



# SPARKS

Daytona Section Newsletter  
January 2013



## FROM THE HIGH CHAIR

Once more, I have been honored to be the Chair of the Daytona Section of the IEEE. I looked on the wall of my office just now and was astonished to see that my last term as Chair was 2000. That millennia year was 13 years ago. We used to meet at Sweetwaters, a first class restaurant with a great river view - except in the room where we met. I forget why we moved to the yacht club but members seemed happy with the switch. Sweetwaters has closed so that is just as well. In those days, we had "overhead transparencies" for our lectures. The section bought a computer projector so we could show Power Points but the club, and most venues now have their own projectors. I still have that projector in my office and bring it to meetings as a backup. You may have noticed that I also have a banner, like a section flag, which I try to remember to bring to meetings and hang up on the door.

So much for tradition. We used to draw over 30 members at Sweetwaters. Attendance did not fall when we first moved to the club. In the last few years it has dropped until it is good if we have 20 attend. This is a problem and like most hard problems there is no single cause. If it were simple, we would have fixed it long ago. Dinner meetings at the yacht club, with spouses and friends attending have several advantages. First, it's a chance for socializing and networking. The cocktail period at the bar is an opportunity to meet and chat, to find out what the others are doing and pick up some ideas. In the past, the food has been quite good for the money. Since many of the attendees are not engineers, it makes sense to present topics of general interest.

A part of the problem seems to be that socializing and general interest lectures are of no interest to a large segment of our membership. Students are universally pressed for time, particularly when there are night classes or labs. Ours is not the kind of socializing they seek. Professors would like to expand their knowledge and would squeeze time from their hectic schedules if they could gain something from the lecture. Gone are the days when a learned person sought knowledge of history, art, literature, travel, etc. as well as his/her profession. This is not so strange if one considers the amount of engineering knowledge that has been added since then. It seems to me that what we knew in 1951 when I graduated from MIT has at least tripled. The Whirlwind I, which we programmed in my senior class, had a 16-bit word and a 32-instruction repertoire. We were adding the Williamson Storage Tube RAM which would have 1000 sixteen-bit words (2K) and we thought that would be a lot. The power of our current machines is many orders of magnitude greater. So is the knowledge required to program and use them.

Another dimension of our attendance problem is the students. It is wonderful that we have a new chapter at Bethune Cookman and are working with Daytona State College to form a student chapter. I went to Dr. Liu's December Meeting presentation at ERAU (which was excellent) but did not see any students from other schools. I also hoped to meet some faculty from those institutions. I did not. Did I miss something? I often do. In any event, we need to offer meetings that will attract ALL the students in our area.

Finally one solution to the attendance problem is to raise membership, IEEE encourages us to do that. Our problem is that our membership base is in large part limited by demographics. Our student membership is limited to the number of EE students in our area. Sure, we should try to get higher participation among students but the max population is the number of EE students. A large part of our membership is retired life members. That population is fixed. We lose some to the grim reaper but others move into our area. We need to call out to them. Finally, there are a number of working EEs in our area. There are a few companies like Raydon and Teledyne. Perhaps we can reach out to them with programs that support their careers.

I wish you all a Happy New Year of good socializing, interesting lectures and better attendance.

Tracy

## **JANUARY PROGRAM**

### **OUR SPEAKER**

Dr. Susan Allen's work has focused largely on laser/material interactions, with an early emphasis on laser chemical vapor deposition and some novel laser machining. She has worked on laser cleaning of surfaces, including particle removal and laser induced desorption and their underlying mechanisms and, more recently, on laser sensor development and photocatalytic disinfection of bacteria.

Her previous university administrative appointments include:

- Director of the Arkansas Center for Laser Applications and Science at Arkansas State University
- Vice Chancellor for Research and Academic Affairs at Arkansas State University
- Vice President for Research at Florida State University
- Dean of the Graduate School at Tulane University

She has more than 150 scientific and engineering publications, many presentations to professional societies and other groups and nine U.S. patents. She has served on advisory panels for the National Science Foundation, the National Academy of Sciences and was appointed to the President's Committee for the National Medal of Science. Currently, Dr. Allen is serving as the Associate Dean for Research at the College of Engineering at Embry-Riddle Aeronautical University.

Professor Allen is active in the Materials Research Society, the Optical Society of America, the American Vacuum Society and is a senior member of IEEE and a Fellow of SPIE.

## **TALES FROM THE OLD PROFESSOR**

### **THE YEAR ZERO**

It's the beginning of another year and many of us have made resolutions vowing to do things differently in the New Year. It is time to calculate what we owe in income taxes for the last year and to stop writing last year's date on our checks.

A new year, marking the passing of time. Of all the earth's creatures, only man has a fascination with time. Animals sleep according to the light of the sun, some sleep in the day while others during darkness. It is known that birds are confused by an eclipse of the sun and will fly to their roost and prepare to sleep during an eclipse. Chicken farmers take advantage of their hapless birds by turning on electric lights in the chicken coop before dawn to fool the birds into staying awake longer and thus laying more eggs. Some animals such as those who live deep under the sea and those that live under the earth, such as worms and grubs live out their lives never knowing of the rising and setting of the sun or

any concept of time.

Only Homo sapiens mark time. Early man arranged sticks and stones so that the movement of the sun through the heavens could be used to mark the time of day. To mark time when there was no sun, there were all kinds of contrivances such as sand falling through a constricted glass, calibrated candles that burned at a known rate.

Accurate time keeping brought about living one's life according to the clock. Man began each day, not with the rising of the sun or the crowing of the rooster but to the raucous jangling of the alarm clock. Meals are eaten not when one is hungry but at a specific time. Public conveyances are proud of their punctuality and farmers would set their watches by the sound of a railroad locomotive whistle.

The accuracy of time keeping has steadily improved over the thousands of years man has marked time. In the mid 18th century, England offered a grand prize to the clock maker that could make a clock with an accuracy of one second per day. This clock was needed as an adjunct to navigation and had to maintain this accuracy while aboard a sailing ship.

Today a clock with a precision of one second a day is mere child's play as even the cheapest electronic watch can achieve this accuracy. The Global Positioning System, GPS, can provide the time of day to within microseconds. The super accurate clocks used for GPS provide "micro time".

On the other end of the time spectrum is macro-time which is marking the years, centuries, millennia and eons. In this field of macro-time we have serious problems. First, there are a number of calendars used for determining macro-time. The Chinese use a calendar based on the phases of the moon. The Jewish calendar, likewise, is based on the phases of the moon and the beginning of time corresponds to a year, traditionally, believed to be the year of the creation. The Christian church calendar, which sets the days of Easter and Lent, but not Christmas, is a mix of lunar and solar events, which makes it quite confusing. But no calendar is more confusing than the ancient Roman calendars. The Roman Caesars had a habit of modifying the calendar to suit themselves, such as adding months to honor Roman leaders. The roman emperors added months as needed so that officials would remain in office longer. Also, if an emperor was running short of cash, history records months were removed from the calendar to hasten tax collection.

The most widely used calendar today, ironically, came from Rome and was devised by Pope Gregory XIII. The new calendar has 12 months with one of the months being a short month. Every four years an extra day is added to the short month. Well, that is most of the years; there are exceptions for some centuries and millennia. This Gregorian calendar was a vast improvement over the Roman calendar. It had to be. The Roman calendar was so messed-up that anything would be an improvement. But because we did use the Roman calendar we have a fundamental problem.

To understand the problem we have to go back to December 31<sup>st</sup>, 1 B.C. We are at a wild New Year's orgy in Rome and the last grain of sand has fallen to the bottom of the hour glass and we celebrate the arrival of the New Year. Augustus Caesar raises his wine glass and announces a toast to the New Year; one AD. What happened to the year zero? Yes, dear reader, there was no year zero! Pope Gregory would not appear on the scene for another 1500 years and we have been living with this mistake for over 2000 years! We should have never entrusted our calendar to the hedonistic Romans, their number system has no zero! So this is not 2013 but actually 2012.

I intend to file my income tax return for the year 2012 early in 2013 before I receive any pay checks. When I fill out the form and the line item asks, "How much money did you make in 2012", I can honestly write down "zero". I could probably, for the first time, fill out my income tax form in less time than the government estimates it should take because every number is zero, including "tax owed". I would be doing the tax collector a big favor, too, because it would be very easy to check my return as it is obvious I have no math errors.

I hope this will be a benefit to all of you and give new meaning to the old phrase; "time is money". Happy New Year.  
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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386-671-3706 or [a.jusko@ieee.org](mailto: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](mailto:roger_grubic@ieee.org) for more information.

### CALENDER OF EVENTS

SouthEastCon- Jacksonville, April 4-7, 2013

### 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.ieemelbourne.org](http://www.ieemelbourne.org)

### Orlando Section website

[www.ieee.org/orlando](http://www.ieee.org/orlando)

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# JANUARY 2013 MEETING

**Thursday January 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**

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

**OUR SPEAKER** – Dr. Susan Allen,  
Associate Dean for Research at the College of  
Engineering at ERAU

## **January Dinner Menu**

Marinated Flank Steak  
Chicken Piccata  
Grilled Tilapia

[All entrees served with mashed potatoes,  
[Seasonal vegetables, rolls and butter,  
[house salad, 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 Al Jusko with your dinner selections or for program information. Dinner selections must be in by Wednesday the 23<sup>rd</sup> 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.**

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