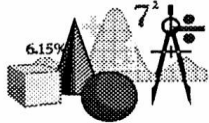




SPARKS

Daytona Section Newsletter
April 2016



APRIL SECTION MEETING

Thursday April 28th at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION TOPIC
Student Presentations

CHAIR'S REPORT

It's the last letter of the Spring Season! This is perhaps the most exciting news I've had to tell all season, at least as far as our long-suffering Editor is concerned. That being said, this has been a very exciting month for our Section:



Two of our members, Dr. William Barott and Dr. Thomas Yang, will be promoted to full Professor at Embry-Riddle Aeronautical University (ERAU) beginning in Fall 2016.

Our ERAU student branch took home the third place plaque for the software competition at SoutheastCon.

Our total membership is officially back up to 209; however, 62 members still have not renewed since last year. If you would be interested in assisting with a calling campaign to find out how the Section (or I personally) can better fulfill their needs, please let me know!

While it is going to be almost impossible to top last month's spectacular presentation from The Old Professor, the April meeting is always one of significant excitement. Not only do we welcome our Science Fair awardees (Julia Yu and Abigail Walker) and their parents to attend and participate, but we hear Tales from the Young Engineers (also known as student potpourri.) While less technical than our usual presentation, we strongly encourage and invite our membership to attend and help us support the scientific and engineering leaders of the future.

Wherever you may roam over the summer break, be creative, make a difference, stay up-to-date through our soon-to-be revamped website, and start looking for us on Facebook, Instagram, and IEEE Collabratec!

Jeanette

APRIL PRESENTATIONS

As we have done the last few years, our April meeting will celebrate the accomplishments of our students. This is always a popular and entertaining topic, giving the students an opportunity to show off some impressive achievements. In addition to presentations from teams in the capstone course and members of the Special Projects Lab, Abby Butka and Nick Serle will describe their experiences with their entry in the 2015 AUVSI International RoboBoat competition, the S.S. Minnow. The competition had 16 international collegiate teams and required an unmanned surface vessel to navigate and perform numerous tasks autonomously. Abby has a paper about the boat in the 2016 AUVSI autonomous vehicles conference.

MARCH'S PRESENTATION



Dr. Al Helfrick gave a wonderful presentation based on his recent “Tales from the Old Professor”. It was a historical, humorous and sometimes nostalgic talk discussing some of the pioneers and eccentric characters who helped shape technology.

Dr. Helfrick is shown receiving the prestigious Daytona Section coffee cup from Dr. Keith Garfield, Vice Chair of our Section.



Our Section was pleased to have Natalie Krauser McCarthy, Development Officer from the IEEE Foundation, attend our March meeting.

Natalie give a short presentation on how the IEEE’s Development Office can help our Section.

Before the meeting Natalie met with Ron Gedney, Life Member Chair, and Al Jusko, Newsletter Editor, to discuss some of our needs and take back some suggestions to Piscataway.

SECTION NOTES



We'd like to introduce the second official member of our "Publicity/Media" committee, Ms. Rebecca DeMarco. She has agreed to take on the new role of "Social Media Chair." We have been asked to maintain a presence on social media (sites like Facebook, Instagram, Pinterest, Twitter, IEEE Collabratek, etc.). Ms. DeMarco is an excellent "digital native" user who will be a great source for creating and maintaining this presence.

ERAU NEWS

Southeast Con 2016



The ERAU student branch won 3rd place in the software competitions. Students were (L-R): Paul Mundy, Jonathan Rach, and Thomas Bassa



Daytona Section Chair (Jeanette Barott) and ERAU Student Branch Secretary/ERAU WIE Affinity Group Chair (Rebecca DeMarco) were also in attendance (back row L-R: Anuj Sharma, Thomas Bassa, Jonathan Reich, Benedict Pineyro, Paul Mundy; front row L-R: Jeanette Barott, Rebecca DeMarco, Zhaoyang Fu, Amay Desai).

In addition, four of the students presented papers: Benedict Pineyro, Zhaoyang Fu, Anuj Sharma, and Amay Desai

ANOTHER TALE FROM THE OLD PROFESSOR

TO COMMUNICATE BY RADIO; YOU NEED AN ANTENNA

Having been fascinated by radio since I was a young lad I understand the importance of antennas. Those of us involved with radio view antennas as things of beauty; something to admire and be proud of. Even a wire strung between trees is admired when the trees are very tall, always begging the question, “how did you get it up there?” I remember a few years ago I asked a radio buddy who was good at identifying trees what type of tree was in my front yard. His response was “I don’t know exactly but it is an ‘ornamental’ tree”. “What do you mean by ‘ornamental’ tree?” I asked. “One you can’t hang antennas in” was the reply.

Not everyone views antennas the same way as those who truly appreciate them. Those who don’t understand antennas are usually neighbors. Some communities had attempted to literally ban all antennas. The Federal Communications Commission declared that citizens had the Constitutional right to use radio frequencies and that required an antenna. Communities could impose some reasonable restrictions on antennas but an all-out ban was not allowed.

When it comes to “home owners associations” they seem to have the right to operate outside of the United States Constitution and impose very restrictive antenna limitations. Ham radio operators have resorted to clever techniques to create “stealth” antennas. Some are fine wires in trees, often raised under the cover of darkness and lowered before dawn. Some enterprising amateur radio operators have insulated their rain gutters to create an antenna. Unfortunately this limits the amount of power that can be transmitted because of the strength of the electromagnetic fields generated inside the house.

The most popular stealth antenna is a vertical antenna with an American flag at the top; obviously a flagpole. The usual problem with vertical antennas is their impedance is not a convenient 50 ohms and an antenna tuner is used to match the antenna’s impedance to the transmission line. The trick is to disguise the needed antenna tuner at the base of the flag pole. One can buy fake rocks that are actually stereo speakers to use outside. Some fake rocks have antenna tuners in them.

I remember nearly 60 years ago when I was a new amateur radio operator reading an article about the U.S. Army Signal Corps experimenting with using trees for “wireless” transmission and reception. Today, with the magic of the Internet, I was able to locate several articles describing the Signal Corps’ tree antennas. This activity actually started in 1905 and several patents were issued for tree antennas. It is my guess that the wires connecting the radio to the tree were the antenna and not the tree. Whatever the story is, tree antennas never caught on.



The United States Army Signal Corps uses trees for wireless communications. However an odd twist on the tree antenna theme took place in the late 20th century. Instead of turning trees in to antennas; antennas were turned in to trees. This was the result of the explosion of cell phone towers throughout the world. Like so many things, people like their technology but didn't want the ugly part in their back yard. As an example, we love electrical power but don't want to see a power plant belching smoke from our back yard. This is what is called the "not in my back yard" or the NIMBY effect. Cell phone users want to see lots of bars but don't want to see the cell phone tower from their house.



Find the hidden cell phone antennas



To make cell phone antennas less obtrusive the carriers started to disguise the antennas. The most common disguise is to make a cell phone tower look like a tree. But some places don't have trees such as the Arizona desert or city streets and other disguises are used.

Above is the Old Professor Challenge of the Month. See if you can spot the "hidden" cell phone towers.

Al Helfrick

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 \$29, including tax, for S-XL size's, 2XL size is \$3 additional.

For more information or to order shirts contact: Allan Jusko 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 your support and pride in our Section.

Contact Ron Gedney at 386-478-1204 or r.gedney@ieee.org for more information.

EDITORS NOTES

The **SPARKS** newsletter is also available on our website <http://www.ieee.org/go/daytona>

Region 3 website

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

Other web sites of note

Melbourne Section website

www.ieeemelbourne.org

Orlando Section website

www.ieee.org/orlando

FUTURE MEETING DATES:

The remaining meeting dates for the 2016 fall sessions are: Sep 22, Oct 27, Dec 1.

IEEE MEMBERSHIP PINS

Membership pins are available for all member grades. Check out this website for more information.

http://www.ieee.org/membership_services/membership/products/pins.html

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APRIL 2016 MEETING

Thursday April 28th at the Halifax River Yacht Club
331 South Beach Street, Daytona Beach, Florida 32114
Just south of the Fire Station at the corner of Beach and Orange Streets

TOPIC – Student Presentations

SPEAKER – ERAU Students

AGENDA

5:30 PM Greetings & Cocktails
6:00 PM Dinner
7:00 PM Presentation

Dinner Menu

Italian Buffet

The dinner price includes roll and butter, salad, dinner, coffee or tea, gratuity and tax

Members and guests \$20.00 each. Students \$10.00 each

Please contact Allan Jusko by Wednesday the 27th at noon
to give us a count for dinner or for further information

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

The Section is charged for all dinners ordered, please let us know if your plans change

Allan Jusko

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