

**The Florida West Coast  
Section of the IEEE**  
Serving over 2,300 members in Charlotte,  
Citrus, DeSoto, Hardee, Hernando,  
Hillsborough, Lee, Manatee, Pasco, Pinellas,  
Polk, and Sarasota Counties



**THE  
SUNCOAST  
SIGNAL**

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

**Happy New Year!**

**This Month's Meetings**

*Tuesday, January 4th: 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*

**Tour of St. Pete Times Printing Plant**

*January 14, 2011 at 7:00PM*

*[Details on page 3](#)*

**Robotics and Automation Society Meeting**

*Meeting is January 18, 2010*

*Go to the RAS Page of FWCS Website for Latest Info!*

**Principles and Practices of Engineering Review**

*January 21-March 25, 2011, Friday Evenings 6:00PM-9:00PM*

*[Details on Page 3](#)*

**Substation Grounding Seminar**

*January 28, 2011*

*Location: Seminole Electric*

*[Details on page 5](#)*

**Tampa Bay Engineers Week Banquet**

*"Engineers Making a World of Difference"*

*[Details on page 4](#)*



***Inside This Signal...***

*Page 2*

- \* Editors Column*
- \*Nolan Power Group*

*Page 3*

- \*PE Exam Review*
- \*Tour of St. Pete Times Plant*
- \*PACE Network and Card Exchange*

*\*FWCS Officers 2011*

*\*PE/IA Officers 2011*

*Page 4*

- \*IEEE-USA Commends Legislation*
- \*Engineers Week*

*Page 5*

- \*Substation Grounding Seminar*

*Page 6*

- \* Plasma-Therm Tour Follow-up Report*
- \*Highlights from Florida Council Meeting*

*Page 7*

*\**

- \*Teacher in Service*

*Page 8*

- \*Calendar*



## *This Month...(Editor's Column)*

As I sit down to write the first Editor's Column for 2011 I can't help getting a little political. At my job at the Hillsborough County Sheriff's Office we have had to plan for cutbacks in the IT budget for 2011 but none have been stated so far. We have reduced the numbers deployed PC's and printers and are preparing for more cuts in the future. ObamaCare passed but is being challenged in the courts on a cost basis. Republican Senator Tom Coburn has warned that if we don't get our financial house in order then we could be facing 15-18% unemployment and the government enacting austerity measures like what has been seen in Greece. Employment has improved a bit but is still not where it needs to be and the real estate market is a long way from recovering.

The good part is that the U.S. is still the engine of innovation for the rest of the world and it is due in large part to engineers. It will be interesting to see what the New Year brings.

### **2011 IEEE EXECUTIVE COMMITTEE FLORIDA WEST COAST SECTION**

CHAIR: Serge Beauzile (863) 834-6511 [serge.beauzile@ieee.org](mailto:serge.beauzile@ieee.org)

VICE CHAIR: Claude Pitts, [cpitts7@tampabay.rr.com](mailto:cpitts7@tampabay.rr.com)

SECRETARY: Ralph D. Painter, Esq., [rdpainter@ieee.org](mailto:rdpainter@ieee.org) (813) 228-4685

TREASURER: Dr. Paul Schnitzler (813) 974-5584  
[pauls@eng.usf.edu](mailto:pauls@eng.usf.edu)

SIGNAL EDITOR: Richard A. Sanchez,  
Phone (813) 239-3849 [rsancz@verizon.net](mailto:rsancz@verizon.net)

AWARDS & BYLAWS: Richard Beatie, PE,  
[r.beatie@ieee.org](mailto:r.beatie@ieee.org)

EDUCATION: Dr. Rudolf E. Henning and Zhen Tong  
(813) 974-4782 or (727) 328-8777 (Ext: 333)  
[henning@eng.usf.edu](mailto:henning@eng.usf.edu) or [tong@ieee.org](mailto:tong@ieee.org)

MEMBERSHIP: Glenn H. Davis, [ghdavis@ieee.org](mailto:ghdavis@ieee.org), (727) 389-6184.

TEACHER IN-SERVICE: Sean Denny: [Venner20@ieee.org](mailto:Venner20@ieee.org)  
(727) 678-0183

PES/IAS CHAPTER: Serge Beauzile, Lakeland Electric,  
(863) 834-6511 [serge.beauzile@ieee.org](mailto:serge.beauzile@ieee.org)

MTT/AP/ED CHAPTER: Ken A. O' Connor  
[kenoconnor@ieee.org](mailto:kenoconnor@ieee.org)

COMP/AESS CHAPTER: James S. Lumia (813) 832-3501,  
[jlumia@ieee.org](mailto:jlumia@ieee.org)

EMBS: Engineering in Medicine & Biology: Dr. Ravi Sankar:  
813-974-4769 [sankar@eng.usf.edu](mailto:sankar@eng.usf.edu)

SP/COMM CHAPTER: Hector Martinez, [abelhct@hotmail.com](mailto:abelhct@hotmail.com)

WIE: Women in Engineering: Valerie Tur, (813) 840-3454,  
[Valerie.tur@tawinc.com](mailto:Valerie.tur@tawinc.com)

LIFE MEMBER AFFINITY GROUP: Bob Franklin  
[boatseven@aol.com](mailto:boatseven@aol.com)

GOLD: Bashar Salahia, [bsalahia@mail.usf.edu](mailto:bsalahia@mail.usf.edu)

PACE: Jim Anderson, (813) 425-2467  
[jim.anderson@ieee.org](mailto:jim.anderson@ieee.org)

STUDENT BRANCH CO-ADVISORS:  
Dr. Paul Schnitzler, USF PS&A (813) 974-5584  
[pauls@eng.usf.edu](mailto:pauls@eng.usf.edu)

Dr. Andrew Hoff, [hoff@usf.edu](mailto:hoff@usf.edu)

STUDENT BRANCH MENTOR: Jim Howard, Lakeland Electric  
(863) 834-6585 [jhoward@ieee.org](mailto:jhoward@ieee.org) (H) (813) 876-1748

STUDENT BRANCHES:

Michael Taube, [umtaube@mail.usf.edu](mailto:umtaube@mail.usf.edu)

Victor Basantes, [vbasante@mail.usf.edu](mailto:vbasante@mail.usf.edu)

CONFERENCES: Jim Beall, [j.beall@ieee.org](mailto:j.beall@ieee.org)

WEB PAGE: <http://www.ieee.org/fwcs>

WEB MASTER: Claude Pitts, III, [Claude.Pitts-III@pgnmail.com](mailto:Claude.Pitts-III@pgnmail.com)

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers.

Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due in electronic form by 1<sup>st</sup> Sunday after the 1<sup>st</sup> Tuesday of the month preceding the issue month.

Address all correspondence to:

**Richard A. Sanchez**

**1018 Berry Avenue**

**Tampa, FL 33603**

**Home Phone 813-239-3849**

**E-MAIL: [rsancz@verizon.net](mailto:rsancz@verizon.net)**

**The Signal, Copyright 2011**



**NOLAN POWER GROUP**  
Power Quality Specialists  
Sales – Service

Batteries / Chargers / UPS  
PM Service / Capacity Testing  
Emergency Call Out

john.todora@nolanpower.com  
Phone: 954-333-3040

Authorized EnerSys Representative

Attend Your Local IEEE Meetings

And Take Advantage Of The

**Networking Opportunities**

# *Principles and Practices of Engineering (PE Exam) Review*

## *Electrical Engineering – Power*

This comprehensive review seminar provides outstanding preparation for the NCEES Professional Engineering Exam for Electrical

Engineering - Power. Each portion of the exam will be covered in this seminar, which was completely restructured in April

2009 to conform to the current exam format

**January 21 - March 25, 2011**

**Friday Evenings, 6:00pm - 9:00pm**

**Face-to-Face (USF Poly) or online**

**3433 Winter Lake Road, Lakeland;**

***poly.usf.edu/ManEng***

**Early Registration (Before Jan. 7, 2011): \$500 |**

**Regular Registration: \$550 | Registration for IEEE members: \$400**

*Instructors: Ralph Fehr, Ph.D., P.E. and Tom Blair, M.S.E.E., P.E.*

Register at

***poly.usf.edu/ManEng***

863.667.7059 or [ksebeny@poly.usf.edu](mailto:ksebeny@poly.usf.edu)

*Technical Co-sponsors:*



## *Tour of the St. Petersburg Times Printing Plant*

**Sponsor** is the PE/IA

**Date:** January 14, 2011

**Time:** 18:00

**Location:** 1301 34<sup>th</sup> St N, St Petersburg Florida, 33701 (meet at guard station in lobby.)

**Cost:** Free to attend

**Space is limited to 15 registrants**

**RSVP:** online at <http://time2meet.com/fwcs-meetings/>

**Questions:** [claud.pitts@ieee.org](mailto:claud.pitts@ieee.org)



## *PACE Networking & Business Card Exchange*

### *Meeting a Great Success*

Were you one of the almost 30 people who attend the FWCS PACE Networking and Business Card Exchange meeting on December 16<sup>th</sup>, 2010 at CDB's Southside?

If not you missed an outstanding opportunity to meet your fellow peers and share information about where you work and your particular fields of interest. Those attending received handouts about the IEEE USA and what it offers all USA members, as well as plans for 2011 PACE events, all presented by Jim Anderson, our outgoing Florida West Coast Section Chair and incoming PACE Chair for 2011. Among these planned items Jim mentioned a Career Workshop and some additional Networking meetings to be held through out the coming year. Watch your upcoming Signal Newsletter for more information on these PACE opportunities for the FWCS Section members.



## *Florida West Coast Section Officers for 2011*

The following are the officers for the FWCS for 2011:

Chair – Serge Beauzile

Vice-Chair – Claude Pitts III

Secretary – Ralph Painter

Treasurer – Paul Schnitzler



## *FWCS PE/IA Chapter Officers for 2011*

The following are the officers for the FWCS PE/IA Chapter for 2011:

Chair – Serge Beauzile

Vice-Chair – Jim Howard

Secretary/Treasurer – John Stankowich



## *IEEE-USA President Commends House for Passing Innovation Legislation*



WASHINGTON (21 December 2010) -- IEEE-USA President Evelyn Hirt commends the House of Representatives for passing the America COMPETES Reauthorization Act of 2010 on Tuesday.

The legislation, which the Senate passed on 17 December, authorizes federal investment in science, engineering, innovation, technology and competitiveness, and is designed to help the United States maintain its world leadership in high-technology and create jobs. It will now go to President Barack Obama for his signature.

COMPETES strives to, among other things, prepare students for high-skilled, high-paying jobs by improving science, technology, engineering and math (STEM) education; keeps basic research program budgets on a path to doubling at the Department of Energy Office of Science, the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST); reauthorizes the Advanced Research Projects Agency for Energy (ARPA-E), which supports high-risk, high-reward transformational energy technology development; and provides loan guarantees "for a project that re-equips, expands, or establishes a manufacturing facility in the United States."

"This legislation is important for the United States as it competes to retain global leadership in technology innovation, research and math and science," Hirt said. "It will enhance needed economic growth and U.S. STEM education, while helping manufacturers become more competitive by supporting innovative manufacturing technologies."

Rep. Bart Gordon (D-TN), outgoing chairman of the House Science & Technology Committee, said on the House floor Tuesday that more than half of U.S. economic growth since the end of World War II in 1945 can be attributed to the development and deployment of new technologies.

"These investments are the path toward sustainable economic recovery and growth and the path toward prosperity for the next 50 years," Gordon said. "There is an undeniable relationship between investments in R&D and the creation of jobs, the creation of companies, and economic growth."

"COMPETES," short for "Creating Opportunities to Meaningfully Promote Excellence in Technology, Education and Science," is based on recommendations outlined in the 2005 National Academies' report, "Rising Above the Gathering Storm."

*IEEE-USA*, one of more than 750 organizations to endorse the legislation, worked to support its passage.



## *Tampa Bay Engineers Week Banquet Coming February 25th! "Engineers Make a World of Difference"*

We are pleased to announce that the **Tampa Bay Engineer's Week Banquet will be held February 25, 2011** at A la Carte Pavilion. Please join us at this elegant gathering to celebrate the 61st National Engineer and to recognize many contributions made to society by those in the engineering profession.

The evening will feature fine dining, guest speaker **Ken Johnson Director, FIRST Tech Challenge, (FTC)**, and an exhibition room for vendors. And we are expecting as many as four hundred or more attendees including 250-300 engineers, so you will have plenty of opportunities to meet with friends and colleagues in the Tampa Bay technology community.

In keeping with the spirit of the event, awards will be given to accomplished engineers in each engineering discipline and to local university students who excel in engineering related studies. We will also be honoring select local high school educators with the Lignell Award for their outstanding instruction in the area of science, technology, engineering and mathematics.

We hope you will consider being part of this outstanding event to recognize those in the Tampa Bay area who are doing so much to promote engineering.

**Cost: \$65.00 per person. (\$55.00 if purchased thru IEEE)**





## *Substation Grounding Seminar*

- Date:** Friday, January 28, 2011  
**Time:** Seminar: Registration 7:30am-8:00am, Speaker 8:00am-4:00pm  
**Speaker:** Dr. Sakis Meliopoulos  
**Location:** Seminole Electric, 16313 North Dale Mabry Hwy, Tampa, FL 33618  
**Cost:** \$100 Members, \$150 Non-Members, \$50 Students. (Includes Lunch)  
**PDH Credit** 5 professional development hours will be awarded. Be sure to enter your name and PE number on the signup website as it appears on your license.  
**RSVP:** Online at: <http://time2meet.com/fwcs-pes2/index.html>  
Make checks payable to: IEEE FWCS  
Send checks to: John Stankowich, IEEE PES/IAS Treasurer  
2593 Forest Run Court  
Clearwater, FL 33761-3716  
Space limited to the first 45 registrants!  
**Cancellation must be submitted online 24 Hrs prior to the seminar at:**  
<http://time2meet.com/fwcs-pes2/index.html>  
**No shows will be invoiced for the full registration fee for the seminar.**
- Questions:** Serge Beuzile at 863-834-6511 or [Serge.Beuzile@lakelandelectric.com](mailto:Serge.Beuzile@lakelandelectric.com)

This seminar is intended to introduce the attendees to the topic of Grounding, Safety in Electrical Installations, and Lightning Protection. The seminar will address the basic principles that determine grounding system design procedures, the applicable standards and the basis of the standards. Design procedures will be described and will be demonstrated with state of the art computer programs. In particular integrated design procedures will be discussed that address all issued identified in the standards. Finally the important issue of grounding and lightning shielding design will be addressed with demonstrations of the basic methodologies.

Topics include:

- Grounding System Design Principles
- IEEE Std 80 Design Procedures
- Ground Design for Lightning
- Grounding System Performance
- Soil Characterization
- Integrated Grounding System Design Procedures

### **Dr. Sakis Meliopoulos**

A. P. Meliopoulos obtained a Diploma in Electrical and Mechanical Engineering from the National Technical University in Athens, Greece in 1972 and a Master in EE (1974) and a Ph.D. degree (1976) from the Georgia Institute of Technology in Atlanta, Georgia, USA.

After receiving a PhD degree in 1976, he joined the faculty of the Georgia Institute of Technology as an Assistant Professor (1976), Associate Professor (1982-88) and full professor (1989-present). Since 1999 he is the Georgia Tech site Director of PSERC, a power system research consortium of universities and industry.

Dr. Meliopoulos has pioneered several new analysis and design techniques for safety, protection and electromagnetic compatibility of electric power systems. Dr. Meliopoulos has modernized many power system courses at Georgia Tech, introduced new courses, initiated the power system certificate program for practicing engineers and most importantly he has introduced visualization and animation methodologies that dramatically increase the teaching efficiency of complex power system concepts.

Dr. Meliopoulos is a Fellow of the IEEE. He holds 3 patents, he has published two books, a chapter in the Standard Handbook for Electrical Engineers and over 250 technical papers. He has received a number of awards, including the Sigma Xi Young Faculty award (1981), the outstanding Continuing Education Award, Georgia Institute of Technology (2002), three of his papers have received the best paper award (IEEE-PES-SC-1984, IEEE-PES-EC-1987, and IEEE-CSS-HICSS 2002) and he received the 2005 IEEE Richard Kaufman Award. Dr. Meliopoulos was named the Georgia Power Distinguished Professor in 2006.



## *Plasma-Therm Tour Report*

Were you one of the lucky members who attended the December PE/IA Meeting and Tour of the Plasma-Therm facility in St. Petersburg? If so, you enjoyed an outstanding opportunity to see what an exceptional operation we have right here in the Bay Area.

Dr. David Lishan, Principal Scientist, Mr. Ken Pizzo, Product Engineering Manager, and Mrs. Kristina Anderson, their Marketing Communications Coordinator shared with the attendees the details behind the development, production and marketing of Plasma-Therm's various products. We also learned how Plasma-Therm provides their process equipment to both industry and academia.

Plasma-Therm provides semiconductor processing equipment globally and targets key market areas including, LED's, PV, Wireless, MEMS and others for a current total of nine key areas. Dr. Lishan shared with the group the growth in the LED market, which is currently expanding at over 30% growth per year. He also shared with group the potential in the MEMS area, as well as the PV-CPV area.

We have good news for those members who missed this outstanding meeting and tour – Plasma-Therm has agreed to host another meeting for the PE/IA Chapter in the future, so watch your Signal newsletter for this opportunity.

A Special Thanks to: Dr. Lishan, Mr. Pizzo, and Mrs. Anderson for sharing their knowledge and for their wonderful hospitality.

***IEEE FWCS members suit up to enter the clean room during the tour of Plasma-Therm***



<http://www.plasmatherm.com>

## *Highlights from the Florida Council (FC) Meeting Held in Orlando on December 11<sup>th</sup>, 2010.*

The twelve IEEE Sections in the state of Florida held their third meeting in 2010 on December 11, 2010 at NOVA University. Each of the Sections attending presented reports on their activities and concerns for their Sections and Members. In addition, some Section who could not attend in person, sent in reports to be shared with the FC. During this meeting the FC elected new Officers for the 2011 year which included:

Donghui Wu – Chair\*

Jim Anderson – Vice-Chair & Treasurer

Tracy Wichmann – Secretary

Past Chair – Quang Tang

\*As the Florida Area has formed a Council they elect their representative on the Region 3 Executive Committee as Area 4 representative. This individual is the elected chair for the FC, Donghui Wu, who also serves on the Region 3 Executive Committee representing the members of the FC.

Also in attendance were the Director-Elect for Region 3 – Dave Green, and the President-Elect for IEEE USA – Jim Howard. Dave Green, Region 3 Director-Elect will become the Region 3 Director on January 1, 2012 and, as part of that position becomes a member of the IEEE Board of Directors for the entire IEEE. Dave shared information with the group about the Region and IEEE in general. Jim Howard will become the President of IEEE USA on January 1, 2012 and, as part of that position also becomes a member of the IEEE Board of Directors for the entire IEEE. Jim thanked everyone for their support over the years and asked that the FC Section continue to show their support of IEEE USA through their efforts in the PACE areas.

The next meeting for the FC is currently planned to be held at the Region 3 SoutheastCon Meeting in March 2011.



## Teacher in Service Update

Dear Friends,

Happy Holidays to all Teachers & Engineers. The following are important announcements for education and engineering around the Tampa Bay Area. Please continue to browse the Teacher In Service Lesson Plans at the following URL for topics: <http://www.ieee.org/web/education/preuniversity/home.html> or [www.tryengineering.org](http://www.tryengineering.org). We want to assign an engineer to a project that is appropriate for your science educators. We encourage every school to take a look at the lesson plans. I need you to pick a lesson plan most appropriate for the event. Please contact me at [venner20@ieee.org](mailto:venner20@ieee.org) to ask an engineer to do a presentation for your school going forward. We ask all IEEE members and Certified Engineers to volunteer with your local schools. Please let me know if you are volunteering so that I can provide you with IEEE surveys that need to be given and collected. The IEEE is dedicated to also helping your districts as well. I have attached the IEEE TISP surveys to the email. We can arrange to do these any time at the convenience of the schools and the engineers. We are offering effective and economical alternatives to promote engineering. This is to inspire the educator to perform these activities themselves while enriching their Students. If the teachers and the volunteers work together, students have a better chance at successful careers in engineering. In the long run, it helps "the technological literacy of tomorrow's leaders."

### Great American Teach In

The FWCS has two of its Engineers, who serve on our Executive Committee, are prepared to do a presentation on "Making Sense of Sensors" for a Professional Study Day of your choice. Please contact me to arrange their availability.

### PROFESSIONAL STUDY DAY OPPORTUNITIES

Request from Manatee County Schools

*Hi Sean, I was wondering if you could help me with a trainer for our January 3rd In-Service day from 8:30AM - 11:30AM to present hands-on physical science/physics activity for our teachers. Thank you for your consideration.*

*Judy Griffin*

*Curriculum Specialist, School Board of Manatee County, Professional Support Center*

*2501 63rd Avenue East, Bradenton, FL 34203*

*Phone - (941) 751-6550 Ext. 2103/ Fax- (941) 751-7374*

[griffinj@fc.manatee.k12.fl.us](mailto:griffinj@fc.manatee.k12.fl.us)

### SCIENCE FAIRS 2011



Pasco County has asked us to volunteer to judge the Science Fair on ***February 5th, 2011***. The Elementary Young Scientist Fair has been changed to May 7th, 2011; the original date was April 16th in the letter. The Fairs will be held at T.E. Weightman Middle School. There is a web link to register to judge. Please read and complete their attached letter and form and return them to Laura Hill, [lhill@pasco.k12.fl.us](mailto:lhill@pasco.k12.fl.us).

Pinellas County Schools Paul Dickman, [dickman@cat.pcsb.org](mailto:dickman@cat.pcsb.org), PRSEF Director writes, "It is that time of year again for me to request your help in judging this year's 2011 Pinellas Regional Science Fair. Our fair will be held at Seminole Middle School on Saturday-Feb 5<sup>th</sup>, 2011. Please see the attached invitation letter and judges' form. Please forward this email to any of your colleagues who may also want to judge. As always, I truly appreciate your generous help and look forward to hearing from you. Phone: (727) 893-2609.

Sarasota County provided us with their Science Fair Schedule:

**January 25, 2011** Elementary School Judging (grades K-5)

**January 27, 2011** Middle and High School Judging (grades 6-12)

**Location:** Robarts Arena, 3000 Ringling Blvd.

**Time:** 8:00 a.m. - Judges' Continental Breakfast and Meeting

8:30 a.m. - Judges' Preview of Projects

9:30 a.m. to 12:30 p.m. - Judges' Interview Students

Please contact Susan Puchalla, [Susan\\_Puchalla@sarasota.k12.fl.us](mailto:Susan_Puchalla@sarasota.k12.fl.us), if there are any questions.



Institute of Electrical and  
 Electronics Engineers, Inc.  
 Florida West Coast Section  
 3133 W. Paris  
 Tampa, Florida 33614




Florida West Coast Section, Tampa

NON PROFIT  
 ORG  
 U.S. POSTAGE  
 PAID  
 TAMPA, FL.  
 PERMIT  
 No. 1197

**DATE SENSITIVE MATERIAL. DO NOT DELAY**

Change of address? IEEE Web Contact Update <http://www.ieee.org/membership/coa.html>  
 Or send address changes including your name, IEEE Member number and all pertinent information to:  
 IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333  
 Or fax your address changes to (732) 562-5445

January 2011 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1 
2	3	4 <i>EXCOM at TECO Hall, see page 1</i>	5	6	7	8
9	10	11	12	13	14 <i>Tour of SP Times Plant, see page 3</i>	15
16	17	18 <i>RAS Meeting, See page 1</i>	19	20	21	22
23 30	24 31	25 <i>Elem. School Judging, see page 7</i>	26	27 <i>Middle, HS Judging, see page 7</i>	28 <i>Grounding Seminar, see page 5</i>	29