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**THE**

**SUNCOAST**

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**May 2008**



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***INDUSTRIAL and COMMERCIAL POWER SYSTEMS  
TECHNICAL CONFERENCE***

***I&CPS 2008***

***Clearwater Beach Florida***

***May 4 - 8, 2008***

***Sheraton Sand Key***

***Register at: [www.ieee.org/icps2008](http://www.ieee.org/icps2008)***

***PACE/GOLD Event with Russell Harrison  
IEEE Washington Lobbyist***

***May 22, 2008 at TECO HALL***

***Time 5:00 PM to 7:30PM***

***USF Student Branch Picnic at Fort Desoto Park***

***May 4, 2008***

***A joint event with three other student groups: Europeans @USF, WIE and SWE***

***For more information contact [kson@mail.usf.edu](mailto:kson@mail.usf.edu)***

## *This Month... (Editor's Column)*

### **2006 IEEE EXECUTIVE COMMITTEE FLORIDA WEST COAST SECTION**

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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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There are a few new things in this issue I would like to bring your attention to. First, we have one new advertiser and a returning advertiser. Deftlogic, whose business card is on page 3 and Long and associates on page 4. If the services of either interest you, check them out. Next, FWCS has a new chapter, the Consultants network being organized by Kenneth Pohl. His article is on page 3. There are a few events on the calendar. The I & CPS Conference on page 5 and the Student Branch Picnic and the PACE/GOLD meeting with Russell Harrison. He is the Washington Lobbyist for IEEE and will be giving a presentation on how to make the political process work for us. The details are on page 5.

Thanks to all who contributed articles or announcements to the newsletter. In the future I will be having articles by guest authors on PACE topics such as investing, employment. If any of our readers want to submit an article for publication in the Signal on topics of technical, scientific or educational needs of our members, send it to me in Word format for consideration by the Friday after the EXCOM meeting each month.

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### *USF Student Branch Picnic*

This looks like fun for all. Ft Desoto Park is a beautiful beach and the beginning of May seems like a good time to be there. On May 4, 2008, the USF Student Branch is holding an end-of-year picnic at the nationally known Fort De Soto Park, [www.fortdesoto.com](http://www.fortdesoto.com). It is a joint activity with three other student groups (Europeans@USF, WIE and SWE). This all-day affair will be at Shelter #9 and will include food, swimming, food, games, food, hiking, food...you get the point. For more information contact Kosol Son, [kson@mail.usf.edu](mailto:kson@mail.usf.edu).



## Calling All Consultants!

The IEEE Florida West Coast Section is looking for members interested in forming an affiliated Consultants' Network (CN). If you are a consultant or are considering it, a local CN can be an invaluable resource for your consulting practice. CN members enjoy benefits including:

- An expanded network of peers and clients
- Access to additional marketing channels
- Technical and business development advice
- A forum for idea sharing and advice

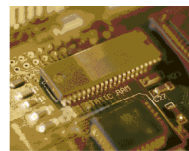
Consultants' Networks are local alliances of independent consultants operating with the support and guidance of IEEE-USA's Alliance of IEEE Consultants' Networks (AICN.) Membership in the CN is open to IEEE members and nonmembers alike. The network will offer regular meetings with your peers along with speakers on topics of interest to independent consultants, and can offer expanded services such as member directories and referral services.

If you would like to participate in the CN, or are just interested in coming to networking meetings, please let us know by emailing your interest to Ken Pohl at [Kenneth.Pohl@ieee.org](mailto:Kenneth.Pohl@ieee.org)



## 2007 Membership Growth Shows Mixed Picture

The IEEE saw a small increase in overall membership last year, while student membership dipped. The institute added 1359 new members to finish 2007 with 376 126. Higher-grade membership, which excludes student and graduate student members—a category added in 2007—increased by 2 845 over 2006. Student membership, which includes the graduate students, totaled 51 257, a decrease of 1999 over the 2006 total



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## ***I&CPS Technical Conference*** ***May 4-8 Sheraton Sand Key*** ***Clearwater Beach***

**Sunday evening** starting at 6 pm the Conference Reception will be by the pool with cash bar. After the reception our long time friend and supporter Cooper Industries is hosting a Dessert Reception.

All day **Monday** there are Committee, Subcommittee and Working Group meetings. The subject of these meetings is the standards written by this group of engineers. You are invited to join any of these meetings. The primary work at the moment is the reorganization of the Color Book Standards into a new format.

### Technical Sessions

#### **Tuesday 8 AM – 12 noon**

- **Session 1** Power Systems Engineering Maintenance - Operation - Safety.
- **Session 2** Power Systems Protection

#### **Tuesday 1 PM – 5 PM**

- **Session 3** Power Systems Engineering Power Quality
- **Session 4** Energy Systems

#### **Wednesday 8 AM – 12 noon**

- **Session 5** Power Systems Engineering Reliability
- **Session 6** Power Systems Protection

#### **Wednesday 2 PM – 5 PM**

- **Session 7** Power Systems Engineering Analysis
- **Session 8** Energy Systems

Each session contains three or four papers, with time for questions and discussion. On Thursday May 8 there is an all day tutorial on changes to the National Electric Code. While it is part of the conference, it may be registered for without registering for the conference. For more details and registration information see the web site at

[www.ieee.org/icps2008](http://www.ieee.org/icps2008)

**Tutorial:** On Thursday May 8 there is an all day tutorial on changes to the National Electric Code. While it is part of the conference, it may be registered for without registering for the conference.

## ***PACE/GOLD Event in Tampa on May 22<sup>nd</sup>!***

**Location:** The Tampa Electric Building in Downtown Tampa 702 N. Franklin Street

**Parking:** Parking is available on the street or nearby parking lots

**Time:** 5:00PM till 7:30 PM

**Speaker:** Mr. Russell Harrison, IEEE Lobbyist

**Topic:** Making the political process work for the members.

Pre-register for the event at <http://ieee.org/fwcs> and click on "Meetings" and look for the registration information.

**Russell Harrison** is the Legislative Representative for Grassroots Activities for IEEE-USA. In this capacity, he is responsible for helping members of IEEE-USA interact with, and ultimately influence, elected officials. Prior to joining IEEE-USA, Mr. Harrison directed grassroots programs at the Institute of Scrap Recycling Industries and the American Iron and Steel Institute. During his tenure, he actively raised campaign contributions through both of the associations' political action committees. Mr. Harrison also represented the recycling and steel industries on Capitol Hill, and in state capitols on a variety of issues as a professional lobbyist. Mr. Harrison has a BA in Political Science, with minors in History and Communications, from Allegheny College, and a MS in Public Policy for the University of Maryland. He resides in Manassas, Virginia with his wife, Kathy. (*Continued on the next page*)



*(Continued from previous page)*

**The Citizen Engineer** What difference can one person make in Washington, D.C.? That depends on the person. If you know how to play the game, ordinary citizens can have a huge impact on Washington, D.C.'s policy making. Nevertheless, you have to understand the game in order to play. Learn the rules for influencing your elected officials, and how to help form public policy without investing all of your free time, or all of your savings. Learn how you can influence your government to protect and enhance your profession.

**Communicating With Elected Officials** Why are engineers so good at solving technical problems yet have difficulty influencing public policy? Politicians need and often want advice from engineers on solving tough problems. But, you need to speak the politician's language to get through to them. Learn the simple rules for communicating effectively with your elected officials

**Modeling the Political Process** Engineers are good at understanding complex systems. Can our political system be understood using the same tools? We will consider our electoral system from an engineering perspective. What are the inputs? What are the outputs? How is the system powered? What are its by-products? This basic introduction to our political process will go beyond, "How a Bill Becomes a Law

## *Brain Teaser Challenge Solution - February 2008*

*Butch Shadwell*

Last month I told a story about suicidal fruit flies. A high school student was trying to determine "...how many fruit flies it takes to screw in a light bulb. The feat was accomplished by taping a tongue depressor to a light bulb forming a lever arm, and training the insects to hurl their tiny bodies at it at full speed, 1 m/s. Let's say that all of them will hit the tongue depressor (at an angle normal to the surface) at exactly the same place, 10cm to one side of center axis of the bulb. If a fruit fly weighs .05 grams and the bulb requires 200 dyne-cm of torque to overcome the thread friction, how many flies must hit the depressor per second to supply the correct average force to advance the bulb? Assume elastic collisions where all momentum is converted to driving force, no heat and no bounce."

I'm sure that all of you as you read this problem were remembering your physics professors telling you that the units always have to come out right if the equation is correct. In answering this problem, we are actually calculating the deceleration rate required for the given momentum, in order to generate 20 dynes of force (due to the mechanical advantage provided by the tongue depressor). So the equation could take the form of  $X/s * (.05g * 100cm/s) = 20 g\text{-}cm/s^2$ , where X is the number of flies. Of course I converted all units to CGS, and if you check, the units do come out right, i.e. all units cancel. So the correct answer to this BTC is 4 fruit flies per second, bashing their little heads into the wooden stick, is the least that is required to screw in this light bulb. Even though only one person has sent me the correct answer at the time I am writing this, I bet you all already knew that.

## *Brain Teaser Challenge – March 2008*

My wife really hates the road noise outside our home in Jacksonville. She thinks the DOT has intentionally used a special paving material just to bug her. On top of the usual tire noise there is a lot of construction going on as well. We find there is a constant supply of fresh dust in our air from all of the earth movers. And perhaps the biggest annoyance is of course the cars with the 10,000 watt sound systems that shake the house as they go by. I wish someone would explain to them how much that excessive noise also costs them in gas mileage and acceleration ability.

Maybe we can calculate something meaningful. Let's say we start with a Scion sedan that weighs 1800 pounds. I suspect they are actually lighter than this. And we will say the little engine produces 90 horsepower. For this calculation we will assume that there is a linear relationship between the mass of the vehicle and its miles per gallon of fuel, and the rate of acceleration at a given engine available horsepower. So, if this car normally can get from 0 to 60 mph in 9 seconds and gets 35 mpg, what would the stats be if we added a 350 pound sound system that pulls 10,000 watts? I think I will pass on this sound system upgrade.

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. (<http://www.shadtechserv.com>) The names of correct respondents may be mentioned in the solution column.



## *RFID Ecosystem Project*

There is a very interesting article in the Seattle Times about a National Science Foundation funded experiment at the University of Washington called the RFID Ecosystem project. According to the story, a number of University of Washington "students, faculty and staff are being tracked as they move about the computer-science building, with details of where they've been, and with whom, stored in a database."

The point of the exercise is to "explore both positive and negative aspects of a world saturated with technology that can monitor people and objects remotely."

Computer science and engineering Professor Gaetano Borriello says in the article that, "Our objective is to create a future world where RFID is everywhere and figure out problems we'll run into before we get there."

The project has highlighted how easily a person's privacy can be penetrated without their knowing about it - something that governments around the world have started exploiting.

The article, for example, describes how the UK police are increasingly asking for information from London's RFID-based transit cards as well as the governmental activities in southern China, where "the government is installing RFID readers throughout the city of Shenzhen to track movements of citizens, and U.S. companies are helping deploy the technology. Chips in national ID cards contain not just a number, but a person's work history, education, religion, ethnicity, police record and reproductive history."

The article also notes that the Department of Homeland Security requires states to use an RFID chip in driver licenses that is readable from a distance and is compatible with its REAL ID initiative, which Borriello doesn't think is a good idea.

"There's no reason to have remotely readable technology in a driver's license," Borriello is quoted as saying in the article. Instead, he "recommends a system that requires contact with the surface of a reader, so the license-holder knows when information on his license is being read."

If you want to see how RFID may be used in your near-future, go read the story and the other publications at the UW RFID Ecosystem project website.

IEEE Spectrum also had an article last March on the ethics of implanted RFID chips and another in December 2004 on how employers are using surveillance technology to keep an eye on workers.



## *Call for Papers*

Wireless Hive Networks (WHN) are local communities of wireless devices, in potential volumes dwarfing memory chips, associated with items on warehouse shelves, biomedical samples, border motion detectors, etc. ZigBee is an example of hive protocols. This conference addresses the challenges facing the organic semiconductors "pennies per device" production, integrated logic, ROM, antenna and battery design, and integration of embedded platforms, applications and wireless interfaces. Attendees also benefit from our co-location with National Instrument's NIWeek 2008 exhibitions and conference.

Authors are invited to submit full 3 to 6-page papers in the IEEE conference format presenting new research, innovations, and implementations related to the theory and practice of systems, sensor technologies, and related information system support. All submissions must describe original work not previously published or currently under review for publication in another conference or journal. Papers must be submitted by April 27, 2008. See <http://ieee-whnc.org> for the complete Call For Papers and submission instructions.

Sponsored by IEEE Central Texas Section, IEEE-USA and IEEE New Technology Directions Committee

Technical Co-sponsors: IEEE Communications Society



## *Teacher in Service*

Dear Friends,

This month has been very busy in Engineering and Education. I contacted Karl Lohman to inform him that I am representing the IEEE on April 17th in Lakeland. The 53rd State Science and Engineering Fair (SSEF) of Florida to be held April 16-18th at the Lakeland Center in Lakeland, Florida from 8:30AM to 5PM. Sign up for judging at [www.floridaassef.net](http://www.floridaassef.net).

Marian Manganello of Hillsborough High contacted Jim Anderson on March 5.

*"Hillsborough High School has taken the plunge to organize a FIRST Robotic Team ([www.usfirst.org](http://www.usfirst.org)) and looking for sponsors. We are trying to raise sufficient funds to participate in the Palmetto Regional at Clemson University. The team is not attending the Florida Regional due to FCAT testing week*

*During the course of building the robot, the team has learned countless skills about mechanical engineering, electronics, finance, budgeting, and project management. More importantly, the team has realized the value of collaborating toward a common goal. Our team is eager to have the opportunity to take part in their first competition and see how their robot functions.*

*The costs of participating in the competition prove prohibitive for many hopeful teams, but with the help of corporate sponsors, we can overcome the financial obstacles. We would greatly appreciate if IEEE would help us participate. Any level of sponsorship is helpful and greatly appreciated.*

*If you have any questions, please contact me.*

*Thanks,*

*Marian Manganello*

[Marian.manganello@sdhc.k12.fl.us](mailto:Marian.manganello@sdhc.k12.fl.us)

*Hillsborough High School  
Mathematics"*

I was invited to the third annual Florida Engineering Education Conference at UCF on May 2, 2008. Please go to <http://partner.cecs.ucf.edu/FEE/2008/>. I have signed up for that day.

Michael Capco of Human Resource Solutions has a job opportunity for a Sr. Electrical Engineer-Control Systems. To apply email your resume and salary history to: [hrosolut@tampabay.rr.com](mailto:hrosolut@tampabay.rr.com).

Ralph Painter is attending the Teacher In Service Training Workshop in Los Angeles on April 4-6, 2008.

Congratulations again to the Lignell Award Winners from the Celebrate Engineering Banquet: Mr. Eric Shelton of Sickles High School in Hillsborough County, Mrs. Andrea Carvill of Lakewood High School in Pinellas County, Mr. Luigi Galati of Hudson High School in Pasco County who each were awarded the Outstanding Science Teachers Lignell Award. The upcoming science fairs include: The Pasco Engineers Fair will take place on April 26th at the River Ridge School Complex north of Starkey Park.

Sincerely,

Sean Denny, [venner20@ieee.org](mailto:venner20@ieee.org) IEEE FWCS TISP Chairman

## *New IEEE-USA E-Books Available – Two Free for Members*

The 2008 IEEE-USA Program Book highlights IEEE-USA's mission, goals and programs, and was developed to increase awareness of IEEE-USA programs and services, provided to advance the engineering profession and for the benefit of the IEEE's U.S. members. The 2007 IEEE-USA Annual Report highlights IEEE-USA's progress and accomplishments in each of our 2007 priority areas, as well as our related efforts to promote the public awareness and appreciation of engineering. Both the program book and report are available as free IEEE member downloads.

To download the two free e-books, and purchase others, go to <http://bmsmail3.ieee.org:80/u/11241/81724>

May 2008 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	1	2	3
4	<i>Industrial and Commercial Power Systems Technical Conference, Clearwater p. 5</i>			8	9	10
11	12 <i>EXCOM @ TECO Hall</i>	13	14	15	16	17
18	19	20	21	22 <i>PACE/GOLD Event @TECO Hall</i>	23	24
25	26	27	28	29	30 <i>GOLD Meeting @ 6:30 PM</i>	31

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