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THE

SUNCOAST

SIGNAL

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Inside This Signal...

Page 2

*SP/COMM and WIE Present

Wireless Technologies for
Monitoring & Control

Page 3

* IEEE-USA's Free E-Books

* Life Members, I&M Joint
Meeting

Page 4

* Utility Battery Seminar

Page 5

* Best Robotics Event
Volunteer Information

Page 6

* EMBS meeting
Announcement

* Are you a Graduate of the
last decade?

Page 7

*NESCO Resources

Page 8

*Tour of Matheson Tri-Gas

* Do you have What it takes to
Manage Engineers?

Page 9

*Lazzara Yacht
Manufacturing Tour

*Advertising Section

Page 10

*Calendar

This Month's Meetings

Tuesday, October 1: EXCOM Meeting
Meeting starts at 5:30PM At TECO Plaza

Register online at <http://time2meet.com/fwcs-excom/index.html>

Open to all FWCS Members

SP/COMM and WIE Present:

Wireless Technologies for Monitoring and Control

[Details on page 2](#)

IEEE-USA's Free E-Books

FWCS Life Members and Instrumentation & Measurement Chapter Joint Meeting

[Details on page 3](#)

Utility Battery Systems Seminar

[Details on page 4](#)

BEST Robotics EVENT VOLUNTEER Information

[Details on page 5](#)

Engineering in Medicine and Biology Chapter Meeting Announcement

Are you a Graduate of the Last Decade?

[Details on page 6](#)

Tour of Matheson Tri-Gas

Do You Have What It Takes To Manage Engineers?

[Details on page 8](#)

Lazzara Yacht Manufacturing Tour

[Details on page 9](#)

Calendar

[Details on page 10](#)

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COMMITTEE**

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Sunday after the 1st Tuesday of the month preceding the issue month.

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SP/COMM and WIE Present:

Wireless Technologies for Monitoring and Control

Date: Tuesday, November 19th

Time: 6:00 – 7:30 PM

Cost: \$2 for Members, \$4 for Non-Members

Speaker: Mike Sutton

Location: Star Center, Planning Center Conference Center

7887 Bryan Dairy Rd Largo, FL 33777

Topics

1. Overview of Wireless Spectrum
2. Unlicensed 900-928 MHz
3. WiFi
4. Cellular
5. Wireless HART
6. Bluetooth

The presentation will cover the most commonly used wireless technologies for monitoring and control systems. The discussion will begin with an overview of the wireless spectrum, including the difference between proprietary and public standards networks and the general guidelines for selecting a wireless technology. We will then drill into more detail on each technology noting the benefits and disadvantages of each, and how the technologies are applied in industries.

Speaker:

Michael Sutton - Michael has over 20 years of experience in the automation and control systems industry and is a licensed Professional Engineer in six states. He has a BS in Chemical Engineering from Columbia University and a MS in Chemical Engineering from Polytechnic University. He spent the early part of his career on the end user side working for the New York City DEP as a licensed WWTP operator and then spent over 13 years doing design, startup and commissioning of control and wireless telemetry systems for water and wastewater treatments plants for a large environmental consulting firm. He joined Phoenix Contact over a year ago as the Project Sales Engineer for the Southeast Region and is thoroughly enjoying his new role residing in Tampa FL.

For more information, please contact: Valerie Tur, 813-334-2317



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**FWCS Life Members and Instrumentation
& Measurement Chapter Joint Meeting on
October 24th, 2013 at 5:30 PM**

Meeting location:
Red Lobster Restaurant
6151 34th Street
St. Petersburg, FL

Topics and Speakers:

Life Members Activities and Concerns - Charles
Husbands, Region 3 Life Member Coordinator
How to Make Measurements You Can Bet Your Life On -
Karl Anderson, Measurement Systems Engineer

This is a regular meeting of the FWCS Life Members.
Meet and greet your IEEE Life Member colleagues again
and hear what is coming up from Charles Husbands, your
Region 3 Life Member Coordinator.

The FWCS Life Members are joined at this meeting by the
FWCS Instrument and Measurement Members which at
this joint meeting resume chapter activities.

Karl Anderson's topic is 'How to Make Measurements You
Can Bet Your Life On'. This goal is met by applying
principles from the technical discipline of Measurement
Systems Engineering. This design approach results in
measurement systems that can be guaranteed to provide
data that will not to mislead a knowledgeable observer.

Karl is the owner of Valid Measurements which designs
and builds innovative analog signal conditioning and
integrates the designs into measurement systems. Karl
also trains and consults in the area of Measurement
Systems Engineering. He spent 30 years as a NASA
scientist and engineer. He has invented measurement
circuit topologies that can be found in IEEE I&M
publications, NASA reports, conference papers,
magazine articles, patents and in measurement
textbooks published around the world.



**IEEE-USA's Free E-Books to Members in
October FREE E-BOOK**

In "Engineers Can Write! – Thoughts on Writing from
Contemporary Literary Engineers," author Tom Moran shares
the work of award-winning and much-lauded writers of poems,
short stories and novels, all of whom are engineers.

Each of these engineer authors has been successful in the world
of literature, and their competence with language undermines
any claims that engineers can't write.

"Many engineers are excellent writers, adroit at taking on
technology's toughest challenges, and using language to clearly
and cogently describe what they have learned," Moran writes.
"Indeed, engineering's history has been marked by important
works written clearly and competently by engineers."

This e-book will be available free to members for all of
October.

To purchase IEEE members-only products, and to receive the
member discount on eligible products, members must log in
with their IEEE Web account.

**2014 Washington Internships for Students of
Engineering (WISE)**

SUMMER 2013 PROGRAM
MONDAY, JUNE 1st - FRIDAY AUGUST 3rd
Applications **Due 31 December 2013**

IEEE seeks applications from exceptional engineering
students who display evidence of leadership skills and
have a keen interest in public policy. Each year,
outstanding engineering students are selected to spend
nine weeks in Washington, D.C., learning about the public
policy process, including how government officials make
decisions on complex technological issues and how
engineers can contribute to legislative and regulatory
public policy decisions. All application forms are online
at: <http://www.wise-intern.org/index.html>

*"...one of the best summers of my life; one which truly
transformed my dreams and goals. When I left D.C., I
really wanted to instill in my fellow engineers the
appreciation of the interaction between public policy and
engineering." -- Marc Canellas, WISE 2011*



Utility Battery Systems Seminar

- Date:** October 25th, 2013
- Time:** Registration: 8:00 A.M. Seminar: 9:00 A.M. - 3:00 P.M.
- Speaker:** Art Salander, Roy Gates
- Location:** Seminole Electric Cooperative, 16313 North Dale Mabry,
Tampa, Florida 33618
Parking: Use parking lot in front of building
- Cost:** \$100 Members, \$200 Non-Members, \$20 IEEE Student Members
Make checks payable to IEEE FWCS and mail a check in advance to IEEE PE/IA Chapter
Treasurer: PES/IAS Chapter
2593 Forest Run Court
Clearwater, FL 33761-3716
- PDH Credits:** 4 professional development hours will be awarded. Be sure to provide your name as it appears on your Florida license and your license number to insure proper credit. Florida Provider #0003849 IEEE
- Reservations:** Online at: <http://time2meet.com/fwcs-pes1/index.html>
Space limited to the first 45 registrants!!!
- Questions:** Jim Howard at 863-834-6585 or Jim.Howard@Lakelandelectric.com

Topics

- I. 19th Century Battery History
- II. A study of Phased Controlled SCR charging
- III. Determine Recharge Voltages
- IV. Alarm settings
- V. Enclosure types defined and considerations provided
- VI. Ripple Content on the bus and what the allowable numbers really are.
- VII. Battery Charger Sizing Calculations
- VIII. Practical Application of Modular Battery/charger Enclosures
- IX. Mobile Power Systems
- X. Using Diode Isolation Systems
- XI. Stationary Batteries Defined: Flooded Lead Acid Batteries, Valve Regulated Lead Acid (VRLA) Batteries, Nickel Cadmium Batteries:
- XII. Battery Sizing
- XIII. Installation / Maintenance / Testing / Maximizing your Investment
- XIV. NERC PRC-005, DC System considerations with a review of the pertinent sections in the Supplemental Reference and how they may be implemented.

Speakers:

Art Salander – Graduate Adelphi University/Physics & Engineering, IEEE Senior Member, Art has lectured on many aspects of battery and charger applications and has worked on developing battery load profile and sizing techniques and standards in use today. He is also the current Conference Manager for the IEEE NewNEB Conference and is currently providing application engineering and business development for HindlePower, Inc.

Roy Gates - 25-years' experience with stationary batteries, currently with HindlePower, Inc. Experienced in a variety of electro-chemistries, including alkaline, lithium and traditional lead acid designs, his responsibilities ranged from systems design engineering to installation, testing and long-term maintenance, as well as training and education. A sought after speaker within the IEEE Continuing Education on Demand community, Roy has given numerous papers and presentations on selection, sizing, configuring and operating all types of energy storage.

BEST Robotics EVENT VOLUNTEER Information

Venue: Armwood High School, 12000 U.S. 92, Seffner, FL 33584

All volunteers will be provided with an event Tee Shirt that should be worn at Friday and Saturday events. A Hospitality room will be provided at the Armwood High Media where meals, snacks, and beverages will be provided for event volunteers, judges and corporate sponsors only. On **Friday** evening, pizza and drinks and on **Saturday** a continental breakfast and lunch will be provided for event volunteers, judges and corporate sponsors only. We thank you in advance for your willingness to volunteer to help with this worthwhile STEM program. We guarantee you'll have an awesome time.

Saturday First Shift 8am – 12noon

Location: Armwood High Media,

Saturday, Nov. 2, 8:00am -12noon

Breakfast, 8-830am

Orientation: 8:30am-9am,

Judging: 9:00am – 12noon

Friday Evening Shift 6:00-9PM

Location: Armwood High Media

Friday Nov. 1 6-9pm

Pizza: 6-6:30pm

Orientation: 6:30-7pm,

Judging: 7-9pm

Saturday Second Shift 12noon – 4pm

Location and Time: Armwood High Media, Saturday, Nov. 2, 12noon- 4pm

Lunch: 12pm – 12:30pm, Orientation: 12:30pm -1pm, Judging: 1:00pm – 4:00pm

[Registration Link \(Check all positions that you would be willing to volunteer for\):](#)

Marketing Presentations - *9 judges needed Friday Night Only* .Each participating "BEST Awards Company" must give a 20-minute oral presentation to highlight both the Company's business model and robot-building process as well as community involvement. Each Company is allowed a 30-minute time slot: 5 minutes for set-up, 15 minutes to present, 5 minutes for Q & A from the judges and 5 minutes for judges to fill out the scoring sheets. Teams are encouraged to be as creative as possible with their presentations. This category will include a minimum of 4 and a maximum of 8 Company members, with 3 judges present for each presentation. This judging event will occur on Friday, November 1 with hospitality 6-6:30pm, orientation at 6:30-7pm and judging beginning at 7:00pm to 9:00pm

Company Tradeshow Exhibits and Interviews - *6 judges needed Friday Night Only*. Trade Show Booth: Each participating "BEST Award Company" is given a 8' X 8' X 8' space with a 6-ft. table on which to visually and creatively display their Business Model, School Spirit, Community Involvement, and Robot Design and Construction. Judges will circulate the table display area and interview Company members staffing the displays. These displays will occur on Friday, November 1 with hospitality 6-6:30pm, orientation at 6:30-7pm and judging beginning at 7:00pm to 9:00pm.

Project Engineering Notebooks – *6 judges needed Shift 1 only*. Each participating "Company" must produce a 3-ring binder notebook that documents the process the Company went through to design and build the robot, a technical diary of sorts. The notebook can contain a maximum of 30 pages of written explanation, along with photographs, design drawings, computer-generated drawings, etc. Notebooks will be submitted online and reviewed by judges during the week prior to competition. People with backgrounds in math, science, engineering and technology are especially needed in this area. Notebooks judging will occur on Saturday, November 2 with orientation at 8:30am and judging beginning at 9:00am to 12:00noon

Spirit and Sportsmanship - *6 judges needed to work all day covering both shifts during the competition on Saturday, November 2*. Judges will circulate the arena and evaluate School/Company Spirit and good sportsmanship of Company members. Judges need to arrive on Saturday, November 2 with orientation at 8:30am and judging beginning at 9:00am to 4:00pm

Head Judges (Shift 1- 2 needed, Shift 2- 2 needed) November 2 with orientation at 8:30am and judging beginning at 9:00am to 4:00pm

Referees – 10 needed (5 Shift 1 and 5 Shift 2) The Robotics portion of the competition is similar to many sporting events in that it requires referees to oversee all head-to-head matches between robots. Additional referees will be needed to rotate periodically and give each other breaks throughout the day. Referees must be very familiar with the game rules, with preference being given to those who have served as referee for the current year's game at a local hub. Rules for this year's challenge will be released 9/21/12 at <http://FloridaRoboticsAlliance.Org>. Saturday, Nov. 2, 8:00am to 4pm

Hospitality - 6 Needed (3 Shift 1 and 3 Shift 2). A hospitality room will be provided at the Armwood High School where meals, snacks, and beverages will be provided for event volunteers, judges and corporate sponsors only. Friday evening pizza and drinks, Saturday continental breakfast and lunch will be provided for event volunteers, judges and corporate sponsors only. Friday, November 1 6:00pm – 7:00pm, Saturday November 2 7:30am – 4:00pm

The Florida West Coast Section Engineering in Medicine and Biology Chapter Meeting Announcement

Date: Wednesday October 9, 2013

Topic: Virtually Transparent Epidermal Imagery system

Speaker: Dr. Yu Sun

Location: University of South Florida , Center for Urban Transportation (CUTR 102)

Time: 6:30 PM -8:00 PM

Laboratory tour to follow talk

The meeting is free to attend. For details and to register: <http://time2meet.com/fwcs-emb/index.html>

This talk will introduce a novel design, and prototype implementation, of a virtually transparent epidermal imagery (VTEI) system for laparo-endoscopic surgery. The system uses a network of multiple, micro wireless cameras and multiview mosaicing technique to obtain a panoramic view of the surgery area. This view provides visual feedback to surgeons with large viewing angles and areas of interest so that the surgeons can improve the safety of surgical procedures by being better aware of where the surgical instruments are relative to tissue and organs. The prototype VTEI system also projects the generated panoramic view on the abdomen area to create a transparent display effect that mimics equivalent, but higher risk, open-cavity surgeries.

We look forward to seeing you at the meeting.

For questions please contact either:

Stephen Sadow, sadow@ieee.org or

John West, john.west@ieee.org



Are you a Graduate of the Last Decade?

Your local IEEE FWCS GOLD group is excited to announce its initiation and its commitment to bringing career-enhancing activities to its community. Our first meeting was held on Friday, September 6th, and the outstanding outcome is being shared with all who want to participate.

We are calling ALL interested volunteers to hop-on board and join our growing team. Planning of activities has officially started and everyone is encouraged to participate! To know how you can help, please contact the on-growing and enthusiastic IEEE FWCS GOLD team:

Victor Basantes, Chair - victor.basantes@ieee.org

Muhammad Saqib Jamil - Vice Chair - saqibjamil2007@ieee.org

Abdullah Ahmed, General Secretary - abdullah12@mail.usf.edu

Everyone is welcome! And we are also in need of tech-savvy volunteers that can help us with our website and graphics design needs.

Remember to stay in tune! IEEE GOLD FWCS will organize its very first Student Transition and Elevation Partnership (STEP) during the month of November. This, and other upcoming events, will be announced in the upcoming weeks. Get ready for GOLD!

IEEE FWCS GOLD promises to serve humanity in the best manner it can. We hope to combine valuable resources from your local FWCS section and the USF student branch to give you the best benefits possible.

We're one of the country's fastest growing HR solutions companies. And we're in Tampa.

Nesco Resource, recognized as one of the fastest growing large staffing firms in the USA, has grown significantly in the Tampa metro area in the past few years. In July of 2011, local operations of A1Temps were acquired by Nesco Resource, bringing 57 years of experience and a vast array of services to the already tenured local staff of A1 Temps.

Since that time, Nesco Resource has vastly expanded its local service lines, and now offers clients dedicated solutions for IT, engineering, technical, accounting and finance in addition to the light industrial, warehouse and clerical markets historically provided by A1 Temps.

These combined local and national resources, pulling from the strengths of each to create a formidable network of offices and staff that's second to none.

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2013
Fastest-Growing
Staffing Firms

BEST
OF STAFFING
TALENT 2012

BEST
OF STAFFING
TALENT 2013

BEST
OF STAFFING
CLIENT 2013



Tour of Matheson TriGas

Date: Wednesday, December 12, 2013

Time: 2:00pm to 4:00pm

Speakers: Matt Wendel

Location: Matheson TriGas, 2500 N. Combee Road, Lakeland, Florida

Cost: Free for Members, \$10 Non-Members.

RSVP: Online at: <http://time2meet.com/fwcs-pes2/index.html>

Make checks payable to: IEEE FWCS

Space limited to the first 15 registrants!!!

Questions: Serge Beazile at 863-834-6511 or serge.beazile@lakelandelectric.com

Special Invitation for IEEE members to Learn about Air Separation System

Air separation is the most common process used to extract one or all of the main constituents of atmospheric air. The three main components are Nitrogen (78.1%), Oxygen (20.9%) and Argon (.9%). The remaining gases in the air are in trace amounts and normally not recovered. In very large air separation units (ASU) Neon, Xenon and Krypton are recovered in small amounts.

Cryogenic air separation utilizes the differing condensing/boiling points of the components of air to enable separation by distillation at cryogenic temperatures. At atmospheric pressure the main components of air have the following condensing/boiling points:

- Nitrogen -320F
- Oxygen -297F
- Argon -308F

Since air is a simple mixture, liquefying and distilling air provides a process to successfully separate the Nitrogen, Oxygen, and Argon.

Do You Have What It Takes To Manage Engineers?

In every engineer's career if you do a good enough job you're going to get promoted. Eventually, you are going to find yourself in charge of a group of engineers (or perhaps an entire department). Will you be ready?

Your PACE committee is ready to show you exactly what you need to know – before you need to know it! In this fast-paced seminar we're going to cover the 8 critical skills that every engineer manager needs to master BEFORE he or she finds themselves in charge of an engineering team.

In order to make sure that your time as the leader of engineers is not cut short, register to attend this seminar and master the skills that will allow your career to reach the heights that you know that it can! We've got your back on this one...

When: Wednesday, October 23rd @ 6:00pm

Where: TECO Hall, 702 N Franklin St, Tampa

Price: \$25 Non-Members, \$17 Members, \$5 Students, \$5 Life Members

Held Jointly with the FWCS Consultants Network

Lazzara Yacht Manufacturing Tour

Date: Wednesday, November 20th, 2013

Time: 2pm-5pm

Cost: Members – FREE, Non-Members - \$20

Make checks payable to IEEE FWCS and mail a check in advance to:

IEEE PE/IA Chapter Treasurer

2593 Forest Run Court

Clearwater, FL 33761-3716

Speakers: Brad Lazzara

Location: 5300 West Tyson Ave, Tampa, Florida 33611, **Parking:**

RSVP: Online at: <http://time2meet.com/fwcs-pes3/index.html>

Space limited to the first 20 registrants!!!

Questions: Jim Howard at 863-834-6585 or Jim.Howard@Lakelandelectric.com

Did you know we have a manufacturing facility here in the FWCS area that produces Top-of-the-Line Mega Yachts? Well we do, and they have been producing them for many, many years. This is your chance to tour this facility and see what goes into the production of a Work Class Mega-Yacht.

Lazzara Yachts is headquartered in a 130,000 sq. ft. facility on a 24 acre peninsula in Tampa, Florida. They employ close to 500 craftspeople of various trades from over 78 different nations. Some of these skilled individuals trace their lineage back to working under Vince Lazzara at Gulfstar Yachts in the 1970's and now some of their children are building yachts with Lazzara.

Being a family builder has its advantages and ingenuity. It has propelled Lazzara Yachts to the forefront of modern boat building.

Advertising Section

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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="2">One Month</th> <th colspan="2">6 Months</th> <th colspan="2">12 Months</th> </tr> <tr> <th>Size</th> <th>Member</th> <th>Non-Member</th> <th>Member</th> <th>Non-Member</th> <th>Member</th> <th>Non-Member</th> </tr> </thead> <tbody> <tr> <td>Business Card</td> <td>\$25</td> <td>\$33</td> <td>\$120</td> <td>\$150</td> <td>\$210</td> <td>\$252</td> </tr> <tr> <td>¼ Page</td> <td>\$40</td> <td>\$52</td> <td>\$190</td> <td>\$238</td> <td>\$335</td> <td>\$402</td> </tr> <tr> <td>½ Page</td> <td>\$75</td> <td>\$98</td> <td>\$360</td> <td>\$450</td> <td>\$630</td> <td>\$756</td> </tr> <tr> <td>¾ Page</td> <td>\$110</td> <td>\$143</td> <td>\$530</td> <td>\$663</td> <td>\$925</td> <td>\$1,110</td> </tr> <tr> <td>Full Page</td> <td>\$140</td> <td>\$182</td> <td>\$670</td> <td>\$838</td> <td>\$1,175</td> <td>\$1,410</td> </tr> <tr> <td>Insert / Sheet</td> <td>\$200</td> <td>\$260</td> <td>\$800</td> <td>\$1,000</td> <td>\$2,000</td> <td>\$2,400</td> </tr> </tbody> </table>				One Month		6 Months		12 Months		Size	Member	Non-Member	Member	Non-Member	Member	Non-Member	Business Card	\$25	\$33	\$120	\$150	\$210	\$252	¼ Page	\$40	\$52	\$190	\$238	\$335	\$402	½ Page	\$75	\$98	\$360	\$450	\$630	\$756	¾ 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	<p style="text-align: center; color: blue;">Blue Elephant Consulting</p> <p style="text-align: center; color: red;">Unforgettable communication skills that will set your ideas free...</p>  <p>Dr. Jim Anderson jim@BlueElephantConsulting.com President Phone: 813.418.6970 www.BlueElephantConsulting.com P.O. Box 341734, Tampa, Florida 33694-1734</p> <div style="border: 1px solid black; padding: 10px; text-align: center; margin-top: 10px;"> <p>Your advertisement here reaches over 2300 members in the local area!</p> </div>
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October 2013 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	1 <i>IEEE EXCOM TECO Plaza 5:30pm</i>	2	3	4	5
6	7	8	9 <i>EMBS Meeting</i>	10	11	12
13	14	15	16	17	18	19
20	21	22	23 <i>PACE Meeting</i>	24 <i>Life Members, I&M Meetings</i>	25 <i>PES/IAS Batteries Seminar Seminole Electric 8 :30 am</i>	26
27	28	29	30	31 <i>PES/IAS EXCOM Village Inn 6am</i>	1	2