



# SPARKS

Daytona Section Newsletter  
February 2013



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## CHAIRMAN'S REPORT

One of my favorite observations is "The future belongs to those who plan ahead". These thoughts bring me to an observation about our dynamic Vice Chair Jeanette Barott. While gathering information for the newsletter, Al and I were not aware of the effort and planning still involved for Engineering Week at ERAU, less than two weeks away. The remaining details for an event this size can be overwhelming. Obviously, younger people have shorter reaction times and are able to cope with the issues. I am so glad to have a younger person as Vice Chair to help us. Unlike the young, we old folks sometimes have a hard time speeding up our tempo.

In any event, Jeanette has done it again. This month we have Butch Shadwell coming on the 21st. We thus kill two birds with one stone - take care of our February meeting and put in an event for Engineer's Week. It will be at ERAU (see below for time and location). I hope we get good student attendance because Butch is an excellent speaker and the Chair for Student Activities at FCIEEE. As a result of Engineers Week, we are going to cancel our planned meeting at the Yacht Club on the 28th.

Our first meeting of the year was very good but there was a disappointing element. Good because we had Dr. Susan Allan present a compelling description of all that myriad of things lasers can do and how they do them. She may be new to ERAU but she shows the poise and presence of an experienced professional. The disappointing news was that we had only 15 people attend. A lot of our members missed her fascinating lecture. I, for one, learned a lot and enjoyed the evening. The meal was quite good also.

Since it's during my watch, I would like to understand why so few show up. Most of the reasons that I heard were time conflict, some were out of town, some had other meetings and some even had classes. For some, traveling at night is a factor. I am also told that price is a factor. There have been discussions about a change of venue and/or time. Venue suggestions have included Applebee's, Olive Garden, Outback, Carribean Jack's, Mario's and Red Lobster. For years we have had our meetings at the Halifax River Yacht Club on Thursday evenings. The club happens to have a pleasant room with complete audio visual equipment. It is convenient and usually has plenty of parking.

Since many of our members and most of our students are at ERAU, meetings held at ERAU are better attended. As we draw in B-CU and DSC, the venue may need to be addressed. In any event, we need to change, and like all good engineers we need to find out how. I plan to gather such data if I can (and if it exists) and see if we can be more available.

In the meanwhile you all can help me by giving me your preferences, including venues, other days and times. What would persuade you to

Tracy

## **FEBRUARY PROGRAM**

In 2009 at a special meeting at the National Academy of Sciences Butch Shadwell was elected the international chair of the IEEE Humanitarian Technology Challenge - Reliable Electricity Solution Team. Their charge was to donate their time and talent toward finding better ways to apply technology to alleviate human suffering in the world. He led the development of an experimental power system with many unique features for this problem domain. He has installed prototypes in Nicaragua and Kenya on four trips abroad. He will review the project and experiences from this humanitarian work.

## **OUR SPEAKER**



Percy “Butch” Shadwell has been working in electronics since he was 12 years old. Starting with vacuum tube technology, he has designed systems through the evolution of transistors, SSI, MSI, and LSI. In his extraordinary career he has worked with almost every kind of technology in the electronics industry. Including advanced R&D in nuclear medicine, opto-electronics, electronic warfare, robotics, industrial automation, machine vision, artificial intelligence, digital television, special sensors and embedded microcontrollers.

A senior member of the IEEE, for the last twenty years Mr. Shadwell has been authoring the Brain Teaser Challenge, a monthly humorous column with a technical challenge inside. It is published in a number of IEEE newsletters and magazines worldwide. Readers are encouraged to send in their answers.

He has conducted sponsored research at Carnegie-Mellon Robotics Institute and received over \$1.5 million in grants for his work in machine vision. For the past ten years he has had a successful consulting practice developing new technologies for over a dozen companies. His clients include multi-billion dollar companies, and as an active volunteer in IEEE has been a featured speaker at many universities, sections, and student branches around Region 3 and Jamaica. In 2009 he was selected as the international chair of the Humanitarian Technology Challenge – Reliable Electricity.

## **TALES FROM THE OLD PROFESSOR**

### **ON SLEEPING**

As a young lad, I was one of those children that hated to go to bed. Life was much more interesting when you are awake and I resisted being bored by sleeping. I can remember my parents suggesting it was time to go to bed and finally ordering me to go to bed. What my parents never knew was that they had made a mortal mistake by ordering me “to bed”. Notice, I was not ordered to sleep but “to bed”. You cannot be ordered to go to sleep. You cannot fall asleep by command.

In my crafty way of thinking, as long as I was in bed, I would satisfy my obligation to my parents. If I had something to do in bed I would avoid the boredom of sleeping.

Now, most young boys had experimented with reading comic books under the covers with a flashlight. Of course, the regular reading lamp caused a telltale glow under the door which usually had your dad at the door in less than a minute.

The flashlight was quite effective by shedding only enough light to permit reading and not be a beacon in the night. Once a working flashlight was found in your room its purpose was suspicious and confiscated.

When I was about 9 years old, I constructed a very rudimentary form of radio receiver, a “crystal set” from

directions in a Boy Scout magazine. This was the classic crystal set, probably a museum piece today, that was mounted on a piece of wood. The tuning was accomplished with a coil of wire that was wound on a cylindrical Oatmeal box. (Oatmeal doesn't come in these containers any more. That is why no one has a crystal set today.) Many turns of very fine wire, perhaps several million were wound on the Oatmeal cylinder. Well, it wasn't a million but when you struggled to keep the wire from falling off before you could tie the ends it felt like a million. A fine trace was cleared of the insulating varnish to allow a piece of copper to slide along the wire and make electrical contact. This was a variable inductor and used to tune the stations.

The crystal set was used with a pair of headphones. These items could be quite expensive but lucky for me, my neighbor threw out a pair of old "Acme Professional Model" headphones in the trash after cleaning out their attic.

The key item to the crystal set was a rock, a piece of galena, the crystal. You could buy a galena crystal in a holder with a fine piece of springy wire that was touched to the surface of the crystal called a cat's whisker. You could not simply touch the crystal anywhere with the cat's whisker; there were only certain points on the surface of the crystal that would work, and some spots were much better than others. Everyone who had a crystal set knew the surface of their crystal like they knew the back of their hand and knew exactly where the sensitive spots were.

A crystal set needs a long antenna. I had a beautiful antenna that started in my neighbor's back yard near the top of an evergreen tree to the corner of my house near my bedroom. The lead-in wire sneaked in under the storm window and the lower window sash into my bedroom. This wire was my connection with the outside world. With this wire I could break the bondage of bedtime!

I kept the crystal set under the bed and when I was sent to bed I would lift the crystal set from under the bed, don the headphones and in the dark, (my flashlight was confiscated), tap the cat's whisker to the crystal and in short order hear the sounds of the outside world.

In those days, the early 1950s, radio drama was still broadcast in spite of television. I used to listen to The Shadow, Johnny Dollar, The Green Hornet, Fibber McGee and Molly, and Inner Sanctum. I would lie in bed, not bored at all and with a certain feeling of victory over my parents.

One night I fell asleep with my headphones firmly attached to my ears during the weekly broadcast of Inner Sanctum. For those of you not familiar with Inner Sanctum, it is radio's version of a horror movie. While I slept, I was dreaming what was entering my ears; a macabre plot of murder and mayhem and, finally, awoke with a start. The poor soon-to-be victim was about to meet a terrible demise by opening the door behind which stood the crazed axe murderer. I awoke shouting "don't open that door!!"

This sudden outburst brought my mother to my room where she found me with eyes as big as saucers and wearing my prized Acme Professional Model headphones. Shortly thereafter the crystal set joined the flashlight. Al Helfrick, Ph.D.

## SCIENCE FAIR NEWS

The Tomoka Regional Science and Engineering Fair was held on January 19, 2013 at Atlantic High School in Port Orange. The winners of the IEEE Daytona Section Special Awards were:

Junior Division - Jude Flynn, Ormond Beach Middle School



Senior Division - Nicholas Fichera, Spruce Creek High School  
**DAYTONA SECTION SHIRTS**

We are pleased to offer Daytona Section polo shirts for our Section

members. The shirts are embroidered with the IEEE Logo and DAYTONA SECTION on the left and your name and grade, if desired, on the right. The shirt is a high quality 5 oz, 65/35 poly/cotton pique in Royal Blue with white embroidery. Available in S - 2XL in men's as well as ladies sizes. Price is \$28, including tax, for S-XL size's, 2XL size is \$4 additional.

For more information or to order shirts contact  
Allan Jusko  
3706 Longford Circle  
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386-671-3706 or a.jusko@ieee.org

Indicate shirt size and name and grade if desired. Shirts must be paid for before ordering, typical turn around time is 2 weeks. Arrangements can be made to pick up shirts or have them shipped to you.

### DAYTONA SECTION COFFEE MUGS



The Daytona Section has available coffee mugs with the IEEE Daytona Section Logo and are available for \$7.00. Purchase one or more to show you support and pride in our Section. Contact Roger Grubic at 386-441-8958 or roger\_grubic@ieee.org for more information.

### CALENDER OF EVENTS

SouthEastCon- Jacksonville, April 4-7, 2013

### EDITORS NOTES

The **SPARKS** newsletter is also available on our website. The website address is shown below.

### Website address for the Daytona Section

<http://www.ieee.org/go/daytona>

### Region 3 website

<http://www.ewh.ieee.org/reg/3/>

### Melbourne Section website

[www.ieemelbourne.org](http://www.ieemelbourne.org)

### Orlando Section website

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

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# FEBRUARY 2013 MEETING

**Thursday February 21st** at Embry Riddle Aeronautical University  
600 S. Clyde Morris Blvd, Daytona Beach, Florida 32114  
Lehman Building Atrium

**AGENDA**

6:30 PM Dinner  
7:30 PM Presentation

**OUR SPEAKER –** Butch Shadwell  
Chair - Reliable Electricity at Humanitarian  
Technology Challenge  
Principal Consultant - Shadwell Technical  
Services

The presentation will be preceded by an Engineers Week buffet in the Lehman Building Atrium.

Cost is \$15 for IEEE members, \$20 for non-members, \$5 for students.

Seating limited to 42 by the Fire Marshall.

Parking is available near Lehman Building, first lot on left from main entrance.

**Since seating is limited, reservations are needed. For reservations or information contact:**

Allan Jusko                      SPARKS Editor                      386-671-3706                      a.jusko@ieee.org

**If you make reservations and are unable to attend, call at least 12 hrs prior to the event to cancel**

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