



SPARKS

Daytona Section Newsletter

April 2013



CHAIRMAN'S REPORT

Among the great mysteries of life, along with the Higgs Boson, the location of Atlantis, and the extinction of the dinosaurs is what we have to do to get members to come to our meetings. One way is to have Butch Shadwell speak at a joint meeting in the ERAU Lehman Building during Engineers Week and another is to invite Dr. Remzi Seker to be our speaker for the March meeting at the Yacht Club. We had the best turn out at the Yacht Club in a long time. The staff actually had to add another table.

Of course, all of us have computers and we are all interested in what Big Brother or marketing firms are finding out about us through them. At the March meeting, Dr. Seker gave us a beautifully organized insight into what they discover about us and how they do it. All the data, he said, can be obtained over the internet without Trojans (necessarily) inside our computers. What you ask for and when you ask for it reveals a lot about us to the firms gathering the data.

I myself, use Netflix. It is amazing how they present titles, on my home page, of shows I might like. They suggest titles saying, "Because you watched (whatever)....". They must have some algorithm for tagging shows and selecting ones with tags that match ones that I have watched. From Dr. Remzi's talk, it sounds like most of the internet organizations that we interact with do the same sort of thing. This gives them data that can be sold on what we, as individuals, are prone to buy. If you missed this talk it you missed a most informative presentation.

Our traditional April meeting is where the student chapters from ERAU and BCU give a presentation. Our Section helps support the student teams entering the IEEE sponsored robotics competition held at SoutheastCon in the spring. As part of that, the students are asked to present us with what the SoutheastCon committee has planned for the robot contest. Each year this is different so a new robot is required. The student advisor(s) keep us informed how they are designing their robot and their progress. After the competition, we request the team(s) to give a presentation at our April meeting. If they do not decide to enter the robot contest, we invite them to brief us on student projects or research they have been doing. Either way, there are so many interesting things going on at both ERAU and BCC that it is sure to be a fascinating evening.

Also, at our April meeting, we invite the student winners of the Daytona Section's Special Awards at the Tomoka Region Science and Engineering Fair and their families to dinner. This is part of our effort to encourage young people to enter the engineering profession.

In the meanwhile, you all can help me by giving me your preferences. What would persuade you to come to our meetings? Please let me know at tracy@alum.mit.edu.

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. Also, student winners of the IEEE Daytona Section Special Awards at the 2013 Tomoka Region Science and Engineering fair will be introduced.

TALES FROM THE OLD PROFESSOR

THE PINEWOOD DERBY

I was a long time member of the Boy Scouts, starting with the Cub Scouts, through the Boy Scouts and finally as an adult leader. The Scouts engaged in interesting activities and I couldn't wait until the next meeting to do things with my friends and have a good time.

One of the long-time events known to all Cub Scouts is the annual Pinewood Derby. This event is a race between model wooden cars that run down a long track propelled by gravity.

The cars are made from a kit of parts that include a block of pine wood, four nails, which serve as axles and four plastic wheels. The making of the car is typically a father/son project as the block of wood is shaped by carving with a knife or sanding or filing. The cars are usually painted and decorated in a variety of interesting schemes. Fathers may enter a car but are not eligible for awards.

The first year my son entered the Derby, our entry was a pair of matching antique Indianapolis- style open wheel racers complete with roll bars. These cars were handsomely decorated and had drivers in the form of Bert and Ernie from Sesame Street. The Cub scouts and their younger brothers and sisters loved the Bert and Ernie cars. Every time either of the two cars were raced against a competitor, the children would cheer, "go Ernie, go Bert" in spite of the fact they seldom won. The cars were too heavy and had too much wind resistance because of the driver's heads protruding from the car. We were delighted to receive a special award for the most popular car.

The Pinewood derby was very popular in our small New Jersey town and the inclined track we had been using was in bad shape from many years of use. Frank, one of the Cub Scout fathers suggested we build a new track for the next year. Frank volunteered to buy the wood and do most of the work on the track in his basement but asked several of us if we could help.

I was very willing to help build the track and we set about doing just that. Frank was a mechanical engineer by trade and a sort of perfectionist. As the track was coming together, Frank made sure each joint was perfectly mated; each cavity was filled with plastic wood and sanded to a silky-smooth surface. We continually tested the track with one of the kid's cars and the track was, without a doubt, fast.

Then Frank had an idea. "Could you design a timer for the track?" "Of course", I replied and a few weeks later we had a painted track that was smooth as glass, faster than any other Cub Scout pack in the State and an electronic timing system to prove it.

I asked my son if he wanted to make a fun car this year or be competitive. The word was competition, a winner.

This time we were not going to make the mistake of a heavy car with a lot of wind resistance. We took the block of wood and the first operation we performed was to drill a hole through the entire length of wood and dropped a large bolt covered with glue in the hole. Then we started to file and sand the wood until the car weighed the maximum and not a milligram more. It is permissible to add metal to the Pinewood cars, usually to bring a car up to the maximum weight. In our case, the car was 80 percent steel and the wood

was removed to bring the weight down. There was barely enough wood left to hide the bolt and the car was very thin. There was very little air resistance.

Frank was working on his son's car too, except his secret weapon was some high tech lubricant used on the aerospace equipment he designs. The nails supplied with the pinewood kit were coated with the lubricant and allowed the wheels to spin virtually friction-free.

Race day finally arrived and the Methodist Church basement became a festival of racing. We assembled the new race track and placed the electronic timing displays on a small table near the track. The Pinewood Derby rules did not provide for electronic scoring so the actual winners were decided by two judges. Every year the town's Police Chief and Fire Chief, dressed in full uniform would serve as judges.

The early matches were easily judged as the fast cars were being separated from the Bert's and Ernie's. Our car won its first races easily. Frank Junior's car did too. Frank and I were watching the elapsed times and it was becoming apparent that our cars were, far and away, the fastest cars running.

The judges were supposed to make their decisions strictly from what they saw. As the competition wound down to the faster cars, it was getting quite difficult to judge which car won, and I noticed that the Chiefs were sneaking a look at the electronic displays before making their judgment.

There was no doubt about it now. Frank Junior's car and my son's car were the final heat as they were undefeated. There was a buzzing going on in the crowd as it was odd how the cars belonging to the sons of the two engineers were to make the final championship run. It was suggested that a bit more engineering than a Cub Scout was capable was a part of the two cars. Furthermore, the two engineers designed the electronic timing device and built the track during the past winter. There was suggestion of scandal. Realizing this, Frank and I moved away from the table with the displays just before the final heat in which one of our sons would be the Pack Champion.

Tension was in the air. The cars were placed at the starting gate and the track was rubbed down with a towel to remove all traces of dust or grit. The young Scout finished the rub down and tossed the towel on the table such that it covered the electronic displays.

There was complete silence, the starting gate was snapped and the two tiny cars rolled as if propelled by rockets. There wasn't a millimeter separating them. They shot passed the finish line so close that no one could judge the winner. The two chiefs looked at each other, said a few words that no one could hear and declared my son's car as the winner and the members of his Den were jubilant.

I noticed Frank edging towards the table while reaching out for the towel. Thinking no one was watching during the celebration, he pulled the towel aside. Much to his surprise the electronic time display was dark. Frank looked up from the table to see me standing by the wall outlet with the power cord in my hand.

Al Helfrick, Ph.D.

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
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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 email roger_grubic@ieee.org for more information.

MEETING SCHEDULE

The Daytona Section's meeting schedule for the fall session is: September 26th, October 24th and December 5th.

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.ieeemelbourne.org

Orlando Section website

www.ieee.org/orlando

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APRIL 2013 MEETING

Thursday April 25th 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

TOPIC – Student Presentations

OUR SPEAKERS – Members of the ERAU and BCU senior student project and robotics teams

April Dinner Menu

Salisbury Steak
Chicken Marsala
Fried Shrimp

[All entrees served with garden salad,
[potato or pasta, vegetable de jour,
[rolls and butter, coffee/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. Dinner Selection's must be in by Wednesday the 24th at noon so the club has time to order and prepare

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
