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IEEE



THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Volume 63—No. 1 January 2017

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FWCS Students Win National Recognition and Scholarships

Of the 529 individuals who applied for Power and Energy Society (PES) scholarships for the 2016/17 academic year, 230 scholars received awards, and four are from the University of South Florida. The FWCS proudly announces the following scholarship recipients:

Kyle Sweezy was selected as one of the four 2016/17 Schweitzer Meritorious Scholars from Region 3.

Christopher Noah, Alexander Tremper, and Tristan Siebold were also awarded scholarships funded by the IEEE Power and Energy Society Scholarship Fund of the IEEE Foundation. Kyle, Christopher, and Alexander anticipate graduating in 2017, while Tristan will be at USF through 2018.

These students are examples of some of the excellent engineers being trained for industry to replenish our aging workforce. We applaud their hard work and dedication! If you or your employer are interested in helping to support our fine scholars, please contact a section officer (see page 2).



Tampa Bay E-Week Banquet

DATE: Thursday, February 23, 2017

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



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 in each discipline, 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.

See Page 4 For registration details



KEYNOTE SPEAKER
Karen A. Swager, P.E.
Vice President, Concentrates - Phosphates

Karen A. Swager is Vice President, Concentrates for the phosphates business unit of The Mosaic Company, the world's leading producer and marketer of concentrated phosphate and potash, two of the primary crop nutrients required to grow the food the world needs. In this capacity, she provides overall direction, guidance and day-to-day support for all concentrates operations in the phosphates business unit.

Previously, Karen held various roles of progressive leadership responsibility with the company's mining and manufacturing operations, including serving as Vice President, Mining Operations and General Manager of Four Corners and Wingate mines. She also led the Phosphates Business Unit's Mine Planning and Strategy group and various other special business initiatives for the company, including development of offshore mining projects.

Karen is a licensed professional engineer and has held numerous leadership roles with the Society for Mining, Metallurgy & Exploration (SME), including Chapter Chairman and Director. She is also a member of the American Institute of Chemical Engineers and was appointed by then-Governor Charlie Crist to serve a three-year term on the Board of Directors for the Florida Institute for Phosphate Research. In 2007, she was recognized by the Florida Chapter of the SME with the "Hero of the Industry" award. Karen currently serves on the board of the United Way of Central Florida.

Upcoming Meetings

EXCOM Meeting

Tuesday, January 3, 2017 5:30PM at TECO Plaza

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

Open to all FWCS Members

Energy Production Systems Engineering

Friday, January 20, 2017 8:00AM-3:30PM at FRCC Headquarters

Register online at http://time2meet.com/fwcs-pes1/index.html

2016 IEEE EXECUTIVE COMMITTEE - FLORIDA WEST COAST SECTIONCHAIR: Claude Pitts claudie.pitts@ieee.orgVICE CHAIR: Jim Cavanaugh James.A.Cavanaugh@ieee.orgSECRETARY: Sean Denny, venner20@ieee.org, 727-678-0183TREASURER: Jim Howard, Lakeland Electric (863)834-6585 jhoward@ieee.orgSIGNAL EDITORS: Donna Howard, amberdon3133@gmail.com (813) 924-2024; Serge Beauzile, serge.beauzile@ieee.org 863-834-6511; Ralph Fehr, r.fehr@ieee.orgAWARDS & BYLAWS: Richard Beatie, PE, r.beatie@ieee.orgMEMBERSHIP: Jim Howard, Lakeland Electric (863)834-6585 jhoward@ieee.orgTEACHER IN-SERVICE: Sean Denny: Venner20@ieee.org (727) 678-0183PES/IAS CHAPTER: Serge Beauzile, Lakeland Electric, (863) 834-6511 serge.beauzile@ieee.orgMTT/AP/ED CHAPTER: Jing Wang jingw@usf.eduCOMP/AESS CHAPTER: Jim Cavanaugh james.a.cavanaugh@ieee.orgEMBS: Engineering in Medicine & Biology: John West: 727-743-2267, john.west@ieee.orgROBOTICS and AUTOMATION SOCIETY, Sean Denny, Venner20@ieee.orgSP/COMM CHAPTER: Chris Lambrecht chris.lambrecht@ieee.orgWIE: Women in Engineering: Valerie Tur, (813) 334-2317, VLT4@cornell.eduLIFE MEMBER AFFINITY GROUP: Glen Cock gcock@tampabay.rr.com, 813-689-4765YOUNG PROFESSIONALS: T.J. Ross anthonyross@mail.usf.edu, (505) 620-7734PACE: Jim Anderson (813) 425-2467 jim.anderson@ieee.orgCONSULTANTS NETWORK: Herman Amaya hamaya@tampabay.rr.com

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PE Corner

Art Nordlinger, PE, Senior Member

The Steps to Professional Licensure, Part 2

Last month I discussed the beginning of the route to get your PE license; taking the FE exam. This month I will focus on the next step, experience required and being an Engineering Intern (EI).

An EI must obtain 48 months of experience to qualify to sit for the PE exam. What qualifies as experience? The type of employment considered acceptable must principally involve activities in the field of engineering as defined in *Section 471.005 (7), F.S.* What qualifies as “experience” is found in *61G15-20.002, F.A.C.- Experience*. Some criteria considered for meeting the 48-month requirement includes:

- Experience that logically follows and incorporates an application of the engineering education previously obtained.
- Full-time experience obtained within 2 years of completing the engineering degree, that involves tasks and responsibilities consistent with the disciplines of engineering. Experience credit may be awarded at 50% of actual time, with total allowable credit for pre-graduation experience to not exceed 12 months.
- Experience on engineering projects that is progressive in nature, indicating an increase in quality and involving greater responsibility.
- Experience gained under the supervision of a licensed professional engineer.
- Experience gained in engineering research and design projects by members of an engineering faculty where the program is approved by the Board.
- Experience that includes demonstration of a knowledge of engineering, mathematics, physical and applied science, properties of materials, and the fundamental principles of engineering design.
- Experience that includes demonstration of the application of engineering principles in the practical solution of engineering problems.

Additionally, an applicant must list three (3) personal references who are professional engineers. These references cannot be the same individuals used to verify employment and experience.

To learn more about the examination and application process for the FE and PE exams go to the *Application Process* page under the *Licensure* section of FBPE's website at www.fbpe.org. If you have questions related to qualifying experience contact the Board office at (850) 521-0500 and ask to speak to someone in the *Licensure* department.

Next month I'll discuss the final step to licensure, the PE exam.

The most-recent FBPE newsletter notes that license renewal opened Monday, November 7. As with the last renewal cycle, engineers do not have to submit evidence that they have completed the required continuing education. However, they must have that evidence available if requested by the Board. Information on license renewal may be found on the Board's website at <https://fbpe.org/licensure/license-renewal/>.

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 deadline is less than 2 months away. Better start earning those CEHs now!

Nuclear Industry Outlook

SAVE THE DATE!

DATE: Friday, April 7, 2017

TIME: 10:00am—2:00pm

LOCATION: FRCC Headquarters
3000 Bayport Dr #600, Tampa, FL 33607

Mr. Matt Lovitt, Chemistry and Environmental Manager at Sequoyah Nuclear Plant in Soddy Daisy, Tennessee will present an outlook of the nuclear power industry in the United States to the FWCS on Friday April 7, 2017 at FRCC headquarters. Matt's employer, Tennessee Valley Authority (TVA), operates 7 reactors at 3 different sites, including Watts Bar Unit 2 which entered commercial operation on October 19, 2016, making it the nation's newest nuclear unit, and the first new reactor to go online in the U.S. in 20 years. TVA's nuclear fleet supplies more than one third of the region's electricity, providing enough energy to power more than 4.5 million homes.

Prior to Sequoyah and TVA, Matt served in the U.S. Navy as a Nuclear Surface Warfare Officer, performing tours onboard USS Roosevelt (DDG 80) and USS George Washington (CVN 73). He was also a Navy ROTC Instructor at the University of South Florida, where he taught Naval Engineering and Navigation Courses.

Matt's education includes a Bachelor of Science in Systems Engineering from the U.S. Naval Academy and a Master of Science in Electrical Engineering from the University of South Florida.

With new nuclear units being planned for the Sunshine state, many Floridians are showing a renewed interest in nuclear energy. Watch the Signal and time2meet.com for additional details and be sure to join us at FRCC headquarters for this most informative presentation.



FREE EBOOKS

Twenty (20) free downloads on energy issues being confronted by today's legislators and decision-makers.

These downloads are available to non-members for \$4.99 each, but are yours free as an IEEE member.

- 112th Congress Accomplishments—Committee on Science, Space, and Technology—Dec. 2012.
- A History of the Committee on Science and Technology: 1958-2008.
- A Policy Framework for the 21st Century Grid—A Progress Report—Feb. 2013.
- A Strategy for American Innovation—Feb. 2011.
- America's Future Energy Jobs.
- Building a Stronger and Smarter Electrical Energy Infrastructure.
- Building a Sustainable Energy Future—Draft Report: 10 April 2009.
- Copyright Basics (U.S. Copyright Office 2010).
- Cybersecurity—Authoritative Reports and Resources.
- Cyberspace Policy Review (May 2009).
- Diminished Funding and Rising Expectations—Trends and Challenges for the Public Research Universities.
- Foreign Science and Engineering Presence in U.S. Institutions and the Labor Force—March 2010.
- FutureGen: A Brief History and Issues for Congress.
- Highlights of the FY 2012 Federal Science & Technology Budget Proposal: A Compendium (Feb. 2011).
- IEEE-USA Unemployment Survey—2006 Edition.
- Industrial Competitiveness and Technological Advancement: Debate Over Government Policy—Feb. 2010.
- Interagency Public Access Coordination (March 2012).
- Nanomanufacturing—January 2014.
- Nanotechnology—A Policy Primer—June 2010.
- Risking it All—Unlocking the Backdoor to the Nation's Cybersecurity.

Access all the above documents at:

http://www.ieeeusa.org/communications/ebooks/free_new.asp

USF Student Branch

The USF Student Branch finished a busy fall semester, and plans are well underway for an equally-busy spring. A senior banquet was held to honor the fall graduates. Drs. Fehr, Hoff, Jeong, and Schnitzler were on hand from the USF faculty. Dr. Jim Anderson gave an inspirational keynote talk, and Ralph Fehr and T.J. Ross were recognized for supporting the student activities.



A large contingent of students will be travelling to Charlotte, North Carolina in March to participate in SoutheastCon 2017. A hardware team is building an awesome robot that is sure to impress (and hopefully win the competition). Other students will be taking part in software and ethics competitions, while yet others are hard at work designing websites and T-shirts. But it won't be all fun and games, as USF will be the host university for SoutheastCon 2018. This means observing the conference, meeting with the Charlotte organizers, and learning all we can to help make the Tampa Bay event in March 2018 the best Region 3 conference ever.

Florida Polytechnic University in Lakeland will put their newly-formed IEEE student branch to work, helping USF organize the student program. A team of students and faculty from USF has been formed and has started working on the student program. Jordan Irby, a USF junior, has assumed the role of Florida Poly liaison. This critical post will lay the groundwork for a successful and productive long-term relation between USF and Florida Poly, both for SECon18 and beyond. Having a second university in the section provides many opportunities. We welcome the Florida Poly IEEE Student Branch to the Florida West Coast Section and hope to do great things together. Stay tuned for further updates regarding SoutheastCon 2018, and **GO BULLS!**



Tampa Bay E-Week Banquet Registration Information

Who: *Engineers of Florida's West Coast, Family, and Friends*

Where: *TPepin's Hospitality Centre
4121 N. 50th St. • Tampa, FL 33610*

Time: *4:30PM-6:30PM Vendor Expo and Cocktails
6:30PM-9:00PM Dinner, Speaker, Awards*

Cost: *\$65 per person (pre-event price)
\$75 per person (day of event)*

Menu: *Chicken, Fish, or Vegetarian*

Dress: *Cocktail / Evening Attire*

Keynote: *There's No Crying in Phosphate!*

Karen A. Swager, P.E.

*Vice President, Concentrates—Phosphates
The Mosaic Company*

Society Awards:

Engineer of the Year

Student of the Year

Young Engineer/Professional of the Year

Professional of the Year

Lignell Awards:

For some years now, the FWCS has participated in the Lignell Award Outstanding Teacher Recognition Program to recognize and honor outstanding contributions by teachers to pre-college education in math and science. This year, the field has been expanded to include Charlotte, Citrus, DeSoto, Hardee, Hernando, Hillsborough, Lee, Manatee, Pasco, Pinellas, Polk, and Sarasota counties. Three teachers will be selected from the nominees, truly representing the best of the best.

For more information:

info@tbewb.org

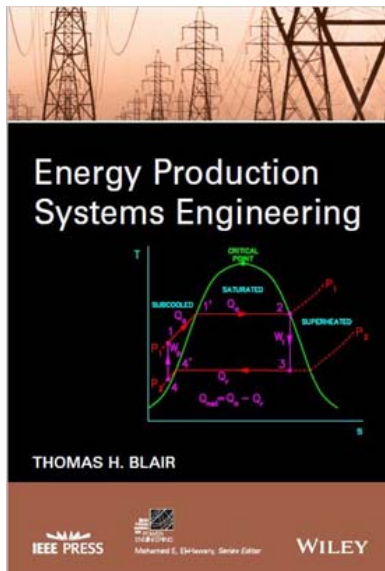


		
<h2 style="margin: 0;">Energy Production Systems Engineering</h2>		

Date:	January 20, 2017	Time:	8:00am-8:30am Registration 8:30am-3:30pm Seminar
Speaker:	Thomas Blair, P.E., Engineering Fellow Tampa Electric Company	Cost:	\$150 Members \$250 Non-Members \$100 Students
Location:	FRCC Headquarters, 3000 Bayport Dr #600 Tampa, FL 33607		

Use parking lot for Hyatt (North side only).

Includes lunch and a copy of *Energy Production Systems Engineering* by Tom Blair (Wiley/IEEE Press - 2017) **\$140 value!**



PDH Credits: **6 Continuing Education Hours (CEHs)** will be awarded for this seminar. Be sure to enter your name and PE number on the signup website as it appears on your license. IEEE Florida Provider Number is 3849.

RSVP: Online at: <http://time2meet.com/fwcs-meetings/>
Make checks payable to IEEE FWCS and mail a check in advance to:

John Stankowich
IEEE PE/IA Chapter Treasurer
2593 Forest Run Court
Clearwater, FL 33761-3716

Questions: Serge Beuzile at 863-834-6511 or serge.beuzile@lakelandelectric.com, or
Jim Howard 863-834-6585 or jim.howard@lakelandelectric.com

Tom Blair will cover the key concepts of energy production systems, as covered in the newly-published first edition of his textbook:

Electrical Safety • Basic Thermal Cycles • Boilers & Steam Generators • Fossil Fuels & the Basic Combustion Process • Hydraulic Turbines • Nuclear Power • Conveyors • Fans • Pumps • Condenser Cooling System • Steam Turbines • Gas Turbines • Reciprocating Engines • Electrical System • Transformers & Reactors • Generators • Motors • Variable Frequency Drive Systems • Switchgear • Battery / Vital Bus Systems • Ground System • Electrical System Protection / Coordination • Control Systems • Instruments and Meters • Valves & Actuators • Emission Control Systems • Water Treatment • Solar & Wind Energy

These topics are thoroughly covered in the Energy Production Systems Engineering course offered by the University of South Florida (USF), but in a single day, we will cover the highlights of the course and give you a good feel for what each of these essential topics entails. This seminar is ideal for new engineers in the power industry and veteran power engineers looking to brush up on some old concepts or learn some new ones. Current industry practices in regards to safety and emerging trends such as solar power will be discussed.

Speaker: Tom Blair is an Engineering Fellow with Tampa Electric in the Generation Engineering Department. He performs electrical system analysis and uses the results to specify electrical equipment ratings, protective relay settings, and electrical system arrangement. Tom is also an adjunct professor and occasionally instructs courses at the University of South Florida. He has instructed the Electrical Machines and Drives Course, the Energy Production Systems Engineering course and a PE (power) exam preparation course at USF. Mr. Blair is a Senior Member of IEEE.

		
Generator Protection Fundamentals		

Date: Friday, February 17, 2017

Time: Registration & Breakfast
Seminar

11:00am—2:00pm
9:00am—2:00pm

Location: FRCC 3000 Bayport Dr. #600, Tampa, FL 33607

Parking: Use parking lot for Hyatt (North side only)

Cost: \$100 Members, \$200 Non-Members, and \$20 Students

4 Continuing Education Hours (CEHs) will be awarded

Speaker: **Wayne Hartmann** — VP, Protection and Smart Grid Solutions — Beckwith Electric

RSVP: Online at: <http://www.ewh.ieee.org/r1/floridawc/> (Select Reservations)

Make checks payable to: IEEE FWCS

Send checks to: Jim Howard, IEEE FWCS Treasurer
3133 W. Paris Street
Tampa, FL 33614-5964

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

Generators are subject to internal faults, external faults, and abnormal operating conditions caused by turbine and excitation system issues, as well as power system events over which the generator has no control, but must cope with. False (nuisance) trips are costly as the generator output is lost. Inability to trip due to lack of sensitivity, lack of certain protections, or deficiencies in protection application may cause severe damage to generators, resulting in prolonged outage and revenue loss, plus increased system instability risk. Achieving the ideal balance of secure and dependable protection involves use of an array of elements that protect the generator for all operating modes: off-line, start up, synchronizing, various levels of power output and when challenged by system faults and anomalies.

Who should attend this course: power plant protection engineers and technicians, as well as power plant operators and protection generalists who desire a deeper background on the subject.

- | | | |
|--|---|---|
| Generator construction and operation | - | Grounding and connections |
| IEEE standards for generator protection | - | Generator and power system interaction |
| Generator protection element review | - | Internal faults (in the generator zone) |
| Abnormal operating conditions | - | External faults |
| Protection Application Exploration | - | Tripping considerations and sequential tripping |
| Discuss tactics to improve reliability | - | Redundancy concepts |
| Generator protection upgrade considerations | - | Lessons learned from NE Blackout (2003) |
| Explore Setting, Commissioning and Event Investigation Tools | | |

Wayne Hartmann is VP, Protection and Smart Grid for Beckwith Electric. He provides customer and industry linkage to Beckwith Electric's solutions, contributing expertise for application engineering, training and product development.

Before joining Beckwith Electric, Wayne performed in application, sales and marketing management capacities with PowerSecure, General Electric, Siemens Power T&D and Alstom T&D. During the course of Wayne's participation in the industry, his focus has been on the application of protection and control systems for electrical generation, transmission, distribution, and distributed energy resources.



Hurricane Matthew Panel Session

Tampa Electric Co. (TECO), Duke Energy Florida (DEF), and Seminole Electric

Date: Friday, March 17, 2017

Time: Registration 10:30am—11:00am
Meeting 11:00am—2:00pm

Location: FRCC 3000 Bayport Dr. #600
Tampa, FL 33607

Parking: Use parking lot for Hyatt
(North side only)

Cost: \$10 Members, \$20 Non-Members, and \$10 Students
Lunch Included

3 Continuing Education Hours (CEHs) will be awarded

Speakers: **Robert Lee Collins, III** — TECO
Jimmy Guzman — DEF
John Price — Seminole Electric

RSVP: Online at: <http://www.ewh.ieee.org/r1/floridawc/> (Select Reservations)

Make checks payable to: IEEE FWCS

Send checks to: Jim Howard, IEEE FWCS Treasurer
3133 W. Paris Street
Tampa, FL 33614-5964

Space limited to the first 50 registrants!!!

Questions: Jim Howard at 863-834-6585, or jim.howard@lakelandelectric.com

TECO will be reviewing the details of what was required to get facilities restored at Grand Bahama Power Company, their Emera sister company. TECO shipped men, materials, trucks, generators, etc. down to Grand Bahama, where 90% of their system was destroyed by Hurricane Matthew. They will be sharing the many, many challenges they experienced in working to get this system restored.

DEF plans to cover their response to both Hurricanes Hermine and Matthew, and share with the group lessons learned from these experiences.

Seminole Electric will be sharing with the group the details of getting their system, along with their member's systems, restored following these devastating storms.



SoutheastCon 2017

Charlotte, NC—March 30-April 2, 2017

“The Internet of Smart Ideas”



This year’s Region 3 conference promises to be another outstanding event, offering a superb technical program and a demanding student program, all set in the beautiful Embassy Suites Hotel Golf Resort and Spa, in the Charlotte/Concord metroplex. Registration for the conference is already open, and can be accomplished on the conference’s website: <http://sites.ieee.org/southeastcon2017/>. Early registration fees start at \$385 for the technical program and \$125 for students and life members.

Technical sessions include the following topic areas:

- Power and Sustainable Energy
- Cybersecurity & Information Assurance
- Health Informatics and Healthcare
- Communications and Networking
- Control and Automation
- Embedded Systems
- Nanotechnology and Materials
- Signal and Image Processing
- Big Data and Warehouse Architecture
- Software Engineering
- Sensor Networks
- Electromagnetics and Microwaves
- Geosciences and Remote Sensing
- Robotics and Computer Vision
- Simulation and Game Development
- Bioengineering and Bioinformatics
- Optics and Optoelectronics
- Instrumentation and Measurements
- Social Implications of Technology

SoutheastCon 2017 Paper Submission is now OPEN!

The annual IEEE SoutheastCon conferences promote all aspects of theories and applications of engineering disciplines. Sponsored by the IEEE Region-3, this event will attract researchers, professionals, and students from the Southeastern region of the U.S. SoutheastCon 2017 will feature tutorial sessions and workshops along with the Technical Program. Submit your paper or proposal for tutorial/workshop NOW at conference Website: <http://www.ieeesoutheastcon.org/>. Questions of a general nature should be directed to the Technical Program Chair.

Important Due Dates:

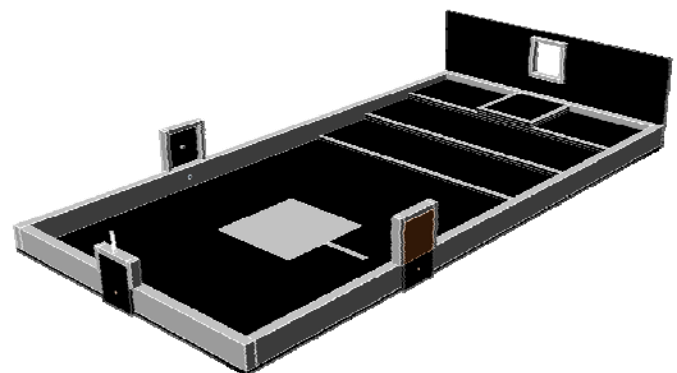
- **Abstract/Paper Submission:** January 10, 2017
- **Tutorial Submission:** January 10, 2017
- **Notification to Authors:** February 15, 2017
- **Camera-Ready Papers:** March 1, 2017

SoutheastCon 2017 Student Program

The SoutheastCon 2017 Student Program consists of six major events:

- | | |
|------------------------|-----------------------|
| • Hardware Competition | • Paper Competition |
| • Software Competition | • Website Competition |
| • Ethics Competition | • T-shirt Competition |

Teams from close to 50 universities in Region 3 will be competing head-to-head for recognition, prizes, and of course bragging rights. The hardware contest is the crown jewel of the student competitions, and this year’s game was inspired by Star Wars. Teams build robots to compete autonomously in a contest where they must discover the unknown, use the Force in a lightsaber duel, bring down the energy shield protecting the enemy base, then launch a photon torpedo to defeat the enemy. Don’t miss this exciting display of student genius!



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¾ Page	\$110	\$143	\$530	\$663	\$925	\$1,110
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January 2017 Calendar of Events (For more information see P. 1) in this Signal...

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 <i>EXCOM Meeting 5:30 TECO Plaza</i>	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20 Energy Production Systems Engr. <i>Details P. 7</i>	21
22	23	24	25	26	27	28
29	30	31				