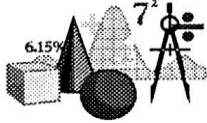




SPARKS

Daytona Section Newsletter
September 2015



SEPTEMBER SECTION MEETING

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

PRESENTATION TOPIC

The History and Growth of Modeling and Simulation

CHAIR'S REPORT



Welcome back from the Summer hiatus for Section activities! Hopefully everyone enjoyed the mild Florida Summer and is prepping for the rigors of the fall and winter seasons ahead.

This year, both Embry-Riddle's Daytona campus and the IEEE Daytona Section celebrate fifty years of technical contributions. At Embry-Riddle, the new PhD program in Electrical Engineering and Computer Science has officially started, and the IEEE student branch leadership has changed to an almost all underclassmen group. The spring semester's HKN induction added a new crop of talented students to the Chapter, and offers are going out for the fall semester group. We strongly encourage and invite participation from HKN members in the Section; if you'd like to be involved, please contact the group advisor, Dr. William Barott (barottw@erau.edu).

Plans for a new Women in Engineering (WIE) Student Chapter are underway; we are still looking for signatories for a Section level Chapter for both this and the Young Professionals Affinity Group. If interested in participating, or leading, in either group, please let me know (barottj@erau.edu).

As a friendly reminder, nominations for the IEEE Daytona Section leadership are open to all IEEE non-student members. If you wish to gain valuable leadership experience, and have access to the many resources of IEEE volunteers, please contact any of the e-mail addresses at the back of the newsletter for more information.

I look forward to seeing many of you at our Fall kick-off meeting, which will feature the history and growth of modeling and simulation, including its relevance to industry and its role in modern K-12 education. If you have any topics you'd like to see, or any activities you'd like us to participate in, make sure to drop a note to our director of programming (garfielk@erau.edu).

Jeannette

SEPTEMBER PROGRAM

The History and Growth of Modeling and Simulation

The presentation visits some early designs of simulators—from crude attempts in World War I to the Link Trainer, effectively used in World War II to train approximately 500,000 pilots. The evolution of simulators from the primitive to the current highly complex devices is chronicled. The expansion of simulation technology into many applications, such as medical, commercial airlines, space, defense, transportation, etc., is described through examples provided.

The growth of simulation technology in Florida is described with the economic impact of that growth discussed. Filling the career workforce pipeline is a serious challenge and the National Center for Simulation (NCS) is addressing that need by focusing on education, having developed a 4 year curriculum for high schools and instituting a Modeling and Simulation Certification for high school students. Plans are outlined for expanding the certification from the 6 beta-test schools in Central Florida, accomplished in 2015, to a national offering.

OUR SPEAKER



Henry (Hank) Okraski, National Center for Simulation, is a simulation consultant for the modeling and simulation industry. After 32 years of government service he retired and is President/ Chief Executive Officer of Henry C. Okraski and Associates in Winter Park, Florida.

While with the Navy and a member of the Senior Executive Service, he was the Director of the Research and Engineering Department and the Deputy Technical Director of the Naval Air Warfare Center Training Systems Division. He has served on NATO Study Groups and received several awards including the Navy Meritorious Service Award and Navy Superior Service Award. He was named Federal Engineer of the

Year by the National Society of Professional Engineers.

He is a founding member of the National Center for Simulation and continues to serve on the Board of Directors. He chairs the Education and Workforce Development Committee of NCS. He led the task force in developing a four year high school curriculum in modeling and simulation. He is a registered Professional Engineer (PE) and Certified Modeling and Simulation Professional (CMSP). Formerly, adjunct faculty member at Rollins College and University of Central Florida.

Mr. Okraski has a Bachelor's degree in electrical engineering from Clarkson University in Potsdam, NY and a Master's degree in systems engineering from the University of Florida. He received, and is proud of, the Golden Knight Award from Clarkson, the highest alumni award given by the university.

He and his wife, Judy, live in Winter Park. They have six children and fourteen grandchildren.

DAYTONA SECTION NEWS

Abigail Butka and Nick Serle presented their project to our membership at our April meeting.

Homeschooled teens place 4th at RoboBoat competition



By Saul Saenz , Reporter, Brighthouse Channel 13 News
Sunday, July 19, 2015

DAYTONA BEACH -- It may be hard for most to believe that what a couple of teens learned at home would allow them to take on some of the nation's top colleges in a robotics competition but they did just that, even beating the majority of those schools and they are only 14 and 15 years old.

The two members of the Daytona Beach Homeschoolers say some of those colleges they beat are now trying to recruit them.

Abigail Butka, 14, and her teammate, Nick Serle, 15, went into the 8th Annual International RoboBoat Competition hopeful, overwhelmed and understaffed.

The homeschooled teens built a robo boat called the S.S. Minnow with parts they found online. "That was actually kinda intimidating. Whys that? Well they had more experience than us, they had full time programmers, which we did not have, they had just more resources than we had," said Butka.

It's a humbling experience," said Serle. It was humbling for the victorious and the defeated.

The two teens, who don't even attend college, competed against 16 university teams and they came in fourth beating both Villanova University and the University of Florida and bringing home a \$2,500 check.

Abigail's father Brian Butka is their coach and advisor. He is also an Embry Riddle University electrical engineer professor.

"There were two students on this team. Some of the teams had up to 30 people," said Brian Butka.

Embry Riddle, who sponsored the pair, took first in the competition followed by Florida Atlantic University, the University of Michigan, and the teens.

Nick sums up how he and Abigail were able to take on University teams with all their resources and complicated computerized robots and beat them. "If you have a complicated system there's more things to de-bug more things to take out of. And with our system it's so simple it takes a short amount of time to see what's the problem," said Serle.

Nick and Abby already know what they're going to do with this check. They are going to take the proceeds and buy more materials for their next competition."

The teen's future looks bright. "They already have companies talking to them wanting to give them internships. Except they're just not old enough," said Brian Butka

As for those colleges Abigail and Nick beat. "Some of the colleges actually asked us if we would be interested in going on a tour of their facilities," said Abigail.

Adding to the old adage, if you can't beat them, enroll them.

APRIL PRESENTATIONS



Rebecca DeMarco, current student secretary and future-chair of ERAU WIE, is shown displaying the Tee shirt that was awarded an Honorable Mention for Embry Riddle in the Tee Shirt competition at IEEE SOUTHEASTCON 2015.

Members of the ERAU SOUTHEASTCON 2015 Hardware Competition Robotics Team



Greg Carkin, Brittany Rompa, Nezar Bakhsh, and Gary Roach

2015 TOMOKA SCIENCE AND ENGINEERING FAIR - IEEE SPECIAL AWARD WINNERS



Abigail Walrath, a 7th grader at Southwestern Middle School, was our Junior Division winner for her project titled "Magnify 2 Maximum"



Daphne Forester, a 12th grader at Spruce Creek High School, was our Senior Division winner for her project titled “Do Transportation Costs Affect the Size of a City”

ERAU NEWS

ETA KAPPA NU HONOR SOCIETY INDUCTION CEREMONY



Congratulations to students newly inducted into HKN.

Shown left-right: students Andre Napier, Shizhen Huang, Sujith Geevarghese, Sarvesh Dubey, Amay Desai, Brian Powell, Saloni Shah, Mohammed Alghumgham, Bharvi Chhaya, Dominick Tournour and Justin Albano. The first eight are the inductees.



Dr. William Barott shown with induction panel members Justin Albano, Dominick Tournour and Bharvi Chhaya.

SECTION NOTES

The IEEE is offering loyalty pins to reflect landmark years of membership for members. If you would be interested in receiving one of these pins, please contact the Section Chair, Jeanette Barott (barottj@erau.edu)

ANOTHER TALE FROM THE OLD PROFESSOR

THINGS THAT GO BUMP IN THE NIGHT AND THINGS THAT HAPPENED FIFTY YEARS AGO

From Ghoulies and ghosties
And long-legged beasties
And things that go bump in the night,
Good Lord, deliver us! A Traditional Scottish Prayer

Ah! The year 1965. I remember a lot from that year. We mark the midpoint of our 20 year involvement in Viet-Nam with a huge troop buildup. The voices of dissension against the war were growing louder. There was racial strife and the sad story of Selma. Mariner 4 passes Mars and sends back images of the Red Planet. The IEEE Daytona section was formed in 1965.

The average sunspot number was very low; 15, that year. This is a fact that I remember well. All my HF radio equipment was in the closet and the UHF and VHF gear took its place. On Tuesday 9 November 1965, at 5:25 PM EST a cascade of failures in the electrical power grid led to a massive blackout in the Northeast.

Is there a connection between sunspots and potential blackouts? Yes, but a low sunspot number would suggest a lower risk of power grid problems. However, the massive blackout was caused by equipment failures and not by Ghoulies, ghosties, beasties or extraterrestrial forces.

Your humble correspondent was working in a TV repair shop in 1965 after college classes and Saturdays. On November 9th I was working on a television that I had just replaced the picture tube and was finishing up by checking to be sure everything worked OK. Much to my dismay only channel 13 was working. The area in South Jersey had three network stations from

Philadelphia and none could be received. That was the end of the idea that I had finished the job and started to remove the back of the TV set to see what I could have possibly done to cause this situation.

Just about that time Heidi, who took care of the front desk and the telephone, came back to the workshop. "The strangest thing is happening. I have received 5 telephone calls from customers who have the same problem; their television will only receive channel 13", Heidi explains. Wondering if there was a cataclysmic event I turned on the AM radio. Most of the stations were off the air. Then, by using advanced logic I concluded that a power failure in Philadelphia may be responsible for the loss of television and radio stations. But why is channel 13 still broadcasting? That was easy to explain. That station was from Wilmington, Delaware, and its transmitter was in South Jersey.

In a few minutes Heidi returned. The lady from the sandwich shop across the street came in and asked to use our phone. They had no power and she could not find the phone directory in the completely dark sandwich shop to call the power company. Heidi gave the lady our contact number for the power company and the sandwich shop lady started to spin the dial. Whoa! Wait a minute! Our utility company was Atlantic City Electric which serves only South Jersey. Across the street was Public Service Electric and Gas which was headquartered in Northeast New Jersey.

I walked outside to take a look and what I saw was eerie. The North side of the street was completely dark while the other side was lit up as normal. But this was distressing as I intended to go across the street to get a sandwich for my dinner. But the sandwich shop lady said if I brought a flashlight she could make my sandwich but I had to come right away as she needed to put the meat in the refrigerator and cover it with ice soon to prevent it from spoiling.

I got my sandwich and before I finished working for the night, three hours later, the power from Public Service was back on and South Jersey was back to normal. The Muntz TV I was finishing up was working on all channels again. Things were not so fortunate for millions of people mostly in New York City and New England and including some areas in Canada. Some of those folks were without power for days.

A thinking person would figure that efforts would be taken to prevent such massive power outages again. But there were two other outages covering pretty much the same area in 1977 and 2003. The Old Professor had the "privilege" of arriving in New York City the day after the 2003 outage. Although the power had been restored to the City much of the computer-based systems had not been "rebooted" and New York still had a mess. Have we hardened out power grid to prevent future episodes? I will leave the answer to the reader.

The TV I was working on was a Muntz. The story of the Muntz brand is worthy of its own Tale. Stay tuned for a future release.

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 \$27, including tax, for S-XL size's, 2XL size is \$3 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.ieeemelbourne.org **Orlando Section website** www.ieee.org/orlando

FUTURE MEETING DATES:

The meeting dates for the 2015 fall session are: October 22nd and December 3rd

2015 SECTION OFFICERS

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Engineer's Troubleshooting Flow Chart



SEPTEMBER 2015 MEETING

Thursday September 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

TOPIC – The History and Growth of
Modeling and Simulation

SPEAKER- Henry (Hank) Okraski
National Center for Simulation

AGENDA

5:30 PM Greetings & Cocktails

6:00 PM Dinner

7:00 PM Presentation

Septembers Dinner Menu

Java rubbed **Baby Back Ribs** with steak fries and cider slaw

Lemon Chicken Piccata with capers and fresh garlic served over angel hair pasta with broccoli

Panko and horseradish encrusted Flounder with rice pilaf and broccoli

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 by Wednesday the 23rd 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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