



THE POCKET SCOPE



The Institute of Electrical and Electronics Engineers, Inc.

Volume 53, Number 1

September 2002

SCOPE NOTES

September Houston Section News

Where:
HESS (Houston Engineering and Scientific Society)
5430 Westheimer @ Yorktown

When: DATE CHANGE
Thursday, October 8, 2002
6:00 - 6:30 p.m. Social
6:30 - 7:30 p.m. Dinner
7:30 - 8:30 p.m. Speaker

Cost:
\$FREE - IEEE Members with 48-hour advance reservations.
\$20.00 - non-members
\$5.00 - students
Call (713) 207-IEEE to make your reservations.

See Page 2 for the Continuing Education Schedule!

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

IEEE Houston Section
P.O. Box 460014
Houston, Texas
77056-8014



The Chairman's Message

Donald Dunn

The Executive Committee of the Houston Section will travel to Washington D.C. to represent our section at the 2002 Section Congress in October. Every three years the regional activities board (RAB) holds a conference for all sections within the IEEE. Representatives from countries from around the world network and exchange ideals on section best practices. Representatives attend training sessions, tutorials and panel discussions on section activities during the conference. For more information about Section Congress 2002 visit the following website: <http://www.ieee.org/organizations/rab/sc/2002/index.html>

The first section meeting of the year has been moved from September 26, 2002 to October 8, 2002. The speaker for our October meeting will be Thomas P. O'Brien, P.E. Since graduating from Texas A&M, Tom O'Brien has worked in aircraft design and manufacturing, data processing, airline reservation systems, business software development, simulator development, electronic commerce, and spacecraft software. He is currently developing software requirements specifications for the Space Shuttle Upgrades project. The topic of discuss at the section meeting will be "Bell Telephone Patents, 1874-1884".

The Houston Section CED programs will startup in October with several courses that cover new and exciting topics. In addition, our employment section on the IEEE Houston Section website is growing. Take the time to visit the site and forward the information on to individuals within your companies that are seeking IEEE engineers <http://www.ieee-houston.org/>. These features, training and other activities are services that the Houston Section provides to the IEEE members within our area.

We are looking for members that are interested in becoming a Senior Member in the IEEE. If you meet the following criteria: for elevation to Senior Member status, ten years of professional practice including five years of significant performance, and references (See the nominator letter and application form for clarification on the IEEE website) or if you know an IEEE member who qualifies for Senior Membership, I would like you to nominate him or her by forwarding their nomination to one of the Houston Section Excom members. If you qualify and are not a senior member please reply to one of the Section Excom members.

The IEEE Houston Section has worked to provide programs and services that add value to your IEEE membership. Over the past year and a half the Houston Section has continued to have positive membership growth. In the August 2002 report that compared membership statistics from August 2001, the Houston Section had a 7.6% growth in members. Few sections in Regions 1-6 (US) have had sustained positive membership growth. The Executive Committee and I feel that the programs we have implemented are fostering positive growth in our membership base. If you have feedback and comments contact one of the Excom members. Our goal is to add value to your IEEE membership. Thanks for taking the time to forward your feedback.

IEEE CONTINUING EDUCATION ON DEMAND

2002-2003 REGISTRATION FORM

Name:

Company:

Mailing Address: (where certificate will be delivered)

City/State:

Zip:

Email:

Telephone Voice:

Telephone Fax:

IEEE Membership Number:

Mail a copy of your completed registration form along with your check payable to **IEEE CED SEMINARS** at the following address:

IEEE CED SEMINARS
SANDY CROCKER
ABB Power T&D Company
P.O. BOX #42802
HOUSTON, TX. 77242

Registration receipts will be distributed **at the seminar**.

For a cancellation refund, telephone by the Friday before the seminar:
Contact Sandy Crocker at (713) 821-4020

IEEE Continuing Education On Demand Completion Certificate with Continuing Education Units (CEUs) is provided after receipt of both nightly questionnaires.

Please check the IEEE Houston Section website for the latest schedule and course information.

[http://\(www.ieee-houston.org\)](http://(www.ieee-houston.org))

IEEE CONTINUING EDUCATION ON DEMAND

The purpose of IEEE Houston Section Continuing Education On Demand is to provide a two-year repeating program sequence of practical industrial power application topics that supplement the daily work activities of the practicing graduate electrical engineer.

The seminars are intended to stimulate further study and discussion for learning continuance throughout the working career. Topics apply to heavy industries: oil and gas, petro-chem, cogen, pulp and paper, etc.

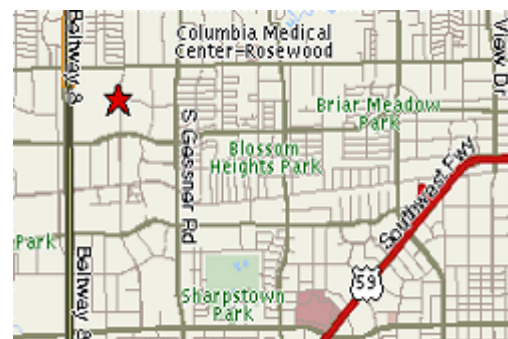
Instructors are application engineers, manufacturing specialists and expert consultants who provide a blend of diverse engineering perspectives.

The cost of each seminar is \$120.00 for IEEE members. "Early Signup" is \$60.00 and the **check must be received the Friday before** the seminar start date. The cost for non-IEEE members is \$200.00. Signup the week of the seminar does not guarantee seminar presentation documents or meals. For IEEE membership application information, contact Sandy Crocker at (713) 821-4020.

The following 2002-2003 seminar schedule defines the topics, dates and times. A course syllabus is available on request. Minimum class size is twenty for each seminar. Seating is limited and filled on an as received basis. Presentation documents are provided. A buffet is served from 5:00PM-6:00PM.

Seminar location:

ABB Power T&D Company
P.O. BOX #42802
HOUSTON, TX. 77242
Contact Sandy Crocker
(713) 821-4020



Seminar Title	Code	Date	Amount
Residual Bus Auto Transfer System	111	Oct. 1/2	\$
Symmetrical Components	202	Oct. 15/16	\$
Elect. Safety In Ind. Workplace	921	Oct. 29/30	\$
Harmonics Theory And Applications	502	Nov. 12/13	\$
Harmonic Filters	503	Jan. 28/29	\$
CT/PT Application	308	Feb. 11/12	\$
Directional Power Current Relaying	307	Feb. 25/26	\$
Solid-State Starters	504	Mar. 11/12	\$
Relays and Meters Com. Sys. Integration	112	Mar. 25/26	\$
51V Gen Relay, Standby Gen. & UPS	316	Apr. 8/9	\$
Substation Design Appl. And Fund.	312	Apr. 22 /23	\$
Total Paid:			\$

Enter amount for each seminar:

IEEE member registration:	\$120.00
IEEE member early signup:	\$ 60.00
Non-member registration:	\$200.00

Fall of 2002 IEEE Seminar Schedule

Residual Bus Automatic Transfer System (111)

James Bowen / Roy Cossé, Powell Elect. Mfg. Co.

Oct. 1/2, 2002 6:00-8:50PM

Reviews fundamentals of a traditional transfer scheme. A modern transfer approach provides guidance for enhanced residual transfer scheme applications. [0.5 CEU]

Symmetrical Components (202)

William Nichols, Siemens Westinghouse Technical Services

Oct. 15/16, 2002 6:00-8:50PM

Reviews basic theory and provides application examples for LL, LG, and LGL faults. Unbalanced voltage concerns are also discussed. [0.5 CEU]

Electrical Safety in Industrial Workplaces (921)

James Bowen, Powell Electrical Mfg. Co.

Oct. 29/30, 2002 6:00-8:50PM

Modern industrial facility safety concerns and NFPA70E are discussed. [0.5 CEU]

Harmonic Theory and Applications (502)

David Rice, GE Engineering Services

Nov. 12/13, 2002 6:00-8:50PM

Introduces basic harmonic concepts and typical industrial applications. [0.5 CEU]

Spring of 2003 IEEE Seminar Schedule

Harmonic Filters (503)

David Rice, GE Engineering Services, and Richard Harlow, Phaseco, Inc.

Jan. 28/29, 2003 6:00-8:50PM

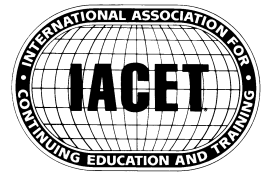
Discusses filter design, implementation, and typical application example concerns. [0.5 CEU]



**IEEE
Houston
Section**

2002-2003

**Continuing
Education
On Demand**



CT / PT Application Seminar (308)

Tony Zhao, Powell Electrical Mfg. Co.

Feb. 11/12, 2003 6:00-8:50PM

Discusses CT and PT ratings, selection criteria, ANSI Std. Ref. and typ. appl. considerations. [0.5 CEU]

Directional Power/Current Relaying & Meters (307)

William Nichols, Siemens Westinghouse Technical Services

Feb. 25/26, 2003 6:00-8:50PM

Reviews typical industrial directional power and directional current relaying applications. Directional metering topics are also included. [0.5 CEU]

Solid-State Starters (504)

Harold Haggarty, Benshaw Inc.

Mar. 11/12, 2003 6:00-8:50PM

Discusses traditional mtr. starting appl. and modern "soft-start" theory, appl. and selection. [0.5 CEU]

Relays and Meters

Communication Systems Integration (112)

Martin Hildreth / Roy Cossé, Powell Elect. Mfg. Co.

Mar. 25/26, 2003 6:00-8:50PM

Reviews modern concepts and reasons for integrating diff. mfg. meters and relays into one communicating system. [0.5 CEU]

Generator 51V Relaying, Standby Generator and UPS Selectivity (316)

Roy Cossé, Powell Electrical Mfg. Co.

Apr. 8/9, 2003 6:00-8:50PM

Reviews MV/LV gen. 51V and stdb. gen. concerns. UPS dist. sys. selectivity is discussed. [0.5 CEU]

Substation Design and Application Fundamentals (312)

Donald Sevcik, Reliant Energy HL&P

April 22/23, 2003 6:00-8:50PM

Reviews theory and appl. design basics. [0.5 CEU]

Guidelines for Applying IEC Standards to Electrical Distribution Systems (801)

Terence Hazel, Schneider Electric France

April 30/ May 1, 2002 6:00-8:50PM

[0.5 CEU]

September 12 COMSOC MEETING

The next meeting of the IEEE Communications Society, Houston Chapter will be held Thursday, September 12th, 2002.

Please RSVP via e-mail to [Lee Gaspard](#) by 12:00 Noon Wednesday, September 11th. (Please include your company name.)

Time and date: 11:30 AM to 1:00 PM on Thursday, September 12th, 2002.

Program: "Bluetooth - Personal Area Networking" (Texas Instruments)

Speaker: Dr. Arefeen Mohammed, Texas Instruments Inc.,

Abstract: Bluetooth is a new technology for building wireless Personal Area Networks. Connect your mobile phone, MP3 player, PDA, headset, and printer together wirelessly.

Location: Shell Information Center, 1500 Old Spanish Trail Houston, TX

Lunch: Lunch may be purchased at the Shell Information Center cafeteria. We'll plan to eat from 11:30 to 12:00 and enjoy the presentation from 12:00 to 12:45.

PLEASE CHECK THE NEW DRIVING DIRECTIONS!

[\(click here for driving directions\)](#)

Please send e-mail to [Lee Gaspard](#) for more information (including driving and parking directions), or to reserve a seat at the meeting.

Date Changed October 8 SECTION MEETING

See the Houston Section web site to conform your reservation.

Title: Bell Telephone Patents, 1874-1884

Abstract: An informal study of some key patents that shaped the telephone system. The presentation is illustrated with drawings from the patents, and enhanced with background information on the outstanding people who invented the foundations of our modern telephone system.

Speaker: Thomas P. O'Brien, P.E.

Since graduating from Texas A&M, Tom O'Brien has worked in aircraft design and manufacturing, data processing, airline reservation systems, business software development, simulator development, electronic commerce, and spacecraft software. He is currently developing software requirements specifications for the Space Shuttle Upgrades project.

Tom earned a BS in EE from Texas A&M in 1966 and an MS in Telecommunications from SMU in 2000. He has been an IEEE member for 41 years, and has been a licensed Professional Engineer in Texas since 1971. He serves as Vice Chairman (and Webmaster) of the Houston Chapter of the IEEE Communications Society (ComSoc).

Tom and his wife Susanne have lived in Taylor Lake Village since 1976. They have two children: Amy Bowles, MD, of Houston, and Paul O'Brien, PhD, of Carson, CA.

Where: HESS Building, 5430 Westheimer at Yorktown

Time: 6:00 - 6:30 PM Social - 6:30 - 7:30 PM Dinner - 7:30 - 8:30 PM Presentations

Cost: Dinner Free for members who register 48 hours prior to the event, \$20.00 for members who do not register 48 hours prior to the event and for non-members; \$5.00 for students **(see the website for more information)**

IEEE-USA NEWS

NEWS from IEEE-USA

1828 L Street, N.W., Suite 1202, Washington, D.C. 20036-5104

Contact: Chris McManes

Marketing Communications/Public Relations Coordinator

Phone: + 1 202 785 0017, ext. 8356

E-Mail: c.mcmanes@ieee.org

Older Engineers Face Longer Unemployment, IEEE-USA Survey Shows

WASHINGTON (27 September 2002) - Older electrical and electronics engineers are out of work longer than their younger peers and cite age as a barrier to re-employment, the 2002 IEEE-USA Unemployment Survey reveals.

For each additional year of age, unemployment duration increases 1.3 weeks. But using three variations of multiple regression estimates and seven control variables, the impact of age was more dramatic. In this case, for each additional year, joblessness rises by three weeks.

Additionally, those reporting age as a barrier to reentering the workforce face longer lengths of unemployment (55 weeks) than those who do not (30 weeks).

Dr. Laura Langbein, a professor of public affairs at The American University in Washington, D.C., analyzed and reported the results. The entire report is available at <http://www.ieeeusa.org/careers/survey/2002results.pdf>.

"Overall, age appears to have a persistent effect on the duration of unemployment," Langbein wrote, "but it cannot be determined from these surveys whether that is attributable to productive differences, price differences, the supply of engineers, age discrimination, or some other factor."

The survey, which IEEE-USA has conducted four times, the last in 1998, was mailed to the 2,955 U.S. IEEE members who reported being unemployed at some time during the 2001-02 membership year. The responses totaled 758 responses, or 26 percent.

The survey also revealed that each additional year of experience helps to reduce unemployment by two weeks. For example, when comparing two engineers of the same age (say 55), one with 30 years experience vs. one with 25, the engineer with more experience has 10 fewer weeks of joblessness. When comparing two engineers, one 55 and one 60, both with 30 years experience, the older engineer can expect to endure 15 more weeks of unemployment than his younger peer. Both examples assume that the engineers are comparable in all other respects, including education.

IEEE-USA is an organizational unit of The Institute of Electrical and Electronics Engineers created in 1973 to promote the careers and public-policy interests of the more than 235,000 electrical, electronics, computer and software engineers who are U.S. members of the IEEE. The IEEE is the world's largest technical professional society. For more information, go to <http://www.ieeeusa.org>.

IEEE Education Partners Program

Canadian company, Omniz Global Knowledge Corporation, has joined the IEEE Education Partners Program.

Available at a 10% discount to IEEE members are six technical courses, referred to as multimedia books, which are presented in a combination of CDROM and print. All six courses were developed by IEEE members Drs Michel Nakhla and Ram Achar, who are faculty in Electrical Engineering at Carleton University.

The current course list centers on signal integrity, with difficulty levels ranging from introductory to highly technical. The multimedia books cover such topics as macromodeling, principles of SPICE based simulation, transient analysis, and Krylov-Subspace Techniques. Each comes with exams to measure learning. The exams are graded and solutions are provided. The CD ROM format allows students to proceed at their own pace.

IEEE Fellow, Professor Nakhla, is one of the leading researchers in the world in the area of high-speed interconnect analysis. IEEE member Dr. Achar has received awards on his work on high-speed circuit and interconnect analysis, including the highly regarded Natural Science & Engineering Research Council doctoral award. They have both been published widely.

To receive the member discount and to read the course syllabi, go to www.ieee.org/EduPartners, look under corporate partners. For further information on this program, contact Sasha Eydlin, s.eydlin@ieee.org.

Lynn Murison

Outreach Coordinator, IEEE Educational Activities

www.ieee.org/organizations/eab/

IEEE USA CAREER ALERT

IEEE CAREER ALERT for 4 September 2002

Your weekly report on jobs, education, management, and the engineering workplace, from the editors of IEEE Spectrum

IN THIS ISSUE:

- 1. Welcome to IEEE GOLD Members**
- 2. EE Unemployment Rises**
- 3. Speaking Out on Unemployment**
- 4. Managing through Crisis**

1. Welcome to IEEE GOLD Members

If you're currently a subscriber to the newsletter What's New @ IEEE for GOLD (Graduates of the Last Decade) and you're wondering why this newsletter has appeared in your e-mail inbox instead, here's what's happened: as of September, the monthly GOLD newsletter has been replaced with the weekly IEEE Career Alert. (You should have received a message by e-mail about the switch.) We'll still try to bring you all the news on engineering careers, education, and professional issues that you're accustomed to getting. And we'll deliver the news directly to you each and every Wednesday. So please read on!

2. EE Unemployment Rises

We don't like to be the bearers of bad news, but the numbers speak for themselves: engineering unemployment in the United States is on the rise. From more experienced workers to recent graduates, engineers are finding it increasingly difficult to locate a haven in this turbulent technology market. Read on at <http://www.spectrum.ieee.org/careers/careerstemplate.jsp?ArticleId=n090102>

3. Speaking out on Unemployment

Congress returns from its summer break today, and the IEEE-USA is urging U.S. engineers to contact their representatives and urge them to look into the growing unemployment they face and what is causing it. To learn more about the appeal, see <http://capwiz.com/ieeeusa/issues/alert/?alertid=435666&type=CO>

4. Managing through Crisis

Any company, any project, or any program can suffer a critical incident. Indeed, skillfully coping with turbulence is one of the hallmarks of good management. So when a serious event occurs, how should an incident be managed to reduce the impact? Read the article, from the IEEE Engineering Management Society's Engineering Management Review, at <http://www.ewh.ieee.org/soc/ems/emr/hunsucker02v30n2.html>

The IEEE Job Site, available exclusively to IEEE members, can help you locate career opportunities easily and confidentially. Just complete a profile of your qualifications and requirements, and you'll be notified via email when a suitable job becomes available. Top employers know that IEEE members are the most qualified electrotechnology and information-technology professionals in the world. Take a few minutes to register with the IEEE Job Site and check out your career options today! <http://www.ieee.org/jobs>

IEEE Career Alert is prepared weekly by the editors of IEEE Spectrum, the flagship magazine of the Institute of Electrical and Electronics Engineers, read by more than 360,000 people worldwide. You'll find IEEE Spectrum's home page at: <http://www.spectrum.ieee.org>

IEEE Career Alert is part of the WHAT'S NEW@IEEE e-mail news service. For more information on subscribing to other WHAT'S NEW newsletters, visit <http://whatsnew.ieee.org/>

IEEE USA CAREER ALERT

IEEE CAREER ALERT for 18 September 2002

*Your weekly report on jobs, education, management,
and the engineering workplace, from the editors of IEEE Spectrum*

IN THIS ISSUE:

1. *ABET Evaluators Sought*
2. *Why Accreditation Matters*
3. *Technical Expertise Is Not Enough*
4. *Engineering Entertainment*

1. ABET Evaluators Sought

The IEEE Educational Activities Board is looking for engineers from industry, government, and academe to serve as program evaluators for accrediting engineering and engineering technology programs at U.S universities. Nominations for the five-year term starting 2003 will be accepted through 31 October 2002. Applications and information are available at <http://www.ieee.org/organizations/eab/apc/ceaa/engapplication.htm> and <http://www.ieee.org/organizations/eab/apc/ctaa/techapplication.htm>

And for a first-hand account of what it's like to be an accreditation evaluator, see <http://www.ieee.org/organizations/eab/apc/news5.htm>

2. Why Accreditation Matters

The process of accreditation has a huge influence on what engineers in training learn, or don't learn. The Accreditation Board for Engineering and Technology (ABET) is the body charged with accrediting U.S. engineering programs. Two years ago, it rolled out its drastically revamped evaluation criteria, Engineering Criteria 2000. This article, from IEEE Spectrum, describes why ABET and the engineering community felt such a change was needed:

<http://www.spectrum.ieee.org/WEBONLY/publicfeature/sep00/abet.html>

3. Technical Expertise Is Not Enough

Managers expect today's engineers to do more than just come up with innovative solutions--in many cases, they also want them to present them to management, other departments, and clients. In other words, being successful requires not just technical know-how but good written and oral communications, marketing, and familiarity with business and financial matters. Read on at <http://www.todaysengineer.org/Aug02/skills2.htm>

4. Engineering Entertainment

For those of you who didn't catch the opening episode of the ABC mystery series Push, Nevada last night, the show features a play-along game that invites viewers to help track down \$1 million that's gone missing. Viewers can hunt for clues on screen, online, and on the street, and the winner gets to keep the \$1 million. A bit gimmicky, to be sure, but it's all part of a new breed of entertainment known as "interactive media." As it happens, two electrical engineers served as the technical brains behind the Hollywood company that created Push. Learn more about them at

<http://www.spectrum.ieee.org/careers/careerstemplate.jsp?ArticleId=p030402>

ANNOUNCEMENT

COMDEX Fall, held from 18-22 November in Las Vegas, Nevada, is the world's most dynamic launch platform for IT innovation. This year, the COMDEX Educational Programs include conferences, full-day tutorials, and IT professional certification. Don't miss this opportunity to advance your career, network with your peers, and get up to date on the most recent developments in information technology. IEEE members save US\$200 on registration by using priority code EEPT and coupon code 972. For details, visit: <http://www.comdex.com/fall/about/index.php?s=register>

Career Alert is prepared weekly by the editors of IEEE Spectrum, the flagship magazine of the Institute of Electrical and Electronics Engineers, read by more than 360,000 people worldwide. You'll find IEEE Spectrum's home page at: <http://www.spectrum.ieee.org>

IEEE USA TODAY

FROM Washington, DC: *IEEE-USA TODAY* September 2002
 YOUR Monthly U.S. IEEE MEMBER E-ZINE on "Building Careers & Shaping Public Policy"
<http://www.ieeeusa.org>

IN THIS ISSUE:

1. IEEE-USA President's Column: Helping the Unemployed Member
 2. Action Alert: IEEE-USA Calls on U.S. IEEE Members to Engage Lawmakers on Unemployment
 3. IEEE-USA Seeks Safeguards Against Misuse of Health Information
 4. Sept. Edition of *IEEE-USA TODAY'S ENGINEER* Webzine Spans Entrepreneurship to Broadband
 5. U.S. IEEE Student Member Concludes Mass Media Fellowship
 6. 'IEEE-USA in the News' Spotlights Career/Policy Media Coverage
- *EXTRA*: 'Voices of Engineering'-- IEEE Members Needed for Radio Program on Engineering Wonders

1. IEEE-USA PRESIDENT'S COLUMN: HELPING THE UNEMPLOYED MEMBER

LeEarl A. Bryant outlines various IEEE-USA initiatives aimed at lowering engineering unemployment, including a one-stop website for addressing all of the organization's employment resources.

Read the IEEE-USA President's Column at <http://www.ieeeusa.org/newspubs/presidentscolumn/bryantsep02.html>.

Go to the one-stop website for employment at <http://www.ieeeusa.org/careers/help/>.

2. ACTION ALERT: IEEE-USA CALLS ON U.S. IEEE MEMBERS TO ENGAGE LAWMAKERS ON UNEMPLOYMENT

In response to rising engineering unemployment, IEEE-USA is calling on U.S. IEEE members to write their U.S. Representatives and Senators in order to educate them on how unemployment affects engineers, and to urge lawmakers to take action.

Go to the Legislative Action Center and make your voice heard at <http://capwiz.com/ieeeusa/issues/alert/?alertid=435666&type=CO>.

3. IEEE-USA SEEKS SAFEGUARDS AGAINST MISUSE OF HEALTH INFORMATION

IEEE-USA supports introducing additional safeguards into currently drafted legislation or tightening current U.S. Department of Health and Human Services privacy regulations to protect against the misuse of genetic and other health information by employers. Go to the news release at <http://ieeeusa.org/releases/2002/082602pr.html>.

4. SEPT. EDITION OF *IEEE-USA TODAY'S ENGINEER* WEBZINE SPANS ENTREPRENEURSHIP TO BROADBAND

Additional articles cover "Setting Yourself Apart With Soft Skills," "Successful *Paid* Consulting," and "Biotechnology: The Key to Sustainable Global Development." Go to the latest Sept. issue at <http://www.todaysengineer.org>.

5. U.S. IEEE STUDENT MEMBER CONCLUDES MASS MEDIA FELLOWSHIP

U.S. IEEE member Rob Barnett, a graduate student studying electrical engineering at Clemson University, concluded his 10-week media fellowship assignment this summer at *Popular Science* with a presentation at the American Association for the Advancement of Science in Washington, D.C.

Go to the news release at <http://ieeeusa.org/releases/2002/090402pr.html>.

6. 'IEEE-USA IN THE NEWS' SPOTLIGHTS CAREER/POLICY MEDIA COVERAGE

Every week, issues IEEE-USA champions for U.S. IEEE members are covered in newspapers, magazines and electronic media worldwide. For the latest IEEE-USA coverage in *ComputerWorld*, Cox Newspapers and *The Minneapolis Star Tribune*, go to <http://ieeeusa.org/newspubs/inthenews.html>.

EXTRA: 'VOICES OF INNOVATION'--IEEE MEMBERS NEEDED FOR RADIO PROGRAM ON ENGINEERING WONDERS

VOICES OF INNOVATION, two-minute spots featuring engineers talking about their innovations, careers and work, are now being aired on local public and commercial radio stations. If you have an idea that could help improve the public's understanding and awareness of engineering, your story could join this exciting new program. To listen to the spots currently being aired and to participate in the American Association of Engineering Societies-sponsored project, go to <http://www.voicesofinnovation.org>.

Pender M. McCarter, APR, Fellow PRSA, MIPRA
 Director, Communications and Public Relations

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IEEE NEWS

NEWMONTHLY FEATURE! EE Brain Teasers by Butch Shadwell

Drexel University Joins IEEE Education Partners Program

2001 IEEE Annual Report

2002 IEEE Annual Election

NEWMONTHLY FEATURE! EE Brain Teasers by Butch Shadwell

How much do you remember from your basic Electrical Engineering courses? Test yourself every month with Butch Shadwell's brain teasers (my teachers never gave such funny word problems!). Watch for the answer in next month's issue. Butch is a long-time IEEE volunteer, currently serving as Chair of the Florida West Coast Section.

Brain Teaser:

Floyd Anemone lived in Denver, Colorado. Growing up in the mile high city was complicated by the fact that Floyd, from his earliest memories, was completely enamored of the sea. His mother's job at the Post Office cafeteria barely kept corn flakes on the table, so the prospects of going to the seashore were remote. Then one morning, as Floyd was grasping the last corn flake from the table top, he noticed a strange ad on the cereal box. There was a contest that would award the lucky winner the birthday party of their dreams.

To make a long story short, Floyd won the prize and elected to have his thirtieth birthday off the Florida coast under 33 feet of water. To decorate the affair the cereal people bought 100 balloons filled with air at sea level. Each balloon had a volume of one cubic foot, making them an impressive array of colorful spheres. When the party began at the sub-surface local it was clear that something had happened to those impressive balloons. Though still spherical, they had shrunken quite a bit. The question for the readers this month is, assuming that the temperature of the air in the balloons was the same as it was at the surface, what is the volume of each balloon now? And for extra credit, what is the change in the balloon's diameter in inches? Also ignore any effects of the elasticity of the rubber envelopes of the balloons..

DREXEL UNIVERSITY JOINS IEEE EDUCATION PARTNERS PROGRAM

Drexel University, Philadelphia's technological university, has become the newest IEEE Education Partner. IEEE members can now continue their life long learning with selected graduate-level, credit courses provided online by Drexel at a 10% discount. Current online programs offered to IEEE members through Drexel e-Learning, the university's online subsidiary, include Masters of Science in Information Science/Systems and Management and Certificate Programs.

Applications, course prerequisites, and systems requirements are detailed at the Drexel-supplied website for IEEE members. You must use your IEEE member number to receive the 10% discount.

Enter through the IEEE Educational Partners, <http://www.ieee.org/EduPartners>, and choose Drexel from the university partners. To learn more about the IEEE Education Partners Program contact Sasha Eydlin, IEEE Educational Activities, s.eydlin@ieee.org.

2001 IEEE ANNUAL REPORT

The 2001 IEEE Annual Report is now available. To conserve costs and achieve a broad, global distribution, the report will be primarily accessible online from the IEEE home page, <http://www.ieee.org>. Print copies will be mailed to the IEEE Board of Directors, major boards and committees, as well as about 4,000 corporate, government and academic leaders around the world. Delegates to the 2002 Sections Congress will receive both a print copy and a CD-ROM.

For more information, contact Helen Horwitz, IEEE Corporate Strategy and Communications, at h.horwitz@ieee.org or +1 732 562 6821.

2002 IEEE ANNUAL ELECTION

The 2002 IEEE Annual Election is underway. Members have already begun to receive their ballots. The balloting period will run from 1 September until noon on 1 November. Only signed ballots that are received in sealed envelopes will be valid and counted in the election. For information contact Angela Wyckoff, IEEE Corporate Activities, telephone +1 732 562 3934; a.wyckoff@ieee.org.

IEEE Education Activities E-Digest

September Educational Activities E-Digest

IEEE EAB Section Professional Development Award Debut
\$30,000 NSF grant for an online Reference Guide on Power and Energy
"Deans Summit II: Fostering Campus Collaborations" 9-12 January 2003

IEEE EAB Section Professional Development Award Debuts

The IEEE Educational Activities Board (EAB) has inaugurated a new award exclusively for Sections and GOLD Affinity Groups. The IEEE EAB Section Professional Development Award was designated to recognize the major contributions that Sections make to their members in the areas of lifelong learning, continuing education, and professional development. It joins the IEEE EAB Employer Professional Development Award in honoring an organization or institution, rather than an individual.

2003 EAB Awards nominations packages are being developed now for the new and following awards:

- IEEE EAB Meritorious Achievement Award in Accreditation Activities*
- IEEE EAB Meritorious Achievement Award in Continuing Education*
- IEEE EAB Major Educational Innovation Award*
- IEEE EAB Pre-College Educator Award*
- IEEE EAB Meritorious Service Citation*
- IEEE EAB Employer Professional Development Award*

Please check the awards pages starting at www.ieee.org/eab/awards for full descriptions of the awards plus honorarium details, if applicable. For more information contact Rae Toscano by e-mail, rtoscano@ieee.org

\$30,000 NSF grant for an online Reference Guide on Power and Energy

A \$30,000 National Science Foundation grant has been awarded to IEEE Educational Activities as seed money for an introductory online Reference Guide on Power and Energy. The new Guide will be developed by the IEEE Virtual Community on Power and Energy and be posted at its website, www.ieee.org/virtualcommunities/power.htm. It will be suitable for both a non-technical and technical audience, providing information, research, and curricula in the power and energy fields.

Initially focusing on the non-technical audience, the Guide will stress the interdisciplinary nature of power and energy. Information on how the fields interact with law, economics, and other fields of engineering will be included. Additionally, it will enumerate a set of learning objectives indicating what the technologically literate person should know about these fields.

The Project Team designing the Guide will be drawn from the present members of the IEEE Virtual Community, and will work with volunteers through IEEE Technical Societies, including Power Engineering, Industry Application, Industrial Electronics, Communications, Computing, and Neural Networks. It will draw from both university and non-university sources for contributions.

The pilot of IEEE Virtual Community on Power and Energy was introduced Spring 2002. Hallmarks of the service are the ability for members to consult world-wide with colleagues and receiving current and cutting edge information in their fields.

For more information on the project or on the IEEE Virtual Community on Power and Energy, contact Jill Bagley, Educational Activities New Products Manager, j.bagley@ieee.org.

"Deans Summit II: Fostering Campus Collaborations" 9-12 January 2003

The IEEE Educational Activities Board (EAB) presents the "Deans Summit II: Fostering Campus Collaborations." A follow up to the successful 2001 EAB Conference: "Taking the Lead: Deans Summit on Education for a Technological World," Fostering Campus Collaborations will be held on 9-12 January 2003 in Miami, Florida, USA at the Biscayne Bay Marriott Hotel & Marina. The three day conference will combine parallel sessions with break out groups on three basic tracks: teacher preparation, community outreach to pre-college and undergraduate levels, and pedagogical approaches for engineering education.

IEEE Education Activities E-Digest-Con't

Deans of Education and Engineering are logical partners to address the level of understanding of science, technology, engineering and mathematics. The growing complexity and influence of technology has made learning the fundamentals of engineering an urgent public matter.

Fostering Campus Collaborations is open to any college-level teacher preparation or engineering educator, of any field, who wants to contribute their best practices or learn more about collaborations to further technological literacy. Sessions will demonstrate and initiate discussions on the benefits of pedagogical collaborations; engineering standards in pre-college curricula; potential funding sources and effective program implementation strategies.

Registration, submission guidelines and requirements for presentations, and applications are online at www.ieee.org/eab/fcc. Register before 15 October 2002 to receive the Conference discount. For more information, contact Douglas Gorham, Ed.D, Educational Activities Pre-College Education Manager, at phone +1 941 753 4758 or d.g.gorham@ieee.org.

IEEE CAREER ALERT

IEEE CAREER ALERT for 25 September 2002

Your weekly report on jobs, education, management, and the engineering workplace, from the editors of IEEE Spectrum

IN THIS ISSUE:

- 1. Why Consult?*
- 2. The Nuts and Bolts of Consulting*
- 3. Networking for Consultants*
- 4. How Much Do IT Consultants Charge?*

1. Why Consult?

For the working professional, consulting can fill a career completely, expand opportunities, and actually improve job security. For the organization, bringing in independent contractors can help balance staff and workload. Here's what one seasoned consultant has to say about his chosen career path's rewards and responsibilities:

<http://www.ewh.ieee.org/soc/ems/emr/archives/issues2002/oxer02v30n1.html>

2. The Nuts and Bolts of Consulting

Some 7 percent of IEEE members consult full-time, and many more do so part-time. As veteran consultants know well, but rookies may not, one has to be vigilant to avoid being taken advantage of by clients and stay at the top of one's game.

Read on at: <http://www.todaysengineer.org/Sept02/consulting4.htm>

[Note: this is the last of a four-part series on consulting; the other three parts are linked to the online article.]

3. Networking for Consultants

For the self-employed engineer, networking is especially important. The IEEE-USA fosters local networks (and we don't mean LANs) through its Alliance of IEEE Consultants' Networks Coordinating Committee. See what resources they have to offer at: <http://www.ieeeusa.org/business/aicn.menu.html>

4. How Much Do IT Consultants Charge?

An on-line survey, sponsored by the IEEE-USA, is attempting to answer that question. Back in 1998, the last time such a poll was taken, respondents reported hourly rates ranging from US \$35 to \$250, with an average of \$97.80. Individual responses to this year's survey will be kept confidential, and final results will be posted on the IEEE-USA Web site.

To complete the 17-question survey, visit

<http://www.ieeeusa.org/business/consultants/directory/2002feesurvey.html>

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The **Pocket Scope** is the newsletter of the Houston Section of the Institute of Electrical and Electronics Engineer (IEEE). The Houston Section address is: IEEE Houston Section, P.O. Box 460014, Houston, Texas 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 field in the greater Houston area.

Advertising rates are listed on the IEEE Houston Section website and include publishing in The Pocket Scope, ad on the website, and within the monthly e-mail update.

IEEE members make change of address notices via the IEEE website: www.ieee.org.

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