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**SUNCOAST**

**SIGNAL**

*THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.*



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***This Month's Meetings***

***Tuesday, August 7: EXCOM Meeting  
Meeting starts at 5:30PM At TECO Plaza***

***Register online at <http://time2meet.com/fwcs-excom/index.html>***

***Open to all FWCS Members***

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**IEEE 50<sup>th</sup> Anniversary**

Dear Section and Council Chairs,

I'd like to share some news that may be of interest to IEEE members in your Sections.

As you probably know, IEEE was founded on January 1, 1963, through the merger of the AIEE (founded 1884) and IRE (founded 1912). So 2012 is IEEE's 50th year and we're celebrating it modestly, focusing primarily on honoring those members who have been with us continuously since the beginning. There are about 9400 of them. They have all now received a pin identifying them as a "Member 1st 50 Years" and we are asking them to contribute their memories to the IEEE Global History Network.

I encourage you to recognize these loyal members in your newsletter or magazine, or in other appropriate ways. You can find a list of those in your Section(s) here: [http://www.ieeeahn.org/wiki/index.php/First-Hand:50\\_Year\\_Member\\_First\\_Hand\\_Histories](http://www.ieeeahn.org/wiki/index.php/First-Hand:50_Year_Member_First_Hand_Histories) .

Secondly, The Proceedings of the IEEE is publishing its volume 100 this year, since it began life as the Proceedings of the IRE and the numbering continued in 1963. The editorial team at proceedings has produced a special 13th issue in vol. 100. It's about 650 pages long and includes some very interesting papers that look both backwards and forwards. No matter what their primary interests, I think that most members will find several papers that interest them. They are available free of charge through IEEEExplore.

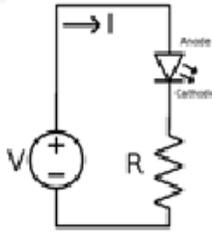
Finally, I'd like to call your attention to some work we have been doing in the international policy arena. In January, the IEEE Board of Directors endorsed the United Nations' declaration of 2012 as the International Year of Sustainable Energy for All. Since then we have been working with other engineering organizations to build support. To date, 45 other organizations, with a combined membership of over 2 million members, have joined us in a supporting statement. You can find the statement here: [http://www.ieee.org/about/news/2012/sefa\\_18june](http://www.ieee.org/about/news/2012/sefa_18june) .

I encourage you to share this statement with your members and encourage them to bring the importance of this issue to the attention of their government officials and others.

Best regards and thank you for everything you do to make IEEE the outstanding organization that it is.

Gordon Day

IEEE President



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## IEEE EMBS, Florida West Coast Section

The FWCS EMBS Chapter is holding a meeting on Neural Implants for Brain Machine Interfaces. Dr. Christopher Frewin will be giving the presentation. (See Abstract below)

Date: Wednesday evening, August 22, 2012

Time: The presentation will begin at 7 p.m.

Location: USF Engineering II, ENB 109  
4202 E Fowler Avenue, Tampa

Please register at <http://time2meet.com/fwcs-embs/index.html>

We look forward to seeing you at the meeting!

John West

Chair, FWCS EMBS Chapter

[John.west@ieee.org](mailto:John.west@ieee.org)

## Interactive Neural Implants for Brain Machine Interfaces

**Abstract:** Brain machine interfaces (BMI) using implantable neural interfaces (INI) offer a wide range of therapeutic opportunities for people suffering from neural damage caused by trauma or disease. However, the promise of these devices has yet to be achieved due to low levels of device reliability. Dr. Frewin has been investigating cubic silicon carbide (3C-SiC) as a potential INI construction material that may overcome many of the reliability issues. Not only is this material physically and chemically robust, but it has demonstrated excellent levels of biocompatibility both *in vitro*, and more importantly, *in vivo*. SiC has another advantage as it is a semiconductor, therefore offering many more avenues of neural interaction when compared with traditional INI materials. These advantages include active field effect and direct light emitting diode interactions with neurons.

#### Biography:

Dr. Christopher L. Frewin Current Position: Post Doctorial Researcher - Neural Implants for Brain Machine Interfaces, Morsani College of Medicine, Department of Molecular Pharmacology and Physiology & USF Health Byrd Alzheimer's Institute, and a recipient of NIH Ruth L. Kirschstein F32 Fellowship

Dr. Frewin started as a research scientist in materials science and built a chemical vapor deposition reactor for the heteroepitaxial growth of cubic silicon carbide (3C-SiC). He has been a visiting researcher at Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany as well as CNR-IMM Catania, Italy, studying crystallography and surface science of 3C-SiC. He expanded the research into using 3C-SiC and other novel materials into the construction of a permanent neural interface. This current work includes research into bridging undamaged parts of the brain to repair neural damage and optogenetics to provide therapeutics for diseases like Parkinson's disease.

## Remembering an Outstanding Leader

Again, we have sad news. Former Region 3 Director Jim Beall died 2 July 2012 at the age of 82. Jim was presently serving as Mentor to the Conference Committee. Jim, an IEEE Life Fellow, received the IEEE Haraden Pratt Award Medal in 2009. The IEEE information for the award listed many of his contributions:

James H. Beall, an IEEE Life Fellow, has demonstrated unparalleled leadership to IEEE for over 40 years. With contributions at the Institute Region, Society levels, committee work and section activities, in particular the Florida West Coast Section, Beall is known for his pride in IEEE and an ability to elevate his colleagues to a higher level of performance while striving to adhere to the ideals of IEEE.

Mr. Beall served on the IEEE Standards Board for seven years and as director of Standards Activities in 1983–84. While on the Standards Board he coordinated the development and revisions to IEEE standards as well as reviewed IEEE standards projects for due process.

Mr. Beall has served on the Technical Activities Board, the Regional Activities Board and the USA Board. He has chaired many committees within the IEEE Industry Applications Society, serving as the Society's president in 1980 and on its Executive Board for 12 years. He was Director of Division II in 1985–86 and Region 3 Director in 1996–97. Mr. Beall also served on the Chicago Section Executive Committee and was chair of its Northwest Subsection. His contributions to IEEE conferences include Centennial Committee Chair of the 1984 Industry Applications Society Conference and organizer of the IEEE Power Engineering Society 1998 Winter Power Meeting.

In all of his IEEE positions, he has provided technical leadership. Mr. Beall retired from AT&T Teletype Corp. in 1984 and is currently an engineering consultant in New Port Richey, Florida and remains an active member of the Florida West Coast Section, Florida council and Region 3.

Jim was a major contributor to his section, council and region. He help each of these entities run a variety of conferences which for years include SouthCon. Jim was always willing to review conference plans, conference contracts, etc. and provide a critique based on his extensive experience. In 1999, Region 3 honored Jim Beall with our IEEE Region Outstanding Service Award. We benefited greatly from his participation and enjoyed his wife Nina's company many times as she traveled with him to our Region events. We know that Jim's contributions will continue to benefit IEEE and Region 3 for years to come.





IEEE



## Tour of Progress Energy's Paul L. Bartow Power Plant on Weedon Island Pinellas County

**Date:** Friday, August 31, 2012

**Time:** 2:30PM - 5:30PM. (Meet at 2:00PM Front Gate for Security Processing)

**Location:** 1601 Weedon Island Dr., St. Petersburg, FL, 33702 ([Map & Directions](#))

**Cost:** Free for IEEE Members, \$20 Non-Members,

**RSVP:** Online at: <http://time2meet.com/fwcs-pes3/index.html> **limited to 25 attendees**

**SPECIAL REQUIERMENTS:** Due to security restrictions registration will **CLOSE on August 29<sup>th</sup>**. There will be **NO EXCEPTION!**

**Questions:** Claude Pitts at 727.418.5272 or [claud.pitts@ieee.org](mailto:claud.pitts@ieee.org)

The group will meet at the Front Gate for Security processing at 2:00 PM then meet in parking lot of the Administration Bldg. for the tour.

This site tour will take approximately three (3) hours and will include an unofficial Power Plant 101 discussion about the various types of power plants in the Progress Energy System, history of the Bartow Plant site and a walk-about in the new power block.

Bartow Plant is classified as a Maritime Transportation Security Act (MTSA) Facility and has **SPECIAL REQUIERMENTS and RESTRICTIONS;**

- **MTSA Requirement** - All visitors, vendors, and delivery personnel must be screened and processed at the Access Control Point (ACP) prior to obtaining access authorization. All visitors, vendors, and delivery personnel must present a valid photo ID to obtain a Visitor Badge.
- **MTSA Requirement** - All facility personnel, including contractors, whether part-time, full-time, temporary, or permanent, vendors and visitors must display the Progress Energy issued Access/Identification Badge on the outer most garment on the front of the body between the neck and the waist clearly visible for inspection.
- **Plant Walk-Through Requirement** - Tour attendees must wear long pants, sleeved-shirt and closed-toe shoes. Steel-toe safety shoes are not required for tour attendees.
  - Personal jewelry should be minimal and close fitting, i.e., wedding band, small earrings. Large loose dangling jewelry (necklace, bracelets, etc.) should not be worn during the plant walk-through tour.
  - Any person wearing the following articles of clothing will be disqualified from attending the plant walk-through tour:
    - Shorts, sleeveless shirts, dresses/skirts, sandals/flip-flops, or any other clothing that exposes more skin than a pair of long pants with closed-toe shoes and a T-shirt.



## IEEE-USA Launches New "Career Manager" for Members

WASHINGTON (20 July 2012) -- One of the principal reasons IEEE-USA was founded in 1973 was to provide career resources for U.S. IEEE members to help them enjoy long and fruitful careers. IEEE-USA, in its quest to continue providing these resources, has launched a redesigned careers page.

The IEEE-USA Career Manager (<http://www.ieeeusa.org/careers>) is organized into eight categories designed to help you manage and advance in your career:

- \* Career Management Interactive Workshop
  - \* Salary Service
  - \* Consulting and Entrepreneurship
  - \* Professional Development Webinars
- \* Employment Assistance and Job Search
  - \* IEEE Online Distance Learning
  - \* E-Book Library
  - \* IEEE.tv

The interactive online workshop, "Making a Difference," will help you learn how to increase your job satisfaction, become and remain a top performer, maximize your employability and receive the support needed to achieve your career goals.

The IEEE-USA Salary Service offers those who take the organization's annual Salary and Fringe Benefits Survey five complimentary uses of the IEEE-USA Salary Calculator. The latter helps members determine their market value, assess job offers and negotiate salaries.

Employment assistance includes the IEEE-USA Employment Navigator, which captures hard-to-find job postings; the IEEE Job Site; and IEEE-USA Employment Networks, where small groups of people come together in person or electronically to help one another in their job search.

IEEE-USA also offers a wide array of resources for consultants and entrepreneurs. The IEEE-USA Consultants Directory is an online meeting place where employers and consultants can be paired on specific projects.

Entrepreneurial services include, among other things, resources the Small Business Administration provides to high-tech business owners, and TechMatch, where your business proposals are reviewed by experts and you can reach potential investors.

For more on IEEE-USA's Career Manager, see <http://www.todaysengineer.org/2012/Jul/career-manager.asp>.

IEEE-USA advances the public good and promotes the careers and public policy interests of 210,000 engineering, computing and technology professionals who are U.S. members of IEEE.



IEEE



## *Smart Grid Symposium Back By Popular Demand*

**Date:** Friday, September 21, 2012  
**Time:** Seminar: Registration 8:30am-9:00am, Speaker 9:00am-3:00pm  
**Speakers:** Jason Flynt Duke Energy –Lee Collins TECO – Randy Dotson, Lakeland Electric  
**Location:** Seminole Electric, 16313 North Dale Mabry Hwy, Tampa, FL 33618  
**Cost:** \$100 Members, \$150 Non-Members, \$50 Students. (Includes Breakfast & Lunch)  
**RSVP:** Online at: <http://time2meet.com/fwcs-pes1/index.html>

Make checks payable to: IEEE FWCS

Send checks to: John Stankowich, IEEE PES/IAS Treasurer  
2593 Forest Run Court  
Clearwater, FL 33761-3716

Space limited to the first 45 registrants!!!

**Cancellation must be submitted online 24 Hrs prior to the seminar at:**

<http://time2meet.com/fwcs-pes1/index.html>

**No shows will be invoiced for the total cost of the seminar.**

**Questions:** Serge Beazile at 863-834-6511 or [serge.beazile@lakelandelectric.com](mailto:serge.beazile@lakelandelectric.com)

Following a successful Smart Grid presentation last year, the FWCS will once more have Randy Dotson, Jason Flynt and Lee Collins representing Lakeland Electric, Progress Energy Florida and Tampa Electric Company. The Symposium expert speakers will present the latest information on state-of-the-art innovations in smart grid technologies and their applications in their respective company. They will provide an update on their progress implementing that vision and share intimate detail of their plans. It will be an interactive presentation affording you the opportunity to participate and ask questions. In addition there will be a presentation on the impact of Electric Vehicles on the distribution Grid. A Chevy Volt will be available for a “show & tell” for those interested

## *RAS Update*

The local IEEE Tampa Bay Robotics and Automation Chapter has been informally researching the state of K12 Robotics and has estimated that perhaps less than 1% of the High School Students participate in Robotics Education in the Greater Tampa Bay Area (TBARTA Service Area).

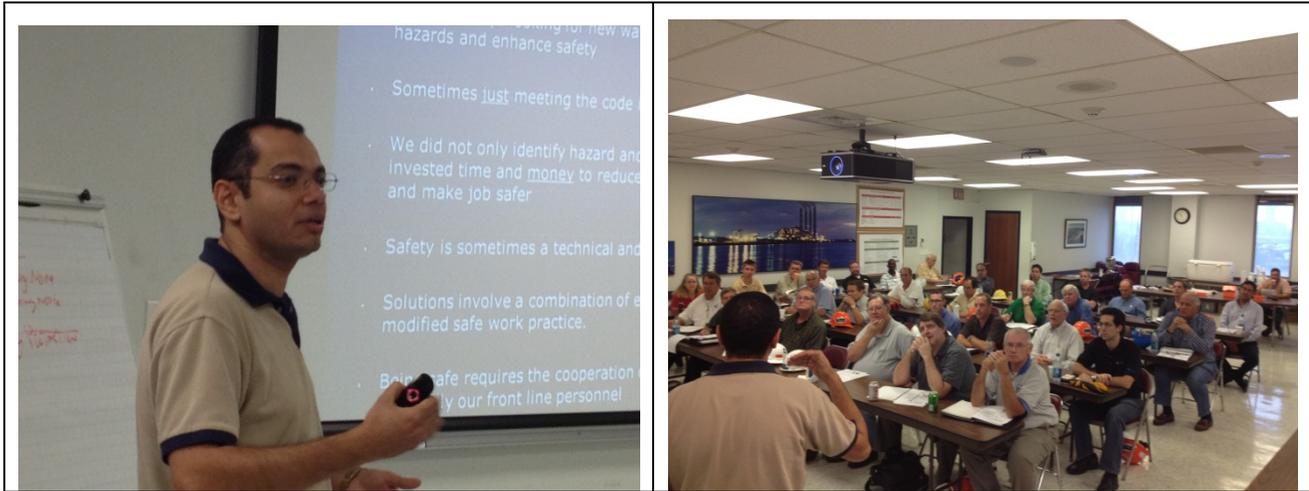
The major hurdle to greater participation is cost exacerbated by shrinking budgets. In looking at various Robotics Programs we have determined that the BEST Robotics headquartered at Auburn University offers a virtually a "No Cost" Program with no "Entry Fees and Kit Costs" in contrast to some Programs which have Entry Fees in excess of \$5,000 for competitions.

Ken Fiallos P.E. talked about and recruiting for the \$2000 Chapter Development Grant awarded to Tampa Bay RAS to introduce High School, College Students and RAS members to the Arduino Microcontroller through hands on mentor led Arduino Workshops called “Learning Your ABCs” (Arduino Breadboarding Circuits).

Ken Fiallos P.E.  
Chair

## IEEE FWCS PES UTILITY USERS GROUP MEETING

On Wednesday, July 18, we held our first Local Utility Users group meeting at Tampa Electric, Big Bend Station and it was a great success. We had 42 people involved in the utility industry attend. The engineering staff at Tampa Electric presented the engineering solutions and safe work practices implemented at their three generation stations. A case study of an arc flash event that occurred after the remediation projects was presented and compared with what the event results would have been had the improvements not been made. We would like to especially thank Mr. George Bolos for his work putting together the materials for this meeting and we would like to thank Tampa Electric, Big Bend Station for providing the facilities, breakfast and lunch for the group.



Additionally, the attendees discussed potential future meeting topics to be covered. Some of these are

- Cable technology and standards,
- Reliability standard and requirements
- Lightning and power surge protection methods
- Motor Applications, repair, failures, specifications and standards
- Transformer Applications, repair, failures, specifications and standards
- System Neutral ground systems.
- Smart Grid / Distribution Automation
- Protective relay engineering

The local committee will begin working on the above ideas and we are looking for support of members that can provide expertise on the above topics. If you would like to host a user's group meeting, please contact us with you area of interest. Also if you are interested in being included in the group communication, please contact us with your email address and we will add you to the group mailings. Lastly the PES Executive committee that organizes these meetings meets the last Thursday of every month at 6am at the Village Inn Restaurant on Dale Mabry between I274 and Hwy 60 and we would welcome you to attend one of these meetings and support our fellow utility engineers.

Lastly, we want to thank all that attended the meeting and we hope everyone found something in the meeting that will help them in their future endeavors. The goal of this group is to help each of us by providing all useful information. We look forward to more learning experiences in the future.

Interested members can find the users group on LinkedIn by searching groups for **“IEEE FWCS PES ELECTRIC UTILITY USERS GROUP”**

## IEEE TISP Program

### PINELLAS STEAM SUMMER CAMP 6-15-12 REVIEW:

IEEE FWCS members were invited to the *STEAM Summer Camp* at Pinellas Park Middle School on June 15, 2012. STEAM is an acronym for Science, Technology, Engineering, Art, and Music and was organized by Pinellas County Teacher Suzanne Hedberg. Ken and Sean were led to a classroom to setup. Four groups of Sixth Graders came to the classroom they were teaching in for one hour sessions between 9:30am to 3:00pm. They discussed the Laws of Physics concerning Kinetic and Potential Energy. Ken made an apparatus consisting of a metal pole, tape measure, plastic tube, two lasers at each end, and an Arduino Circuit Board with a USB cable connected to a laptop. They positioned the Kinematic Tube and measured the angle of slope. They explained the Trigonometric significance of the Sine Curve once the angle was known. Each student would drop a ball bearing down the tube. The Arduino would calculate the time the ball rolled down to the second laser. Each laser beam generated an Integer value when the beams were broken. The data would be generated in an application called Teraterm. They would call out the Transition time with each test and compare it to the calculated values. Ken also promoted Junior Solar Sprint and Electrathon Racing. He left the students with the inspiration to be “Entrepreneurs in the future.” The teachers and the children enjoyed the presentation.

## Advertising Section

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August 2012 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1	2	3	4
5	6	7 EXCOM Meeting at TECO Plaza, see page 1	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22 Neural Implants for Brain Machine Interfaces (page 3)	23	24	25
26	27	28	29	30 PES EXCOM Meeting at 6AM	31 Tour of Bartow Power Plant see page 5	1