# THE POCKET SCOPE

*The Institute of Electrical and Electronics Engineers, Inc.*

Volume 51, Number 1 September 2000

## Scope Notes

### September Houston Section Meeting

**Where:** Shell Information Center: 1500 Old Spanish Trail, Houston TX 77054

**When:**

Thursday,September 14, 2000

| | |
|---|---|
| Lunch | 11:15-12:00 |
| Program | 12:00-12:45 |

Lunch will be provided by Alcatel

Call Ransom Siler at 713-245-4199 by noon September 13th to reserve your seat.

**See Page 2 for info about this months meeting!**

**IEEE WEB ADDRESS**
http://www.ieee-houston.org

## The Chairman's Message

**Justo Benitez**

For the past five years the members attendance to the Houston Section meetings have been steadily decreasing. From an average attendance of 50 to 60 members then, our present attendance is down to plus or minus 20 members at each meeting. We have tried offering different subjects: technical, membership, community, social issues, political, family oriented and others. In previous years technical presentations have brought the largest number of members. However this year not even technical subjects have been able to motivate our members to come to the meetings. For the September and October meetings we are going to change the time of the Houston Section meeting to the lunch time. Some of the local Chapters hold their meetings at that time and they get better results than us.

The September meeting will be a joint meeting with the Communications Society Houston Chapter. Since we are joining their presentation we will have to make other adjustments to our routine schedule. The meeting will be on the second Thursday of the month and it will be held at the Shell Information Center. **Alcatel** is providing a complementary lunch for all the attendees. Specific details are provided on the announcement included with this issue of The Pocket Scope.

We have not received an overwhelming response from our members to our request on the May issue for updating their e-mail addresses. However using the SAMEE list provided by IEEE headquarters we have been able to verify more than 70% of the e-mail addresses included on the list. We intend to send a post card to each member whose e-mail address was rejected through the regular mail. Please provide us your correct address or you will not receive notification of The Pocket Scope posting on our web site beginning January, 2001. Since the Houston Section meeting will be two weeks earlier and there is a possibility that The Pocket Scope will be late, we are going to test the electronic distribution of the September issue with the 70% plus correct addresses we have at present.

I hope all of you had a happy and relaxing summer and came back ready to finish the year providing a strong support to the Houston Section.

Visit us on the web at http://www.ieee-houston.org

# September Section Meeting Speaker Info

Tom has had a lifelong interest in amateur radio and electronics. He earned his first Amateur Radio license in 1959, when he held the call sign KN5YFK. He now holds the FCC's Amateur Extra class license, with the call sign AB5XZ. Tom has been an active member of several Amateur Radio organizations, including the Amateur Radio Relay League, the Quarter Century Wireless Association (Chapter President), and the Clear Lake Amateur Radio Club (Vice President). He has designed and taught courses for all levels of Amateur Radio licenses, and is an accredited Volunteer Examiner for FCC licensing. His main Amateur Radio interest is in long-range (terrestrial) communication, with which he has contacted amateurs in about 150 countries. Most of Tom's professional career has been in the computer industry. He has designed and built many successful systems for engineering and business applications. Some areas of application have been: flight control systems for high-performance military aircraft; manual and automatic controls for the Space Shuttle's Remote Manipulator System; unified Problem Reporting and Tracking system for the Space Shuttle program; high-confidence Data Reconfiguration System for Space Shuttle avionics; Corporate Software Reuse Environment for IBM; and Electronic Commerce applications for the Shell Oil companies. Tom is a Senior Consultant with Shell Services International in Houston. He has been a Member of IEEE since 1961, and is currently Vice-Chairman of the Houston Chapter of the IEEE Communications Society. Since 1970, he has been a licensed Professional Engineer in Texas.

Tom is a graduate of Texas A&M University, with a BS in Electrical Engineering. He is nearing the completion (December 2000) of a Master of Science degree in Telecommunications from Southern Methodist University. Tom and Susanne O'Brien, who have been married for 31 years, live in Taylor Lake Village, Texas. They have two grown children, both graduates of Rice University. Their daughter Amy is a physician, and their son Paul is a researcher and PhD candidate in Space Physics at UCLA.

## IEEE SEEKS U. S. UNIVERSITY PROGRAM EVALUATORS

PISCATAWAY, NJ, 15 June 2000. The IEEE Educational Activities Board seeks engineering professionals from industry, government, and academe to serve as program evaluators for accrediting engineering and engineering technology programs at U.S. universities. Nominations will be accepted through 31 October 2000. The Accreditation Board for Engineering and Technology, Inc (ABET) provides a peer review of university programs that is so important to the continuing vitality and quality of the engineering and engineering technology professions. Aside from the professional and public good that evaluators perform, there are specific benefits to the evaluators and their employers.

The evaluators are trained in the Quality Process and are able to hone their decision-making skills. By virtue of being on campus, evaluators can identify potential schools and students for future recruitment. It is the ABET accreditation program which assures the quality education of those who will be the future innovators and industry leaders.

The IEEE members selected will attend a one-day training seminar on the IEEE/ABET accreditation process, one of which will take place at the June 2001 American Society for Engineering Education convention in Albuquerque, New Mexico. After training, these program evaluators will visit engineering and engineering technology departments across the country on behalf of the IEEE and ABET. Evaluation sessions take place each fall and generally run for two to three days.

Information packages, including the application and nomination forms, are
available on the WWW at:
http://www.ieee.org/organizations/eab/apc/ceaa/engapplication.htm
(engineering programs) and
http://www.ieee.org/organizations/eab/apc/ctaa/techapplication.htm
(engineering technology programs). For more program information, contact
<eab-accred@ieee.org>.

## Whither Transmission Reliability? Selected Readings Available

PISCATAWAY, NJ, 20 June 2000. Will the bulk electric power system be as reliable in the future as it has been in the past? The Evolution of Electric Power Transmission Under Deregulation, edited by John A. Casazza and George C. Loehr, is a compendium of over fifty of the most current and classic articles on transmission under deregulation which seeks to enlighten the reader on this subject. According to John Casazza, “Those restructuring the electric power industry have ignored the effects on the reliability of our electric transmission systems. Risks of blackouts and power shortages continue to grow. New technical and institutional solutions are needed. If these are not coordinated, reliability will continue to decline while costs continue to increase.”

These selected readings provide up-to-date information and an overview valuable not only to those working in the field, but also to those in power policy positions, offering under one convenient cover a choice selection of papers and articles on transmission reliability. Areas covered include:

· An overview of electric power systems
· Transmission System Planning & Design
· Transmission System Operation
· Transmission Transfer Capability
· Restructuring, Reliability & Transmission Capability
· Transmission System Components & Research
· Communications, Information Security & Other Factors

Experts John A. Casazza, P.E. and George C. Loehr have carefully selected the most significant and valuable articles for this volume. Mr. Casazza, an award winning IEEE Life Fellow, has worked in industry and served the community and nation as a member of various Councils and Panels for 54 years. He has testified extensively as an expert witness before Federal and state regulatory bodies. Mr. Loehr ‘s career in transmission planning in the Northeast spans more than 35 years. He is a recognized national expert on electric power system reliability.

To order The Evolution of Electric Power Transmission Under Deregulation , List price $69.95, IEEE Member price $49.95, use product number SR112. Order from the IEEE Customer Service Department, 445 Hoes Lane, PO Box
1331, Piscataway, NJ 08855-1331, USA; e-mail: customer-service@ieee.org;
phone: 1.800.678.4333; Web: ONLINE STORE at http://shop.ieee.org/store/.
For other educational products access:
http://www.ieee.org/organizations/eab/cathome.htm



Houston Chapter

IEEE Communications Society

---

**You're invited to attend a luncheon meeting of the Houston Chapter. This is a joint meeting with IEEE Houston Section. Bring your friends!**

**Date:** Thursday, September 14, 2000

**Location:** Shell Information Center, 1500 Old Spanish Trail, Houston, Texas.

**Time:** 11:30 (Lunch), 12:00 (Program)

**Program:** "The State of the Art in Amateur Radio", by Tom O'Brien, P.E., Shell Services International. Tom will show you that Ham Radio today is much more than just "plug and play".

**To reserve a seat, contact: Ransom Siler, Chairman, rsiler@ieee.org, by Noon Wednesday, Sept. 13, 2000.**

*Please copy, print, post, or otherwise share this notice.*

---

See our Web pages at
http://www.comsoc.org/~Houston

# New Power Engineering Tutorial from IEEE

PISCATAWAY, NJ, 8 May 2000. Four experts from Rensselaer Polytechnic Institute of Troy, New York are the presenters for the new tutorial from IEEE, Principles of High-Voltage Engineering. This tutorial is ideal for design engineers, users, purchasing officers, operations managers, technicians, and electrical engineering or physics students concerned with high voltage equipment.

In recognition of the global, workplace, and personal preferences of our members' approach to learning, IEEE Educational Activities is offering this tutorial in a variety of modes. Principles of High-Voltage Engineering is now available as a four videotape package, interactive CD-ROM, or by video-streaming from the IEEE Video-On-Demand website.

The tutorial combines lecture, PowerPoint references, and onsite Electric Power Engineering Department laboratory demonstrations to illustrate the high-voltage principles. It is divided into four subject categories: Basic Principles of Electric and Magnetic Fields, presented by Sheppard Salon; Basic Principles of Switching, presented by Allan Greenwood; Transient Voltages in Windings, presented by Robert Degneff; and Insulation Materials and Dielectric Design, presented by J. Keith Nelson.

Integrated into the Insulation Materials and Dielectric Design portion of the tutorial are field visits to EPRI Delivery and Utilization Center at Lenox, Massachusetts. At that site, Mr. Nelson highlights functioning instruments that protect high-voltage equipment.
By the end of the tutorial, the user will:

· Obtain a fundamental understanding of the basic principles of electric field production in high-voltage equipment.
· See how switching operations and lightning can result in subjecting the equipment to high voltages.
· Obtain an understanding of the voltage distribution in windings of transformers and machines.
· Learn practical techniques to control high voltage and protect equipment.

Order Information:
IEEE Product Number (for NTSC version): HV7045 List $780.00 / Members: $650.00
IEEE Product Number (for PAL version): HV7046 List $780.00 / Members: $650.00
Web Product number: EW129. List $199.99 / Members: $179.99
CD-ROM Product Number: EC126. List $755.00 / Members $625.00

All formats can be ordered from the IEEE Customer Service Department, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331, USA; by e-mail: customer-service@ieee.org; by phone: 1.800.678.4333; at our new site on the Web: http://shop.ieee.org/store/. To check out systems requirements for Video-On-Demand go to http://ieee.mediaplatform.com/vod/ieee/index.po. For further information on Education Activities check our website www.ieee.org/eab.

**Visit the Houston Section Homepage at http://www.ieee-houston.org**

## DISCOUNT ON PROJECT MANAGEMENT COURSES OFFERED

PISCATAWAY, NJ. 7 July 2000. Management Concepts, a global leader in project management training, is offering classes to IEEE members at a special 10% discount. Management Concepts is an innovator that consistently provides timely, targeted information and knowledge-based products to people requiring business-related skills. Take the next step in career development by learning project management. The discipline of project management is critical for success and is becoming a required area of expertise for career advancement.
These 2 to 5 day courses are awarded Continuing Education Units making it ideal for fulfilling professional obligations. Courses are held at a variety of locations and times during the year.
Among the 35 Project Management courses offered are:
· Project Management Principles, covering the fundamentals necessary for each phase of the project life cycle.

· Leadership and communication skills for project managers, covering the forms of leadership best suited to your personalityand how to use techniques to manage and resolve conflict, change and personnel issues.

· Managing multiple projects and geographically dispersed projects, focusing on the challenges of co-locations, virtual teams,conflicting priorities and limited resources.

· Negotiation for project management executives, examining the negotiation process, how to determine what is negotiable, recognize needs and vulnerabilities, and improve negotiating techniques.

The Management Concepts courses join the growing list of educational opportunities to be found at the IEEE professional development institute (PDI) when it opens in September 2000. The IEEE PDI will maximize life long learning and professional development opportunities for IEEE members globally.
To register or for full course selection and schedules visit www.mangementconcepts.com or call 1.800.232.9096. The IEEE member discount can be applied to any course offered by Management Concepts. For further information contact Alan Trembly, a.trembly@ieee.org.

## Global Course Access and Discounts Too

PISCATAWAY, NJ. April 28, 2000. On June 1 professional development gets easier and more convenient for IEEE members. That date marks the start of full access to the co-sponsored Stevens Institute of Technology Online WebCampus courses and the all-IEEE generated Video-on-Demand tutorials. Either one click off the Educational Activities Board (EAB) homepage for easy access to either or use the discrete sites quoted below.
IEEE members receive a 10% discount on all Stevens WebCampus online courses. The Stevens online courses, currently numbering eleven, are in three hot fields: Wireless Communications, Telecommunications Management, and Technology Applications in Science Education. Our members and their employers appreciate that the same highly respected Stevens faculty teaches both the traditional oncampus courses and the online courses.
EAB Professional Development committee member, Sameer Kalra, while still a graduate student at Stevens, participated in the design of the online Wireless course. To Mr. Kalra “the single most important feature of the online course is that you can access it anywhere, anytime at your convenience.” The busy professional can determine scheduling, course lengths, order of classes, and graduate credit or Continuing Education Unit options, from anywhere in the world. Modest systems requirements make these courses global friendly.
Check registration requirements and sample a class at the Stevens website:
http://attila.stevens-tech.edu/gradschool/distance_learning/courses/sample.html
.For Video-On-Demand IEEE partnered with Softcom, Inc. to stream videotapes of lectures and tutorials over the web directly to the user’s desktop. By using a free Real Networks G2 player, members are able to watch the tutorials from any computer connected to the Internet in any part of the world without a download period.
Fifteen moderately priced tutorials, taught by experts in their fields, are currently being offered in five subject areas including communications, computer engineering and networking, power and energy, and signal and image processing.
All courses feature a five to seven minute preview, so users can browse before buying. Courses are available as one-month subscriptions from the order

cont... *on page 7*

## TWO WAYS TO LEARN ABOUT REAL-TIME SIGNAL PROCESSING AVAILABLE

PISCATAWAY, NJ. 17 July 2000. Meet the challenge of moving from research to real life applications with two new offerings from IEEE Educational Activities, a self-study course and a selected reading book. Commit to an 80-hour course or use the selected readings as a primer for application writing to learn this vital system.
According to Philip A. Laplante, Dean of Pennsylvania Institute of Technology and editor of the Real-Time Image and Signal Processing ? Selected Readings, "Real-time signal processing differs form "ordinary" signal processing in that the logical correctness of the system requires correct and also timely outputs. Real-time has no tolerance of missed deadlines. Even one missed deadline can result in total system failure."
The self-study course, Real-Time Signal Processing, developed by John G. Ackenhusen, Veridian, ERIM International, Inc., covers the entire process of implementing signal processing algorithms, from real-time concepts to multiprocessors and tradeoff analyses. This course also walks through the entire system design process from requirements development through life-cycle systems engineering, project management, integration, testing, and maintenance.
The complete course includes a study guide, a workbook, and the text:
Real-Time Signal Processing, Ackenhusen, Prentice Hall; a final examination is provided in paper format, and, in September, the examination will be available by web at IEEE Professional Development Institute (PDI). 8 Continuing Education Units (CEUs) and a Certificate of Achievement are awarded upon successful completion of the course. John G. Ackenhusen has been involved with research in real-time signal processing since 1978. Following his work in speech recognition at AT&T Bell Labs, he joined the Environmental Research Institute of Michigan, now ERIM International, Inc., leading efforts in recognition processor and algorithm design. He is a fellow of IEEE, past President of the IEEE Signal Processing Society, and past director of the IEEE Signals and Applications Division. He received his Ph.D. from the University of Michigan. Real-Time Signal and Image Processing ? Selected Readings provides introductory-level to intermediate-level readings in the hardware, software, programming languages and applications of real-timeimage and signal processing. These systems are incredibly important in virtually every application from avionics to industrial inspection and in every application domain from entertainment to defense. The reader is intended to provide sufficient background for a baccalaureate engineer or scientist who is not familiar with the field to become familiar enough to write software or design systems for these types of applications. The reader is also ideal for managers supervising projects of these types. The thirty-one selected readings are culled from referred journal articles and reviewed magazine pieces, all IEEE sources, and less than five years old. The articles focus on the following topics: issues and challenges; hardware support; algorithms; software languages and systems; applications and case studies. Phillip A. Laplante has been a software engineer, project manager, teacher, researcher, and author for almost 20 years. His experience includes designing software for embedded avionics like the Space Shuttle; building computer aided design software for commercial use and developing software and best practices for software testing. He has written 13 books and currently edits two book series, Complex Systems and Image Processing. He is a licensed Professional Engineer in Pennsylvania and New Jersey and received his Ph.D. in computer science with a dissertation in digital signal processing from Stevens Institute of Technology. Real-Time Signal Processing Self-study Course, IEEE Product No. HL5765
List: $475.00/Member: $375.00
Real-Time Image and Signal Processing ? Selected Readings, IEEE Order No.SR116
List: $69.99/Member: $49.95
Both the self study course and the selected readings can be ordered from the IEEE Customer Service Department, 445 Hoes Lane, PO Box 1331,
Piscataway, NJ 08855-1331, USA; by e-mail: customer-service@ieee.org; by phone: 1.800.678.4333; or on the Web at http://shop.ieee.org/store/ For further information on Education Activities check out our Website www.ieee.org/eab.

### Global Course Access and Discounts Too

*...cont. from page 6...*date and may be purchased online. Included with the integrated, synchronous audio, video, and slide presentation, is aFrequently Asked Question page, help screens and an interactive table of
contents that allows users to go directly to information or presentations of interest.
Systems requirements and previews are explained on the Video-On-Demand webpage http://ieee.mediaplatform.com/vod/ieee/index.po.
Stevens and VOD are just a start to a series of innovative partnerships of IEEE Educational Activities with industry and university educational programs and delivery systems. The series will maximize life long learning and professional development opportunities for IEEE members
globally.

# EXECUTIVE COMMITTEE
## HOUSTON SECTION IEEE

### OFFICERS

Justo Benitez, Foster Wheeler USA, Chair.....281-587-3108
Reggie Comfort, Reliant Energy HL&P, Vice Chair.....713-207-6616
Donald G. Dunn Equistar Channelview, Secretary.....281-452-8809
Donald G. Dunn, Equistar Channelview Treasurer.....281-452-8809
Kenny Mercado Reliant Energy HL&P, Past Chair.....713-923-3201
IEEE Home Page..... http://www.ieee-houston.org

### SOCIETY CHAIRS

W. Ransom Siler, Shell Services Int., Communications.....713-245-4199
Ernst Leiss , U of Houston, Computer.....713-743-3359
Peri Ktonas , U of Houston, Engr-Medicine &Biology.....713-743-4429
Sunita Kulkarni, Bechtel Industry Applications.....713-235-2833
Jeffrey Williams, U of Houston, Multi-group Electronics.....713-743-4455
David Rains, Motors Drives & Controls Power, Engineering.....713-783-0074
Richard Baraniuk, Rice University, Signal Processing.....713-285-5132
John Tyler, Jr. Texas A&M U. A.M.L.G. A&M.....409-845-7591
Joseph Cavallaro, Rice University, Circuit and Systems.....713-527-4719

### COMMITTEE HEADS

P. J. Donner, Reliant Energy, Arrangements.....713-945-7771
Paul Barrett, Fred Oberlender and Associates, Awards .....713-680-9659
Ray Schmidt, Conferences .....281-468-2978
Raymond Joseph, Aarden Control Engr. & Science, Consultants Network.....281-343-1607
Roy Cosse', M.W Kellog, Continuing Education .....713-753-2924
Linda McOmber-Smith, Reliant Energy, Engr Council of Houston .....713-207-3521
Jeff Glasgow, Foster Wheeler USA, Membership .....281-597-3385
John Lucey, Reliant Energy, Offshore Tech. Conf. .....713-945-5923
David Fink, Esq, PACE.....713-729-4991
Ram Gupta, Foster Wheeler USA, Programs.....281-597-3175
Jonna Schuler, Dow Pipeline, Publications.....713-978-2538
Timothy Johnson, D. Fink Esq. , Student Activities .....713-729-4991
Jimmy Salinas, SW Bell Telephone Science Fair Coordinator .....713-567-8095

### FREEPORT SUBSECTION OFFICERS

Greg Slingerland, Equistar Chemical ,Chairperson .....409-244-7161
Mick Bayer, Dow Chemical, Vice Chairperson .....979-238-7911
Larry Williams, Dow Chemical, Secretary/Treasurer .....979-238-9087

### STUDENT BRANCH ADVISORS

A. Kumar, Prarie View A&M U. .....409-857-3923
Bob Jump, Rice University .....713-527-4020
Walter Daugherity, Texas A&M U. (CS) .....409-845-1308
John Tyler Jr., Texas A&M U. (EE) .....409-845-7508
Rainer Fink, Texas A&M U. (ET) .....409-845-5966
Pierre Catala, Texas A&M University Communications .....409-845-4948
Brent Nicholas, Texas Southern U. .....713-827-2428
Ovidiu Crisan, U. of Houston (EE) .....713-743-4432
Heidar Malki, U. of Houston (ET) .....713-743-4075

**The Pocket Scope** is the newsletter of the Houston Section of the Institute of Electrical and Electronic Engineers (IEEE). The Houston Section address is: IEEE Houston Section, P.O. Box 460014, Houston, TX 77056-8014

**The Pocket Scope** is published eight times a year (monthly, September to May except December). It is distributed to over 3000 professionals in the electrical engineering feild in the greater Houston area.

**Advertising** rates include $25 for one column inch, $107 for a quater page, and $375 for a full page. Employment wanted ads for unemployed members are free.

IEEE members send **change or address** notices to: IEEE, PO Box 460014 Houston, TX 77056-8014 or call (800) 678-IEEE.

Newsletter Staff
**Editors:** Jonna Schuler, (713) 978-2538, Fax (713) 978-3050
E-mail jlschuler@dow.com
Mike and Joe Mabile, E-mail MikeM035@houston.rr.com
**Advertising:** (713) 978-2538

**THE POCKET SCOPE**
IEEE Houston Section
P.O. Box 460014
Houston, TX 77056-8014

NON-PROFIT
ORGANIZATION
U.S. POSTAGE
**PAID**
HOUSTON, TEXAS
Permit No. 6513