 2023). Articles have been shared with Region 3 on the work we are offering.

RAS:

George Schott opened a Robotics and Automation Chapter (RAS) in 2010. Sean attended and helped with the motto of Learn, Do and Teach. Soon was elected Recording Secretary. Helped George and second Chair by attending Robotics Competitions which included FIRST, BEST, Bizbots, ROBOFEST, and Electrathon of Tampa Bay. In 2014, Sean received an appreciation award from Tampa Public Schools.

In 2015, Sean was elected RAS Chair. Since then, RAS would ask student team to demonstrate their robot projects, tours of local schools including USF Robotics. The big event was the World Championship for ROBOFEST at St Pete Beach in the summer of 2017. Sean just gave a presentation at USF Tampa Campus hosting the FCRAR this past May 2023.
IEEE Pre-University STEM Community

The IEEE Pre-University STEM Community (PreU STEM) unites educators, volunteers, and STEM enthusiasts who are passionate about science, technology, engineering, and mathematics (STEM) at the pre-university level. Our global community provides you with access to a wealth of resources, networks, and expertise that will help you engage in STEM education.

The IEEE Pre-U STEM Community offers the opportunity to participate in a variety of exciting activities, funding opportunities, contests, recognition programs, webinars, and events that are designed to support, challenge, and inspire you. You'll also have the chance to connect with like-minded peers from around the world, as well as with educators and volunteers who are dedicated to mentoring and supporting the next generation of STEM innovators and problem solvers.

Sean Denny STEM Champion
Tour – TECO Big Bend Modernization

Date: Friday, September 29, 2023
Time (EST): 9 am – noon (lunch to be provided)
Speaker: Marnix A. Groenendijk, PE
Engineer – Power Generation, Tampa Electric Co. (TECO)
Location: Big Bend - 603 Big Bend Rd, Apollo Beach, FL 33572
Cost: $20 Members/$40 Non-Members/$10 Students
CEH Credits: No CEH’s provided for this event.
RSVP: https://events.vtools.ieee.org/m/365627
***Limited to 20 Attendees***
Questions: Richard Beatie - r.beatie@ieee.org
Ryan Copley – rcopley@tecoenergy.com

The IEEE Florida West Coast Section Life Members Affinity Group (LMAG) and Power & Energy Society/Industry Applications Society (PES/IAS), in collaboration with TECO is bringing to the IEEE community this awesome behind the scenes tour of the Big Bend Modernization Project located in Apollo Beach. This is a great event for Life Members to get connected with fellow IEEE Members and the community.

Tampa Electric (TECO) completed the Big Bend Modernization project safely, on time and under budget. Big Bend Unit 1 is now the most efficient generator in Tampa Electric’s fleet. The project has repowered Big Bend Unit 1 with state-of-the-art combined-cycle technology and has eliminated coal as that unit’s fuel. Construction began in August 2019, and the project came online Dec. 16. Crews worked more than 3.5 million hours with no lost-time injuries.

The project is capable of producing 1,090 megawatts (MW), which is enough energy to power more than 250,000 homes. The company also retired Unit 2, and Unit 3 will retire in spring 2023. Unit 4 remains in operation with coal or natural gas. "This project is improving the land, water and air emissions at Big Bend, and it is a continuation of TECO’s great environmental record," said Archie Collins, president and chief executive officer of Tampa Electric. "This investment in cleaner energy will provide significant savings to customers – and will further reduce our use of coal."

**IMPORTANT** As participants register for this event, please note that ALL attendees will be responsible for supplying and bringing their own personnel protective equipment (PPE) including steel-toe boots, cotton shirt and pants, hard hat, and safety glasses.
Florida Laws & Rules and Ethics for Professional Engineers

Date: Thursday, October 26th, 2023
Time: 10:00 am-noon
Cost: $30 IEEE Members / $60 Non-Members / $10 IEEE Student Members
Speakers: Mr. Art Nordlinger, PE,
IEEE Representative to the Florida Board of Professional Engineers
Presentations: The Rules and Laws That Govern the Practice of Engineering in Florida
Ethics and the Practice of Engineering in Florida
CEHs: One (1) Rules & Laws CEH will be awarded; and
One (1) Ethics CEH will be awarded, which will meet the current requirements for PE Renewals.
Be sure to enter your name and PE number on the signup website as it appears on your license.
IEEE Florida Provider Number is 0003849.
Location: This seminar will be presented virtually
Registration: Register at https://events.vtools.ieee.org/m/359432
Questions: Art Nordlinger: a.nordlinger@ieee.org or Robert DeMelo: Robert.demelo@ieee.org

Abstract: The Rules and Laws That Govern the Practice of Engineering in Florida. This course is at a basic to intermediate level.
- Florida Statute 471 – Engineering
- FBPE and FEMC
- Florida Administrative Code
- Updates from NCEES and FBPE

Ethics and the Practice of Engineering in Florida. This course is at a basic to intermediate level
- Basic Engineering Ethics Precepts
- Florida Administrative Code 61G15
- Recent Cases and Examples

Art Nordlinger, PE, who recently retired after a rewarding career in the electric utility industry, was most recently the Manager of Transmission Tariff and Contracts at Tampa Electric Company. Art earned a Bachelor of Science degree in Electrical Engineering from Northwestern University in 1979 and his Master of Engineering degree in Electric Power Engineering in 1988 from Rensselaer Polytechnic Institute. Art is a Life Senior Member of IEEE, Past Chair of the Florida Engineers Management Corporation (FEMC), and a registered PE in the State of Florida.
Between Management and Leadership

An Interview with Dr. Mark Davis, Director and CTO at WOOD DUCK RESEARCH

by Aly El Tanany,
IEEE Student Member and Senior-Year Electrical Engineering student at the University of South Florida

The reasons for my participation in this interview were very obvious and clear which led me to want to understand Dr. Davis's motivations which were unclear to me at the time, when asked for the reason he is taking time out of his day for this, Dr. Davis responded:

“One of the things that I wanted to do with my extra time in retirement, which there's surprising little is, uh, to give back in different ways, we all stand on the shoulders of our predecessors.

For example, after I had been at IBM for about 15 years, then it became, a reasonable thing to become a mentor. And so I spent some time working with younger guys and just giving them advice on things that I'd learned, and then I continued to do that while I was at Lenovo that's just a very natural thing. So I consider that a natural duty, if you can contribute, you have the time and you have the ability, then, that's something that you should do.”

After talking for a while and sharing stories about our backgrounds and experiences, the conversation led us to the difference between Leadership and Management.

Dr. Davis defines Leadership:

“To me, the classic example of leadership is being able to convince a bunch of guys to go do something really dangerous to accomplish the task. And that's always a piece of the magic of getting people to do more than they think they can do or that they wouldn't do unless somebody was there leading them to do that.”

This shows that leadership is mainly task oriented with the leader pushing everyone to go above and beyond to hit their target. This differs from Management

Dr. Davis defines Management:

“Being a manager is more an employee is an asset, and you need to take care of that asset, which means a manager needs to care about your training, a manager needs to care about your morale. Because he wants to retain you and he wants you to be enthusiastic about the stuff.

He further explains how management requires a lot of time put in it as well as a high level of emotional and social intelligence, he touches on how employees should understand their organization’s structure to see if it aligns with their character and interests

“So some organizations, like IBM, have set things up so that it's a very separate career path. You can either be a technical guy and go do lots of cool technical stuff. Or you can be a manager guy and rise up through the ranks as a manager and you can become a high-level executive”

While about other organizations, he said:

“A lot of firms, and particularly Silicon Valley type firms don't make that distinction. and they want to see, you know, if you're a technical star, it's expected you're going to be a good manager and you're going to be a high-level executive then”
The Florida West Coast Section Computer Society Chapter, University of South Florida Computer Society Student Chapter, and Florida Polytechnic University Computer Society Student Chapter welcome you to the Tech Horizons Summit, to be held at the University of South Florida Campus on 15 September 2023 from noon to 5:00 PM.

The Tech Horizons Summit will feature industry and academic leaders from the complete arc of a computing career, covering trends, emerging technologies, challenges, research topics, professional development, and pedagogical approaches. Join speakers and panelists from Hillsborough and Pinellas K-12 school districts, Hillsborough Community College, USF, Florida Polytechnic, IEEE Florida West Coast, and IEEE Computer Society. Our confirmed keynote speaker is IEEE Computer Society President Jyotika Athavale.

**Jyotika Athavale, IEEE Computer Society**

Emerging trends in computing and the role of the Computer Society

**Jyotika Athavale** is an experienced leader and influencer in emerging technologies and international standardization initiatives. Currently a Director and Principal RAS Architect at Synopsys, Jyotika focuses on innovative architectures for Silicon Health and Lifecycle Management (R&D).

Prior to Synopsys, she was Lead Technologist, Functional Safety Architecture at NVIDIA, driving capability development, safety architectures and methodologies, system safety engineering activities and pathfinding for safety critical systems. Prior to NVIDIA, Jyotika was Principal Engineer (Director) at Intel Corporation where she led corporate-wide RAS and Functional Safety methodologies and architectures for automotive, server and avionics use cases.

Jyotika is the 2023 President-Elect of the IEEE Computer Society, overseeing IEEE-CS programs and operations. She was awarded the IEEE Computer Society Golden Core Award in 2022. Jyotika also chairs the IEEE P2851 Standard on Functional Safety interoperability.

She has authored patents and many technical publications in various international conferences and journals. Jyotika received her MS degree in Electrical Engineering in 1996 from Iowa State University.

Continued on Page 9
Empowering the Cybersecurity Workforce: Collective Efforts in Enhancing Programs at Florida Polytechnic University

Mohammad Reza Khalghani is an Assistant Professor in the Department of Electrical and Computer Engineering at Florida Polytechnic University, FL. He obtained his Ph.D. in Electrical Engineering from West Virginia University (WVU), Morgantown, WV, USA 2019.

Dr. Khalghani’s research interests lie in cyber-physical energy systems, specifically focusing on Renewable Energy Integration and resilient control design for microgrids. Throughout his career, Dr. Khalghani has been involved in multiple research and educational grants, leading and collaborating on joint efforts in the realm of cybersecurity.

Email: khalghani@ieee.org

Modernizing Academic Programs with National Science Foundation Grants

Dr. Mubarak Banisakher obtained his Master's and Ph.D. from the University of Central Florida. He has more than fifteen years of teaching experience in higher education. He has several years of experience in the telecommunication industry as an engineer.

He also worked for the United Nations Peacekeeping operations (UNMOT) overseas. His research interest is in: Data Fusion technology, Big Data, Computer networks and security, Cloud computing, and Data Fusion in Disaster Management.

Email: mbanisakher@hccfl.edu
Mario was born in Rio Piedras, Puerto Rico in 1942 so he has a long, long, background, as do many of us in this room as well.

At 23 year of age, when he graduated with his BSEE with Honors from the University of Florida, he had already spent 8 years in Puerto Rico, 2 years in the New York City area, 2 years in a boarding school in Tampa at nearby Mary Help of Christians School, 8 years in Hialeah, Florida for his high school and finally 5 year in Gainesville, Florida, where he was President of the Sigma Tau Honorary Engineering Fraternity and he also participated in a Co-Op program with NASA Project Mercury for 3 trimester work periods and lived in Titusville, Merritt Island, and Cocoa Beach, Florida.

Mario then moved to New Jersey, where he then received his Master's from the Polytechnic Institute of Brooklyn while working with Bell Telephone Laboratories in a Graduate Study Program in Holmdel, NJ. He also worked for Burroughs Corporation and a minicomputer company designing Magnetic Core and Solid state memory before moving back to Florida in 1977, where he had a mixed career as well.

While in South Florida, he spent 15 years designing solid state memory interfaces for Gould Computer systems and Modcomp, Inc. In a career change, he then became Novell and Microsoft Certified, President of 2 computer groups, obtained his Professional Engineering certification in 1994 after 29 years out of college while working for an Environmental Engineering Company, was Director of Engineering for a startup at Doral, Florida for 4 years directing a data center doing Internet Access to 3 South American Companies, and finally a 9 years network support and counseling career of 4 non-profits in the South Florida area.
In the past decade, multiple stakeholder organizations have published documents forecasting and making recommendations about the electric industry's future. The GridWise® Architecture Council (GWAC), a group convened by the U.S. Dept. of Energy, chartered a project to assess the electric industry vision and future state assessment documents and determine how aligned these views of the future are.

The project objectives were to identify:

- Stakeholders' vision and future states for the electric industry and grid,
- Their similarities, differences, divergences, and stakeholder impacts, and
- Architectural challenge-gap categories for potential multi-stakeholder organization coordination and collaboration opportunities.

The GWAC identified six major architectural challenges or gap areas during assessing and characterizing ten vision and future state reports from nine organizations:

- Developing new industry structures
- Transitioning from centralized to distributed
- Transitioning from silos to platforms
- Developing effective data communications enabling control and coordination in distributed structures
- Standardizing Interfaces and structures
- Accommodating large quantities of DER with new structures

These must be addressed to achieve the vision of the future grid described in the ten reports, so how do we get there? In addition to traditional forward analysis, the importance of using a structured "future back" approach will be discussed.

Finally, Grid Architecture will be defined and its importance as a tool in this process will be discussed, along with a description of the GWAC's Interoperability Framework and its continued relevance.
IEEE Societies Anniversaries

Signal Processing Society
75 Years

In October 1947, Raymond A. Heising recommended that IEEE – then called the Institute of Radio Engineers (IRE) – imagine a new technical division, called “groups,” to address burgeoning interest and focus in emerging areas of audio engineering. This new body would tailor to members’ specialized technical interests and respective meeting and publication needs, setting the stage for what we know as IEEE societies today.

On 2 June 1948, the first professional group of the IRE was formed. The Professional Group on Audio became a model for other groups within the organization, demonstrating strength and involvement at local and national levels. In time, the Professional Group on Audio would evolve into the IEEE Signal Processing Society (SPS) we know today.

75 years later, SPS - IEEE’s first society – has continued to act as a bastion of innovation and collaboration, connecting a global community through a discipline that has swelled with the same speed and vigor that demanded its establishment in 1948, driven by passionate, dedicated leaders that make it the technical home to nearly 20,000 members today.

2023 marks 75 years of our rich history, and we look forward to celebrating with you with events and activities all year long! Keep checking back here for events and details throughout the year. Having a celebration of your own or any ideas of how you can get involved? Let us know!

Aerospace and Electronic Systems Society - 50 Years

Field of Interest
The field of interest shall be the organization, systems engineering, design, development, integration, and operation of complex systems for space, air, ocean, or ground environments. These systems include but are not limited to navigation, avionics, mobile electric power and electronics, radar, sonar, telemetry, military, law-enforcement, automatic test, simulators, and command and control.

Mission
The mission of the AESS is to provide a responsive and relevant professional society that attracts, engages, aids, and retains a diverse set of members (age, culture, community – theoretical, managerial and applications) worldwide in the areas of our fields of interest as defined in our constitution. AESS will accomplish this through technical, chapter and society activities in the areas of conferences, publications, education, technical operations, industry relations, and member services.

Vision
The vision of the AESS is to be essential to the worldwide technical community and be recognized for outstanding contributions in the fields of aerospace and electronic systems as demonstrated through the Society’s products, service and offerings in the areas of conferences, publications, education, technical operations, industry relations, and member services.
Florida West Coast Section

Inviting ALL Active Members and Guests to Participate in the

Year End Gala Banquet And Awards

Saturday, October 28, 2023

St. Petersburg Yacht Club

Registration will be available shortly

See Details

https://events.vtools.ieee.org/m/370016

AGENDA

1700 - 1800 - Social Mixer

1800 - 1900 - Dinner and Keynote Speaker

1900 - 2030 - Awards and Recognitions

2030- 2100 - Closing Remarks
## September 2023 - Calendar of Events  
*(For more information see "Inside the SunCoast Signal" → Page 1)*

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Or send address changes including your name, IEEE Member number and all pertinent information to:
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Or Fax your address changes to (732) 562-5445