



SPARKS

Daytona Section Newsletter

March 2012



FROM THE HIGH CHAIR

First, I would like to share some encouraging news about our section's Membership Development (MD) status. During the February 4th IEEE Florida Council (FC) meeting, FC MD chairman Jim Howard (IEEE-USA 2012 President) and Region 3 MD chairman Jim Anderson both presented their MD status reports. According to their updates, Daytona section is one of only 19 sections in IEEE-USA (Regions 1-6) that qualified for recruitment incentive in 2012. In Region 3, as of Dec. 2011, our section ranked No. 1 in total retention (63%, tied with Palm Beach Section). In fact, we rank No. 1 in % renewal for both higher grade members and total members. Also, our section ranked No. 1 in Region 3 in recruitment year over year (340% growth). Thanks to all of our members for your involvement in Daytona section, especially to student members from ERAU and BCU who recently joined IEEE!

On Feb. 17th, we had a meeting at BCU in recognition of student volunteers who helped at the Electrical Safety Workshop (ESW). Besides the presentation of certificates of appreciation, Mr. Roger Grubic and Mr. Ron Gedney made an inspiring presentation on the benefits of joining a professional society to engineers' career advancement. From their personal experiences, we learned much about how one can benefit both personally and professionally from being an IEEE member throughout the entire engineering career. At Feb. 28th section meeting, we recognized Ron Gedney's outstanding contribution to the success of ESW through a section award.

On Feb. 11th, our section participated in the annual Tomoka Science and Engineering Fair at Atlantic High School in Port Orange. Same as last year, two IEEE special awards were given, one for the junior division, and one for the senior division. Dr. Jianhua Liu, Tracy Wichmann, Dr. Ilteris Demirkiran and I worked as science fair judges this year. The winner for the junior division is Ms. Kaitlyn Thompson, who also won the award last year. The winner for the senior division is Ms. Allison White from Spruce Creek High School. Besides receiving a check and a plaque, both winners and their families will be invited to our section's April dinner meeting as well.

Feb. 19-25 was the national Engineers Week (EWeek). At ERAU, the college of engineering sponsored a series of activities in celebration of the EWeek. The two major events were: Presentation on Feb. 21 by Dr. Kevin G. Bowcutt, Chief Scientist of Hypersonics for The Boeing Company; and EWeek banquet on Feb. 23, which featured student award presentations and guest speaker Scott Mangrum, an ERAU alumnus and Chief Engineer at Warner Robbins Air Logistics Center. Many students and officers of IEEE Daytona Section participated in these exciting events.

As a last reminder, IEEE SouthEastCon 2012 will be held in Orlando, Mar. 15-18 at Wyndham Orlando Resort. Supported by Daytona Section, two student robotics teams from ERAU and BCU will again compete in the hardware competition this year. ERAU will also be an exhibitor at the conference, and hold a special session on unmanned vehicles and green energy as part of the technical program. You are highly encouraged to attend this year's SouthEastCon, especially because the conference venue is very close to the Daytona area. For more information, go to <http://www.southeastcon2012.org/>.

Thomas Yang, Ph.D.

MARCH PROGRAM

THE UNIVERSITY OF CENTRAL FLORIDA BUSINESS INCUBATION PROGRAM



Since its founding in Oct. 1999, the UCF Business Incubation Program (UCFBIP) has helped more than 200 emerging companies (including over 110 current clients) create over \$500 million in annual revenue and more than 1600 new jobs with an average salary of \$59,000. With nine opened current locations across 5 counties in Central Florida, the Business Incubation Program is a collaboration in economic development between UCF, Orange County, the City of Orlando, Seminole County, the City of Winter Springs, Lake County, the City of Leesburg, the City of Sanford, Osceola County, the city of St. Cloud, the city of Kissimmee, Volusia County, and the Florida High Tech Corridor Council.

The UCF Business Incubator - Daytona Beach International Airport is UCFBIP's ninth incubator. The incubator opened July 27, 2011, in an effort to assist high growth companies in Volusia County. The incubator is a mixed use incubator and will house all kinds of companies except for retail.

The 8,000 square-foot facility is located at the US Customs terminal at the Daytona Beach International Airport. It has a very modern style, and is able to house approximately 20 companies depending upon how many offices each company requires for operation. The first client has already moved in and many other companies are currently being reviewed for entry to the UCF Business Incubation Program.

TALES FROM THE OLD PROFESSOR MUSICAL ENGINEERING

I have been playing music since I was a young lad of 5 and convinced two nice, matronly piano teachers to give up teaching. It seems I played what I wanted not what the composer laid out for me. I wanted to play fast; and if that didn't work, faster. I also liked playing loud; make everything exciting! Somehow I managed to gravitate from the piano to the trombone and played in my high school band and my college bands. For a number of years I carried a Musician's Union card and played professionally. In my high school days I found my true musical calling: Dixieland Jazz! During my high school summers I was playing Dixieland gigs, experiencing wine, women and song, while my friends were making their money cutting grass for the town.

I matured enough to play legitimate, (that is NOT jazz), music and played in concert bands, orchestras, dance bands and, my favorite, brass quintet. But, I still played in the jazz bands and plenty of barrelhouse gigs with honky-tonk pianos and banjos.

During one gig it was noticed that most of the musicians were engineers. The trumpet and banjo were mechanical engineers, the drummer, chemical, a few others that I don't recall and the tuba, that would be me, electrical. We wondered: what is the attraction of music to the engineer? "I know the answer", I said. "Music *is* engineering". Well! There was an immediate; "how do you figure that?"

First, we have our requirements for the product from the customer. The product is enjoyable music. The customer is the composer, maybe no longer living, who wishes to deliver the product to his customer, the listener, for the listener's enjoyment and to benefit the composer from royalties. The composer's requirements are written in a special document called the "musical score". This document shows exactly how each individual sub system is integrated into the final product.

Then we take the requirements and assign various musical engineering groups subsystems to be developed. The groups can include, for example, strings, brass, woodwinds, etc. Each group has a project engineer; the principal trumpet or principal whatever, who works with his or her section to develop, (practice) their part of the finished product.

Once all the subsystems are developed to the satisfaction of the principals, the subsystems are integrated into the final product under the direction of the chief engineer, the maestro. During this phase we perform the V and V, verification and validation of the requirements. We validate the requirements to insure the requirements do, in fact, produce enjoyable music. We verify that we have implemented the requirements accurately and correctly. In other words, all the musicians are playing what is written on the score.

Then we have a critical design review where the music is performed at the dress rehearsal which is our last chance to make "musical engineering change orders", MECO's, before the product is delivered.

The product is delivered to the ultimate customer, the concert goer who will show their acceptance of the product with great applause.

If the product is successful, we can license the intellectual property to a recording company who will make the product available as CD's or downloads and increase our revenue from royalties.

What type of professional would be most suited for this engineering design project? The "musical engineer" of course!

And, what skills must the musical engineer possess? First, they must be creative, as the notes on a musical score are only suggestions. The actual music requires creativity on the part of the player. Secondly, the musical engineer must be able to work well in groups under the direction of various leaders; the section principal and the maestro. The musical engineer must produce his or her part of the overall project in concert with the other parts. We must have compatible interfaces.

The musical engineer must have good concentration skills, being mindful of tempo, pitch, dynamics and so on. The musical engineer must be disciplined and engage in lifelong learning. (That means regular practice; friends!) And finally; the musical engineer must be willing to accept the lowest salary of all the engineering professions.

Now you know why many engineers are musicians but have a "day job".
Al Helfrick, Ph.D.

CALENDER OF EVENTS

March 15th-18th 2012- Southeast Con, Orlando, and in Jacksonville 2013

EDITORS NOTES

The **SPARKS** newsletter is also available on our website. The website address is shown in the Section information box.

Region 3 website

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

Melbourne Section website

www.ieeemelbourne.org

Orlando Section website

www.ieee.org/orlando

Website address for the Daytona Section

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

FUTURE MEETING DATES

The remaining meeting for the spring session is Tuesday April 24th.

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MARCH 2012 MEETING

Thursday March 22nd 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

AGENDA

6:30 PM Cocktails
7:00 PM Dinner
8:00 PM Program

OUR SPEAKER – Management from the
UCFBIP

TOPIC– The University of Central Florida
Business Incubation Program

March Dinner Menu

Ginger-marinated Flank Steak w/ Mango Salsa	{All Entrees served with Brown Rice Pilaf,
Pan Seared Chicken w/ Zucchini & Peaches	{Grilled Squash Battonets, Roll and Butter,
Seared Salmon	{Garden Salad, Coffee/Tea

Unless noted, dinner entrées are \$18.00 each. Students \$10.00 each
A Veggie plate is available on request for \$10

Please contact Al Jusko with your dinner selections or for program information. Dinner selections must be in by Wednesday the 21st at noon so the club has time to order and prepare

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

IMPORTANT: If you make dinner reservations and are unable to attend, call at least 12 hours prior to the meeting to cancel. The Daytona Section is charged for all dinners ordered.
