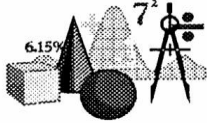




SPARKS

Daytona Section Newsletter
April 2014



MONTHLY SECTION MEETING

Thursday April 24th at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION TOPIC – ERAU & B-CU Student presentations on the Robotics Competition

CHAIRMAN'S REPORT

We had an unusually small turnout for the March meeting. There was one table of 10. It is true that a lot of our regulars were out of town or otherwise had good excuses but the topic was really very interesting - the EcoCar2. Our two ERAU speakers provided a balanced information flow. This vehicle is extremely complex and covers many technical disciplines. Patrick Currier (photo) is the lead faculty advisor and teaches in the Mechanical Engineering Department. Chester Rowe II, the lead student of the EcoCar team, covered the mechanical design aspects. Chris Rowe, another student, covered the electronic/electrical aspects. This broad and balanced kind of lecture is what we need for our social - networking meetings. We should save the in depth technical stuff for special meetings like the ones we have at ERAU. There are about 6 students on the ecoCar2 team at ERAU and they call themselves the EcoEagles.



The EcoEagles chose to implement a Series Plug-in Hybrid Electric Vehicle (PHEV) architecture on their 2013 Chevrolet Malibu for the EcoCAR 2 competition. The electrical half of the vehicle uses a lithium-ion battery pack from A123 and an AM-Racing, Remy Electric Motor to propel the EcoEagles vehicle for 35-42 miles per charge. Whereas the mechanical half of the vehicle consists of an efficient General Motors 1.7 L diesel engine that utilizes a 5-gallon reservoir of B20 biodiesel (20% processed vegetable oil, 80% diesel) to maintain the charge on the battery pack. By using the electric motor and diesel engine in the PHEV format, the EcoEagles' vehicle gets an estimated 105 MPGe. This has been achieved by creating a more eco-friendly, fuel-efficient vehicle while maintaining consumer acceptability.

The bottom line is that you absentees missed a fascinating lecture. So be sure to come on April the 24th. That is the meeting where we honor the students who won awards in the Tomoka Science and Engineering Fair and their families. We also get a briefing by the ERAU and BCC teams who competed in the robot contest at SoutheastCon.

This has always been an enjoyable meeting and it is our last until the fall, so please save the date. See you there.

Tracy

APRIL PROGRAM

STUDENT PRESENTATIONS

Embry Riddle Aeronautical University and Bethune-Cookman University students will do presentations on their robotics competition as well as senior projects.

The Embry-Riddle Aeronautical University Senior Design team, also active IEEE members, designed and developed a robot to compete in the IEEE SoutheastCon Hardware competition. The speakers for the presentation are Marc Latil, Evan Richardson, and Nicholas Antonio. The remaining members of the team are Inacio Dias, Dominick Tournour, Leo Ghelarducci, and Carey Pfaff. Six of the seven members were first year IEEE students and new to the robotics side, leading to a large gain in engineering robotics experience. The goal of the competition is to design and construct a robot that navigates a course autonomously, acting as a basketball player. The team posed the following requirements: the ability to line follow, detect colors, utilize machine vision, be fully autonomous and shoot a Nerf dart. To accomplish this, the system was broken down into six Sub-Systems to decrease complexity of simultaneous integration.

During the design phase there was extensive research conducted, including decision matrices, system design specification documents, system requirements documents, and validation and verification documents. As with any system, there were many difficulties encountered that were not anticipated. These setbacks induced more in depth research to achieve the desired results. Of course the desired results amounted to completing the course, but there is much involved with finalizing a Sub-System. Once a Sub-System was developed, it awaited other Sub-Systems to be completed for full system integration.

The newest members of IEEE at Bethune-Cookman University set out on a mission to partake in this year's IEEE SoutheastCon Hardware Competition. In doing so had the opportunity to gain an immense amount of knowledge and experience in engineering and all that it takes to construct a project from beginning to end. The three speakers for this robot presentation will be Jennifer Jimenez, Kasongo Munza, and Nabil Ahmed. The entire team consisted of the three people mentioned above.

The mission for this year's competition was to construct a completely autonomous robot that was able to navigate through a course and shoot through a target from desired locations throughout said course; much like a basketball player. The team was able to accomplish these tasks using line following, color detections, sensors, and many more protocols. This was not an easy task. It was one that came with many challenges. They were faced with several design issues and were forced to go back to the drawing board several times. In this presentation they hope to give you a brief yet in depth idea of their journey leading up to SoutheastCon 2014.

Also, student winners of the IEEE Daytona Section Special Awards at the 2014 Tomoka Region Science and Engineering Fair, Nicholas Fichera from Spruce Creek High School, our Senior division winner, and Elizabeth Nami Pruitt from Ormond Beach Middle School, our Junior division winner, will be introduced.

ANOTHER TALE FROM THE OLD PROFESSOR

REMEMBERING SHEP

You know Jean Shepherd; Shep. If you don't recognize the name he is the author of the iconic American Classic movie; the Christmas Story. If that isn't ringing a bell, the line; "you'll shoot your eye out" may help.

I used to listen to Shep on WOR in New York when I was a college student. I can remember driving home from the radio station in Philadelphia where I worked listening to Shep at 10 PM every night. Shep was a raconteur; a story teller. He did his show totally unscripted which was very evident. He would even do the commercial announcements unscripted which often got him in trouble. One time he was doing a Miller

beer ad during a rainy Independence Day and suggested if your barbeque was rained out you bring every one inside and get them “bagged” on Miller beer and they would forget the rain. Miller had no complaints because he sold lots of beer for them.

I had the opportunity to meet Shep back many years ago. I was at the head table of a banquet with Shep who was the evening’s speaker and had a conversation with him. It wasn’t hard for me to connect with him as he was a signal corps veteran, a private pilot, an amateur radio operator, and worked in broadcasting; all of which I shared with him.

Shep was known for constantly bashing New Jersey on his radio show. What was not known was he had a home in northwestern New Jersey where he would escape the hustle and bustle of his main home in New York’s Greenwich Village. There in New Jersey he would fish, fly his plane and every so often we would hear K2ORS on the amateur radio bands. Of course living in New Jersey is another thing I shared with Shep.

Many of Shep’s radio stories were about his life in Hammond, Indiana as a young boy. This is the setting for The Christmas Story. Much of his stories were true. He did have a brother named Randy, his “old man” worked as a cashier at a dairy and so on. But there were times, listening to Shep, when I wasn’t sure where truth ended and fiction began.

But I remember one story where Shep described what it was like to be in a transmitter shack of a broadcast station during a thunderstorm. Shep was known for telling stories in extreme detail. He meticulously described the behavior of the transmitter every time the tower got struck. Believe me, dear reader, AM broadcast towers can get struck several times during a thunder storm. Every strike the transmitter protects itself with a spark gap, then the loud clacking of the overload relays trying to restore the power before the ionized air in the spark gap had cleared and creating a great loud clacking and clattering for a few seconds and the characteristic smell of ozone from the spark gaps. And before you can say “what the...?”, wham! You get hit again.

Shep went into such detail as to actually cite the part numbers of the tubes in the transmitter. He described how the 866 rectifiers would glow a bright blue and the 833 output tubes had internal arcs. I knew these tubes well as they were very common in the broadcast transmitters of the day and I had changed quite a few of them along the way. But, most importantly, having experienced this myself I knew

Shep had described every little detail perfectly. Nothing in his story was fiction. This left me perplexed. How could I ever discern when Shep’s tales would go from fact to fiction? Of course I still listened to Shep on the radio but never knowing what was fact and what was fancy. But that’s the charm of it.

Al Helfrich, Ph.D

IEEE NEWS

The IEEE Spectrum Career Guide (you can either [download the PDF version](#) or [view it in your browser](#)) has some EXCELLENT articles and information for impending graduates in ECSSE-related fields, including the highly anticipated free five uses of the IEEE Salary Calculator (link on the last page) for all IEEE student members (good until May 1), and links to the IEEE (free to members) young professionals resume building lab, job networking site, etc., as well as some articles on job opportunities and how to make the most of them.

The webinar and free book (below) seem more geared toward graduate school students and returning professionals, but it might be a decent idea for the IEEE Student groups to book a conference room and advertise the opportunity to all engineering/CS/EP students as a way of building up interest in the organization and introducing the opportunities available with student membership "now" (as opposed to

waiting to join during the big push right before the IEEE Xtreme competition in October or the March pre-robotics competition membership rush.)

Jeanette Barott
Daytona Section, Vice Chair

Special Edition - IEEE Spectrum New Career Guide

This month we have a **special promotion** from the IEEE Publications group **for you and your section membership**. With the April digital issue of IEEE Spectrum, IEEE Publications is presenting the **First Edition of the Digital Spectrum New Career Guide**.

IEEE Spectrum has offered a dedicated recruitment advertising section in the print magazine since 1964. The Publications team thought it was now time to provide engineers-to-be and new engineers their own annual digital publication to help with the ever-changing world of the job hunt. This publication will also provide a great refresher for those engineers who are jumping back in to the job hunt game as well. To access the digital publication you can either [download the PDF](#) version or [view it in your browser](#).

In addition to the new digital publication, **IEEE Job Site will be hosting a FREE webinar titled - Job Seeker or Opportunity Magnet?** - to help you obtain all the necessary tools you'll need to confidently go out into the job market and land your ideal job.

In this 45 minute presentation you will learn:

- Why most job seekers waste huge amounts of time and what you can do differently
- Where top companies hunt for talent and what you can do to help catch their attention
- Three simple job search strategies that consistently deliver exceptional results
- One powerful mindset shift that will set you up for lifelong career success
- What really distinguishes an opportunity magnet from a job seeker – and how you can become one

As a **special offer to attendees*** of this upcoming Webinar, to be held on April 23rd, we're **offering a free downloadable edition of Michael's book - Purple Squirrel: Stand Out, Land Interviews and Master the Modern Job Market**.

For more information, check out the [webinar website](#). To register for the "[Job Seeker or Opportunity Magnet?](#)" Webinar, **[visit the registration page](#)**.

Please be sure to share this important information with your section members by simply forwarding this message. Also feel free to take advantage of this opportunity for yourselves.

Kind regards,

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* You must attend the actual Webinar in order to obtain the Promo Code for your free downloadable edition of Purple Squirrel: Stand Out, Land Interviews and Master the Modern Job Market. Download available on various eReaders (Kindle, Nook, ePub, Mobi, and LRF formats). Also can be read on DropBox.



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
Ormond Beach, FL 32174
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.

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/>

Melbourne Section website
www.ieemelbourne.org

Orlando Section website
www.ieee.org/orlando

FUTURE MEETING DATES:

The remaining meeting dates for the 2014 session are: Sept 25, Oct 23 and Dec 4

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APRIL 2014 MEETING

Thursday April 24th 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

5:30 PM Cocktails
6:00 PM Dinner
7:00 PM Program

TOPIC – Student Presentations

SPEAKERS- Members of the ERAU and B-CU
senior student project and robotics teams

April 24th Dinner Menu

Italian Buffet

All entrees served with rolls and butter, house salad, coffee and tea

Unless noted, dinner entrées are \$20.00 each. Students \$10.00 each

A Veggie plate is available on request for \$10

Please contact Allan Jusko with your dinner selections or for program information.

Selection's must be in by Wednesday the 23rd at noon so the club has time to order and prepare

Allan Jusko Secretary/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.
The Section is charged for all dinners ordered, please let us know if your plans change**
