



IEEE Pittsburgh Section

Bulletin



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Included in this issue:

- From the Chair
- CMU MBA Program – April 6
- Life Members: Recent Patent Law Developments – April 11
- Law School for Engineers – April 18
- Signal Processing for Gene Networks – April 12
- Outsourcing America – April 19
- History Dinner – April 20
- Consultants Network: Neural Networks – April 25
- IEEE Conferences in Region 2
- FE (EIT) Exam Review Course
- 2005 Nat'l Electrical Code course

Editor of this issue: Jace Cochrane, P.E. jacejc@pghmail.com (412) 390-0718

Contributors: Ralph Hauser, Joe Kalasky, Heung-No Lee, Tom McDermott, Karl Muller, Kal Sen, John Twigg, Chuck Urso and Dave Vaglia.

All announcements for publication in a particular month's bulletin are due to the Editor by the 20th of the previous month. The accuracy of the published material is not guaranteed. If there is any error, please bring it to the Editor's attention.

The Section's web site www.ewh.ieee.org/r2/pittsburgh has past issues of the bulletin and lots of other useful information.

• *From the Chair*

I thank all of our members who worked so diligently to make our Section's March activities happen. Our first tutorial of the year, sponsored by the PES/IAS Chapters on Grounding and Bonding, was spearheaded by Chuck Urso, the Chapter Chair and ExCom Secretary. The all-day session was very well attended with over 35 participants.

On March 28 and 29, two members of the ExCom and one member of the Upper Monongahela Subsection participated in the Science, Engineering, and Technology Congressional Visits Day in Washington DC, organized by the IEEE USA and other associations. Over 300 engineers and scientists met with their senators, representatives, and staff to ask them to maintain their commitment to science, engineering, and technology through funding in the FY 2007 budget.

In April, for those interested in finding out the benefits of an MBA or Law degree, we have sessions on April 6 and April 18 with representatives from Carnegie Mellon (MBA) and Duquesne University (Law) respectively.

One upcoming April event that I want to mention again is our History Dinner on Thursday, April 20. It will be held at the Westinghouse Castle in Wilmerding. Our speaker will give a presentation on the history of power blackouts, and Section awards will be presented. It's a great event to bring your spouse or significant other to, and to meet people in our Section.

We are still taking names for the review course for the Fundamentals of Engineering (FE) Exam. This is being done as a service to our community in partnership with Penn State New Kensington.

Note that the April ExCom meeting will be held on April 27 at Point Park University. This is one week later than normal because of the History Dinner.

Check inside this Bulletin for details on all of our upcoming activities, as there is something of interest for all of our members.

We solicit your help and participation in our Section and Chapters, where your contribution will be truly appreciated. Please contact me at (412) 491-6944 or davevaglia@ieee.org if you are interested.

Dave Vaglia

Section

Chair & Awards Co-Chair – David J. Vaglia, P.E.
davevaglia@ieee.org (412) 491-6944

Vice Chair – John Twigg
jtigg@ascent-systems.com (412) 795-4444

Secretary – Charles Urso, P.E.
curso@llitechnologies.com (412) 338-4871

Treasurer – Harold Hagerty, P.E.
hhagerty@ieee.org (412) 492-0943x226

Webmaster – Andrew Novotny
andrewnovotny@ieee.org (412) 351-4954

Immediate Past Chair – Dr. Kalyan Sen (Kal)
senkk@ieee.org (724) 696-1611

UpperMon Subsection
Chair: Dr. Dimitris Korakakis
Dimitris.Korakakis@mail.wvu.edu
(304) 293-0405 x2512

Chapters

Communications Society – Chair: Philip Cox
p.e.cox@ieee.org (724) 443-0566

Computer Society – Chair: John Twigg (see above)

Engineering In Medicine & Biology Society
Co-Chair: Dr. Zhi-Hong Mao
maozh@engr.pitt.edu (412) 624-9674
Co-Chair: Robert Brooks
rbrooks@medrad.com (412) 767-2400 x3506

ElectroMagnetic Compatibility Society
Chair: Michael J. Oliver
emi@majr.com (814) 763-3211

Power Engineering & Industrial Applications Societies
Chair: Charles Urso, P.E. (see above)
Vice Chair: Andrew Novotny (see above)

Magnetics Society – Chair: Dr. Ganping Ju
Ganping.Ju@Seagate.com (412) 918-7046

Robotics Society – Chair: Dr. Guy Nicoletti
Nicoletti+@pitt.edu (724) 836-9922

Signal Processing Society – Chair: Dr. Heung-No Lee
hlee@engr.pitt.edu (412) 624-9677

Affinity Groups

GOLD – Chair: Andrew Rydholm
andrew_rydholm@yahoo.com (412) 261-3200 x281

Life Member – Chair: Bob Grimes, P.E.
r.d.grimes@ieee.org (412) 963-9711

Vice-Chair: Wally Raisanen
wraisanen@ieee.org (724) 986-4467

Committees

Consultants Network
Co-Chair: Dr. George Crawford, P.E.
gwc2@psu.edu (412) 675-9164
Co-Chair: Peter Mantzouridis
Coolpetros1@yahoo.com (412) 780-0201

Professional/Career Activities (PACE)
Chair: Joe Kalasky, P.E.
j.kalasky@ieee.org (724) 838-6492

Student Activities – Chair: Ralph Sprang
rsprang@ieee.org

Membership Development
Chair: Dr. Karl F. Muller, P.E.
karlmuller@compuserve.com (412) 374-6051

Awards – Co-Chair: Ray Valentine, P.E.
r.d.valentine@ieee.org (724) 733-5083

Publicity – Chair: Thomas Dionise, P.E.
ThomasJDionise@eaton.com (724) 779-5864

- ***MBAs for Engineers***

Speakers: Laurie Stewart, Executive Director of Masters Admissions, and Monique Moreland, Lead Admissions Team Member for FlexTime program. Both are from Carnegie Mellon University's Tepper School of Business.

Date: Thursday April 6, 2006

Time: Social 6:30 PM Program 7:00 PM

Place: Westinghouse Energy Center Directions on page 9.

Cost: No charge

RSVP: **REQUIRED** by April 4 to Dr. Kal Sen, senkk@ieee.org or (724) 696-1611. Please provide your name, telephone number, and email address.

Sponsor: PES/IAS Chapter

Is there an MBA in your future? This session will explore the value of obtaining an MBA for individuals from technical professions, as well as provide details on Carnegie Mellon's FlexTime MBA program at the Tepper School of Business. Specific topics covered include: Who should obtain an MBA? What do you learn in an MBA program? When is the right time to pursue an MBA? Should you study full-time or part-time? What career paths are available to MBAs? How does Carnegie Mellon's FlexTime MBA program work? What do you need to do to get started?

About one speaker: Ms. Stewart earned an MBA from Carnegie Mellon's Tepper School and an undergraduate degree in engineering from Kettering University. She held various technical roles at General Motors and Valeo Engine Cooling. Ms. Stewart has been responsible for MBA admissions at Carnegie Mellon since 1994.

- ***Current Developments in Patents and Intellectual Property and their Significance***

Speaker: Daniel C. Abeles, a member of the firm Eckert Seamans Cherin & Mellott

Date: Tuesday, April 11, 2006

Time: 7:00 PM

Place: George Westinghouse Technical Center, Building 801, Room 2C14
Directions on page 9.

Sponsor: Life Member Affinity Group

Contact: Bob Grimes at (412) 963-9711 or r.d.grimes@ieee.org

Mr. Abeles has extensive experience in Intellectual Property Law. Formerly Assistant General Counsel for a Fortune 500 company, he has managed a law department involved in power generation (including nuclear), environmental and government services businesses. His work has embraced both domestic and international licensing, technology transfer, and government contract terms and conditions dealing with intellectual property. Mr. Abeles has lectured extensively on patents and intellectual property issues and has been instrumental in setting up effective worldwide patent strategies focused on commercial return. In addition, his work on behalf of clients has included participation in conceptual protection for future evolution of products, patent application in mechanical and electrical arts, and software protection. Mr. Abeles encourages questions following his presentation.

- ***Law School for Engineers - A Most Powerful Option***

Speaker: Joseph P. Campion, Director of Admissions, Duquesne University Law School
Date: Tuesday, April 18, 2006
Time: 5:30 PM-Light refreshments 6:00 PM-Presentation
Place: University of Pittsburgh, Oakland Campus, Benedum Hall, **Room 360**
Please note room change from last month's bulletin.
Cost: No charge. Members and guests welcome. Students encouraged.
Sponsors: PACE (Professional Activities Committee) & GOLD (Grads of the Last Decade)
RSVP: **REQUIRED** by April 13 to Joe Kalasky at (724) 838-6492 or j.kalasky@ieee.org
or to Andrew Rydholm at (412) 261-3200 x281 or andrew_rydholm@yahoo.com.
Please provide your name, telephone number, and email address.

Two of the most highly respected professionals are Engineers and Attorneys. The pinnacle credential is an engineering degree complemented with a Law Degree (JD). Command the Salary and Status that you deserve! Whether you are a working engineer advanced in your career, a recent graduate, or a student nearing graduation, if you have the stamina, consider Law School in the evenings or full time. PACE and GOLD have arranged this presentation as a professional service to the Pittsburgh Section. Our speaker, Mr. Campion, will describe various dimensions of Law School including prerequisites, course material, and blending studies with your current job and family life. The presentation is designed for Engineers.

- ***Statistical Signal Processing for Inferring Gene Regulatory Networks***

Speaker: Professor Xiaodong Wang, Associate Professor, Columbia University
Date: Wednesday, April 12, 2006
Time: Noon - 1:00 PM
Place: University of Pittsburgh, Oakland Campus, 424 Benedum Hall
Sponsor: Signal Processing Chapter

Abstract: Genomic Signal Processing (GSP) is an emerging discipline that brings to genomics the structural model-based analysis and synthesis that form the basis of mathematically rigorous engineering. Owing to the advent of micro-array technology to simultaneously assess gene-expression levels from thousands of genes, there now exists the practical potential to apply signal-processing methods to expression-based signaling within the genome. The aim of GSP is to integrate the theory and methods of signal processing with the global understanding of functional genomics, with special emphasis on genomic regulation. In this talk, Dr Wang will first give a brief tour of the basics of molecular biology. He will then describe two applications of statistical signal processing techniques to genomics, namely, motif discovery in DNA sequences and inference of gene regulatory networks.

About the speaker: Xiaodong Wang received the BS degree from Shanghai Jiao Tong University, Shanghai, China; the MS degree from Purdue University; and the PhD degree from Princeton University; all in Electrical Engineering. He is now an Associate Professor in the Department of Electrical Engineering, Columbia University. Dr. Wang has published extensively in the areas of computing, signal processing and communications. His current research interests include wireless communications, statistical signal processing, and genomic signal processing.

- **Outsourcing America - Book Discussion and Signing**

Speaker: Dr. Ron Hira, Assistant Professor, Rochester Institute of Technology
Date: Wednesday, **April 19**, 2006 *Please note date change from March bulletin.*
Time: 6:00 PM – social with pizza and pop, 7:00 PM – presentation
Place: University of Pittsburgh, Oakland Campus, Benedum Hall, Room 1175
Cost: No Charge All members and guests welcome.
Sponsor: Pittsburgh Chapter of the Computer Society
RSVP: By April 18 to John Twigg at (412) 795-4444 or jtwigg@ascent-systems.com
Please provide your name, telephone number, and email address.

The IEEE Pittsburgh Section encourages all of its members to attend this presentation to learn about outsourcing and how it relates to your job. Invite your colleagues.



Abstract: Firms have shifted the ways in which they source technology labor. They are transferring tasks and jobs traditionally done by American engineers to lower-cost countries where engineers earn as little as ten percent of a comparable American. Company managers, acting rationally, hope to save up to seventy percent in net costs by offshoring work. While no government organization has reliable figures on exactly how many engineering tasks and jobs have moved to low-cost countries in recent years, observable trends indicate the process is accelerating in scale and scope. These changes in firm behavior have important implications for American engineers and the US national innovation system. However, engineers have little objective information to help them adapt to these changes, and in spite of widespread media attention, policymakers have chosen to do nothing in response to the structural changes to our innovation system. The elite response, popularized by Thomas Friedman in his book The World is Flat, has been to blame US workers – their education, skills and work ethic - thereby completely ignoring the role that firm behavior plays. As a result of their limited problem identification, the policy responses being proposed by elites are simplistic and will have limited positive impact. This talk will provide a more complete picture of the economics and business aspects of the phenomenon and discuss the politics and policy of offshore outsourcing.

About the Speaker and Author: Dr. Ron Hira is an Assistant Professor of Public Policy at RIT, where he specializes in engineering workforce issues and technology policy. Ron is co-author of the book, Outsourcing America, published by the American Management Association. In 2006 he received the IEEE-USA President's Special Citation Award "for furthering public understanding of an economic trend that has profound

implications for the engineering profession through his book Outsourcing America.” He is a recognized expert on offshore outsourcing and has testified before the US Congress twice on its implications. He has given over 70 invited talks on offshore outsourcing at universities, to policymakers, as well as to the general public. Ron is frequently quoted and interviewed in many major newspapers and magazines, and on television and radio. Previously Ron worked as a control systems engineer and program manager with Sensytech, NIST, and George Mason University (GMU). Ron has been a consultant to the U.S. Department of Treasury Executive Institute, Rand Corporation, National Research Council, Enterprise Integration Inc, Deloitte & Touche, General Motors and Newport News Shipbuilding. Ron completed his Post-Doctoral Fellowship at Columbia University’s Center for Science, Policy, and Outcomes. He holds a PhD in Public Policy from GMU, an MS in Electrical Engineering also from GMU, and a BS in Electrical Engineering from Carnegie-Mellon University. Ron is a licensed professional engineer and is Vice President for Career Activities of IEEE-USA, the largest engineering professional society in America. In 2004, he was awarded the Citation of Honor from IEEE-USA for his work on behalf of the engineering profession. Ron participated on the Council on Foreign Relations’ “Research Roundtable on Technology, Innovation and America’s Primacy” and the Council on Competitiveness’ “National Innovation Initiative.” There will be an opportunity to purchase Dr. Hira’s Book, Outsourcing America at this event. The first 25 registrants will receive a free, signed copy of Dr. Hira’s book.



- ***Inside Neural Networks: A Technology and Application Tour***

Speaker: Jack Copper, President and CEO of NeuralWare
Date: Tuesday, April 25, 2006
Time: 6:30 PM
Place: Westinghouse Energy Center Directions on page 9.
RSVP: **REQUIRED** to Dr. Karl Muller at karlmuller@compuserve.com or (724) 327-0016
Sponsor: Consultants Network

Abstract: Neural networks comprise a collection of adaptive learning algorithms that are widely used in problem domains as diverse as credit risk management, bioinformatics, and advanced process control. This technology and application tour will introduce the mathematical and software concepts that provide the foundation for neural network learning algorithms. Then some representative real-world neural network applications will be presented, along with commentary about why neural networks were chosen, and the challenges that were overcome in implementing the neural network solutions.

About the speaker: Jack Copper holds a BS in Nuclear Engineering from the University of Virginia and has completed graduate courses in engineering design, public policy, and computer science at Carnegie Mellon University. He holds several design and utility patents related to wireless pointing devices. He has held senior positions in companies that provided distributed energy management systems, robotic welding equipment, and medical signal processing systems. Since 1987 NeuralWare has been a leading supplier of neural network tools, technology and solutions.

- ***Annual History Dinner - History and Mechanics of Blackouts***

Speaker: Stan Horowitz, Life Fellow of IEEE
 Date: Thursday, April 20, 2006
 Time: 5:30 PM Social and Dinner
 7:00 PM Award presentations and speaker's presentation
 Place: Westinghouse Castle (a.k.a. APICS Training Center) in Wilmerding, PA
 Directions on page 9.
 Cost: \$20 per person \$35 per couple NO CHARGE for program only.
RSVP: **REQUIRED** by April 14 by sending a check payable to 'IEEE Pittsburgh Section' to Tom McDermott, EnerNex Corporation, 90 Clairton Blvd, Suite 1-LL, Pittsburgh PA 15236. Tom's phone number is (412) 653-0407.
 Menu: Buffet including Fresh Fruit Tray, Caesar Salad, Crabmeat Stuffed Shrimp, Sliced Roast Beef in Wine & Mushroom Sauce, Rice Pilaf, Vegetable Medley, Dinner Rolls, Tea and Coffee, Cheesecake with Strawberry Topping.

Every year our section has a history and awards dinner at the Westinghouse Castle. This is a great event to bring your spouse or significant other to. It's also a great opportunity to get together with your electrical engineering buddies you haven't seen in a while. Call them and make plans for all of you to attend the dinner and catch up with each other.

Our speaker, Stan Horowitz will describe and review the history and mechanics of blackouts. He will introduce some technical aspects of system operation and protection as they result in wide-area outages and then describe in some detail the 3 major blackouts we have had: Northeast in 1965; New York in 1977; and the Ohio Northeast in 2003. Stan will touch on several other notable blackouts. He will include the lessons learned from each. Stan will wrap up by describing measures that can be applied to mitigate blackouts such as adaptive relaying, flexible systems and System Integrity Protective Systems.

About the speaker: Stanley H. Horowitz is a consultant, author, and lecturer. He joined American Electric Power Service Corp (then American Gas and Electric) in 1950 and retired in 1989, having served as head of the System Protection Section, Assistant Head of the Electrical Engineering Division and Consulting Electrical Engineer. He is a recipient of the IEEE Third Millennium Medal and was elected to the National Academy of Engineering in 1995.

About the Castle: Learn more about the Westinghouse Castle and Museum at <http://www.georgewestinghouse.com>.

- ***IEEE Conferences to be held in Region 2***

The following IEEE conferences will be held in our geographic area in the near future, meaning your travel costs would be minimal. Don't overlook any conferences so conveniently located.

Easton PA	April 1-2	2006 32nd Annual Northeast Bioengineering Conference
Arlington VA	April 2-4	2006 Distributed Diagnosis & Home Healthcare (D2H2)
Arlington VA	April 6-9	2006 3rd IEEE International Symposium on Biomedical Imaging: Macro to Nano (ISBI 2006)
Washington DC	April 20-21	2006 Wind Power Symposium: Technology, Economics, and Politics
Arlington VA	May 14-18	2006 27th Power Modulator Symposium
Philadelphia PA	June 25-28	2006 IEEE International Conference on Dependable Systems & Networks With FTCS & DCC (DSN)

• ***The FE Exam Review Course***

As a service to our community, the Pittsburgh PES/IAS Chapter, in partnership with Penn State New Kensington, is sponsoring a 26-week FE Review Course starting in April 2006. Participants will be prepared to take the FE exam in October 2006. To become a PE, one must pass two exams: (1) Fundamentals of Engineering (FE) Exam, formerly referred to as the EIT Exam and (2) Principles and Practice of Engineering (P&P) Exam, referred to as the PE Exam. Our local expert Joe M. DeSalvo, PE, who has been teaching Penn State Continuing Education classes for over 40 years, will teach this review course. Usually the charge for such a course is over \$1000 per person. Because PES/IAS will be responsible for the publicity and for providing the classroom facilities, we can project that the cost will be in the range of \$575 per person (IEEE member or non-member) or \$500 without books if we have at least 25 participants. Classes will be held Wednesday evenings beginning April 26 at the Westinghouse Energy Center in Monroeville. (Directions on page 9.) Please indicate your interest by notifying Dr. Kal Sen at senkk@ieee.org or (724) 696-1611 no later than April 19, 2006.

About the instructor:



Joe DeSalvo is a Professional Engineer with degrees in electrical engineering (Pitt) and industrial management (Carnegie Mellon). He is a Senior Life Member of the IEEE and is presently on the adjunct faculty of Pennsylvania State University where he teaches FE (EIT) and P&P (PE) review courses and several engineering and economics courses in the Advanced Power Engineering Program. Mr. DeSalvo is retired from Allegheny Power where, as Manager of Substation and Methods Standards, he had responsibility for substation designs and industrial engineering studies for three operating companies serving five states. He is a past Chairman of the Pittsburgh Section and a past Director of Region 2.

• ***2005 National Electrical Code and Applications Course***

Instructor: Steve Musial, P.E.
Dates: Wednesday, June 14 and Wednesday, June 21, 2006
Time: 6:00 PM – 9:00 PM
Place: CJL Engineering
1550 Coraopolis Heights Rd, Suite 340, Moon Township, PA 15108
Cost: \$75 for IEEE members \$90 for non-members
0.6 Certified CEUs provided upon course completion at no extra cost.
Registration: Send your check payable to 'IEEE-Pittsburgh Section' along with your name, email, and phone number to: Chuck Urso, 5077 Lougean Ave, Pittsburgh PA 15207.

As a service to our community, the Pittsburgh PES/IAS is sponsoring this training session. Emphasis will be on Chapters 1-4 & 9 of the 2005 NEC, along with practical applications and problem solving, and code changes from the 2002 NEC. More information will be provided in the May bulletin. If you have questions, please contact Chuck Urso at (412) 338-4871 or curso@llitechnologies.com.

DIRECTIONS TO WESTINGHOUSE ENERGY CENTER

From Pittsburgh take Interstate 376 East (Parkway East). Take Exit 14A to Monroeville. Cross Business Rt 22 at the traffic light and proceed on Rt 48 South (Moss Side Blvd) approx ½ mile (two traffic lights). The 2nd traffic light is at a 4-way intersection with an Exxon station on the right. Turn left onto Northern Pike. Proceed approx 0.2 miles and turn right at the 1st traffic light onto Westinghouse Dr. Travel 0.7 miles (past the guard stand) to the 3 flags where the building's main entrance is located. Parking in the evening will be plentiful. Use the main entrance and check with the security guards inside. You will be directed to the proper room for your meeting.

From the PA Turnpike, take Exit 57 (Monroeville). After the toll plaza, get in the left lane to get on Business Rt 22 West. At the first light, turn left onto Rt 48 South (Moss Side Blvd) and follow the above directions.

DIRECTIONS TO GEORGE WESTINGHOUSE TECHNICAL CENTER:

The Center is easily accessed right at Exit 10A of the Parkway East (Interstate 376) in Churchill Borough. Park in the 401 parking lot. The guard at the gate will direct you to Building 801. Room 2C14 is located off the second corridor, halfway between the lobby and cafeteria.

DIRECTION TO THE WESTINGHOUSE CASTLE (a.k.a. APICS TRAINING CENTER)

325 Commerce Street
Wilmerding, PA 15148

PITTSBURGH AIRPORT TO WESTINGHOUSE CASTLE

Exit airport and follow South 60 to Pittsburgh. Road will turn into I-279 North (Parkway West). Follow I-279 to Pittsburgh, then follow signs to Monroeville via I-376 East. Stay in right lane going through Fort Pitt Tunnel. When out of tunnel, make first right onto I-376 East (Parkway East). Exit I-376 East at Exit #10 - Forest Hills/Route 30. Stay on Route 30 for 5.5 miles. Turn left at Route 148 (Yellow Belt). (Landmarks are a GetGo station and Eckerd Drug on right). Follow road 1.5 miles. Go straight at stoplight into Wilmerding. Go two blocks, make left onto Herman Avenue. One block, make left onto Commerce Street. Park in APICS Training Center parking lot, which is on the right side. (Travel time: approx. 45 minutes)

PA TURNPIKE-EXIT 57 –PITTSBURGH/MONROEVILLE TO WESTINGHOUSE CASTLE

Exit tollbooth and go to the far left lane. Follow Monroeville Business Route 22 West signage. Make left at end of overpass. Merge into the left lane and make a left at the traffic light onto Route 48 South (Honda dealer is at this intersection.) Follow Route 48 for 3.5 miles. At traffic light (Golden Rose Restaurant) make right onto Route 130 West and follow road for 2.2 miles, passing through the town of Pitcairn. Take Wilmerding exit. At stop sign make left. At second traffic light, make right into the town of Wilmerding. Go two blocks and make left onto Herman Avenue. Go one block and make left onto Commerce Street. Park in APICS Training Center parking lot, which is on the right side. (Travel time: approx. 15 minutes)

2006 Calendar – Meetings of IEEE Pittsburgh Section

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Executive Committee	19 Point Park	16 Point Park	16 U Pitt Greensburg	27 Point Park						
Section		18 Engr Week table	31 Science Fair	20 History Dinner						
Communications		24 Random coding bounds								
Computer	18 Tour SunGard	18 Robot Race	29 Applctn Moderniz	19 <u>Outsourc'g America</u>	17 TBD	21 Marketing a Tech Co	19 Embed Syst for Motor control	16 Technolg Co stories		
EMBS		15 Transm data: body as cable								
EMCS	31 FAQs	1 Path of Least Induc & EMF phobia								
PES/IAS	25 P.E. License	13 Power Quality	25 Grounding & bonding course	6 CMU MBA program 20 History Dinner 26 FE review class starts	Date TBD HV ckt brkr design 3, 10, 17, 24 & 31 FE review class	14 & 21 2005 NEC course 28 Inverters & motor insulation 7, 14, 21 & 28 FE review class	5, 12, 19 & 26 FE review class	Date TBD Pirate game 2, 9, 16, 23 & 30 FE review class	6, 13, 20 & 27 FE review class	4, 11 & 18 FE review class
Magnetics										
Robotics			16 Next Level							
Signal Processing	9 Sensor Network		22 Temporal role-based access control	12 Gene reg networks						
Upper Mon		6 Interconn to Backplan 13 Fingerprint please 20 Magnet Reson Microscopy								
Consultants Network	24 Expand business	28 Business Mtg	28 Legal questions	25 Neural Networks						
Life Member				11 Intellectual Propty						
GOLD				18 Engrs as Attys						
PACE				18 Engrs as Attys	Date TBD MBA Programs	Date TBD Personal Finances		Date TBD Resume preparation		Date TBD Transition to mgmt
Student Activities										

TBD means 'to be determined'