# Region 3 ◆ IEEE

## *Message from the Region 3 Director….*

I hope your holidays were safe and enjoyable. We were very busy but we managed the time to remember why we were celebrating with our friends and family members both near and far.

We are sending out the Region 3 Newsletter to allow you to include some key activities in your planning for 2005. I also want to apprise you of several projects Region 3 is undertaking to make your membership even more beneficial to your career and the industry you serve.

*Bill Harrison*
*Region 3 Director*
*2004-2005*

### Summary of 2004 Activities

The Region started 2004 with a number of ongoing ExCom Committee activities, and with special emphasis on several special cross-functional projects. The areas the Region has been concentrating on include:

➢ Leadership Development (ongoing activities)
- o The Region 3 Leadership Development brochure is located at http://ewh.ieee.org/r3/leadership/R3LDFlier.pdf.

➢ Leadership by Developing Others (LDO) Special Project
- o Region 3 continues development of this project. Future reports based on activities at the section/chapter level will be provided as the project progresses.

➢ Membership Development Challenges
- o Region 3 is recognized as an IEEE leader in Membership Development activities, IEEE Employment Assistance, and Industry Relations projects. The Membership Development Committee has done a great job integrating these three Region 3 ExCom functions this year.
- o Quoting from our Membership Director, Lee Stogner, "I am proud to say that Region 3 has exceeded the IEEE goals for 2004 Senior Member upgrades. For 2004, we were asked to nominate Members for a goal of 208 new Senior Members. In fact, our nominations resulted in 252 new Senior Members. We exceeded our goal by 21.3%. No other Region in the world exceeded the IEEE goal by that percentage." Applause for Lee and for our region!!!

## Inside this issue of Region 3 Newsletter

*Message from the Director... Continued.*

➢ Newsletter/Communications
  o The tools and techniques Region 3 continues to develop provide access to our committee and project reports on the Internet, speed up handling our routine operational matters, and make us more efficient and more proficient in taking care of the region's business. I encourage all sections to explore ways to use these communication and collaboration tools.

➢ SSVR (Section Support Via Regions) funds for Section-initiated projects
  o The Winston-Salem/Forsyth Section supported an Egg-Drop Contest to interest kids (of all ages) in science and engineering.
  o The Alabama Section is sponsoring a special project with Hoover High School of Hoover, AL. A national pilot program is being conducted in the form of a four-year Engineering Academy
  o The Western North Carolina Section is sponsoring a Robotics Competition at UNC-Asheville.
  o  Three sections celebrated anniversaries:  Atlanta Section 100 years, Alabama Section 75 years, and Savannah Section 50 years.
  o We will have SSVR funds for 2005 – get your projects planned and send them in – the Region will do what we can to help with funding and other support.

➢ Strategic Planning
  o The Region 3 Strategic Planning Committee (SPC) held a planning retreat in Atlanta in August to prepare for 2005 and beyond with over 20 people in attendance. Summary of the Strategic Plan 2005 is located at http://www.ewh.ieee.org/reg/3/spc/sp2005.pdf.

➢ Preparation for Sections Congress 2005
  o Sections Congress will be held in Region 3 during 2005.  SC2005 will be in Tampa 14-17 October 2005 at the Tampa Marriott Waterside.  The host section is the Florida West Coast Section. See http://www.ieee.org/sectionscongress

➢ Student Activities
  o Region 3 has 4432 student members as of October 2004. Region 3 Student Membership is up by 5.725 % since October 2003 and up a whopping 12.3 % since October of 2001--despite an increase in student dues over the period.
  o The student branch at Georgia Tech hosted the first-ever Student Leadership  / Membership Retreat the weekend of 8-10 October at the Hilton Atlanta Northeast with over 40 attending.

## Mark your 2005 Calendars

➢ February 16-17, 2005 – SouthCon 2005 • Orlando, Fl   Orange County Convention Center (More details elsewhere in this issue)

➢ April 8-10,2005 -  SoutheastCon 2005, Fort Lauderdale, FL  Marina Marriott
  (More details elsewhere in this issue)

➢ 14-17 October 2005  - Sections Congress 2005 , Tampa FL  Marriott Waterside

If you have any comments, suggestions, questions, please contact me or anyone on the Region 3 Executive Committee.

William B. Harrison
Director, Region 3 2004-2005
404-378-5553
w.harrison@ieee.org

# Sections Congress Update
By Butch Shadwell

**Sections Congress 2005 is coming**.  For those that may be unfamiliar, it is a meeting of delegates from every section in the world done once every three years.  Sections Congress is October 14-17, 2005, in Tampa, Florida at the Tampa Marriott Waterside.  The host section is the Florida West Coast Section.  Having this meeting in region 3 is not only a great honor, but a great opportunity for our sections to participate at a level that is not usually possible.

**R3 section chairs** have been reminded to save money in the budget to send a delegate(s) to this conference in 2005.  Typically, the section ends up covering about 1/3 of the conference costs.  Sections should plan to send at least the primary delegate, and preferably an incoming officer, or future leader.  Depending on where you are located, this may be as little as $100 or as much as $700.  For those sections that can afford it, it is good to send more section members to the conference.  RAB waives the registration fee for the primary delegate.  The estimated cost of a delegate's attendance is $1200, including the $350 registration fee (airfare additional).  The registration fee for guests in 2005 is $190/adult, and $95/child ages 12 & under.  There will still only be one primary delegate.

 **The Tampa Section has a huge** project to put on the world congress of the IEEE.  Region 3 asks that all sections help defray the organizational costs by making a contribution to the support fund.  We are suggesting that each  section contribute $2 per member grade or higher as of January 1st.  If your section finds this figure difficult to do, we will gratefully accept whatever you can do to help.  Contributions of any amount to the IEEE Sections Congress 2005 Funds are appreciated.  We are working toward matching the Region 2, Sections Congress 2002 contributions - which were 100% of the Sections in the Region making contributions.  The levels shown below are used for all contributions to Sections Congress 2005, but any amount is acceptable.

| | |
|---|---|
| $ 500 - 999 Bronze Level | $1000 - 4999 Silver Level |
| $5000 - 9999 Gold Level | $10,000 or more Diamond Level |

Sections contributing so far are:  FWC 3500; Coastal SC  200; Broward  250; Canaveral  250;  Tallahassee  600; Palm Beach  2000; Atlanta  7000; FWC 3500; Mississippi  441; Huntsville  2300; Jacksonville  1000; Lexington  600
Total  $21,641 – 11 sections contributing so far.  If your section is not on this list, now's the time to get your contribution in.

Make contributions to:
Charles Hickman
Attn: Section Congress 2005 Support
3244 Burning Tree Drive, Birmingham, AL 35226

**Butch Shadwell ( b.shadwell@ieee.org ) is the coordinator** for all sections in Alabama, Florida, Georgia, Jamaica, and Mississippi, and Sean Haynes ( s.a.haynes@ieee.org ) is covering Virginia, Kentucky/Indiana, Tennessee, North and South Carolina.  We will be regularly directing updates and reminders to the section chairs until we get the names of the primary delegate to Sections Congress.  So if section chairs want to get less email, let us know the delegates name soon.  So far I have no delegates names.

Here is a link to the Sections congress PowerPoint slide show that Tracy Hawkins has done at headquarters.  It has lots of relevant information.  http://www.ewh.ieee.org/reg/3/e-conf/sc05/R3SC05Pres0104.ppt

**Sections Congress 2005 is a highly visible function**. Obtaining support from industry will be critical to the success of the Congress. We need your assistance in identifying businesses in your section's area that we could contact to solicit support. Perhaps your section can provide the names of companies in your area that are associated with our electro-technology industries, and a contact inside that company. We will follow-up with your contact, hopefully with the participation of your Section. Personal contact is the best way to garner support.  Even though Sections Congress is going to be held in Region 3 (Tampa), it is an international event. If you have contacts with industries outside of your Section's area, that information would be helpful as well. Send contact information to John Twitchell. Every contact is important.

John R. Twitchell, P. E. - Sections Congress 2005 Committee
john.twitchell@nerc.net
609-452-8060

# Leadership by Developing Others Project

By Richard Riddle and William Ratcliff

Leadership by Developing Others (LDO) is a project to build an environment of cooperative, supportive communications between IEEE leaders on all levels by focusing on the "art of mentoring".  Our goal is to encourage a more cross-functional and collaborative work effort within and between IEEE entities.  We feel that encouraging active mentoring of fellow and future leaders is a way of better equipping everyone to do our IEEE "jobs". WE also will gain skills and experience that will help carry us through our careers and beyond.

## PHASE I -- LDO PROJECT COMPLETED

Phase I was an experiment to simulate and demonstrate the application of mentoring.  The intent of Phase I was to expose a group of volunteers called Pilot 1 team to the LDO concepts and training modules on mentoring, personalities, and conflict.  For our Pilot 1 team, we selected a limited number of ExCom Standing Committee Chairs, Area/Council Chairs, and Region 3 Officers to act as mentors.  These mentors have been paired with the corresponding Vice Chairs and/or incoming officers as mentees.

The goal of this relationship was to train the mentee to assume the mentor's office or position using the LDO concepts and training. During Phase I, we chose the Region 3 Virtual Community (VC) as our primary communication tool to plan, inform, collaborate, store training material, and evaluate the project.

Phase I training started in March at SoutheastCon 2004, followed by IEEE Internet Conferencing sessions on June 29, July 13, August 16 and was completed with a wrap up and feedback session on September 15, 2004. Based on the feedback received at the September 15th session we are modifying the mentoring training module to include more information on the mentoring process as well as responding to other recommendations for incorporation within the project.

## PHASE II -- LDO PROJECT BEGINS

Phase II is an effort to expand the LDO concept to a broader spectrum of Region 3 volunteer leaders.  Our intent is to actively train all Area/Council Chairs to the principles and practices that were developed in Phase I, and work with these chairs to build a network with their section chairs.  The Area/Council Chairs are asked to take on a mentor role with their respective section chairs.  Section Chairs will be taking on an initial role as "mentee" but will also be learning how to mentor their junior officers, committee chairs, and future leaders within their section.

At the same time they will learn new ways of working together with other section leaders and regional support people such as our many committee chairs and their committees. The Pilot 1 team has been encouraged to assist in the training of the new mentors and mentees by sharing your experience from Phase I.

The Leadership Development Training for some of the Area/Council Chairs, Section Chairs, Pilot 1 team, and others was held from 1 PM until 5 PM on October 15 at the Region 3 Meeting in Atlanta. Training for others not in attendance at the Atlanta Region 3 Meeting will be scheduled within the 1st Quarter 2005.

Southeast Con 2005 in Fort Lauderdale, FL, April 8 to 10, 2005 represents a significant opportunity for additional training and face to face discussions. So please mark your calendars and plan to attend. If you have any questions about LDO just drop us a line.

Dick  Riddle r.riddle@ieee.org
Bill Ratcliff w.ratcliff@ieee.org

# Membership Development Update

I proud to say that Region 3 has exceeded the IEEE goals for 2004 Senior Member upgrades.  For 2004, we were asked to nominate Members for a goal of 208 new Senior Members.  In fact, our nominations resulted in 252 new Senior Members.  We exceeded our goal by 21.3%.  No other Region in the world exceeded the IEEE goal by that percentage.

My special thanks goes out to all of the Section Chairs, Membership Chairs and Members that took the time to recognize their fellow Members.  We have exceeded our goals for two years straight and I'm sure we can do it again in 2005.

Another goal that I would like for all of us to consider is to greatly increase our Region 3 Membership base.  If each one of us during 2005 could find and convince one Engineer to join the IEEE, our numbers would greatly increase and provide a base for leadership amongst all IEEE Regions.  Please try to think of that one Engineer that you know and how we can convince them to become a part of the IEEE Network.

Shortly I will be distributing material that you can use to promote the value of IEEE Membership.  With this material and your relationships, we can become the premier Region of the IEEE.

# Membership Development & Corporate Relations

Membership Development is one of the most important activities that we can support at the Section, Chapter and Region level.  As of today, Region 3 has 30,145 "Members".  This represents a slow but steady drop in our total regional membership in recent years.

As a organization, we need to do whatever we can to grow this number so we can have the resources to continue to provide the services that our members need.

Region 3 has a Membership Development Committee made up of Section Membership Chairs.  Most Region 3 Sections already have a Membership Chair.  If your Section does not have one, please ask the question, "Who is looking out for the future of your Section" ?  Without a growing base of members, you will not have a Section in the future.

We have an ongoing series of Membership Development e-conferences on the 4th Monday of each month.  The next MD e-conf is January 24.  Please make sure that your local Section MD Chair participates.

If you need help with your local Membership Program, try the resources at,
http://www.ieee.org/organizations/rab/md/mdresources.html and
http://www.ieee.org/organizations/rab/md/mdprogrpt.html

Another aspect of Membership that we want to promote in 2005 is Corporate Relations.  Most engineers work for industry and we need to encourage both members and companies to work together as the economy continues to provide opportunities.  We are currently developing a Region 3 Corporate Relations plan.  We would like your input as to projects and opportunities that we can undertake that will build a base of activities that will benefit not only companies but the careers of electrical engineers.

Thanks,
Lee Stogner
Region 3 Membership Development Chair
l.stogner@ieee.org

**NSU ◆ IEEE** Broward Section & Nova Southeastern University

April 8-10 2005

Register Online – it is Quicker, Easier, more accurate, and safe on our secure server!  Go to:
**http://www.southeastcon.com/register**

NAME First:_____  Last:_____  IEEE MEMBER NO._____
(Print names as you wish printed on badge)                                              (PUT "NONE" IF NOT A MEMBER)
COMPANION NAME First:_____  Last:_____
COMPANY/ SCHOOL_____

ADDRESS_____

CITY_____STATE/PROV_____POSTAL/ZIP_____COUNTRY_____

PHONE  (_____) _____  FAX  (_____) _____  E-MAIL_____

Please describe any special dietary or physical needs._____ _____

**Registration:**

Member and Non-Member Registration includes: Conference, Reception, Banquet, Conference Proceedings, Conference CD.
Region Meeting Registration includes: Region 3 Meetings, Reception, Region lunch Sat. Awards Banquet, Brunch, CD.
Student Conference registration includes: Reception, Student Conference..
Student Professional Conference registration includes: Reception, Technical Sessions, Conference CD.
Life Members and Unemployed Members may register for professional conference at the Student Rates (not R3 meetings)
Life / Unemployed Member Conference registration includes: Reception, Technical Sessions, Conference CD.

| IEEE Members: | Qty | Advance | On-Site | Subtotal | Non-IEEE Members: | Qty | Advance | On-Site | Subtotal |
|---|---|---|---|---|---|---|---|---|---|
| Conference | ☐ | $225 | $275 | $_____ | Conference | ☐ | $275 | $325 | $_____ |
| **Student** | | | | | **Additional Items:** | | | | |
| Student Conference | ☐ | $30 | $35 | $_____ | Awards Banquet (Saturday Night) | ___ | $30 | $45 | $_____ |
| Professional Conference | ☐ | $30 | $35 | $_____ | Student Party Saturday | ___ | $15 | $20 | $_____ |
| **Life Member** | | | | | Sunday Brunch | ___ | $30 | $45 | $_____ |
| Conference **(not Region 3 mtg)** | ☐ | $30 | $35 | $_____ | Conference Proceeding | | | | |
| | | | | | Hardcopy | ___ | $30 | $30 | $_____ |
| **Companion** Conference | ___ | $45 | $55 | $_____ | Compact Disk ROM | ___ | $5 | $5 | $_____ |
| Tour (see website) | ___ | $25 | $25 | $_____ | **Region 3 Committee, Excom, & PACE** | ☐ | $100 | $110 | $_____ |

Total Amount Charged………………………………………………………………………. $ _____

**ADVANCE REGISTRATION CUT-OFF DATE IS MARCH 19, 2005.**  See website for cancellation policy.

Mailed registration forms received after April 1, 2005 will not be honored.
**Make all checks payable to IEEE SoutheastCon.  All fees payable in $U.S.**
Credit Card (Please Circle One)          MasterCard   VISA  Discover      American Express

Credit Card Number:_____  Expiration Date:_____

Card holders name exactly as it appears ont the card:_____

Cardholder's Signature:_____  Date:_____

**Mail to: IEEE SoutheastCon 2005, 422 Frontage Road, Clemson, SC  29631 or fax to (864) 647-1255**

# Southcon®/2005

**February 16 -17, 2005**
**Orange County Convention Center**
**Orlando, Florida**

## Preview Program

### Targeting the Needs of Today's Engineer

**www.southcon.org**

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*Earn CEU's at a low cost*

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**Co-Locating with AmCon**
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1514 First Street
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# Southcon®/2005

## Targeting the Needs of Today's Engineer

### Today's New Products... Tomorrow's Innovative Solutions

Southcon, Florida's leading OEM electronics event, has long been the industry event where engineering and purchasing professionals come to see, touch, compare *and* learn about new cutting-edge products and innovative solutions. Southcon/2005 will feature product demonstrations, vendor exhibits and a high-quality conference program offering answers and solutions for the entire design, manufacturing and test team.

### Save Time and Money

Southcon's exhibits and engineering tutorials take place in one location – minimizing the amount of time away from the office. No other event offers the convenience and value of Southcon.

### Co-Locating with AMCON

Your Southcon badge also gains you free access to the American Contract Manufacturers Show (AMCON).

### When and Where?

**Orange County Convention Center**
West Complex - Hall E2
9800 International Drive
Orlando, Florida 32819

| Exhibit Hours | Conference Hours |
|---|---|
| Wednesday, February 16 9:30am-4pm | Wednesday, February 16 9am-5pm |
| Thursday, February 17 9:30am-3pm | Thursday, February 17 9am-5pm |

*For more information on Southcon*
## www.southcon.org
(310) 937-1006 • Fax (813) 996-4460
Email southcon@ieee.org

## Why Attend Southcon?

■ **Reduce Product Costs – Find New Sources of Supply**

■ **Product Knowledge – Directly from the Manufacturer**
Get answers to technical questions directly from the people who have the answers.

■ **Earn CEUs at a Low Cost**
IACET CEUs are awarded for all tutorials.

■ **Learn What's Happening in Your Industry**
Stay in touch with your industry...learn about the trends, changes and opportunities that will impact your professional career.

■ **Meet Engineer-to-Engineer in a Creative Environment**
Meet face-to-face with your peers – exchange information and share ideas.

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**Keynote Luncheon - K1**
**Fee: $25**
**Wednesday - February 16, 2005**
**Noon - 2:00 pm**

### What Lies Ahead for the Electronics Industry?

Ms. Susan Mulcahy, Vice President & Director of Research, Reed Electronics Group

One of the electronics industry's most respected observers, researchers and commentators will offer an insightful overview of where the industry has been, how we got here and what must happen to get us out of this mess. Her analysis, based on authoritative economic and electronics industry data, will explore the impact of the "China Syndrome," (the vast movement of manufacturing to the Far East) as well as contract manufacturing's impact on the product development cycle and distribution's impact on the sourcing process. Wherever you fit in the supply chain from design engineering through prototyping, production or marketing, you'll benefit from her no-holds-barred presentation of where we are heading, and what can be done about it.

# Technical Conference

Southcon's industry-relevant, affordable technical tutorials address issues that concern design, manufacturing and test departments. Instructors are leading experts in the topics they present.

Tutorial fees include lunch. As a special bonus, Wednesday tutorial attendees will receive a ticket to attend the Keynote Luncheon.

| Wednesday, February 16 | Thursday, February 17 |
|---|---|

**Tutorial - T1**
Fee: $320 - .6 CEUs will be Awarded
Wednesday - February 16, 2005 - 9:00 am - 5:00 pm

### Analog Electronic Design (6 Hrs.)

Mr. Ronald Mancini, *Applications Engineer, Texas Instruments, Inc.* - Mr. Charles Wray, *MTS, Texas Instruments, Advanced Analog Products Technical Training*

This introductory-level course will teach analog electronics from the basics to the latest analog applications including high-frequency amplifiers, data converters, single-supply op amps, and low power circuits.

**Tutorial - T3**
Fee: $320 - .6 CEUs will be Awarded
Wednesday - February 16, 2005 - 9:00 am - 5:00 pm

### EMC Printed Circuit Board Design Practices (6 Hrs.)

Mr. Ronald W. Brewer, *NCE, Consultant*

PCB design practices to reduce RF emission and susceptibility (immunity) will be explored. Both analog and digital PCBs will be discussed, but EMC design practices for high-speed logic circuits requiring transmission line techniques will be emphasized.

**Tutorial - T4**
Fee: $125 - .2 CEUs will be Awarded
Wednesday - February 16, 2005 - 2:00 pm - 4:00 pm

### Hybrid Packaging Revisited - Save Space, Reduce Cost and Achieve Better "Total Cost of Ownership" (2 Hrs.)

Mr. Herbert E. Dwyer, *Vice President, SatCon Electronics*

Several years ago, hybrids were expensive electronic packages that were used routinely in high-reliability military applications. During the past few years, the shift to consumer digital devices (PDAs, cell phones, digital cameras, MP3 players and many others that we can't live without) have revived this once expensive technology. Hybrid packaging has gained new life and new adherents as the packaging of choice. A guide for implementing this technology; when to use and when not to use hybrids; cost trade-offs; and guidelines that will help you design for a balanced product implementation will be explored.

**Tutorial - T5**
Fee: $390 (Includes textbook) - .6 CEUs will be Awarded
Wednesday - February 16, 2005 - 9:00 am - 5:00 pm

### High-Frequency Digital Design & PCB Layout (6 Hrs.)

Mr. Robert Hanson, *President, Americom Seminars, Inc.*

This tutorial is for the serious digital designer who wants the design to meet SI the first time. Causes and elimination of numerous high-speed concerns will be explored along with methods for design and layout of 4, 6 and 10-layer PCB stackups to control characteristic impedance and crosstalk. This tutorial uses as examples many of the design principles that are included in the book High-Speed Digital Design: A Handbook of Black Magic written by Dr. Howard Johnson and Dr. Martin Graham. The book, valued at $95, is included in the tutorial fee.

**Tutorial - T6**
Fee: $170 - .3 CEUs will be Awarded
Wednesday - February 16, 2005 - 9:00 am - Noon

### Lead-Free Soldering - Reliability Issues (3 Hrs.)

Mr. Werner Engelmaier, *Elec. Pkg., Interconnection & Reliability Consultant, Engelmaier Associates, LC*

The mandated switch to lead-free solders raises a number of manufacturing, processing and reliability problems. These issues will be explored and strategies for assuring solder joint, PCB and component reliability in electronic products with LF-solders will be explained.

## For Expanded Conference Information and Registration visit
## www.southcon.org

**Tutorial - T2**
Fee: $320 - .6 CEUs will be Awarded
Thursday - February 17, 2005 - 9:00 am - 5:00 pm

### Advanced Signal Conditioning (6 Hrs.)

Mr. Ronald Mancini, *Applications Engineer, Texas Instruments, Inc.* - Mr. Charles Wray, *MTS, Texas Instruments, Advanced Analog Products Technical Training*

The five segments of this course will describe the fundamental tools used in designing analog circuits. Segments one and two will explain and develop the tools that will be used and applied in segments three, four and five where the same approach to designing signal-conditioning circuits will be applied in three different ways.

**Tutorial - T7**
Fee: $320 - .6 CEUs will be Awarded
Thursday - February 17, 2005 - 9:00 am - 5:00 pm

### MIL-STD-461E and MIL-STD-464A Evaluation and Compliance (6 Hrs.)

Mr. Ronald W. Brewer, *NCE, Consultant*

Primary MIL-STD-461E design and measurement requirements will be explored along with an overview of MIL-STD-461E contractual and CDRL items. Practical EMC design methodology will help attendees understand major Control Plan requirements. Because of DOD's strong emphasis on COTS equipment, FCC and EU EMC test/evaluation methods will be summarized and compared with MIL-STD-461E, followed by an overview of the MIL-STD-461E conducted and radiated emission and susceptibility tests most frequently required by military procurement specifications.

**Tutorial - T8**
Fee: $320 - .6 CEUs will be Awarded
Thursday - February 17, 2005 - 9:00 am - 5:00 pm

### Troubleshooting the SMT Manufacturing Line - Defect Causes and Solutions (6 Hrs.)

Mr. Robert Hanson, *President, Americom Seminars, Inc.*

The materials and process involved in SMT assembly will be explored with emphasis on identifying and eliminating problem sources. Each of the process areas will be reviewed and diagnostic routines examined for each. Videos will be used to help identify process defects, and to explain why they happen and how they can be prevented. Additionally, videos on inspection (laser, laminography, AOI) and rework of BGAs, fine-pitch QFPs and PCBs will be shown.

# TEXAS INSTRUMENTS PRESENTS TWO SPECIAL SEMINARS

**Texas Instruments Special Seminar - SP-AM and SP-PM Fee: No charge**
**Wednesday, February 16 (9:00 am – 12 noon and 2:00 pm – 5:00 pm)**

## Please join Texas Instruments Senior Analog Applications Engineer, Art Kay, for two two-part seminars on Design for Precision Signal Measurement in Industrial Environments.

*Both sessions will be presented in the morning, and repeated in the afternoon.*

Part 1 will cover methods of pressure, current, and temperature monitoring using Texas Instruments latest analog solutions from the precision linear product line.

Part 2 will include an in-depth discussion and demonstration of noise and its design challenges in the analog environment.

Both Sessions are free of charge. Sign up for either morning or afternoon sessions using the registration form in this preview.

# FREE Admission to Exhibits

**Southcon/2005**
February 16 & 17, 2005
Orange County Convention Center

*FREE VIP Registration*
**Fax Back to (813) 996-4460**

**How to Register**

**Mail Deadline - January 21, 2005**
Southcon/2005
1514 First Street
Manhattan Beach, California 90266

**FAX Deadline - February 11, 2005**
(813) 996-4460
Please do not both fax and mail

**Electronically www.southcon.org**
After January 21 badges will be held for pick-up at the advance registration counter.

**On-Site**
Bring this form with you to Southcon/2005 for FREE admittance.

First Name _____ Last Name _____

Job Title _____ E-mail _____

Company _____

Mailing Address _____ Mail Stop _____

City _____ State _____ Zip _____ Country _____

( ) Telephone _____ ( ) Fax _____

**Register Early:** Prices shown are effective through January 31, 2005. Beginning on February 1; the cost of all events except Keynote will increase by $50 each.

_____ **Southcon Exhibits** (Wed. and Thurs.– February 16 & 17) . . . . . . . . . . . . . . . . . . . . . . . No Charge

_____ **Keynote Luncheon K1** – Wed. February 16 .......... $25 . . . . . . . . . . . . . . . . . . . . . . $ _____

**Design / Manufacture / Test** (All courses shown below include lunch)

**Wednesday**                                                                 **Thursday**

____T1 ($320)  ____T4 ($125)  ____T6 ($170)  ____SP-AM - no charge   ____T2 ($320)

____T3 ($320)  ____T5 ($390)                 ____SP-PM - no charge   ____T7 ($320)  ____T8 ($320)  $ _____

                                                                     Subtotal          $ _____

10% discount for IEEE & ERA members or companies sending more than three attendees      IEEE / ERA Discount $ _____

IEEE Membership #_____.

| Grand Total $_____ |

**Special Assistance:** *If you require special assistance covered under the Americans with Disabilities Act, please call (310) 937-1006 by January 31, 2005.*

**Cancellation:** *No refunds after February 4, 2005. However you may send a colleague in your place.*

**Method of Payment**

___ Check (payable to Southcon 2005).

___ I agree to pay the total amount according to my credit card issuer (circle one)   VISA   MC   AMEX

Card No. _____ CVV2 No.** _____ Expiration Date _____

Name appearing on card (Printed) _____   (Signature) _____

Billing address of card _____
(Street/City/State/Zip)

**For Visa and Mastercard - the CVV2 number appears on the back of the card in the signature area.
American Express cards do not contain this number.

Persons under 18 years of age not admitted. Students 18 or older admitted on Thursday, February 17, only.

## For Complete Conference Information and Registration visit www.southcon.org

### Southcon and Amcon Exhibit Floor & Conference Companies  Partial List as of 11-1-04.

A.M. Metal Finishing, Inc.
A.P.P.I.
Accu-Dyne, Inc.
Acme-Monaco Corp.
Actron Eng.
Advanced Machining
Advanced Microwave*
Altech Corp.*
American Tape & Reel
Americom Seminars, Inc.
APEM Components*
Applied Mfg. Concepts, Inc.
Armstrong Mold Corp.
Arlink Workstations*
Artel CIMTEC, Inc.
ASH Industries
B.A. Precision
Bare Board Group
Bartlett Mfg. Co.*
Betatherm Sensors*
Boose Aluminum Foundry
C-Axis Inc.
C&A Group*
CIAO Wireless*
CMP Enclosures*
Compulink Cable Assembly, Inc.
Connecticut Spring & Stamping
Constellation Tech. Corp.
Cost Cast
Comtech PST - Hill Engrg. Div.*
CPX Tech Div.

Crescent Brass Mfg.
Criterion Instrument
Current Solutions
Da/Pro Rubber, Inc.
Data Graphics
Dayton Rogers Mfg.
Dazor*
Deco Products
Dictaphone
DyCast Specialties
Dynacast
Dyna Graphics Corp.
Dyna-Tech Corp.
ebm-papst, Inc.
E & T Plastics
EAC*
EDM Technologies
EDSi
Ellsworth Adhesive Systems
Empire Electronics Equipmart
ERA Florida/Sunshine Chapter
ESNA Industrial
EXTECH Instruments*
Fogg Co.
Fastbolt
Feller US Corp.
F.K. Instrument Co., Inc.
Florida Sheet Metal
Fort Walton Machining
Fujipoly*
Gasser & Sons, Inc.

Gaston Electronics
General Technology Corp.*
Gowanda*
GSMI
Hallmark Nameplate
Hart Precision Products
Hawkins-Frederickson Assoc.
Heartland
Harmony Castings, Inc.
HHP
Hybrid-Tek.*
IEEE
Illinois Capacitors*
Ind. Machinery Digest
Innovative Strategic Advanced Systems
Intricast Co., Inc.
J. Royal Company
Kolver USA*
Kurt Manufacturing
Lee Spring Co.
Livonia Tool
Metalade N.Y., Inc.
Micro Care*
Microwave Devices*
Mid-West Spring & Stamping
Mini-Systems, Inc.
MKM-Sarasota
Mnemonics
Morrissey, Inc.
MPMA
NCE

Network Engineering Solutions
Networks Int'l *
Newman Machine
North Penn Tech., Inc.
NuWay
Optical Polymers
Orbit GTS*
Oupiin*
P & M Industries
Pacific Aerospace & Electronics*
PCM Products
Performance Tech 2000
Phoenix Components
Plastic Concepts & Design, Inc.
Plastics International
Power-Sonic Corp.*
Profab Electronics
ProSource Industries
Rapid Product Solutions
Renco Electronics
RMI-F, Div. of Rotonics
RS Electronics
S & B Metal Products
Saint-Gobain
Saint Paul Metalcraft, Inc.
SatCon Electronics
Sealing Devices, Inc.
Semiconductor Technology, Inc.*
Servtronics
Shindengen Electric*
Soldering Technologies

Somec Corp.
Southern Spring & Stamping, Inc.
SRC Devices*
SSI Electronics, Inc.
Star-Glo Industries, LLC
Static Control Components*
SunRep
Sunrise Electronics*
Surface Finishes Co., Inc.
Swanstrom*
Syncro Sypris Test and Measurement
Technical Specialties Co., Inc.
Technical System Integrators
Texas Instruments, Inc.
Tropic Fasteners
Tropical Stencils*
United Global Sourcing
U.S. Tech
United Microwave Products*
Universal Sales
Vinland Corporation
Vulcan
Weber Manufacturing & Supplies, Inc.
Wisconsin Tool & Mold
WPI Interconnect Products
Wrico Stamping Co.
Zicon LLC

*Products shown through representative or distributor.

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# Electronic Communications Update around the Institute
By David Green and William Ratcliff

A lot of activity is occurring in the area of Electronic Communications for the IEEE member and volunteer. Various groups such as the IT Strategy Committee, the Regional ECC group, the IEEE EWH Committee and the Region 3 Communications Committee have all been active improving electronic communications services for IEEE. Of course, the content provided by some of the services is the result of additional groups working to provide benefit to IEEE and its members.

The following is a list of enhancements that have occurred on the Entity
Web Hosting (EWH) server (http://ewh.ieee.org) this year.

- The EWH service has been migrated to a new and upgraded high availability server.
- IEEE Web Accounts have been implemented. The same accounts that one uses to manage one's membership can also be used to as a security credential for private parts of web spaces on EWH.
- Improved Web Site statistics…New tool to monitor the activity and availability of the server and alert staff when there is an issue.
- Anti Virus software…Anti Virus software has been installed on ewh, and runs periodically everyday to scan and remove files infected with viruses.

IEEE E-Mail Services
- IEEE Alias service
  IEEE continues to offer an e-mail alias serves that allows one to have an @ieee.org address that is forwarded to a member's real mail box. This service provides one an identity separate from the one provided by the Internet Service Provider and eliminates the need to change mail addresses with contacts when changing providers. See http://eleccomm.ieee.org/personal-aliases.shtml for more details.
- Unsolicited Commercial Email (UCE) /Spam Filtering Service
  The IEEE has made enhancements to the IEEE UCE/Spam Filtering Service for members with an IEEE email alias. New features include:
  - An option that combines the tagging and blocking of UCE (spam); messages with a low spam score will be tagged, messages with a high "spamscore" will be blocked, thereby reducing the amount of spam received over time.
  - The ability to add email addresses to be blocked to a
    "blacklist", and those that never want blocked to a "whitelist". A member's lists are independent of other members.
  - Improved identification technology that will more accurately target possible UCE/spam messages.

To sign up for the IEEE UCE/Spam Filtering Service visit https://uce.ieee.org/. The same web page will allow members to revise their settings.

Region 3 Web Site
The home page of Region 3 is http://ewh.ieee.org/reg/3/ . From this page one can access a variety of services and information. See, for example, http://ewh.ieee.org/reg/3/ea/ a subsite on Employment Assistance and http://www.ewh.ieee.org/reg/3/excom/sp2005.pdf where the Region 3 Strategic Plan will reside.

E-conferencing
Region 3 has been working on technologies for electronic collaboration using a variety of technologies: e-mail lists, newsgroups, TWiki, Plone, IRC, Virtual Communities, Internet Meeting Service, etc. The group can serve as a resource to help other IEEE groups collaborate on projects over the Internet.

Communications is a part of all of our jobs and is a two-way proposition. Without the feedback the sender has no way of knowing if the message is being received and understood. If this summary has stimulated an interest please feel free to contact us for further discussion.

David Green d.green@ieee.org
Bill Ratcliff w.ratcliff@ieee.org

# IEEE Employment & Career Services

By Lee Stogner

The IEEE has a wealth of resources available to members to assist in employment, career planning, and professional development.  We have compiled a short list of places that you, as an IEEE member, can go for these services.

Career Navigator
IEEE-USA has created the Career Navigator website which has employment assistance information, entrepreneurs' resources, information on conferences and workshops, as well as links to material that can be used for local section meetings and workshops on career development.  It also provides links to the IEEE Job Site, and to the Employment & Career Strategies online discussion forum, where a variety of topics related to careers and employment issues can be freely exchanged with other members. http://ieeeusa.org/careers/default.asp

IEEE Job Site
The IEEE Job Site is the official IEEE members site to search for employment opportunities throughout the country.  You can create a profile of your ideal job and update it anytime. Jobs matching the profile can be viewed immediately, or automatically sent via email.  http://careers.ieee.org/index.html

Employment & Career Strategies Forum
For discussion, information, and a place to bounce ideas off other members, the Employment and Career Strategies Forum is always available 24/7.  Join in a discussion topic, or start your own.  https://www.ieeecommunities.org/ecs

PACE Network
The Professional Activities Committees for Engineers (PACE)  is a grassroots network of IEEE volunteers and committees organized at the section and chapter level in the United States with support from their respective regions and the IEEE-USA.  The PACE Network promotes the professional interests of IEEE's U.S. members and provides a mechanism for communication of members' views on their professional needs.  http://ieeeusa.org/pace/

Region 3 Employment Page
Your region has established a local employment page to help members within Region 3.  This page has been developed to bring together into one location the best sources of career planning, current job openings and information about companies that may be hiring in Region 3.  http://www.ieee.org/r3jobs

Reduced Member Dues
If you are unemployed through involuntary termination and actively seeking employment, or if your income has fallen below certain levels, you can request a 50% reduction in your IEEE and society dues/assessments (including publications).  Contact IEEE Member Services at 1-800-678-IEEE for details.

Your Local Section
Often the most important but overlooked employment resource is you own local Section.  At your Section, you will meet engineers from other companies in your own back yard.  Become a part of the local IEEE Network and be in touch and be prepared.  http://ewh.ieee.org/ecc/r3/

For more information on these or other topics related to employment and careers, please contact your Region 3 representative to the IEEE-USA Employment & Career Services Committee:   David Macchiarolo d.macchiarolo@ieee.org

*Mark Your Calendars!*
*Sections Congress 2005*
*is coming to Tampa, Florida*
*October 14-17, 2005*

## Section Public Relations

David Bower, Region 3 Public Information Officer
d.bower@ieee.org

With the start of a new calendar year, many sections are beginning with a new slate of officers. I'd like to encourage each section to appoint a Public Information Officer (PIO) to promote your section meetings and other activities to the media. As I mentioned at the last Region 3 Meeting in Atlanta, a Public Relations package is being prepared for mailing to each section in Region 3. This package will include a copy of the "IEEE Publicity Guide," a FAX cover sheet with IEEE logo, a sample news release and a condensed one page guide for preparing a news release for TV/Radio and Print Media.

A news release for your meetings can help promote attendance, and attract new members. In addition, a news release is an excellent way to highlight accomplishments of your local members. An electronic copy of the "IEEE Publicity Guide" is also available at www.ieee.org/prtoolkit.

Some factual data about the IEEE globally that can be used, as supplied by Headquarters, includes: As of October 2004, the IEEE has more than 360,000 members in more than 150 countries, almost 38% of whom are from outside the United States. There are 304 IEEE sections, 1,384 chapters, and more than 1,200 student branches in 80 countries. The IEEE has 39 societies and four technical councils. Again, I encourage each section to promote their meetings and other activities to the local Media. Please let me know if you need additional information or if I can be of further assistance. Thank you.

## Girls and Technology Program Implemented by IEEE emeritbadges.org Project

Ralph W. Russell, II

Globally, women are under represented in engineering fields. In order to change this trend, the IEEE has been active in global girls and technology education programs. The United Nations recently praised IEEE for being "the leading NGO (Non-Governmental Organization) in 150 countries advancing the technology skills of girls". The IEEE emeritbadges.org Project, founded in IEEE's Region 3, is implementing a new Girls and Technology Program that will primarily work with global girl scouts.

IEEE emeritbadges.org is implementing a program to study the methods of technology learning for girls. The IEEE emeritbadges.org Girls and Technology program is being lead by Mrs. Lynn Simms from Fredericksburg, VA. Lynn is an IEEE member and Past President of the Girl Scout Commonwealth Council of Virginia, Inc. Lynn's group will design an age and gender appropriate program to help global girls enhance technical literacy. The program will be designed to help girls learn more about viable engineering and other technical career options. The group is actively working with the Girl Scouts of the USA on this project and plans to expand the program with the World Association of Girl Guides and Girl Scouts. A project operational and funding plan is expected by the end of 2005.

The progress of the IEEE emeritbadges.org Girls and Technology Program can be tracked at http://www.emeritbadges.org/girls_and_technology.htm. Please send your comments concerning the program to Ralph W. Russell, II at emeritbadges@ieee.org.

The mission of the IEEE emeritbadges.org Project is to provide a global non-discriminatory pre-college technology education program for boys and girls. More information concerning the project can be found at www.emeritbadges.org. The IEEE emeritbadges.org Project team requests that interested web sites provide a web link to this new pre-college technology program.

# *Photos from Last Region 3 Meeting in Atlanta*













Clockwise from top

➢ Director Bill Harrison with IEEE "Lion" at the beginning of Region 3 Meeting

➢ Representatives from each Section presented their Section Report

➢ Saturday evening dinner

➢ Ms. Joey Duvall, winner of IEEE "Lion" at Saturday dinner meeting; with Director Bill Harrison

➢ Award presentation to Adeeb Hamzey by Region 3 Director Elect George McClure

➢ Award presentation to Tom Bellarmine by Region 3 Awards & Recognition Chair John Twitchell

# IEEE Region 3 Executive Committee – 2005

| Director * | Director Elect * | Past Director * |
|---|---|---|
| *Bill Harrison* | *George F. McClure* | *James M. Howard* |

| Treasurer * | Secretary * | |
|---|---|---|
| *Charles E. Hickman, Ph.D., P.E.* | *David G. Green* | |

| Area 1 Virginia Council * | Area 2 North Carolina Council * | Area 3 Georgia * |
|---|---|---|
| *Adeeb Hamzey* | *Carlisle 'Chip' Dawson* | *Chris Hardy* |

| Area 4 Florida Council * | Area 5 Tennessee Council * | Area 6 Alabama/Mississippi * |
|---|---|---|
| *G. Thomas Bellarmine* | *Philip Lim* | *R. Brian Skelton* |

| Area 7 South Carolina Council * | Area 8 Kentucky & Indiana * | Area 9 Jamaica * |
|---|---|---|
| *Stephen G. Carroll* | *John Parr* | *Halden A Morris* |

| Awards & Recognition * | Conference * | Communications * |
|---|---|---|
| *John R. Twitchell, P.E.* | *Donald W. Hill* | *William (Bill) Ratcliff* |

| Educational Activities * | Finance Committee | Membership Development * |
|---|---|---|
| *J. Patrick Donohoe, Ph.D, P.E.* | *Charles E. Hickman, Ph.D., P.E.* | *Lee Stogner* |

| Nominations & Appointments | Professional Activities * | Strategic Planning * |
|---|---|---|
| *James M. Howard* | *George F. McClure* | *Robert S. Duggan, Jr., P.E.* |

| Student Activities * | Student Representative * | |
|---|---|---|
| *Bruce Walcott* | *Patricia Davis* | |

## Communications Subcommittees

| Archive Management | Electronic Comm. Coordinator | Newsletter Editor |
|---|---|---|
| *Vernon Powers / Charles J. Lord, P.E.* | *David G. Green* | *Quang Tang* |

| Public Information | Webmaster | |
|---|---|---|
| *David L. Bower* | *Carlisle 'Chip' Dawson* | |

## Professional Activities Subcommittees

| PACE | IEEE USA Career & Employment Assistance Committee Chair |
|---|---|
| *Adeeb Hamzey* | *David T. Macchiarolo* |

## Ad Hoc Committees

| GOLD Representative | History | Industry Relations |
|---|---|---|
| *Joey A. Duvall* | *Vernon Powers* | *Alan Thomas* |

| Leadership Development | Leadership by Developing Others | Regional Life Member Coordinator |
|---|---|---|
| *Charles J. Lord, P.E.* | *Richard L. (Dick) Riddle* | *David McLaren* |

| Section/Chapter Coordination | Sections Congress Coordinators | Special Projects |
|---|---|---|
| *George McClure* | *Butch Shadwell, Jr. / Sean A. Haynes* | *Vernon Powers* |

| Special Review | Southcon Representative (senior) | Southcon Representative (junior) |
|---|---|---|
| *Roy H. Harris* | *James H. Beall* | *James M. Howard* |

## Southeastcon Chairs

| Southeastcon 2004 Chair | Southeastcon 2005 Chair | Southeastcon 2006 Chair |
|---|---|---|
| *Bill Hennen, Chip Dawson* | *Eric Ackerman* | *Alan Long* |

To contact any of the above members, please go to this website
http://www.ewh.ieee.org/reg/3/excom/comp.html

\* Denotes voting member of Region 3 Executive Committee

# Brain Teaser Challenge Solution - August 2004

Butch Shadwell

At the time I am writing this, I haven't received any answers to the last BTC.  As you recall, I was reminiscing about some robotics work I did in England years ago, which brought me to this problem; "Henry … pneumatically actuated …joints were operated by air pistons.  The elbow used a 1" cylinder to move his forelimb out and in again.  This cylinder had a ¼" piston rod.  Henry's arm extended just fine but would hesitate while retracting.  The arm retraction was powered by the cylinder's retraction motion, as opposed to the extension motion.  With a 90 pound air supply, how much force was the cylinder applying to the retraction function?"

A lot of folks don't know that all piston actuators do not supply the same force in both directions, even with the same fluid supply pressure.  First the force generated for extending the piston comes from the entire piston surface, in this case 0.785 sq. in.  This results in an extension force of 70.7 lbs.  When the fluid is forced into the retraction side of the cylinder, the piston area is reduced by the cross sectional area of the piston shaft.  The piston size is effectively reduced by this amount at the point of attachment.  So the effective piston size in this direction is 0.735 sq. in., resulting in only 66.2 lbs. of force in this direction, a 6.4% reduction.  But I bet you already knew that.

# Brain Teaser Challenge - October 2004

Butch Shadwell

Unlike many of you, people are always asking me, "Butch, how do you stay in such good shape and keep that youthful spring in your step?"  I always reply as modestly as I can, that I owe it all to genetics and regular infusions of Dr. Pepper.  You know … the carbonated soft drink.  I really don't think that the cosmetic surgery and spa treatments I use are any different than anybody else's.  But my wife and I can attest to the medicinal properties of Dr. Pepper.  I'd be willing to bet we could end this debate over stem cell research if those scientists would give Dr. Pepper a proper trial.  We've discovered many new uses for this amazing drink.  Besides cleaning battery terminals, we also find it useful at softening one's cuticles before a manicure.  George Washington Carver may have been the whiz with peanuts, but I'm going to outdo him with Dr. Pepper.

In one of my Pepper applications I needed to recover the power waveform of an acoustical signal, so I squared the waveform resulting in making it all positive instead of bipolar, and doubling the frequency.  Then I put on a low pass filter.  I know I should have it on the tip of my brain, but I can't remember the equation for the cross-over frequency of a simple one pole RC filter.  If I want the knee (- 3db) at 5 Hz and the capacitor is 1 uF, what should my resistor be?

Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL   32250-2328.  (http://www.shadtechserv.com) The names of correct respondents may be mentioned in the solution column.

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