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**SUNCOAST**

**SIGNAL**

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**April 2007**



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***Enforcement of Mandatory Standards for the  
Nation's Bulk Power System***

Friday, April 27, 2007; 12 Noon (Lunch Included – Reservation Req.)

Location: Florida Reliability Coordinating Council (FRCC), Tampa

Gerry Cauley, president and CEO of the Southeastern Reliability Corporation (SERC). and former vice president of standards at the North American Electric Reliability Corporation, will present on the timely topic of the enforcement of mandatory standards for the nation's bulk power system. For details see page 3.



***Ongoing Biomedical Research Projects at  
USF Department Of Ophthalmology***



Date: April 19, 2007 (Thursday) 6:00 pm

Location: University of South Florida, ENB-109 – Fowler Ave. Tampa

Dr. David Richards will speak on subject from digital imaging for detection of glaucoma, probabilistic modeling of nerve damage, measurement of intraocular pressure and more. For details see page 7.



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All material for THE SUNCOAST SIGNAL is due in electronic form by 1<sup>st</sup> Friday after the 1<sup>st</sup> Tuesday of the month preceding the issue month.

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## News (Editor's Column)

It has been exciting: the Celebrate Engineering Banquet; the Student Picnic, the great energy in developing a basketball playing robot for the SECon 07 competition. There have also been a number of very interesting meetings and more this month. We have a new Women in Engineering affinity group, a rejuvenated EMB chapter and all groups are ramping up with meetings and events. This month there are talks on Ophthalmology Research and Mandatory Standards for Power systems. What will come next? Right, the 2007 Florida Engineering Education Conference and

By the time you see this, SECon will be over and USF will have won! So we hope that you have been sending "energy" to the team.

—PS



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## Institute Online Alert

- Students Create Hands-on Electrical Engineering Course**—During a late night study session, John Torous, chair of the IEEE student branch at the University of California at Berkeley, had an epiphany about creating a fun introductory electrical engineering course. Read about the "IEEE Hands-on Electronics" course his branch created at <http://bmsmail3.ieee.org:80/u/5034/00939637>
- Laptop Battery Standard Gets a Reboot**—In June 2006, reports surfaced that laptop batteries from Sony Corp. were short-circuiting because of a misstep in the manufacturing process, and the company recalled them. To prevent such a recurrence the IEEE is making its laptop battery standard even more stringent. Read on at <http://bmsmail3.ieee.org:80/u/5038/00939637>
- Virtual Realists to Meet in Person**—The professional illusionists gathering in Charlotte, N.C., in March won't brandish wands or pull rabbits out of hats. But they will be dealing with the not-quite-real: virtual environments, augmented reality, and related technologies at the 15th IEEE Virtual Reality Conference, sponsored by the IEEE Computer Society's Visualization and Graphics Technical Committee. To learn more, go to <http://bmsmail3.ieee.org:80/u/5040/00939637>



## *Enforcement of Mandatory Standards for the Nation's Bulk Power System.*

Date: Friday, April 27, 2007

Time: 12 Noon (Lunch Included – Reservation Req.)

Speaker: Gerry Cauley, Vice President and Director of Standards of the Southeastern Reliability Corporation (SERC)

Location: Florida Reliability Coordinating Council (FRCC)  
1408 N. Westshore Boulevard, Suite 1002  
Tampa, Florida 33607-4512

Cost: \$10 Members, \$15 Non-Members, Student Members \$5

RSVP: Online at: <http://www.ewh.ieee.org/r3/floridawc/> (Select Reservations)  
Make checks payable to: IEEE FWCS

Questions: Tom Blair at 813-228-1111, ext 34407 or [thblair@tecoenergy.com](mailto:thblair@tecoenergy.com)

The Electric Reliability Organization

Gerry Cauley, president and CEO of the Southeastern Reliability Corporation (SERC) and former vice president of standards at the North American Electric Reliability Corporation, will present on the timely topic of the enforcement of mandatory standards for the nation's bulk power system. Standards are expected to become effective on June 1, 2007 under Section 215 of the Federal Power Act. Under Section 215, the Federal Energy Regulatory Commission has the authority to delegate standards setting and enforcement powers to an electric reliability organizations and regional entities.



## *IEEE FWCS Women in Engineering First Chapter Meeting*



Date/Time: Tuesday, April 10, 2007, 6:00pm

Location: University of South Florida, ENB-261– Fowler Ave. Tampa

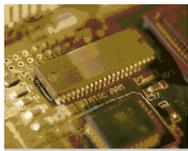
### Meeting Topics:

- State FWCS WIE Chapter mission statement and scope of interests
- Introduce the chapter's current officers
- Announce available volunteer officer positions
- Discuss and plan forthcoming activities

IEEE Women in Engineering is dedicated to facilitate the development of programs and activities that promote the participation of women in engineering programs, to promote IEEE membership and retention of IEEE women members, and to enhance the career advancement of women in the profession.

Join us as we move forward to establish an active FWCS Women in Engineering Chapter!

Members and Non-members of WIE are welcome to participate.



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## ***Meritorious Achievement Award in Informal Education***

PISCATAWAY, NJ - - The IEEE Educational Activities Board is seeking nominations for its 2007 Education Awards. In addition to its seven existing recognitions, a newly-established annual award for Meritorious Achievement in Informal Education will be presented this year.

This new award aims to recognize IEEE members who volunteer their time to the informal education community whereby teachers, students, and the public benefit from their professional expertise in science and technology. The award recipient is awarded \$1000 as well as a plaque and is honored during an awards ceremony hosted by the EAB.

The deadline for all nominations is 30 April 2007. Nominations are also being sought for the other awards.

For a complete list of IEEE EAB award descriptions and honorarium details visit:

<http://www.ieee.org/web/education/EABAwards/descriptions.html>

## ***FWCS News: Serge Beauzile—New Secretary***

Serge Beauzile has picked up the quill to take the handoff from Jules Joslow as Secretary of the Section. Serge has an extensive background in the Electric Utility industry particularly in Power System Control & Protection and Transmission planning. As a senior engineer in the Grid Management team of Progress Energy Florida he supports service restoration, switching and tagging operations on the Distribution system. He develops and maintains contingency plans for the regions to permit rapid response to a system outage. He also provides technical expertise to support training functions related to the Distribution Control Center operations.

He previously worked for the Lee County Electric Coop in the Relay Engineering group. He was responsible for all phases of the design, coordination, and construction of protective relaying systems including transmission, and distribution substations.

Prior to this Serge worked for Keyspan, formerly Long Island Lighting Company, for fifteen years. His experience includes Transmission System Planning, and he developed plans for the reliable and economic performance of transmission and interconnection systems, overseeing the development of major transmission and interconnection expansion projects. He was a member of the New York Power Pool Operating Study Task Force. Serge also served as a Supervisor for the Engineering System Analysis group with responsibility for relay coordination, relay setting and evaluation of system disturbances.



Serge is a senior member of IEEE; he obtained a Bachelor Degree in Electrical Engineering from Manhattan College and Master in Electrical Engineering at the Polytechnic University of New York in 1990 and 1997 respectively. He holds a Professional Engineer licenses in the states of Florida and New York.

Photo: Serge and his lovely wife.

# 2007

# IEEE Power Engineering Society General Meeting

## Tampa has it all.

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Tampa, Florida

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[www.ieee.org/PES\\_GM2007](http://www.ieee.org/PES_GM2007)

### TAMPA is a family destination city.

While you're in Tampa a single day's itinerary might include breakfast at a waterside café, Busch Gardens, The Florida Aquarium, a streetcar ride to Channelside for shopping and a Tampa Bay Devil Rays game.

Cultural endeavors: Dramatic productions from opera to orchestras bring patrons to their feet in applause at the performing art center and other cultural venues such as The Salvador Dali Museum, and the Tampa Bay Museum of Art where Georgia O'Keefe and Her Time is a featured exhibit.

For the family: Tampa offers a wide variety of activities including, the Big Cat Rescue, Dinosaur World, Busch

Gardens Tampa Bay, the Florida Aquarium, The Lowry Park Zoo, and the Museum of Science and Industry.

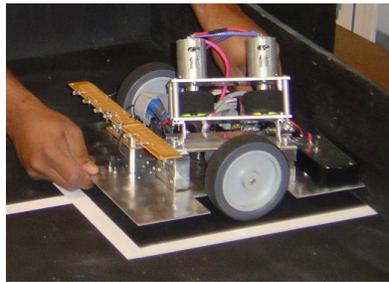
Past and Present: The Henry B. Plant Museum offers a taste of how the other half vacationed at the turn of the 20th Century. Once you've toured the Plant Museum, the Tampa Bay History Center offers a look back at archeological discoveries, including a cache of 10,000-year-old weapons, while pop culture buffs can catch a glimpse of 1950s souvenirs. The wood-planked Ybor City State Museum and the 100-year-old Columbia Restaurant are worth the time and the visit.

WATCH for details about a dynamic companion program.



Hosted by Tampa Electric





## USF Student Branch Robot to Compete at SECon

In early March the USF IEEE Robotics team had their robot showing off. It would trace the competition course and fire ping-pong balls at just under the speed of sound.

As of this writing, the team is expectantly waiting to leave for Richmond VA. Final code tweaks and some decorative touches remain but these students have a winning machine!

Here are some photos of the course (above left) and a close-up of the robot (above right) looking into the “gun,” just below the two cylinders.



## Another Student Picnic Photo

Chris Ferekides (Counselor) with student officers



## Lignell Award Winners

Bannister, Ingersoll and Young (from left)



## Celebrate Engineering Banquet '07

The Celebrate Engineering Banquet '07 at the Tampa Wyndham Westshore Hotel was a great success! Live flute and harp music set the background as the guests and vendors mingled in the anteroom. Farewells were said to Jules Joslow, long-time FWCS Secretary and many met his successor Serge Beauzile and his wife. At 7PM the guests entered the banquet hall for dinner of prime rib or chicken topped off with key lime pie.

After dinner, Thomas Pentrack, NASA's Deputy Director, enthralled us with the International Space Station. They are anticipating that the Space Shuttle will fly its last mission in 2010 and NASA plan to go to the moon ten years later.

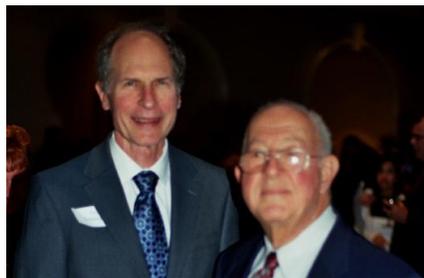
IEEE FWCS Teacher In Service Chairman, Sean Denny had collected the Lignell Outstanding Science Teacher of the Year nominations from three counties.. From the eight nominees, one winner was chosen for each county. The winners were Steve Bannister from King High School (Hillsborough), Jennifer Ingersoll from Pasco High School, and Antonio Young from Bay Point Middle School (Pinellas). Each winner was presented with a plaque and a award check. (See photos bottom of left column.)

The IEEE Engineer of the Year went to Jim Howard. Jim Anderson said that Mr. Howard had arranged many events in Tampa, among other events he organized the very successful IEEE Sections Congress 2005.

Jim Anderson, IEEE FWCS Chair and Al Kurzenhauser, of ASME thanked all the members for their participation on the Celebrate Engineering Committee. In particular, David Figueroa did an outstanding job with the registrations.

—Sean Denny

Photos: your editor and Jules Joslow (upper) and Richard Beatie and Jim Anderson with vendors (lower)





## Meeting



### *Ongoing Biomedical Research Projects at the USF Department Of Ophthalmology Dr. David Richards, USF Department of Ophthalmology*

Date: April 19, 2007 (Thursday)

Time: 6:00 pm

Location: University of South Florida, ENB-109 – Fowler Ave. Tampa

**Abstract:** The following projects will be discussed briefly:

1. Digital imaging of the retinal nerve fiber layer for detection of glaucoma.
2. Probabilistic modeling of optic nerve damage in Glaucoma.
3. Non-invasive measurement of intraocular pressure using pressure phosphenes and visual evoked potentials.
4. Mini-tonometer tip for intraocular pressure measurement by applanation of the cornea.
5. Multi-spectral digital holography of the retina and cornea.

Speaker: David Richards is an Associate Professor of Ophthalmology at the University of South Florida - College of Medicine. He received A.B. degree (Astrophysical Sciences) from Princeton University, Ph.D. (Radio Astronomy) from Cornell University, and M.D. from University of Miami, Ophthalmology Residency from Medical College of Virginia, and Richmond Glaucoma Fellowship, Bascom Palmer Eye Institute, Miami.

Directions: See <http://www2.eng.usf.edu/contact.asp> for directions to USF campus and parking information. The seminar room is in Engineering Building II (ENB).

Contact: Ravi Sankar ([sankar@eng.usf.edu](mailto:sankar@eng.usf.edu)) or Bobby Compton ([Bobby.Compton@med.ge.com](mailto:Bobby.Compton@med.ge.com)) for further information.



### *Joint IEEE/ASME Lunch and Learn – Integrated Gasification, Combined Cycle Technology*

<b>Date:</b>	May 18, 2007 Registration & Lunch: 11:30am – 1PM	<b>Cost:</b>	\$10 Members of IEEE or ASME members, \$20 Non-Members. Includes Lunch
<b>Speaker:</b>	Mr. Lloyd Webb, Engineering Manager, Polk Power Engineering & Technical Services, Tampa Electric Company.	<b>RSVP:</b>	Online: <a href="http://www.ewh.ieee.org/r3/floridawc/">http://www.ewh.ieee.org/r3/floridawc/</a> (Select Reservations)
<b>Location:</b>	TECO Hall, Tampa Electric Company, 702 N. Franklin Street, Tampa—Space is limited to 35.	<b>Questions:</b>	Tom Blair at 813-228-1111, ext 34407 or <a href="mailto:tblair@tecoenergy.com">tblair@tecoenergy.com</a>

The Polk Power Project IGCC plant was awarded \$120 million from the U.S. Department of Energy (DOE) for the development of a project using clean coal technology. Construction on Unit One began in 1994 on a site selected by a public Power Plant Siting Task Force comprised of 17 citizens from environmental groups, businesses, and universities in the Tampa Electric Company service area

and throughout Florida. The objective was to ensure that local and statewide public issues and environmental concerns relative to new power plant development were adequately and accurately considered in selecting a suitable site for the new power plant. The 250-megawatt IGCC facility began commercial operation in the fall of 1996

For more information see RSVP link above.

## Brain Teaser Challenge Column

—By Butch Shadwell

**March BTC** After failing to get a scholarship to clown college, I ended up studying EE at Annapolis. Working with vacuum tubes there brought this problem to mind; “Vacuum tubes and FETs have a spec called transconductance which is measured in mhos. Let’s say a triode has its cathode and plate tied to voltage sources, and the starting grid voltage causes a plate current of 200 mA. If this triode has a transconductance of 1000 mmhos, what happens to the plate current if we make the grid more negative with respect to the cathode by 1 mV?”

Even though 1000 mmhos (or Siemens) may not be a practical transconductance spec for a triode, it made this problem very easy to work. I also simplified things by tying the plate and cathode to voltage sources. All you needed was to know what a mho was. The mho is the reciprocal of the ohm. That is,  $(\Delta \text{plate current})/(\Delta \text{grid voltage}) = \text{the mho}$ . With a transconductance of 1 mho, the problem was very easy as the change in current had to match the change in voltage, or in this case -1 mA. Since the grid is getting more negative with respect to the cathode, there must be a reduction in current flow. The negative grid repels negative electrons back toward the cathode. But I bet you already knew that.

**April BTC** I regularly speak at universities around the state, and occasionally abroad, about some of the different areas of applied research with which I have been involved in my career. For the last 12 years I have been working as an independent consultant in applied physics and electronics. I really have a good time doing what I do and every new project presents many unique challenges.

I was recently working on a new medical device that used a significant amount of electrical energy, most of which was being converted to heat. Since this medical device had to work without tethers or hoses, I had to figure out how much coolant I needed to carry to avoid causing tissue damage to the patient due to high temperatures. So, here’s the problem: The device is using 3 watts of power and it will be operating for 10 minutes. If I start with cooling water at 20 degrees C, how much water do I need to make sure that the fluid never gets above 38 degrees C? Assume that all of the heat from the instrument is dissipated uniformly to this volume of water. This is just one of many interesting problems I had to solve to make this instrument a reality. Enjoy.

Reply to Butch Shadwell at [b.shadwell@ieee.org](mailto:b.shadwell@ieee.org) (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328

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## 2007 Florida Engineering Education Conference

On May 4, 2007, the University of Central Florida in partnership with Northrop Grumman Laser Systems, the Florida Space Grant Consortium, the Society of Women Engineers and the Florida Department of Education will be hosting the second annual "Florida Engineering Education Conference". This year's conference theme is "*Engineering: the Invisible Profession - Recapturing Young Minds*". It will again be held at UCF's Student Union as "central in the State of Florida". The website (<http://partner.cecs.ucf.edu/FEE/>) for the conference is in the process of being updated and you will still be able to see highlights from last year's event. Our goal is to attract 150-200 K12 teachers, administrators, practicing engineers and other (informal) educators interested in learning more about pre-college engineering education in Florida.

Our first panel will include human resource directors from corporations and governmental organizations discussing their current hiring conditions and concerns about the future workforce. The second panel will include K12 STEM teachers who are actively integrating engineering into their curricula. The third panel will include representatives from industry, government and professional engineering organizations who will discuss their engineering education programs. We will then have four workshops to include presentations from Project Lead the Way and the Infinity Project. Please contact Bruce Furino at [bfurino@mail.ucf.edu](mailto:bfurino@mail.ucf.edu) for particulars.

(Advertisement)



## Spring 2007 Battery Maintenance Seminar

### You Are Invited to Attend

#### Nolan Power Group's 2007 Central Florida Spring Battery Seminar

### Seminar

#### Course Topics Include:

- Battery Overview
- Installations
- Maintenance
- Visual Inspections
- Corrective Actions
- Battery Problems
- Discharge Testing
- And More

#### CEU Credits Available

#### Registration

Fee:

\$675 per Person  
\$600 for 4 or more

#### Registration

**Due By:**  
May 7, 2007

Conducted by *Marco Migliaro, PE* a recognized expert in the field of **Emergency Power Systems** and **Stationary Technology**, the two-day course focuses on applications, battery types, preventative maintenance and more. In addition, the course provides an opportunity for gaining a greater depth of knowledge of stationary battery visual inspection, problem identification and corrective actions. CEU credits are available for those who attend.

**June 4 – 5, 2007**

**8:00 AM to 5:00 PM**

**Comfort Inn & Suites, 3520 Highway 98 North, Lakeland, FL 33809**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

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Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

**Please Register Me for the Battery Seminar**

Method of Payment: Credit Card \_\_\_\_\_; PO#: \_\_\_\_\_

Email: \_\_\_\_\_

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Nolan Power Group at 954-333-3041**

For More Information Please Call or E-mail  
Mary Ellen Insley at 954-333-3042  
maryellen.insley@nolanpower.com

**“THE POWER SPECIALISTS”**

**April, 2007 Calendar of Events (For more information see P. 1 *Inside this Signal...*)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 <u>5:30 pm</u> <i>IEEE FWCS ExCom TECO Tampa</i>	4	5	6	7
8	9	10 <u>6 pm:</u> <i>Women in Engineering USF Tampa p. 3</i>	11	12	13	14
15	16	17	18	19 <u>6 pm:</u> <i>Ophthalmology Research USF Tampa p. 7</i>	20	21
22	23	24	25	26	27 <u>12 noon:</u> <i>Bulk Power Standards Lunch FRCC Tampa p. 3</i>	28
29	30	1	2	3	4	5

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*IEEE/PES General Meeting, June, 2007 Tampa!  
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