



THE POCKET SCOPE



The Institute of Electrical and Electronics Engineers, Inc.

Volume 55, Number 5

January 2005

SCOPE NOTES

January Houston Section News

here: ESS (Houston Engineering and Scientific Society)
430 Westheimer@Yorktown

hen: Thursday, February 24, 2005
6:00 - 6:30 p.m. Social
6:30 - 7:30 p.m. Dinner
7:30 - 8:30 p.m. Speaker

ost: 10.00 - IEEE Members with 48-hour advance reservations.
20.00 - non-members
5.00 - students
all (713) 207-IEEE to make your reservations.

See Page 3 for the Continuing Education Schedule!

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

IEEE Houston Section
P.O. Box
460443
Houston, Texas
770568014



The Chairman's Message

Scott Ballew

The Chairman's Message

With the start of the new year, I would like to pass on best wishes for a most prosperous 2005 to all of the IEEE Houston Section membership on behalf of the 2005 Executive Committee. And speaking of the 2005 IEEE Houston Section Executive Committee, allow me to introduce them to you as follows:

- Past Chair - Mr. Gil Dolor
- Chairman - Mr. Scott Ballew
- Vice Chair - Mr. Charles Benard
- Secretary - Mr. Polo Guiterez
- Director - Mr. Shannon Quadros
- Treasurer - Mr. Donald Dunn

This slate of 2005 EXCOM officers were successfully voted in by the Houston Section membership in attendance during the December 2nd, 2004 Houston Section meeting held at the H.E.S.S. club. You will notice that there is a new position listed for 2005, and it is titled "Director". This new position will be filled for the first year by Mr. Shannon Quadros. Please join me in welcoming Shannon to the EXCOM in his first officer assignment, as well as being the first ever to hold this new Director position in the Houston Section. The Director position was created by the 2004 EXCOM, to start in the officer rotation in January 2005, as a result of reviewing what some of the other U.S. IEEE Sections have been implementing recently. Many IEEE Sections have realized the criticality of the Treasurer position as it relates to management of the Sections finances, the responsibility to vendors for timely payments, and the complexities involved in transitioning the financial responsibilities from one individual to the next, year after year. As a result, stability is established for the Treasurer's position by taking it out from the normal officer rotation and having it occupied by someone who is willing to make a service commitment of 2 or more years to the position. The Director position is included now in the officer rotation and is the initial position for an individual to come into the EXCOM and learn the officer responsibilities and to help out the other EXCOM members where needed in a "pinch-hitter" style role. Mr. Donald Dunn has graciously volunteered to be the Treasurer

CONTINUED ON PAGE 2

Chair Message-CONT

for 2005 and 2006. Donald is our current Region 5 South Area Chair and has served numerous years on the Houston EXCOM as Chair, and specifically two full years previously in the Treasurer's role. Donald brings much to this position, and we are glad to have his continued active support and involvement with the IEEE Houston Section.

I would also like to take this opportunity to express my appreciation to the IEEE Houston Section membership for the opportunity to serve as Chairman for 2005. I look forward to what this year has to offer and am very excited the year ahead. As you are all aware, the IEEE is a volunteer organization. The primary success of any volunteer organization is bringing in new volunteers. Please take the time to consider volunteering in some capacity. You will find your time is well spent. It is a great way to network with professionals within the electrical engineering community. Join us at one of the upcoming EXCOM or SECTION meetings; we look forward to meeting you. If you are interested, please contact an EXCOM member. The Houston Section is currently looking for volunteers to take the lead in the following areas: 1) PACE - Professional Activities; 2) Membership; and 3) Consultants Network, just to name a few.

In closing, I wish to extend a sincere thank you to Mr. Gil Dolor for his leadership as 2004 IEEE Houston Section Chairman and for his role in helping me for these last three years plan and coordinate the annual IEEE Houston Section Scholarship Golf Tournament. This annual event has enabled the Houston Section to add significant value to our membership by awarding a total of twelve \$1,000 scholarships over the last three years to some very deserving young college students in pursuit of their degrees. This year, Gil will continue his active involvement and support of the IEEE Houston Section in the "Past Chair" role and he has also agreed to take the primary role as Chair of the Scholarship Committee, taking the lead in organizing this year's golf tournament. I look forward to what Gil will plan for this year's event, as I know it will be better than ever.

Scott Ballew
Houston Section Chair

CED Seminar News

CED Houston announces the following revised registration fee schedule for its new 2004-2005 technical seminars.

The registration fee for IEEE members is \$70. The fee for non-members is \$140. The registration fee for student IEEE members will be \$50

Seminar registration and payment must be received the Friday before the seminar. Seminar registration closes at 5:00 p.m. the Friday before the seminar. No exceptions.

Pre-registration with "payment at the door" is acceptable under certain circumstances. Anyone promising to pay at the door and failing to show up will be debited and invoiced for the full amount of the registration fee.

IEEE CONTINUING EDUCATION ON DEMAND

2004-2005 REGISTRATION FORM

Name:
 Company:
 Mailing Address:
 City/State:
 Zip:
 Email:
 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

PAT ROGERS
 SOUTHWEST POWER
 425 BLUEBERRY STREET
 HOUSTON, TX 77018
progers@swpower.com

Registration receipts will be available upon request **at the seminars**.
 For a cancellation refund, telephone Pat Rogers by the Friday before the seminar at:

Phone: 713.696.9922
 Fax: 713.696.9983
 Email: progers@swpower.com

IEEE Continuing Education on Demand Completion Certificate with Continuing Education Units (CEUs) is provided after receipt of both nightly questionnaires and seminar evaluation sheets.

Please direct seminar questions to Paul Barrett at 713.598.0790

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

<http://www.ieee-houston.org>

IEEE CONTINUING EDUCATION ON DEMAND

The purpose of IEEE Houston Section Continuing Education on Demand is to provide modern 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.

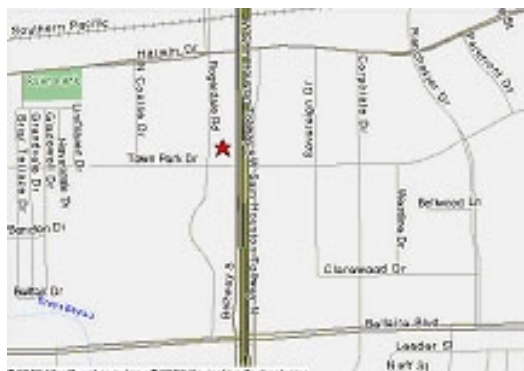
Instructors are application engineers, manufacturing specialists and expert consultants who provide a blend of diverse engineering perspectives.

The cost of each seminar is \$70.00 for IEEE members. The **check must be received the Friday before the Seminar start date**. The cost for non-IEEE members is \$140.00. The cost for student members is \$50.00.

Registration closes at 5:00pm the Friday before each seminar.

The following 2004-2005 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:
Jacobs Engineering
 5995 Rogerdale Road
 Houston, TX. 77072



Seminar Title	C code	Date	Amount
Arc Flash / Arc Resistance	705	Oct. 12/13	\$
Protective Relay 1 Beckwith	311	Oct. 26/27	\$
IEC Electrical Equipment	802	Nov. 9/ 10	\$
Protective Relay 2 Multilin	312	Feb. 1/2	\$
IEC - NEC Area Classification	803	Feb. 15/16	\$
Protective Relay 3 Basler	313	Mar. 1/2	\$
Field Testing of Large Power Transformers	904	Mar. 15/16	\$
Protective Relay 4 SEL	314	Mar. 29/30	\$
National Electric Code	920	Apr. 12/13	\$
Advanced MV Switchgear and Breaker Stds	307	Apr. 26/27	\$
Total Paid:			\$

Enter amount for each seminar:

IEEE member registration: \$ 70.00
 Non-member registration: \$140.00
 Student member registration: \$ 50.00

Fall of 2004 IEEE Seminar Schedule

Arc Flash / Arc Resistance (705)

James Bowen, Powell Electric Mfg. Co.
 Oct. 12/13, 2004 6:00-8:50PM
 Review of fundamentals and design theories. Post event forensic observations and lessons learned.
 [0.5 CEU]

Protective Relay 1 - Beckwith (311)

Wayne Hartmann, Beckwith Electric Co.
 Oct. 26/27, 2004 6:00-8:50PM
 Review of Beckwith relay design fundamentals and application considerations
 [0.5 CEU]

IEC Electrical Equipment (802)

Tom Malone, Areva T&D Corp.
 Nov. 9/10, 2004 6:00-8:50PM
 Reviews IEC guidelines and standards for electrical distribution equipment. Presentation will focus on power transformers and switchgear.
 [0.5 CEU]

Spring of 2005 IEEE Seminar Schedule

Protective Relay 2 - GE Multilin (312)

Jackov Viko, GE Multilin -Canada
 Feb. 1/2, 2005 6:00-8:50PM
 Review of GE Multilin Relay design fundamentals and application considerations. [0.5 CEU]

IEC / NEC Area Classification (803)

Bob Johnson, Source IEC
 Feb. 15/16, 2005 6:00-8:50PM
 A detailed presentation on IEC's approach to hazardous area classifications and related international standards. [0.5 CEU]



IEEE

IEEE Houston Section

2004-2005

Continuing Education On Demand



Protective Relay 3 - Basler (313)

Gerald Dalke, Basler Electric Co.
 Mar. 1/2, 2005 6:00-8:50PM
 Review of Basler relay design fundamentals and application considerations. [0.5 CEU]

Field Testing of Large Power Transformers (904)

Randy Slaybaugh, Substation Services, Inc.
 Mar. 15/16, 2005 6:00-8:50PM
 A detailed presentation on field testing techniques and considerations for large power transformers. [0.5 CEU]

Protective Relay 4 - SEL (314)

David Costello, SEL Inc.
 Mar. 29/30, 2005 6:00-8:50PM
 Review of SEL relay design fundamentals, set-up, programming and application considerations.
 [0.5 CEU]

National Electric Code (920)

Eddie Guidry, Fluor Corp.
 April. 12/13, 2005 6:00-8:50PM
 Review and update on current NEC. Lecture will focus on design issues and application considerations.
 [0.5 CEU]

Advanced MV Switchgear and Breaker Stds. (310)

James Bowen, Powell Electric Mfg. Co.
 Apr. 26/27, 2005 6:00-8:50PM
 Reviews advanced theories and application considerations related to MV Swgr and Ckt Bkr design.
 [0.5 CEU]

New IEEE Fellows!

Congratulations on Recent Fellow Member Upgrades from the Houston Section!

John W. Clark

Rice University
Houston, TX, USA

for contributions to modeling in electrophysiology, and cardiopulmonary systems.

Willis K. King

University of Houston
Houston, Texas, USA

for contributions to computer science and engineering education.

Cam Nguyen

National Science Foundation
College Station, TX, USA

for contributions to microwave integrated circuits and systems

Bjarne Stroustrup

Texas A&M University
College Station, TX, USA

for contributions to the creation of the C++ programming language and its applications.

The grade of Fellow first appeared in the AIEE constitution of 1912. In that year, the AIEE revised its membership structure and established the grade of Fellow for those engineers who had demonstrated outstanding proficiency and had achieved distinction in their profession. Potential Fellows had to be at least thirty-two years of age, with a minimum of ten years experience. When the IRE established its Fellow grade in 1914, the requirements were clearly modeled on those of the AIEE. Much of the wording in the relevant sections of the IRE constitution is identical to the corresponding wording in the AIEE constitution.

Sensors for Industry Conference

Subject: Sensors for Industry Conference, Training, and Exhibition – 8-10 February 2005 - Houston, Texas

Sponsored by the IEEE and the ISA.

The attached flyer has all pertinent information or visit the following website. www.siconference.org

Time and date: Monday, 7 February Training Seminars from 8-4pm. Tuesday & Wednesday 8-9 February Conference from 8-5pm. Thursday, 10 February Conference from 8-2pm.

Where: Houston Hobby Airport Marriott, 9100 Gulf Freeway, Houston, TX, 77017 USA

New Senior Members

Congratulations to the recently elected Senior Members from the Houston Section (November). For a complete list of the new Senior Members see the attached link.

www.ieee.org/organizations/rab/md/smupdates.html

Naomi Halas

Yong-Kyu Jung

Dmitri Litvinov

Looking for Senior Member Nominations

READ THIS SECTION TO BECOME A SENIOR MEMBER IN THE IEEE.

A goal of our Region is to sponsor as many Senior Members as possible and I am asking your help. The IEEE criteria for Senior Member status is 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.) 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. If your are retired and have met the criteria at one time lets get you nominated. Section meetings are the best networking tool to achieve Senior membership.

As an alternative process, you can direct the prospective Senior Member to one of the Houston Section Excom Members. We have a list of several Fellows and Senior Members which we can use for references. The Section will nominate all those qualified who provide a resume and significant performance vita.

Senior Membership in IEEE promotes the value of membership and enhances the status of the member. The is an achievement award lets honor our deserving members.

IEEE Houston Section Officer

EXECUTIVE OFFICERS FOR 2005

The following Houston Section members will serve as Executive Officers during the year 2005

Past Chairman - Gilroy Dolor
Chairman - Scott Ballew
Vice-Chairman - Charles Benard
Secretary - Polo Gutierrez
Director - Shannon Quadros
Treasurer - Donald Dunn

These members were elected at the December 2, 2003, IEEE Houston Section Meeting.

The members of the Nominations Committee were: Donald Dunn, Justo Benitez and Dwayne Lowry.

IEEE Houston Section CED Seminar Update

New CED Seminars for 2005 Kickoff Feb 1st

IEEE CED Houston announces that it's Spring schedule of seminars begins **Feb 1-2** with Protective Relay 2 – GE Multilin. Jakov Vico of GE Multilin-Canada will review solid state protective relay design fundamentals and application considerations for challenging industrial applications. Presentation focus will be on the UR and SR family of relays. **Feb 15-16** Bob Johnson of Source IEC will present a much anticipated lecture on IEC Hazardous Area Classifications and related international standards.

Seating is limited. Make your reservations early. Questions related to the seminars? Contact Paul Barrett
(713) 598-0790

IEEE USA President's Message

Gerard A. Alphonse
2005 IEEE-USA President
President's Column, January 2005

Greetings to all. It is a great honor for me to have the opportunity to serve you as 2005 IEEE-USA president. I am pleased that we have a dedicated group of volunteers serving on the IEEE-USA Board of Directors, its Operating Committee, and the 20-plus committees under the four IEEE-USA vice presidents, as well as a talented and dedicated staff to carry out our programs. We hope to implement some outstanding programs this year.

Over the past several years, we have witnessed worldwide workforce shifts due to the pressures of globalization. Technical workforce issues, offshoring and guest worker visa abuses remain difficult problems. We seek a balance between the need of U.S. workers and engineers to preserve their jobs, and the need of industry to access the talent pool necessary to sustain economic growth. We seek fair treatment for H-1B visa holders, while also seeking to prevent employer abuses of the H-1B and L-1 programs.

We plan to gather major stakeholders from government, industry and academia, and technical workers to look at innovation and offshoring in an effort to discover equitable solutions that satisfy the needs of all parties. Such solutions could include increased R&D to maintain the U.S. technological lead, and incentives for companies that reinvest in their U.S. operations and workforce.

A recent Boeing Co. paper, "Ensuring Workforce Skills of the Future: The Birth to Work Pipeline," perhaps best summarized the challenge offshoring presents to the United States: "As globalization drives businesses to create relationships that take advantage of human and capital resources without respect to borders, how will individual nations ensure their economic stability, national defense, and standard of living for their own citizens?"

We hope our innovation and offshoring forum can help to answer this question. To ensure the forum's success, I have appointed a steering committee that has already begun to develop plans and make contacts with key members of Congress.

I want to promote a stronger relationship between IEEE-USA and the IEEE Regions and Sections outside the United States. For more than 30 years, IEEE-USA has developed programs to serve the professional needs of the IEEE's U.S. members. These programs are numerous and include services such as salary surveys, job search programs, career activities and educational and training programs, as well as programs to promote and support legislation for the benefit of society. Many of these services are generic to engineering communities everywhere in the world. Last year we initiated efforts to share our professional activities know-how with the IEEE worldwide. I intend to continue this outreach in 2005 in the hope that all IEEE members will benefit.

The IEEE Sections Congress will bring IEEE delegates from all over the world to Tampa, Fla., in October. We are working with Sections Congress planners on sessions and speakers in which delegates can discover parts of our programs they can model and adopt.

At the first IEEE-USA Operating Committee meeting this month, we plan to refine our high-priority activities for the year, including updating our strategic plan to align it with the IEEE's strategic goals.

IEEE-USA will continue to be your voice in Washington on career and technology policy issues, lobbying Congress to protect U.S. innovation and cyber-security, and providing federal lawmakers and Cabinet departments with advice and guidance. We will also continue our Congressional Advocacy Recruitment Effort (CARE) to facilitate your communication with your state representatives and those on Capitol Hill.

To learn more about what IEEE-USA is doing for you, please visit our Web site (www.ieeeusa.org), and don't hesitate to share your thoughts with me at galphonse1@comcast.net

IEEE USA News

NEWS from IEEE-USA, 1828 L Street, N.W., Suite 1202, Washington, D.C.
20036-5104

IEEE-USA PROVIDES \$50,000 TO SUPPORT ENGINEERING PUBLIC AWARENESS

WASHINGTON (30 December 2004) — Three programs designed to promote public awareness of engineers and engineering received \$50,000 from the IEEE-USA Board of Directors at its last meeting of the year in San Antonio. The programs appeal to a variety of audiences using targeted media: special events (for youngsters); movies (for youngsters and young adults); and television news (for adults and the public-at-large). On 17 November, the Board also supported in principle the IEEE meritbadge program “to provide a global non-discriminatory precollege technology education program for boys and girls.”

As part of the \$50,000 allotment, the IEEE-USA Board of Directors allocated \$30,000 to support two Engineers Week 2005 events including continuation of the Family Day activity to be held on Saturday, 19 February, at the National Building Museum in Washington, D.C. The hands-on opportunity helps youngsters appreciate how things work and grasp fundamental engineering principles. In 1993, with the EWeek Committee, the IEEE launched the first EWeek Family Night at Intelsat.

In 2004, IEEE-USA and BE&K provided the bulk of funding to continue Family Day, when the IEEE led EWeek with Fluor Corp. More than 8,500 youngsters and adults broke the previous record for attendance at any event at the Building Museum. Youngsters interacted with Washington-area engineers to build towers, compete in a robot competition, explore a model of the Mars Rover, and meet PBS’ “Zoom Into Engineering” cast. The EWeek Committee is working with engineering society volunteers in Washington to assume financial and organizational responsibility for Family Day as soon as 2006.

Also in support of EWeek 2005 (20-26 February), IEEE-USA underwrote the preparation of animated slides to promote “Introduce a Girl to Engineering Day.” The slides will be shown in 157 Regal Cinema theatres in eight major cities prior to and including Engineers Week: Los Angeles/Long Beach 26; San Francisco/Hacienda Crossings; New York/Union Square; Atlanta/Hollywood 24; Philadelphia/King of Prussia; Washington/Gallery Place Stadium 14; Chicago/Lincolnshire; Dallas/Fossil Creek; and Boston/Bellingham.

EWeek 2005 “Introduce a Girl to Engineering Day,” now in its fifth year, is scheduled for Thursday, 24 February. The campaign encourage engineers, particularly women, to make the world of engineering “come alive” for girls. Since its inception, an estimated one-million girls have experienced engineering firsthand each year. IEEE-USA is also lending its support to a planned United Nations activity in support of EWeek 2005 Girl Day, having spearheaded the first such activity with EWeek in 2004.

In addition, the Board provided \$20,000 for IEEE-USA-supported engineering features in American Institute of Physics syndicated news feeds for local news programs in the top 108 U.S. television markets. The “Discoveries and Breakthroughs” news service delivers twelve 90-second broadcasts with two audio tracks each month to the subscribing stations. IEEE-USA involvement will ensure that more engineering stories are included. An IEEE-USA staff member is now participating in weekly editorial planning teleconferences to provide leads to IEEE experts on IEEE technologies.

During 2004, “Discoveries” provided a realistic image of how science, technology, engineering and math professionals actively work to contribute to a better quality of life. News stories have covered improved technology that brings health benefits (38%), new technologies that facilitate daily life (19%), better medical procedures (12%), improved forecasting and air quality (12%), and answers to questions that we are curious about (11%).

IEEE-USA is an organizational unit of the IEEE. It was created in 1973 to advance the public good and promote the careers and public-policy interests of the more than 225,000 technology professionals 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 Career Alert

IEEE CAREER ALERT for 5 Jan 2005

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

IN THIS ISSUE:

1. EE Job Market Brightens
2. Ireland Thinks Big
3. Better Jobs Through Blogging
4. The Role of Computer Science

1. EE Job Market Brightens

The good news is that the engineering job market is coming back from the depths of the tech wreck, particularly in certain areas such as wireless chip design, electronic design automation, military and security technologies, and emerging areas like nanotechnology. The bad news? Even as employers add staff, they are being extra cautious, thoroughly vetting each job applicant before making an offer. Read on at <http://www.spectrum.ieee.org/careers/careerstemplate.jsp?ArticleId=n010105>>

2. Ireland's Big Tech Plans

According to a recent article from New Scientist, Ireland finally appears to be serious about the industries of the the 21st century — namely, information technology and biotechnology. Among other things it's created five Centres for Science, Engineering and Technology funded by Science Foundation Ireland, which is investing 646 million euros in the two flagship areas. Read on at <http://www.newscientistjobs.com/insider/article.action?article.id=insider125&focusId=ireland>>

3. Better Jobs Through Blogging

Can you blog your way into a job? Maybe so. The Web site Blogger-Jobs.com is designed to help bloggers find gainful employment in the high-tech sector. Created by veteran weblogger Jeremy Wright and Jason Davis, owner of recruiting.com, the site is proving to be a hit for those seeking employment and those seeking employees. Go to http://www.recruiting.com/blogger_jobs/>

4. The Role of Computer Science

Computer science has an identity crisis, says Simone Santini, a project researcher at the University of California, San Diego. In the December issue of IEEE Computer, Santini writes that this crisis "threatens to turn [computer science] into just another facet of industrial software development." The influence of industry affects both research and education in computer science, and "has caused many to question the role computing science should play and whether it will still belong to the computing profession." Read on at <http://www.computer.org/computer/homepage/1204/profession/index.htm>>

+++++ANNOUNCEMENT+++++

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. IEEE Job Site was named one of the top online recruitment sites by Weddle's Guide to Employment Web Sites. And 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-USA Needs Help!

IEEE-USA Needs Help!

Early this year, Congress will begin debating legislation that could profoundly effect American engineering professionals.

We Need IEEE Members to Come to Washington on March 8th and 9th to Help Us Defend Your Profession!

IEEE engineers face an unprecedented challenge, and an equal opportunity, this year. Done right, pending legislation could strengthen America's long-term competitiveness and prosperity. Done wrong, these proposed reforms could undermine job opportunities and retirement security for many American professionals, including engineers and scientists. It all depends on what Congress decides to do.

Among the many important issues that Congress will debate this year the most important for engineers include proposals to:

- Expand the country's temporary work visa program. Although it will target low-skill workers, this proposal could substantially increase the number of temporary visas available for foreign professionals.
- Partially privatize Social Security and strengthen the nation's defined pension system.
- Change the processing of visas international students need to study in the U.S. Some proposals would make the student admissions process more restrictive. Others will expedite student admissions.
- Make it easier foreign engineers and scientists to permanent residents of the U.S.

IEEE-USA will be working aggressively to protect the interests of IEEE members, but we can't do it alone. We need help from individual IEEE members who are concerned about the future of their profession.

On the afternoon of March 8th, 2005 we invite all concerned engineers to meet us on Capitol Hill for an intensive training session on key professional careers issues. Then on March 9th, you will visit with your legislators to discuss the state of engineering in America and practical ways Congress can improve it.

All IEEE members in Regions 1 - 6 are encouraged to participate, including students and retired engineers. No experience is necessary. All you need is a willingness to try to make the country better. IEEE-USA will provide you with background on pending legislation and tips on holding successful meetings with members of Congress.

IEEE-USA held a very successful similar event last year. Only two of the participants had ever met a lawmaker before, yet all were able to successfully communicate personal concerns and practical recommendations to their legislators.

More information on the 2005 IEEE-USA Careers Fly-In, including how to register, can be found here: www.ieeeusa.org/policy/Careerflyin. Limited support for a few IEEE members from key legislative districts will also be available.

Questions? Contact Vin O'Neil or Russ Harrison at (202) 785-0017 or e-mail Russ at r.t.harrison@ieee.org.

IEEE USA Today's Engineer

From Washington, D.C.: IEEE-USA TODAY'S ENGINEER E-MAIL UPDATE for 7 JANUARY 2005
Your Monthly U.S. IEEE Member E-Mail Update on "Building Careers & Shaping Public Policy" <http://www.ieeeusa.org/>

IN THIS ISSUE:

1. Latest *IEEE-USA TODAY'S ENGINEER* Webzine Covers Conquering Change, Managing Conflict, Ethics in Energy Distribution, Opening World Service Markets, the X-Prize, Joining the IEEE before Joining the Workforce
2. Salary Survey Reveals Decline in Technical Professionals' Incomes
3. IEEE-USA Urges "Safe-Servicing" of Hubble Space Telescope for Humankind
4. IEEE-USA President Talks about Challenges Ahead for U.S. IEEE Members
5. IEEE-USA Supports Collaborative Engineering Awareness Projects
6. EWEK "Introduce a Girl to Engineering" Goes to the Movies

1. LATEST *IEEE-USA TODAY'S ENGINEER* WEBZINE COVERS CONQUERING CHANGE, MANAGING CONFLICT, ETHICS IN ENERGY DISTRIBUTION, OPENING WORLD SERVICE MARKETS, THE X-PRIZE, JOINING THE IEEE BEFORE JOINING THE WORKFORCE

Also, catch an "Engineering in Pop Culture" feature on "The Far-Reaching Effects of Global Positioning"; a "Capitol Shavings" column on "Being an Informed Citizen;" and a "World Bytes" column on "World Population Projections." Read the January 2005 edition of IEEE-USA TODAY'S ENGINEER online at: <<http://www.todaysengineer.org/>>.

2. SALARY SURVEY REVEALS DECLINE IN TECHNICAL PROFESSIONALS' INCOMES

Median income for electrotechnology and information technology professionals declined for the first time in 31 years, according to the latest IEEE-USA Salary & Fringe Benefit Survey. Median incomes from primary sources — base pay plus any self-employment income, commissions, or bonuses — for U.S. IEEE members working full-time in their area of professional competence declined 1.49 percent from 2002 to 2003. For more information, read the news release at: <<http://www.ieeeusa.org/communications/releases/2004/122204pr.asp>>.

3. IEEE-USA URGES "SAFE SERVICING" OF HUBBLE SPACE TELESCOPE FOR HUMANKIND

NASA should "strive to develop procedures, technology and equipment that would allow the safe servicing of the Hubble Space Telescope, including the possible use of tele-operated robots," according to an IEEE-USA position adopted by its Board of Directors at its last meeting in 2004. To read the news release, go to: <<http://www.ieeeusa.org/communications/releases/2004/123004pr-hubble.asp>>.

To read the position statement, go to:

<<http://www.ieeeusa.org/policy/positions/hubble.asp>>.

4. IEEE-USA President Talks about Challenges Ahead for U.S. IEEE Members

In his first column as 2005 IEEE-USA President, Gerard Alphonse looks ahead at some of the challenges that lie ahead for IEEE-USA and U.S. IEEE members. Read the President's column at: <<http://www.ieeeusa.org/communications/presidentscolumn/Alphonse/alphonsejan05.html>>.

5. IEEE-USA SUPPORTS COLLABORATIVE ENGINEERING AWARENESS PROJECTS

Three ongoing programs designed to promote public awareness of engineers and engineering received \$50,000 in funding from IEEE-USA at the end of 2004. The programs appeal to a variety of audiences using targeted media: special events (for youngsters); movies (for youngsters and young adults); and television news (for adults and the public-at-large).

For more information, read the news release at: <<http://www.ieeeusa.org/communications/releases/2004/123004pr.asp>>.

6. EWEK "INTRODUCE A GIRL TO ENGINEERING" GOES TO THE MOVIES

Showing in January and February at a theater near you: movie teasers featuring a "Girl Day" visual touting Engineers Week's "Introduce a Girl to Engineering Day," slated for 24 February during EWeek. For more information, go to: <http://www.eweek.org/site/News/Eweek/girlsday_mov.shtml>.

WEB: <http://www.ieeeusa.org/>

IEEE Pre-College Education Program

IEEE Organizing Global Pre-College Technology Education Program

Continuing in its tradition of innovation, IEEE is taking the lead in developing a new non-discriminatory global pre-college technology education program. The program titled, emeritbadges.org, will be directed globally towards pre-college boys and girls.

[Emeritbadges.org](http://emeritbadges.org) has developed hands-on electricity and electronics instructional material based on the Boy Scouts merit badge requirements. Instructional material for computer education is being developed. Any student, boy or girl can use the program to enhance technical literacy and learn more about viable engineering and other technical career options.

Emeritbadges.org Project Director Ralph W. Russell, II from the IEEE Richmond, VA Section said that this non-discriminatory program would be promoted globally through IEEE and youth programs such as World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts. The next use of the new global pre-college electronics education material and hands-on kit will be at the 2005 National Scout Jamboree in Caroline County, VA, USA. Over 35,000 scouts will attend the Jamboree from the USA and several other countries.

Project leaders have started discussions with national and regional Girl Scout leaders to develop a method of incorporating the emeritbadges.org program into the Girl Scout program. The next step will be to start discussions with the global World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts.

The 2005 Jamboree will be held at Fort A. P. Hill in Caroline, Virginia. The Jamboree will start on Monday, 25 July 2002 and end on Wednesday, 3 August 2005. Hundreds of volunteers that can serve as Assistant Instructors at the Jamboree Electronics Merit Badge booth for at least two days are needed. Additional project and volunteer information can be found at <http://www.emeritbadges.org>.

IEEE NEWS

Here's your report on news around the IEEE, from the editors of The Institute. The most current version of The Institute can always be found at <http://www.ieee.org/theinstitute>

IN THIS ISSUE:

1. Sections Reach Out to Prospective Engineers During EWeek
2. The Fellows Class of 2005
3. Marketplace of Ideas: China Takes a Chip Off Big Blue
4. For Students, Scholarship Money for the Taking
5. New Membership Grades for Students
6. Attention, Women in Engineering: Canada Calling
7. Thoughts for Victims of Tsunami Tragedy
8. IEEE Members Receive Discount at the Embedded Systems Conference

1. Sections Reach Out to Prospective Engineers During EWeek

Just how interesting the engineering field can be is the message a number of IEEE sections will deliver to students across the United States during National Engineers Week. In New York, for example, the Mid-Hudson Section is sponsoring an engineering day on 23 February at the State University of New York, at New Paltz. About 500 high school students are expected for events that will include hands-on engineering projects and a session with local engineers who will answer questions about engineering careers and education. Find out more at <http://boldfish.ieee.org/u/eweek3s/00086579>

2. The Fellows Class of 2005

Newly elected Fellow Yoshizumi Eto of Hitachi Kokusai Electric Inc. in Tokyo is just one of 268 IEEE members who have made noteworthy contributions to engineering, science, or technology. An IEEE member for 23 years, Eto was recognized for his contributions to digital high-definition television standards and recording technology, accomplishments that highlight his 38-year career as an engineer and manager. Meet the class of 2005 Fellows at <http://boldfish.ieee.org/u/fellows3t/00086579>

3. Marketplace of Ideas: China Takes a Chip Off Big Blue

IBM sold its personal computer division in December for US\$1.75 billion to Lenovo Group Ltd., China's largest PC manufacturer. Does this change the way you think about the electronics capabilities of Chinese industry? Weigh in at institute@ieee.org

SPONSOR'S NOTICE:

Earn a degree ONLINE from Drexel University's College of Engineering, an internationally recognized leader in engineering education and the third largest private engineering college in the US. Online programs include: Master's & Graduate certificate in Engineering Management, Master's in Electrical Engineering with a specialization in Power Systems, MBA and many more. For further information, call 877-215-0009 or visit <http://boldfish.ieee.org/u/drexel3u/00086579>

IEEE NEWS - CONT

4. For Students, Scholarship Money for the Taking

College life for an engineering student can be grueling — and expensive. But membership in the IEEE can help with the expenses, at least. Student members enjoy access to awards and scholarships based on a range of accomplishments, including doing well in design contests and being active in their student branches. Find out more at

<http://boldfish.ieee.org/u/scholar3v/00086579>

5. New Membership Grades for Students

A bylaw change passed by the Board of Directors in November divides the IEEE student member grade into two categories: graduate student member and student member. The change, effective in 2006, will allow new benefits for students to be developed and will provide incentive for people to join. Find out more at

<http://boldfish.ieee.org/u/student3w/00086579>

6. Attention, Women in Engineering: Canada Calling

Two years ago, the number of Women in Engineering groups in IEEE Region 7 (Canada) was, in round figures, well, zero. Today, after a commitment from the region's director and the tireless efforts of some dedicated volunteers, Canada has nine women's groups and is on track for more. Find out how the region boosted its numbers at

<http://boldfish.ieee.org/u/canada3x/00086579>

7. Thoughts for Victims of Tsunami Tragedy

IEEE members around the world are deeply saddened to learn of the devastation and loss of so many lives as a result of the recent earthquake and tsunami in South Asia. Although this disaster is centered in the Indian Ocean area, the impact is felt worldwide. The IEEE offers its heartfelt condolences to the many individuals directly affected by this tragedy.

8. IEEE Members Receive Discount at the Embedded Systems Conference
Members who register early for the Embedded Systems Conference, to be held 6-10 March in San Francisco, can receive as much as a 10 percent discount off the registration fee. Early registration is encouraged; the amount of the discount will change on 18 January, 8 February, and 3 March. The earlier you register, the more you save.

Visit <http://boldfish.ieee.org/u/embed3y/00086579> and use code UX20. If you are planning to attend, IEEE Spectrum will be presenting the Technology in the

Service of Society Award at the EE Times ACE Awards Gala. To attend the gala, please visit <http://boldfish.ieee.org/u/award3z/00086579>.

IEEE EAB/History News

NEWS FROM IEEE EDUCATIONAL ACTIVITIES AND THE HISTORY CENTER (1st Quarter 2005)

REGISTER NOW FOR VINNY COMPETITION

Named after Leonardo da Vinci, VINNY is an award given to students in grades K-12 for the best one-minute videos explaining how science, technology, engineering, and mathematics (STEM) can help solve common global problems. VINNY is a worldwide video competition designed to build awareness of STEM. Teams of 3 students and 1 teacher will identify and research a global problem and discover ways that STEM can help solve it. The teams will create a one-minute video explaining the global problem and a possible STEM solution. There are 3 levels of competition: grades K-5, 6-8, and 9-12. The award is given in both English and Spanish, for a total of 6 categories and prizes.

The VINNY website is available at <http://vinny.pcs.cnu.edu>. The deadline for registration is February 15, 2005. VINNY is proudly sponsored by the NASA Center for Distance Learning, Christopher Newport University, and the Institute of Electrical and Electronics Engineers (IEEE). Funding for the project is providing by the IEEE Foundation.

CALL FOR 2005 EAB AWARD NOMINATIONS

The IEEE Educational Activities Board is accepting nominations of IEEE members for its annual awards. The deadline for nominations is 30 April 2005. Awards include: 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; And FOR THE FIRST TIME IN 2005 - IEEE EAB Society/Council Professional Development Award (PLEASE NOTE that the EAB Society/Council Professional Development Award is offered in odd-numbered years alternating with the Section Professional Development Award which is offered in even-numbered years).

For award descriptions, honorarium details, and nominations packets, visit <http://www.ieee.org/organizations/eab/EABAwards/callnominations-2005.htm> For more information, contact: Rae Toscano, Manager +1 732 562 5482; Karen Kleinschmidt, Administrator, +1 732 562 5493; Email: eab-awards@ieee.org.

RECORD NUMBER OF IEEE MILESTONES IN 2004

2004 saw seven Milestones dedications, a record! These came from around the globe, and several more exciting ones are in the pipeline for approval in early 2005. Although not yet nominated a Milestone by the IEEE New York Section, in December 2004 a ceremony was held marking the addition of Philosophy Hall at Columbia University to the U.S. National Historic Landmark Survey, having been nominated by the IEEE History Center as part of a joint project with the U.S. National Park Service. Sections are urged to get involved in local history, particularly through the Milestones Program. More information can be found at http://www.ieee.org/organizations/history_center/milestones_program.html.

HISTORICAL PUBLICATIONS RELEASED

Also in October, the Guglielmo Marconi International Fellowship Foundation at Columbia University held their 30th anniversary banquet in Bologna, Italy, at which they presented a historical book they had commissioned from the IEEE History Center. Around the same time, Eta Kappa Nu celebrated their centennial with another historical work from the Center, this one underwritten by the IEEE Foundation.

ORAL HISTORIES UPDATE

The IEEE History Center continues to collect oral history interviews with important contributors to our fields, from every corner of the world. The Center now manages over 450 interviews, with more than one half available on the Web. They can be viewed at

IEEE EAB/History News-Cont

http://www.ieee.org/organizations/history_center/oral_histories.html. The entire set of History Center pages is searchable from the center's home page, http://www.ieee.org/organizations/history_center/index.html, if, say, one wanted to see if a particular country or region was mentioned. The Center has recently begun work on a project with the IEEE Electromagnetic Compatibility Society to collect more interviews in their field, in preparation for the EMC's 50th anniversary celebration in 2007.

IEEE SETF – INCORPORATING STANDARDS INTO UNDERGRADUATE PROGRAMS

Volunteers from the IEEE Educational Activities Board and Standards Association have come together and formed the IEEE Standards in Education Task Force (SETF). The goal of SETF is to help the electrical and computer engineering undergraduate programs with incorporating standards into the learning process. A grant from the IEEE Foundation was sought and supported for a needs survey and the development of proof of concept learning products during 2004 and 2005. Through the survey, roadblocks to the introduction of standards into the undergraduate learning process were identified, namely: (1) the scarcity of learning supplements to classroom instruction that would impart essential knowledge about standards and (2) the cost of access to appropriate standards. The survey respondents encouraged the creation of web-based tutorials on, case illustrations using, and a reference guide to standards, many of which are currently being developed by the SETF. These web-based learning products will be pilot tested at two academic institutions in 2005 and, after any refinements based upon the pilot testing, the web site will be made available on an open-access basis. More information about this project will be announced in the coming months.

ABOUT IEEE EDUCATIONAL ACTIVITIES

The IEEE Educational Activities Board is responsible for coordinating the educational activities of the IEEE. The volunteer and staff members of IEEE Educational Activities carry out this responsibility by developing educational programs to ensure (1) The technological literacy of pre-college students, (2) the continuous maintenance and improvement of engineering education programs through active participation in accreditation activities, and (3) the development of continuing education products and services that serve the professional development and lifelong learning needs of electro-technology professionals worldwide. For more information, visit <http://www.ieee.org/organizations/eab/> or email education-services@ieee.org.

ABOUT THE IEEE HISTORY CENTER

The IEEE History Center is a staff unit of IEEE that is located not at the IEEE Operations Center, but on the nearby New Brunswick campus of Rutgers, the State University of New Jersey, which cosponsors the Center's activities. The Center's mission to preserve, research, and promote the legacy of IEEE technologies is overseen by the IEEE History Committee, a standing committee of the IEEE Executive Committee. Since most of the activities in carrying out this mission are educational in nature, the Staff Director of the History Center reports to the IEEE Managing Director for Educational Activities, and Center staff work closely with EAD staff on many programs. Those interested in more information are invited to look at the Center's website (http://www.ieee.org/history_center) or to email the Center at history@ieee.org.

EXECUTIVE COMMITTEE HOUSTON SECTION IEEE

OFFICERS

Gil Dolor, Lyondell Chemicals, Past-Chairman.....	281-862-5906
Scott Ballew, Lyondell Chemicals, Chairman.....	713-309-7721
Charles Benard, Dow Chemicals, Vice-Chairman.....	713-978-3790
Polo Gutierrez, Tesco Corporation, Secretary.....	281-721-3911
Shannon Quadros, Choice Condominiums, LLC., Director.....	281-790-7907
Donald G. Dunn, Equistar Chemicals, Treasurer.....	281-862-5533
IEEE HOME PAGE.....	http://www.ieee-houston.org

SOCIETY CHAIRS

Lee Gaspard, Shell, Communications.....	713-245-1487
Ernst Leiss, U of Houston, Computer.....	713-743-3359
George Zouridakis, U of Houston, Engr-Medicine & Biology.....	713-743-8656
XXXX,XXXX, Industry Applications.....	
Jeffrey Williams, U of Houston, Multi-Group Electronics.....	713-743-4455
H. Allen Xi, Burns & McDonnell Engrs, Power.....	713-945-5923
Richard Baraniuk, Rice University, Signal Processing.....	713-285-5132
Dr. Christl K. Madsen, Texas A&M University, A.M.L.G. A&M.....	979-845-9686
Joseph Cavallaro, Rice University, Circuits and Systems.....	713-527-4719
Daniel Mittleman, Rice University, LEOS.....	713-348-5452

COMMITTEE HEADS

P.J. Donner, Reliant Energy, Arrangements & Awards.....	713-945-7771
OPEN, Conferences.....	
Ransom Siler, Private Consultant, Consultants Network.....	
Paul Barrett, Double E Engineering, Continuing Education-Main Committee.....	713-290-1167
Roy Cosse, Powell Electric, Continuing Education-Consultant.....	713-948-4019
Justin McCaskill, WH Linder, Continuing Education-Administration Co-Chair.....	832-274-5116
Roy Cosse, Powell Electric, Continuing Education-Consultant.....	713-948-4019
Shannon Quadros, Choice Condominiums, LLC, Engr Council of Houston.....	713-790-7907
Kristin Morrow, Lyondell Chemicals, GOLD.....	281-862-5138
Open, Membership.....	
John_Lucey, Reliant Energy HL&P, Offshore Tech, Conf.....	713-945-5923
Polo Gutierrez, Tesco Corporation, PACE.....	281- 721-3911
Justo_Benitez, Foster Wheeler USA, Programs.....	713-587-3108
Dwayne C. Lowry, D.C. Lowry & Associates, Past-Chairman, Webmaster.....	281-565-2316

Donald G. Dunn, Publications and Advertising.....	281-862-5533
Open, Student Activities.....	
Jimmy Salinas, SW Bell Telephone, Science Fair Coordinator.....	713-567-8095
Gilroy Dolor, Lyondell Chemicals, Scholarship.....	281-862-5906

FREEPORT SUBSECTION OFFICERS

Partha Ray, Dow Chemicals, Chairman.....	
Jose Aquas, Dow Chemical, Vice Chair.....	
Open, Secretary/Treasurer.....	

STUDENT BRANCH ADVISOR

Penrose Cofie, Prairie View A&M University.....	409-857-3923
Jim Young, Rice University.....	713-348-4721
Walter Daugherty, Texas A&M University (CS).....	979-845-1308
John Tyler, Jr., Texas A&M University (EE).....	979-845-7508
Rainer Fink, Texas A&M University (ET).....	979-845-5966
Pierre Catala, Texas A&M University (COM).....	979-845-4948
Shahryar Darayan, Texas Southern University.....	713-313-4224
Ovidiu Crisan, University of Houston (EE).....	713-743-4432
Heidar Malki, University of Houston (ET).....	713-743-4075

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.

Newsletter Staff

Editors: Lisa Nichols-Dunn, 281-426-4784

E-mail: lnicholsdunn@aol.com

Advertising: 281-426-4784



THE POCKET SCOPE
IEEE Houston Section
P.O. Box 460443
Houston, TX 77056-8014

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