



# THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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September 2001

## Joint Section & PES/IAS Meeting Continuing Education For Professional Engineers



**Date/Time:** Tuesday, September 11, 2001 at Noon

**Location:** TECO Hall, 702 N. Franklin Street, Tampa

**RSVP:** Art Nordlinger at (727) 596-9319 or  
Email [Nordlinger@hotmail.com](mailto:Nordlinger@hotmail.com)

**Cost:** \$10 for members, \$15 for non-members to cover luncheon



The State of Florida has established a requirement that Professional Engineers complete professional development hours as a condition of maintaining a license to practice engineering. We are fortunate to have Dr. Melvin W. Anderson, PhD, P. E. of the University of South Florida and past chair of the Florida Board of Professional Engineers in our community. Dr. Anderson will provide us with the status of this continuing education requirement, and give insight into how professional engineers can earn professional development hours, stay current in the technology of their field of practice, and better serve the public.

### Melvin W. Anderson, PhD., P.E.

Dr. Anderson is a member and past chair of the Florida Board of Professional Engineers and is the Interim Dean of the College of Engineering at the University of South Florida. In addition, he is the Vice President, Southern Zone of the National Council of Examiners for Engineering and Surveying. Professor Anderson has a Bachelor of Science degree in Civil Engineering from the Virginia Military Institute and Master of Science and Doctor of Philosophy degrees in Civil Engineering from Carnegie Mellon University.

Mel started his teaching career at Louisiana State University prior to joining the USF faculty in 1969. His major area of professional interest is water resources engineering. He is a Past President of the American Water Resources Association and the Florida Engineering Society.

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## Chair's Comment

By Quang Tang

We did it again! Another In-Service program for middle school and high school technology teachers was successfully presented on Aug. 8th at Bay Shore High School in Manatee County. Thanks to Ralph Painter, assisted by Florida West Coast Section volunteers Jules Joslow, Bob Ashley, and myself, presented the program "Everything you wanted to know about electric motors but were afraid to ask" to area teachers and assisted them in building a dc motor in the classroom. Thanks Jules and Bob, and also thanks to Doug Gorham, who is the major driver of this Teacher In-Service program. I talked to several teachers after the program and found out these are the exact programs they could take back to their classrooms. We will continue to commit ourselves in providing such programs to enhance the level of technological literacy among educators and ultimately their students.

Our on-line reservation for Executive Committee (EXCOM) meeting is working very well. We had 17 people including guests attended our August EXCOM meeting. All members are welcome. We like to hear from you so drop us an email or attend the EXCOM meetings.

## Computer Society Membership Survey

The Computer Society in association with the Programmable Logic User Group (PLUG) is considering a three day seminar on "VHDL, the language, simulation, and synthesis".

Proceeds from the seminar will go to IEEE/FWCS and to PLUG.

**Location:** TBA in central Pinellas county.

**Date:** TBA in early November.

**Fee:** \$150.00 for IEEE members,  
\$250.00 for non members,  
\$100.00 for student members.

If you are interested in this seminar or if you would like to join the Programmable Logic User Group, please contact Jack Killingsworth, [j.killingsworth@ieee.org](mailto:j.killingsworth@ieee.org).

Please indicate your format preference:

1. Saturdays for three weeks.
2. Three hours on two evening a week for three weeks.
3. A combination of evenings and Saturdays.

# Fort Myers September Joint Section & Life Member Luncheon Meeting



- Date/Time:** Tuesday, Sept. 25, 2001 at noon
- Location:** Florida Gulf Coast University (FGCU) in Whitaker Hall  
Near I-75 & Exit 20 (Alico Road) in Fort Myers
- Subject:** 1 - FGCU Renaissance Academy for Continual Learning  
2 - Technology, Kids and the Growth of Natural Sciences
- RSVP:** Please reserve by Sunday, Sept. 14 with Al Rosenheck at [rosenheck@aol.com](mailto:rosenheck@aol.com) or (941) 395-2117.  
Spouses and guests are welcome.
- Cost:** \$10 for an all-inclusive box lunch

## **Abstract:**

1 - Jack Crocker, Ph.D, Dean, Graduate Studies, will describe the University program for Continual Learning and the FGCU Renaissance Academy offerings. The Academy was created on the premise that learning should never stop and that keeping the mind intellectually, creatively and culturally active enhances the quality of life. Non-degree classes for the general public are offered in a variety of locations in Southwest Florida throughout Lee and Collier Counties.

2 - The explosive growth of natural sciences in North America in the last 130 years is intimately associated with growth in technology. As new technologies develop old technologies become available to children and young adults. Jerome A. Jackson, Ph.D., Director of the Whitaker Center and Eminent Scholar in Science, will explore links among kids, hand-me-down technology, and advances in natural sciences, and will focus on the importance of hands-on approaches to learning and the involvement of children in real science.

## **Directions to FGCU:**

From Interstate I-75 (Exit 20, Alico Road) drive East about one mile to the traffic signal at Ben Hill Griffin (BHG) Parkway. Turn right and drive south on BHG Parkway to the traffic signal at the entrance to Florida Gulf Coast University (FGCU). Turn left and follow the FGCU Entrance Road to the Information Building on the right. Tell the Attendant you are attending the IEEE Luncheon Meeting and you will be provided a parking permit.

From U.S. Route 41 at Alico Road (Wendy's and Hess Gas Station on SE corner) drive East past Interstate I-75 to Ben Hill Griffin Parkway. Turn right and drive South on BHG Parkway to the traffic signal at the entrance to Florida Gulf Coast University (FGCU). Turn left and follow the FGCU Entrance Road to the Information Building on the right. Tell the Attendant you are attending the IEEE Luncheon Meeting and you will be provided a parking permit.

## Upcoming Meetings and Tours provided by Florida West Coast PES/IAS Chapter

- October 2001 – Power Quality Seminar
- October 2001 – Tour of Tasnet Facility
- November 6, 2001 – Liberty Ship Tour and Meeting



If you have interesting topics or like to tour any facilities, please drop us an email.  
Art Nordlinger, PES/IAS Chapter Chair, [Nordlinger@hotmail.com](mailto:Nordlinger@hotmail.com)  
Ghaff Khazami, PES/IAS Chapter Vice Chair, [GKhazami@seminole-electric.com](mailto:GKhazami@seminole-electric.com)  
John Stankowich, PES/IAS Chapter Treasurer & Secretary, [johns060@qwestmail.com](mailto:johns060@qwestmail.com)

# September Computer Society Chapter Meeting

## Digital Hardware Design - Programmable Logic Roadmap

**Date/Time:** Wednesday, September 26, 2001

**Time:** 6:00 PM to 7:30 PM

**Location:** Paradyne Corp., Commons Area.  
8550 Ulmerton Road, Building G., Largo, FL.

**RSVP:** Jim Lumia, Email at [jlumia@ieee.org](mailto:jlumia@ieee.org)  
or Phone (727) 530-2588

Mark Graham from Xilinx Corporation will be presenting a general view of the direction of programmable logic devices over the next five years. He will be forecasting the direction and capabilities of programmable logic. The presentation will cover process technology (size and speed), Intellectual Property (IP) and Systems on Chip (SOC), partnerships, and the future relationship of programmable logic to ASICs (Application Specific Integrated Circuit). This is an open meeting. Non members and students are welcome. Complimentary cold drinks and snacks will be provided.

### Mark Graham

Mark has been a field application engineer for Xilinx for the past 6 years. Prior to Xilinx, Mark worked for 13 years as a high-speed digital designer for Lockheed Martin and for Texas Instruments. He graduated with a BSEE degree from the University of Tennessee.

### Directions to Paradyne Corp. from Tampa I-275

Follow the signs to I-275 South - St. Petersburg. Still on I-275 South, cross over Tampa Bay on the Howard Frankland Bridge. Exit off the interstate at Exit 18 - Largo/Indian Rock Beach (SR 688/686). Stay on SR 688 (also know as Ulmerton Road) for approximately 7.5 miles, passing through major intersections such as U.S. 19, 66th Street, and Belcher Road. Paradyne is located at the next traffic light in the Spectrum Technology Park (8550 Ulmerton Road). Turn left and follow the signs to Paradyne's visitor parking in the south end of the property. Main Phone: 727-530-2000.

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# September SP/COMM Chapter Meeting

## Communications Societies Southern Lecture Tour

### Fourth Generation Cellular Systems and Smart Antennas

- Speaker:** Dr. Jack H. Winters  
AT&T Labs-Research, [jhw@research.att.com](mailto:jhw@research.att.com)
- Date/Time:** Tuesday, September 25, 2001 at 6:00 pm
- Location:** To be determined
- Food:** Refreshments provided at the meeting with a dinner at members expense after the lecture at a local restaurant to be announced at the lecture.

#### **Abstract:**

In this talk we discuss the evolution to high-speed data mobile wireless systems, with data rates in excess of 10 Mbps. We describe the extension of wireless local area networks using 802.11b and 802.11a, and cellular systems (WCDMA), to provide high-speed ubiquitous access. Smart antennas are then described and shown as a key technology to provide the needed enhancements of range extension, interference suppression, and capacity increase.

#### **Biography:**

IEEE Distinguished Lecturer Dr. Jack H. Winters is Division Manager of the Wireless Systems Research Department at AT&T Labs-Research. He is also a Fellow of the IEEE, Area Editor for Transmission Systems for the IEEE Transactions on Communications, Technical Program Chair for the Fall 2001 Vehicular Technology Conference, and New Jersey Inventor of the Year for 2001. His research interests include signal processing techniques, such as smart antennas, for increasing the capacity and performance of wireless local area networks and cellular systems.

#### **Reservations:**

Please notify Bror Peterson at [Bror\\_W\\_Peterson@raytheon.com](mailto:Bror_W_Peterson@raytheon.com) or call (727) 302-4710 at Raytheon Systems Company at least 48 hours in advance if you are attending.

#### **Special Note:**

*This lecture is part of the Communications Societies Southern Lecture Tour and at Signal press time the final details of the lecture have not been finalized. An E-mail will be sent to members when the final details are available. At this time we are very confident this lecture will take place.*

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## IEEE Seeks Accreditation Evaluators

The IEEE is seeking members from industry, government and academe to serve as technology program accreditation evaluators for U.S. Universities. Accreditation evaluators attend a one-day training seminar given by the IEEE and Accreditation Board for Engineering and Technology (ABET). Program evaluators visit engineering departments across the USA. Evaluation sessions take place between September and December, and generally run for two to three days. Nominations are accepted through 31 October.

Visit [http://www.ieee.org/organizations/eab/apc/ceaa/eac\\_call.htm](http://www.ieee.org/organizations/eab/apc/ceaa/eac_call.htm) or contact <mailto:eab-accred@ieee.org>

# Shaping the Future Through Philanthropy

Mark your calendar and join us for a conversation about charitable giving in income and estate planning.



- ✓ **Thursday 18 October 2001**  
**Hyatt Regency Westshore in Tampa, Florida**  
**6:30 p.m. to 8:30 p.m., For more information, please contact**  
**Jim Howard at [j.howard@ieee.org](mailto:j.howard@ieee.org) or (813) 630-6233**
  
- ✓ **Friday 19 October 2001**  
**Buddy Freddys Country Buffet, 3074 College Ave, Ruskin, FL**  
**(I-75 Exit 46, West towards Ruskin. Make first right turn after getting**  
**on SR 674, immediate right turn towards Buddy Freddys.)**  
**11:30 a.m. to 2:00 p.m., For more information, please contact**  
**Jules Joslow at [jjoslowemi@aol.com](mailto:jjoslowemi@aol.com) or (800) 274-2383**

Our dialogue will address the mutual benefits to you, your family and your favorite charitable organizations, as well as a number of questions including:

- *Is it possible to make charitable bequests and still provide for my family?*
- *Can retirement assets be used as charitable gifts?*
- *How can charitable giving help to minimize income and estate taxes?*
- *Can a charitable giving plan help to supplement my family's income needs?*
- *What is the impact of recent tax legislation?*

The session will be an open discussion, so we welcome questions and personal stories about how you have chosen to honor your philanthropic interests. This information session is brought to you by the IEEE Foundation.

## Job Opportunity

### Design Engineer

Responsible for the design and development of instrument transformers and related power equipment. Oversees product design process, from concept to manufacture. Working from customer-generated specifications, uses engineering skills to design products that meet technical requirements. Work with colleagues in manufacturing, marketing and other functions to design products and resolve issues. Responsible for designing products that meet technical requirements, cost targets and launch dates. Bachelors degree in electrical engineering or equivalent combination of education and experience. Strong analytical, multi-tasking and project management skills. Power engineering experience. For more information, please contact:

Instrument Transformers, Inc  
Kent Jones  
Phone (727) 442-0414; Fax (727) 441-8066  
Email [kent.jones@indsys.ge.com](mailto:kent.jones@indsys.ge.com)

## Job Opportunity

### Electrical - Marketing Engineer

Local growing company is seeking an Electrical – Marketing Engineer with BSEE degree. Account management or tech support experience desired with excellent verbal & written skills. Knowledge of electronics or electrical power systems helpful. Will support multiple sales forces and handle special projects. Salaried position, bonus program, 401k, plus benefits. Mid Pinellas, excellent opportunity in a growing company. Send resume to:

Advanced Protection Technologies  
Louis Farquhar  
Fax (727) 524-6178 or  
Email [lfarquhar@apttvss.com](mailto:lfarquhar@apttvss.com).

# Brain Teaser Challenge Column

By Butch Shadwell

## August BTC Solution

Once again I am forced to write this column much earlier than usual, so I have not received any responses yet to last month's BTC about gas sensors. I'll address that problem in a minute, but first I owe you some ideas about getting electrical power while inside the human body (our BTC two months ago). The only decent idea I got from a reader involved using a piezo electric device that was stimulated by normal muscle activity. As you may know, a quartz crystal can develop quite high voltages when warped along certain axes. Not a bad idea. Other things one might consider is inductive coupling to an external power source, or even harness a some of the electricity produced by the body it self. In the body there are semi-permiable membranes that produce differences in ion concentration. Perhaps we could use natural or an artificial analog to these membranes to generate charge.

As for the sensor discussed in last month's BTC, the most common type is the crystalline semiconductor SnO<sub>2</sub> (tin dioxide). When the element is heated it attracts a layer of monatomic oxygen at the grain interfaces. When reducing gases, such as CO interact with the oxygen layer, they produce CO<sub>2</sub> and lessen the thickness of the oxygen barrier on the surface of the SnO<sub>2</sub> crystals. This thinning raises the electrical resistance through the semiconductor, which can be measured. As the concentration of the reducing gas decreases, The O builds up again and the resistance decreases. Pretty neat?

## September BTC

The reason my writing schedule was messed up last month was a trip I made to the far east. My tour included visiting Hong Kong, mainland China, Taiwan, and Japan. It is a little known fact that there is archeological evidence that phase locked loops had been developed as early as the Ming dynasty. As with gunpowder, the Chinese failed to realize the full potential of this invention. Yes, as early as the 14th century, they had fashioned a stable high frequency source using a lower frequency reference. Of course their design was based on pneumatic and hydraulic components involving a lot of wood, stone and leather thongs. To test your knowledge of Chinese history, can you identify the four or five basic components of the electronic analog (such as might be used to make a synthesized RF source) of this Chinese invention?

Questions or comments to the Brain Teaser Challenge, please contact Butch Shadwell at 904-223-4465 (v), 904-223-4510 (fax), [b.shadwell@ieee.org](mailto:b.shadwell@ieee.org) (email), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. <http://www.se.mediaone.net/~butchs/>



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## September 2001 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 <i>Labor Day</i>	4 <i>EXCOM Mtg TECO Center At 5:30 PM Guests Are Always Welcome!</i>	5	6	7 <i>Material Due For Next Month's Suncoast Signal Newsletter</i>	8
9	10	11 <i>Joint Section &amp; PES/IAS Meeting – Noon @ TECO Hall “PDHs Topic”</i>	12	13	14	15
16	17	18	19”	20	21	22
23	24	25 <i>Joint Section &amp; Life Member Meeting – Noon SP/COMM Meeting @ 6PM</i>	26 <i>Computer Society Chapter Meeting – 6:00 @ Paradyne Corporation</i>	27	28	29
30						

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