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This Month's Meetings

Tuesday, March 5: 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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Ralph Painter IEEE FWCS Engineer of the Year 2013

Mr. Painter is a senior member of the IEEE, with over thirty years of experience in the electric utility business.



His is currently an Engineering Fellow at Tampa Electric Company.

Mr. Painter is a professional engineer registered to practice in Florida and a member of the Florida Bar.

He holds a Master of Engineer degree from the University of South Florida, and a Juris Doctor degree from Stetson University College of Law.

Beginning in 2001, Mr. Painter has supported IEEE's teacher in-service program (TISP) that provides lesson plans and continuing education opportunities to K-12 educators that teach Science, Technology, Engineering, and Math, the so-called STEM subjects.

Mr. Painter designed a number of hands-on activities to challenge and inspire students and teachers. Those activities are the basis for six lesson plans that teachers around the world can download from the IEEE web site:

- Rotational Equilibrium, A Question of Balance
- Everything You Wanted to Know About Electric Motors
- Light Waves and Spectroscopes
- Build Your Own Robot Arm
- Get Connected with Ohm's Law
- Orbit of Planet Gamma

Over the years Mr. Painter has conducted many workshops that cover STEM subjects and balsa wood bridge building activities for teachers in Pinellas, Manatee and Hillsborough counties.

Mr. Painter has extended the reach of the IEEE teacher in-service program (TISP) by conducting workshops at meetings and conventions of:

- The Florida Association of Science Teachers (FAST)
- The National Council of Teachers of Mathematics (NCTM)
- The International Technology Educators Association (ITEA)

Mr. Painter introduced the teacher in-service program to IEEE members at seminars held in Boston, Los Angeles, Baltimore, and Atlanta.

Mr. Painter has sponsored several teams that have competed in USF's annual Engineering Expo Balsa Wood Bridge Contest.

He continues to assist USF to develop and extend the reach of that program.



IEEE ExCom Meeting

For Planning purposes, the following dates are the planned dates for IEEE FWCS ExCom meeting for the remainder of 2013:

- | | | |
|---------------------------|--------------------------|---------------------------|
| - April 2 nd | May 7 th | June 4 th |
| - July 2 nd | August 6 th | September 3 rd |
| - October 1 st | November 5 th | December 3 rd |

2013 Lignel Award recipients will be featured in the April edition

FWCS SP/COMM Wireless Directions for the 21st Century and Beyond

Date: Wednesday April 17th, 6 PM at USF Tampa Campus, room ENB 109

Abstract: Wireless communication has been touted as the fastest growing technology in history ---as early as 2001 the number of mobiles exceeded the number of landlines globally. Currently, new wireless applications and services continue to emerge on an almost daily basis, the number of users of these services, including machines, are growing at an exponential rate, and there is continuous progress in enabling seamless communications between wireless devices (the “Internet of Things”) across many different wireless standards. This growth is being fueled by the almost weekly announcement of new devices, like the iPad or the latest smartphone; however, the challenge for the communications service providers is to provide the enormous network capacity, seamless interworking, and reliability to satisfy these data-hungry devices that demand ever more bandwidth.

This talk will discuss 4G and beyond wireless communications and networking technological landscape, some emerging developments, recent research advances that address capacity, interworking, and reliability improvement of wireless networks, including hybrid WLAN (WiFi/femtocell)-WAN (cellular) networking, cooperative communications, network coding, networked multiple-antenna MIMO systems, and will speculate on at least one new applications domain---*in vivo* wireless communications (think *MIMO in vivo*). Wireless technology has the potential to synergistically advance healthcare delivery solutions by creating new science and technology for *in vivo* wirelessly networked cyber-physical systems of embedded devices that use real-time data to enable rapid, correct, and cost-conscious responses in chronic and emergency conditions.

RICHARD D. GITLIN is a State of Florida 21st Century World Class Scholar and Agere Chair Distinguished Professor of Electrical Engineering at USF. He was Senior VP for Communications and Networking Research at Bell Labs and later visiting professor at Columbia University, where he received his doctorate.

Dr. Gitlin is a member of the National Academy of Engineering, Fellow of the IEEE, and Bell Laboratories Fellow. He is also a co-recipient of the 2005 Thomas Alva Edison Patent Award and the S.O. Rice prize, co-authored a graduate Data Communications text, published 100 papers and holds 44 patents (co-inventor of DSL). Since joining USF in 2008, he has focused on the intersection of communications with medicine and created an interdisciplinary team that is focused on wireless networking *in vivo* miniature wirelessly controlled devices to advance minimally invasive surgery and other cyber-physical health care systems.

Organizer: For more specific information or directions, please contact Chris Lambrecht (e-mail: chris.lambrecht@ieee.org, Ph: (727)458-9061



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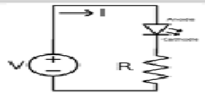
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David Touvell IEEE FWCS Outstanding Student Award Recipient 2013



David is currently at the University of South Florida and is pursuing a degree in electrical engineering. This year he is the IEEE Florida West Coast Section Outstanding Student Award Recipient. David is currently excelling scholastically in

his college curriculum.

He has been active in the IEEE Student Chapter for the past 3 years. He is major contributor to the development and offering of numerous workshops for student benefit, assisting the FWCS Robotics group with workshops for high schools, organizing professional events with outside IEEE speakers. His leadership has been instrumental in making this happen, as the current Chair of the IEEE Student Branch.

David was awarded one of only 2 IEEE PES undergraduate scholarships this year.

David has worked hard to expand the professional opportunity for the members of his section by using his strong leadership abilities.



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Getting a Handle on Projects That Serve the Underserved

By MICHAEL GESELOWITZ, PH.D., SENIOR DIRECTOR, IEEE HISTORY CENTER

Many members have taken to heart IEEE's mission of "advancing technology for humanity." They're working on dozens of projects aimed at improving the living conditions of poor, underserved areas through sustainable technologies tailored for those communities. Some projects have been developed and led by individual members while others are driven by IEEE's organizational units—sections, societies, councils, and student branches.

The Institute has written about several such efforts, including a project to improve India's health care system by installing an [electronic medical record-keeping system](#), a [solar-powered charging station](#) for a primary school in Haiti built by a professor and her engineering students in Chicago, and [portable power stations in rural Nicaragua](#).

But IEEE has no idea how many projects are under way, what those projects are, or how many members are involved. At the same time, members who want to volunteer and participate have no way of learning about projects that could use their help. That's why the IEEE Humanitarian Ad Hoc Committee launched the [Special Interest Group on Humanitarian Technology](#) (SIGHT) program in December 2011. Thirteen groups pursuing humanitarian technology projects have registered as SIGHTs so far.

"Our objective is to coordinate these activities and make them visible to a larger audience," says Satish Babu, chair of the SIGHT Steering Committee, which is responsible for approving new groups and monitoring their projects. "We want to foster collaboration among the groups—have them share information with each other as well as with nongovernmental and other organizations pursuing the same goals."

Humanitarian-technology related initiatives on IEEE's radar include [Engineering For Change](#) (E4C), of which IEEE is a founding member along with the American Society of Mechanical Engineers and Engineers Without Borders-USA. E4C is part of a global community of organizations and individuals promoting sustainable and accessible tech-based solutions to problems facing underserved communities. *Sustainable* is a key word here, for a humanitarian technology project could be built by outsiders, but it must be maintained by the local community.

Babu says the steering committee wants to see the number of SIGHTs at least double in 2013. The committee is providing the groups with the moral, communications, and support to help them succeed.

COMMUNICATION IS KEY

Registering as a SIGHT offers a number of benefits, according to Babu. These include being able to access a website now in the works for groups to share details about their projects, the lessons learned, and best practices. Cataloging projects in this central repository is expected to make it easier for others to learn of opportunities, thereby leading to more members signing up to help.

A newsletter is also being planned for later this year to raise awareness about what's being done. Projects can always use more helping hands as well as money for materials, which a newsletter could bring in.

The steering committee can also seek funding from within IEEE, as well as from other organizations. Last year, the 13 SIGHTs received seed grants of US \$250 each from the IEEE Humanitarian Ad Hoc Committee.

In addition, the steering committee is considering holding a conference to bring together SIGHTs and government agencies, NGOs, charities, and funding groups interested in attacking global development challenges.

"There are advantages to joining forces and feeding each other ideas," says IEEE Senior Member Raj Madhavan, chair of the IEEE Robotics and Automation Society's SIGHT and vice president of the society's Industrial Activities Board. "SIGHTs will let us leverage existing partnerships so we can understand the lessons learned and forge new relationships." Madhavan is also a member of the SIGHT Steering Committee.

GETTING STARTED

To form a SIGHT requires six or more IEEE members, and the SIGHT must be affiliated with an IEEE organizational unit. IEEE student members can also form SIGHTs, provided they are connected with an IEEE section and the chair of the group is an IEEE member.

In any case, a [petition](#) must be submitted providing information such as the organizer's name and contact information, the group's name and mission, the name of its organizational "sponsor," and the proposed activities to be undertaken in its first year. Once approved, the group must report on its activities every six months.

The IEEE Bangalore, Bolivia, Chile, Hong Kong, Kerala, and Madras sections are just some of the IEEE entities with SIGHTs. In September, the IEEE Robotics and Automation Society became the first IEEE society to establish one. The [RAS-SIGHT's](#) mission is to contribute sustainable robotics and automation techniques to improve the quality of life in underserved and underdeveloped parts of the world.

Continued on page 9



FWCS PES UTILITY USERS GROUP MEETING GENERATOR PROJECTS

Open only to IEEE Members in Good Standing



Date: Friday, April 12, 2013

Time: 9:00AM – 1:00PM

Speaker: Thomas Blair, P.E., Senior Consulting Engineer, TECO

Location: 13031 Wyandotte Road, Apollo Beach, FL 33572

Cost: FREE (lunch will be provided by Tampa Electric)

RSVP: Online at: <http://time2meet/fwcs-pes3/index.html> (Select Reservations)

Questions: Tom Blair at 813-228-1111, ext 48179 or tom_blair@ieee.org

Your IEEE PES West Coast Chapter is hosting the next local utility users group meeting on Wednesday, March 27, 2013 at the Tampa Electric Big Bend Power Station where TECO will present their work on Generator projects that restore the capabilities of the existing generators. Tampa Electric Engineers will present information on past projects performed at various stations to recover the performance of existing generators and auxiliary systems. This meeting will also cover a current project at Big Bend Station where a 35 year old, 495MVA, hydrogen and water cooled generator is being modernized. The stator is being rewound, the excitation control system is being replaced, and the generator protection system is being updated to modern available technology. Additionally, we will present information on other generator projects that have been completed in the past few years. The meeting will conclude with a plant tour covering aspects of the current project underway at the station for those that are interested.

We will discuss topics such as stator winding replacement, water clip design, core loss testing methods, retaining ring issues, rotor coil replacement, brush and brushless exciter reconditioning methods, excitation control system improvements, and generator protection relay improvements to protect the investment in the generator.

To ensure everyone's safety, we ask that attendees wear casual clothing. No shorts are allowed onsite. We also request that attendees wear closed toed shoes (steel toed shoes are preferred). Hard hats, hearing protection, and safety glasses will be provided to attendees, but if you have this PPE, you are welcome to bring it and use it at the meeting. Please have a government issued photo ID when arriving.



Tour of Landmarc Contracting Company Net Zero Energy Building

FWCS IEEE Industry Tour Series

Date: 3/28/2013

Cost: Open to IEEE Members in good standing.

Time: 1PM - 2PM

Host: Spencer Kass, V.P of Landmarc Contracting

Location: 1001 North Howard Avenue, Tampa 33607

Make checks payable to: N/A

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

Reservations are limited to 15 attendees.

PDHs are not offered for this event.

Questions: Jeff Basiaga at 813-541-5758 or Jeff.Basiaga@Stantec.com

Spencer Kass no longer pays Tampa Electric to power his office building. The utility pays him. For each of the past 12 months, the electric meter on Kass' 2,600-square-foot building in downtown Tampa registered "net zero" usage. In fact, the solar-powered building produces so much power that the electricity Kass doesn't sell back to Tampa Electric he gives away to owners of electric cars.

"This building is in an elite group of Tampa Electric customers because it produces more energy than it uses," said Cherie Jacobs, a spokeswoman for the utility. "He's one of the few in our territory to maximize the technology to do that."

Of Tampa Electric's 675,000 customers, Jacobs said 30 are regularly net zero energy users and just five of those are businesses.

But if Kass' experience is any indication, there could be many more on the horizon. Increasingly, the falling cost of solar panels makes converting the sun's rays into energy more practical for businesses and individual homeowners. Utility companies such as Tampa Electric and Progress Energy Florida offer about \$1 million to \$2 million in rebates to homeowners and businesses each year to support projects like these as part of their energy conservation efforts. *Source: Ivan Penn, Tampa Bay Times, October 20, 2012.*

Host Bio: Spencer Kass is a fourth-generation construction and real estate professional, Spencer graduated from Lehigh University, with a B.S. in Business and Economics, and has a J.D. from Touro Law School. He has also spent time working in the telecommunications field for large, publicly-traded companies. Spencer was responsible for the zoning and site plan approval for hundreds of telecommunication towers throughout the Northeastern United States. Spencer continues to help shape policy for the City of Tampa. He is a regular fixture at City Council meetings and has helped bridge the divide among groups in citywide disputes. His participation has helped the City of Tampa gain a united approach to problem-solving and policy issues. Spencer's insight into law and the realistic consequences of proposed city ordinances has helped Spencer to protect the people of Tampa, while making local government accountable and responsible for its actions. Spencer continues to be a tremendous asset to residents and business owners in Tampa, as well as local politicians.



Don't Miss This EMBS Event

- Title: “From Tele-health to Biometrics for postoperative surgical care and chronic disease management” – A window into the future of remote physiologic sensing and its role in driving down the cost of healthcare delivery.
- Speaker: Dr. Lennox Hoyte, MD, MSEECs,
Professor, USF Morsani College of Medicine, Director, Urogynecology and Female Pelvic Reconstructive Surgery, USF College of Medicine and Chief Medical Information Officer, USF-HEALTH, Medical Director, Urogynecology and Robotic Surgery, Tampa General Hospital.
- Venue: USF CAMLS (Center For Advanced Medical Learning And Simulation)
124 South Franklin Street Tampa, Florida 33602 <http://www.camls-us.org/>
- Date: March 27, 2013
- Time: Tour starts at 5.30 pm, light refreshments at 6.30, presentation at 7.00 pm
- Register: <http://time2meet.com/fwcs-emb/index.html>

Biosketch for Dr. Hoyte

Dr. Hoyte is Professor and Director, Urogynecology and Female Pelvic Reconstructive Surgery, USF Morsani College of Medicine and is Medical Director, Urogynecology and Robotic Surgery, Tampa General Hospital. He is also Chief Medical Information Officer at USF-HEALTH. He earned his [MD at Stanford University](#), his [MSEECs at MIT](#) and his BSEE at Worcester Polytechnic Institute.

Dr. Hoyte is a fellowship trained sub-specialist in Female Pelvic Medicine and Reconstructive Surgery (FPMRS) and specializes in advanced robotic surgery to correct female pelvic organ prolapse. He is one of the leading robotic prolapse surgeons in the world, and has trained over 50 surgeons in the use of the Da Vinci robotic Surgical system. In addition to his role as a clinician, Dr. Hoyte is active in the development of intellectual property related to the practice of medicine; he has filed several patents on devices ranging from bladder drainage aids, to instruments for enabling prolapse surgery, as well as methods for accurately measuring intravascular blood volume. He is also Chief Medical Information Officer for the USF Physicians group, tasked with designing an electronic health record optimized for delivering high quality healthcare, while maximizing physician resources.

Abstract

This talk reviews existing remote health management technologies in use at USF-HEALTH, discusses remote biometric sensing devices and their role in helping to deliver cost effective healthcare across wide geographies. We begin by presenting a successful tele-radiology application currently used to remotely evaluate obstetric ultrasounds in a way that maximizes the scarce physician resource, while optimizing the cost of care delivery. We then discuss possibilities for using existing low-cost communication-enabled biometric sensors to drive down the cost of providing effective post-surgical patient care. Similar principles will apply to decreasing the costs and improving the quality of the medical management of chronic diseases like diabetes, obesity, and hypertension. We will show that, while current biometric devices appear to be capable of monitoring and communicating important physiologic parameters, they are not currently set up to enable streamlined collection and delivery of patient health data to the healthcare team. Furthermore, their heterogeneous user interfaces and diverse communication requirements pose barriers to their adoption by all but the most technically savvy, determined patients. Seminar attendees are challenged to consider the design of integrated, low-cost patient-friendly biometric device implementations, able to transmit actionable data directly into electronic health records, securely. In future, streaming data from integrated, user-friendly biometric devices will enable us to “close the loop” in the care of chronic diseases like diabetes, obesity, asthma, and hypertension, by calibrating and refining clinical interventions in response to timely, aggregated patient data. This future state will ultimately depend on better integration, usability and dramatically lower costs of biometric sensors.

“Many of the society’s graduate students, as well as senior researchers in the field, want to do something meaningful and make a difference in people’s lives,” says Madhavan. “We are very much united in that cause.”

The RAS-SIGHT is focused on two areas. One is educating students about the robotics field through robotic competitions. The other is collaborating with organizations like Engineers Without Borders-USA on projects that, for example, send students for short stints to remote parts of the world to learn how robotics and automation can help communities there.










Only four months old, the RAS-SIGHT has already sponsored its first educational activity, a robot design challenge for high school students in Africa. Working with the [African Robotics Network](#), the participants were challenged to build affordable robots for only \$10 in parts. Madhavan says that while the event was aimed at getting students interested in robotics, it also helped the group understand how robotics could contribute to education in Africa.

The society is also identifying areas where robots could do such things as search for survivors of disasters, clear land mines, and monitor endangered species.

“We will take a ‘bottom-up’ approach, which is understanding a community’s problems and requirements and then applying technology and our expertise to solve them,” Madhavan says. “Robotics is cool and sexy, but the sustainability side always has to be kept in mind.”

Adds Babu, “IEEE has members who can develop solutions to humanitarian problems around the world. SIGHTs therefore represent both the demand and supply sides of these problems. These special interest groups provide a meeting ground where the solution seekers will be able to meet and interact with the solutions providers.”

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March 2013 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24	25	26	27	28	1	2
3	4	5 <i>IEEE EXCOM TECO Plaza 5:30pm</i>	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27 <i>EMBS Event USF CAMLS 5:30 pm</i>	28 <i>PES EXCOM Meeting at 6 AM - ----- Tour of Landmarc Company 1:00pm</i>	29	30
31	1	2	3	4	5	6