



SPARKS

Daytona Section Newsletter
October 2018



2018 Outstanding Section Membership
Recruitment and Retention Performance
Daytona Section

OCTOBER SECTION MEETING

Thursday October 25th at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION- Cybersecurity Threats

CHAIR'S REPORT



Welcome to the October edition of the Daytona Section newsletter. While some of us will be unable to sleep due to the typical ghosts, goblins, and ghouls we expect in October, some of our students will be staying up all night competing in the IEEEExtreme programming competition.

Last month's speaker, Sohayla Eldeeb, provided an engaging overview of her research into enhancing the ability of microbes to decompose oil spills. She is receiving national attention for her work, applying for grants, and has organized marches in Washington, DC. Not bad for a senior in high school! We look forward to seeing you at this month's meeting, where the speaking topic will be current cybersecurity threats and how they may affect you.

Keith

SEPTEMBER PRESENTATION

Effectiveness of Nitrogen, Phosphorus, and Sulfur Compounds on Bioremediation of Oil Spills by *Pseudomonas Fluorescens* and *Bacillus* with the Aid of Ferrofluid



September's presenter Ms. Sohayla Eldeeb receiving the Daytona Section travel mug from Vice Chair Rich Kent

OCTOBERS PROGRAM

CYBERSECURITY THREATS

Our speakers this month will be Justin Yapp / Josh Gordon from the the White Hat Eagles Cybersecurity Club. Cybersecurity threats are evolving as attackers develop more subtle social engineering traps and take advantage of new Cloud and Internet of Things technology. The talk will focus on current cyber threats and provide practical advice on how to protect your data and identity. The White Hat Eagles Cybersecurity Club is a student organization that focuses on information and network security. They practice both offensive and defensive cybersecurity concepts and techniques, using cutting edge methods of attacking and defending networking assets. They conduct research and security analysis on commercially available, off-the-shelf equipment such as Smart Home appliances, wearables and much more.

ANOTHER TALE FROM THE OLD PROFESSOR

WHY DOES THE WHOLE WORLD MISPRONOUNCE KILOMETER?

The prefix “kilo” means one thousand. For example; kilovolt, kilogram, kilowatt, kilojoules and kilometer. As you read the “kilo-“ words, were you tempted to pronounce kilometer as kilo meter or kill ometer? If you were tempted to pronounce kilometer as kil-ometer it implies something that measures kils; whatever kils are. The suffix “ometer” means to measure. Such as speedometer, tachometer, thermometer, barometer and so on. A speedometer is an instrument that measures speed. A thermometer is an instrument that measures temperature as examples.



Kilomet

Consider the word micrometer. What does it represent? It depends on how you pronounce it. If you say micrometer such that rhymes with thermometer it is a device for measuring small dimensions. Micro means “small” except when applied to Microsoft. But if you pronounce micrometer as micro-meter, it fits into the kilogram, kilowatt etc. group and is one millionth of a meter. This is because the prefix micro means one millionth.



That brings me to another pet peeve of the Old Professor. One million represents ten to the power six such as a million dollars. What is the term for a thousand million dollars or ten to the power 9 dollars? Well, it’s a billion dollars. But people assume the “bi” in billion is a prefix which represents two of something like bicycle which is a transportation device with two wheels. Likewise, a unicycle has one wheel and a tricycle has three wheels. But when this logic is applied to the word billion; the question is: two of what?

The association of bi in billion leads to the term for a million-million or ten to the power twelve as “trillion”. The “tri” in trillion then suggests three is involved somehow. But three of what?

The obvious sequitur for increasingly larger numbers is quadrillion, quintillion, sextillion and so on and they are in widespread use! This insanity goes up to centillion which is ten to the 303rd power. These insane terms are not universal as there are differences around the world.

First, I don’t think there is ever a need to talk about a centillion of anything. It is estimated that there are 7.5×10^{18} or 7.5 quintillion grains of sand on the Earth. Avogadro’s number, which is a BIG number, is 6.02×10^{23} atoms per mole or 602 sextillion atoms per mole.

A googol is ten to the power 100, which is also 10 duotrigintillion. No one uses a googol to describe any quantity. The term is more of a joke and was actually coined by a nine-year-old child. A googolplex is a googol to the one hundredth power or ten to the 10,000 power. That’s 1 followed by a googol zeros, which I think transcends anything in the universe we could count. BTW: Google’s, (notice the different spelling of googol), headquarters in Mountain View, CA, is called the Googleplex.

My favorite big number is a zillion which has no official definition. It just means an awful lot of something. The truth be told, once something is measured in trillions and above, most people have no idea how big the number really is anyhow. But if one considers 21 trillion dollars, the US national debt, and calculates what their share is, suddenly it has meaning.

It's time to stop this silliness. There is a set of prefixes that we can use that makes sense. A million dollars is a megadollar. A billion dollars is a gigadollar and the U.S. debt is measured in teradollars. And..... 1000 meters is a kilo-meter and not a kil-ometer.

Dr. Al Helffrick, a.k.a The Old Professor

PE CORNER

FLORIDA ENGINEERS MANAGEMENT CORPORATION

I'd guess that it's pretty-much universally understood, at least among the engineering community, that the Florida Board of Professional Engineers licenses engineers in Florida and regulates the practice of engineering. And it's probably a little less well known that the FBPE operates under the auspices of the Department of Professional and Business Regulation, which is a state agency.

Until July 1998, administrative and investigative functions for the FBPE were performed by DPBR employees. In 1997, the Florida Legislature determined "that the privatization of certain functions that are performed by the department for the board will encourage greater operational and economic efficiency and, therefore, will benefit regulated persons and the public. Section 471.038, F.S. (97-312, Laws of Florida [L.O.F]), created the Florida Engineers Management Corporation (FEMC), a public-private partnership, for the purpose of performing staff duties for the Florida Board of Professional Engineers (Board). FEMC provides administrative, investigative, and prosecutorial services according to a contract with the Department of Business and Professional Regulation (DPBR).

FEMC is established as a nonprofit corporation with a seven-member board. The FEMC board is composed of five registered engineers appointed by the FBPE, and two laypersons appointed by the Secretary of DPBR. Like many statewide offices, FEMC board members are limited to serving two four-year terms. Three board members' terms will end in October of this year. The FBPE took applications for these board positions and selected three new FEMC board members. I applied and was fortunate to be appointed to the FEMC board for a four-year term beginning in October. The other two new board members are Ms. Safiya Brea, P.E. and Ms. Satya Lory, P.E.

FEMC took over the administrative duties for the FBPE on July 1, 1998. As an integral part of the FBPR, FBPR and FEMC share resources including the Board's website. It may surprise many of you that for nearly 20 years the FBPE support staff has been employed by FEMC and not by the State (DPBR) or the Board itself. I would say, though, that this

transparency is indicative of the success of the arrangement. As required by statute, the Legislature must review the FEMC's performance and reenact the enabling legislation. To date, this arrangement has received favorable review and the Legislature has continued FEMC's mandate. Additional information about FEMC and FEMC Board Members is available on the FBPE's website.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trend in the profession, IEEE has seminars that will meet your needs. And for the PEs, don't forget that the next renewal deadline is only 3 months away. Better start earning those CEHs now!

Art Nordlinger, PE, Senior Member

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 \$30, including tax, for S-XL size's, 2XL size is \$3 additional.

For more information or to order shirts contact: Allan Jusko 386-671-3706 or a.jusko@ieee.org.

FUTURE MEETING DATES:

The last date for the fall session is Nov 29th

EDITORS NOTES

Visit our Daytona Section website <http://www.ieee.org/go/daytona>

ENGINEERING HUMOR



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OCTOBER 2018 MEETING

Thursday October 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 Streets

TOPIC– Cybersecurity Threats

SPEAKERS – Justin Yapp & Josh Gordon
ERAU White Hat Eagles Cybersecurity Club

AGENDA

5:30 PM Greetings & Cocktails

6:00 PM Dinner

7:00 PM Presentation

Dinner Entrée Choices

Flounder Almondine- Sautéed flounder, brown butter, lemon and almonds. Served with rice pilaf and baby carrots

Chicken Piccata- egg battered and sautéed with fresh mushrooms, capers and lemon butter. Served with rice pilaf and baby carrots

Beef Tips Dijonnaise- Sautéed Tenderloin tips with mushrooms, shallots, white wine, Dijon Mustard, Demi-glace and cream. Served over bowtie pasta

A **Veggie Plate** is also available upon request
Dinners include a house salad, bread, coffee or tea

Members and guests \$20.00 each
Students \$5.00

IMPORTANT DINNER NOTE!

The Yacht Club is requiring us to give them a dinner and menu selection count by the Tuesday afternoon before our meeting. Since the menu items are special selections for each of our meetings and are prepared to be served at the same time, this gives the chef and kitchen time to order, receive and prepare the food items.

As always, all members and guests are welcome to attend the meeting and presentations, however any dinner requests received after Tuesday afternoon may not be accepted

Please contact Allan Jusko by Tuesday October 23rd at noon
to give us a count for dinner or for further information

If you make reservations and are unable to attend, call prior to the event to cancel.

The Section is charged for all dinners ordered, please let us know if your plans change

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