



THE POCKET SCOPE



The Institute of Electrical and Electronics Engineers, Inc.

Volume 53, Number 11

July 2003

SCOPE NOTES

July

Houston Section News

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

When: Thursday, September 25, 2003

6:00 - 6:30 p.m. Social
6:30 - 7:30 p.m. Dinner
7:30 - 8:30 p.m. Speaker

Cost:
\$10.00 - 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://\(www.ieee-houston.org\)](http://www.ieee-houston.org)

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

The Chairman's Message

Dwayne Lowry



September 3 has been set for the date of the awards banquet I mentioned last month. The evening is being held to honor those of our Section who have distinguished themselves in many different ways, and to the honor the Section and some of the Societies and Chapters themselves. A highlight of the night will be a presentation by our Region 5 Director recognizing the Houston Section on its 75th year as an IEEE Section. We are one of the older Sections in the

World. More on this next month.

Make a note now to set aside October 17 to participate in our 2nd annual IEEE-Houston Golf Tournament. Proceeds from the event will go to providing \$1,000 scholarships to Section member sons, daughters, grandchildren, etc. We were able to award 3 scholarships this year and look forward to increasing the number in 2004. More details of the Golf event will be forthcoming in the August PocketScope and on the website. And winners of 2003 scholarships will be announced at that time and honored at the Awards banquet in September.

If you're a COMSOC member, or have an interest in this area, you should check out their outstanding programs. Like the one scheduled this month: "How Toastmasters Can Benefit You Professionally". While this particular topic has nothing to do with the "bits and bytes" type of Communication it has everything to do with our everyday Communication. Give them a look.

There were no new senior members recognized in June, though I know there are a few applications in the works. But that's far from all of you. So where are the rest? Senior membership is important to the individual and the Section and I urge all who meet the qualifications to submit an application. It's here on the web.

We received a request this month from a local Girl Scout who is working on her Gold Award, the highest award in Girl Scouting. For her project, she is creating a resource box for a science teacher at a local elementary school, Poe Elementary, about careers in science and engineering. She hopes that through her box the elementary school children will come to a better understanding of what scientists and engineers really do. As a part of her project she is compiling a list of local professionals who would be willing to come and speak to the elementary students about their career. She ask if we could help her find a speaker. When I put the word out, within hours I had several volunteers to get involved and Kristen Morrow, our GOLD co-chair, herself once a Girl Scout will be speaking at the school. We appreciate those who offered to help promote our engineering profession to kids at this early age.

Other Items of Interest:

- **Ask the Right Questions When Financing a Home - a very timely**

CONTINUED ON PAGE 2

Chair Message-CONT

topic

Many people often fail to ask the right questions when they shop for a mortgage. Understanding your options, especially now with interest rates in the United States at their lowest levels in 40 years, helps you get terms that can save you thousands of dollars during the life of the loan. Here's how: http://www.theinstitute.ieee.org/inst_art.jsp?isno=07031&arnumber=07031_7w.fapmortgage§ion=7

- **Wi-Fi Fills the Need for Speed**

The most widely used wireless local area network standard, IEEE Std. 802.11 (TM), also known as Wi-Fi, was extended last month to make it four times faster. Find out how this standard will improve wireless networking by going to http://www.theinstitute.ieee.org/inst_art.jsp?isno=07031&arnumber=07031_7w.newsstandards§ion=41

- **Election Ballots Coming in September**

Ballots for the annual election of an IEEE President-Elect and other officers will arrive in the mail in September. Find out more details at http://www.theinstitute.ieee.org/inst_art.jsp?isno=07031&arnumber=07031_7w.newselections§ion=41

- **Marketplace of Ideas: Legislating Cybersecurity**

In February, the U.S. Department of Homeland Security unveiled its National Strategy to Secure Cyberspace. The report focuses on improving cooperation among federal, state, and local governments, the private sector, and the public. It's a good idea, but with the borderless nature of the Internet, is any plan really going to prevent attacks? What can a nation do to develop cooperation with other countries to secure cyberspace? Give us your opinion at http://www.theinstitute.ieee.org/inst_art2.jsp?isno=06031§ion=20

- **IEEE Financial Advantage** is proud to announce the partnership of IEEE and Wachovia Corporate Mortgage Services to offer IEEE members in the United States the new IEEE mortgage program. Members are eligible to receive competitive rates on mortgage products along with other great benefits. The process is easy, understandable, and fast. For more information or to apply, visit <http://www.ieee.org/fap> or call 1 888 846 9073 today.

- **Let Travel Services Take You Places**

Try this travel quiz: Name a travel agency that offers personal service, an information-packed Web site, and is in business to save you and the IEEE money. If you picked IEEE Travel Services, you deserve to move to the head of the airport security line. Find out more at http://www.theinstitute.ieee.org/inst_art.jsp?isno=07031&arnumber=07031_7w.prodtravel§ion=11

STAY SAFE, enjoy your summer

Dwayne Lowry
Houston IEEE Section Chair

IAS Chapter Meeting

Meeting Date: July 1, 2003
Time: 5:30 PM to 7:00 PM
(Refreshment will be provided)
Place: Bechtel Building
3000, Post Oak Blvd
Houston, TX 77252
Conference Room 4A

Reservations:

Contact - Sunita Kulkarni

Tele: 713 235 2833

Email: skulkarn@bechtel.com

For all of us who have had difficulty keeping up with all of the latest developments in lighting, the National Tech Representative for Advance, Mr. Ross Theis, will be providing an outstanding seminar on the evening of July 1. Ross Theis's office is in Colorado, but he will be coming to Houston to deliver this presentation.

Mr. Theis will cover both Fluorescent and HID technologies, as follows:

FLUORESCENT:

- STARTING METHODS
- BALLAST FACTOR
- T8 vs T5HO
- DIMMING AND SWITCHING
- DALI
- PL-H COMPACTS

HID:

- PULSE START
- ELECTRONIC
- DIMMING

COMPARISON:

- T5HO vs HID

SPECIAL FEATURES:

- PLUS 90 PROTECTION

Bring your technical or economic questions for candid, detailed answers!

There is no charge for this seminar, but it is sure to provide lots of valuable information.

COMSOC Chapter Meeting

July 2003 IEEE COMSOC Meeting Information

The next meeting of the IEEE Communications Society, Houston Chapter will be held Thursday, July 10th, 2003 beginning with lunch at 11:30 am.

Time and date: 11:30 AM to 1:00 PM on Thursday, July 10th, 2003.

Location: Shell Information Center; 1500 Old Spanish Trail, Houston, TX 77054

Program: “ How Toastmasters Can Benefit You Professionally”

Abstract: The “Astrodome Area Toastmasters” will describe how Toastmasters can benefit you as a professional, and then give a brief demonstration of a typical Toastmasters meeting activity. You’ll be invited to join in, even if you aren’t an experienced public speaker. It will be an enjoyable learning experience.

Speaker: Various members of the Astrodome Area Toastmasters Organization + a few “surprised” participants

Come and participate! Why not invite a colleague to come with you? We will all benefit from increased participation in the Houston area.

Please RSVP via e-mail to Lee Gaspard <<mailto:lee.gaspard@ieee.org>> by 5:00 p.m. Wednesday, July 9th. (Please include your name and your company’s name.)

See our Web site for additional ComSoc information:

www.comsoc.org/~houston/ <<http://www.comsoc.org/~houston/>>

Agenda

Time: Lunch: 11:30AM (may be purchased in Shell’s cafeteria)

Program: 12:00 - 12:45 PM

Location: Shell Information Center

Room 3Q18-19

1500 Old Spanish Trail

Houston, Texas 77054

Directions: From South Loop 610 exit Main Street, go North and veer/ turn right on Old Spanish Trail (OST) {Target Superstore on left & Texans’ practice field on right}; from OST turn right on Stadium Drive; from Stadium Drive turn into the first entrance on the left; stop at the guard house and identify yourself as attending the IEEE meeting. KIRBY has become more passable from the previous months. However, FANNIN STREET IS UNDER CONSTRUCTION AND SHOULD BE AVOIDED. Parking: Security will direct you to visitor parking near the building.

Access to the building: Building security will have a list of attendees, and will issue a visitor’s badge to you. An escort will meet you in the lobby.

I look forward to seeing you at the meeting.

Please call Lee Gaspard

713-245-1487 or Tom O’Brien (281 282-5881) if you need further information.

Senior Membership

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 you are retired and have met the criteria at one time let's 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. This is an achievement award that honors our deserving members.

IEEE CED Program Relocates for 2003-2004

2003-2004 CED seminar program will be hosted by Jacobs Engineering

IEEE CED Seminar Site Relocated for 2003-2004 Seminars

IEEE CED Committee announces that 2003-2004 seminars will be hosted by Jacobs Engineering at their facility located at 5995 Rogerdale Road (West side of Sam Houston Tollway near Bellaire Blvd)

Watch for complete details in the September Pocket Scope.

Freeport Subsection Meeting

It is time for another IEEE Freeport Subsection meeting. IEEE and non-IEEE members are invited to this meeting.

If you know someone who might be interested please pass this on.

When: Wednesday, July 30, 2003

6:00 to 8:00 PM

Where: Lake Jackson Civic Center

333 Hwy. 332 E

Lake Jackson, TX

What: Smart Industrial Electrical Substations

Who: Roy Cossé and Tracy Combs

Powell Electrical Manufacturing Company

Abstract: What is a Smart Industrial Substation?

IEEE Houston Section Scholarships 2003



IEEE See the website for more details

IEEE - Houston Section

2003 Scholarship Selection Criteria

In order to promote the interests of the Institute of Electrical & Electronics Engineers (IEEE) - Houston Section, and in support of its dedication to Engineering and Science, scholarship(s) will be awarded annually to selected applicant(s). For 2003, due to the success of the 2002 IEE - Houston Section Annual Scholarship Golf Tournament, up to three (3) \$1,000 scholarships each, will be awarded to both incoming freshman and full time college students who meet the following criteria:

ELIGIBILITY: Limited to a full time student enrolled in an accredited college or university who:

- Is an IEEE - Houston Section member's child or grandchild
****OR****
- Is a member of IEEE (Student Branch or other)

DISCUSSION: By restricting eligibility as above, scholarships are made available to those full time students who have an association with IEEE. This places applicants on a "level playing field" before selection criteria are applied to determine the scholarship recipients. All scholarships will be awarded on merit.

SELECTION CRITERIA:

Merit

- Candidate is enrolled, or is planning to enroll, in an Engineering or Science Curriculum
- His/her cumulative GPA (High School GPA for entering college freshman), SAT or ACT scores
- Discussion paper

DISCUSSION PAPER:

This document will be a key element in the scholarship selection criteria. Topics should include, but not be limited to, the following:

- Employment experience
- Activities/elected positions
- Career goals
- Honors/Awards
- Personal information
- Why are you seeking this scholarship

To apply, please complete the attached form and mail to:

IEEE - Houston Section
Attention: Scholarship Committee
P.O. Box 460014
Houston, Texas 77056-8014

Deadline for submitting application form and all supporting data is July 3, 2003. Scholarships will be presented by July 31, 2003 and winner(s) will be honored at one of the IEEE - Houston Section Annual Meetings.

IEEE Houston Section Scholarships 2003



IEEE - HOUSTON SECTION SCHOLARSHIP APPLICATION

Applicant's Full Name: _____ Phone No.: _____

Home Address: _____ City: _____ Zip: _____

IEEE - Houston Section Member (Sponsor's Name): _____

Member No: _____

Student Status for: ___ High School Sr. ___ Jr. ___ Soph. ___ Fresh. ___
 ___ College or Univ

Cumulative Collegiate GPA (Based on 4.0 man.) substantiated by copy of transcript(s): _____

High School GPA - for applicant entering college as freshman: _____

- If High School Student - please provide SAT / ACT Score: _____

College or University: _____ Location: _____

Major or anticipated major: _____

IEEE Student Chapter Member: _____ Yes _____ No

Attach one (1) page essay by student covering:

1. Employment Experience
2. Activities/Elected Positions
3. Personal Information
4. Honors/Awards
5. Career Goals
6. Reasons for seeking this scholarship

Attach up to three (3) letters of endorsement from former teachers, employers, family and friends.

The information provided herewith is correct to the best of my knowledge.

Student's Signature

Date

IAS PCIC Conference

The Petroleum and Chemical Industry Committee of the Industry Applications Society of IEEE Invites you to the 50th Annual PCIC Conference in Houston, Texas USA. This PCIC Conference is the Industry Application Society's premier meeting for the practicing electrical engineer seeking practical information directly applicable to his or her work.

The Conference will be held September 15 – 17, 2003 at the Westin Galleria Hotel, located in The Galleria set beneath spectacular glass atriums. Between the Westin Galleria and the Westin Oaks, most or all of the conference attendees will be accommodated. The Galleria complex features 300 fine stores, restaurants and an impressive ice rink. This world-class shopping complex showcases the best names in retailing including Neiman Marcus, Cartier, Gucci, Macy's, Tiffany & Co., Saks Fifth Avenue, The Sharper Image, Ralph Lauren Collection, Lord & Taylor and St. John. A 700,000 square-foot expansion added 70 stores, including Foley's and Houston's first Nordstrom.

With the expansion, The Galleria has become the fifth largest mall in the nation highlighted by nine types of stone, suspended glass balconies, three types of wood, glass skylights, and plush leather seating. With three office towers, two hotels, 1.7 million square feet of retail space, and a variety of restaurants, The Galleria is a city within a city.

Houston is one of the most diversified city's on the Gulf Coast, if not the nation, with a \$15-billion petrochemical complex. Houston is a major U.S. gateway for international trade, and ranks number one in the nation in foreign tonnage and second in total tonnage. There are 77 countries represented in the area with consulates.

The renowned Texas Medical Center is home to 42 non profit institutions on 675 acres, ranking it as the largest medical center in the world. The Texas Medical Center has an estimated economic impact of \$11.5 billion a year on Houston's economy. Houston's NASA/Johnson Space Center trains America's astronauts and coordinates operations development and design work for the space missions, Space Shuttle and the International Space Station.

The IEEE PCIC 2003 Houston Local Committee welcomes you to Houston with open arms. Great quest tours are planned. Ya'll come, stay a while and you will wonder why you went back home. We look forward to a fantastic Golden Anniversary with a very large quest attendance. After all, where else can you learn so much about your professional calling and have such a good time along the way.

Kirk Armintor

Local 2003 PCIC Committee Chairman
Houston, Texas

http://www.ieee-pcic.org/Conferences/2003_Houston/index.html

International Symposium on Intelligent Control

IEEE 2003 International Symposium on Intelligent Control (ISIC'03) will be held in Houston October 5-8 at the Westin Galleria.

On behalf of the ISIC'03 General Chair, Gary Yen, I would like to invite IEEE members in Houston to our meeting and its associated tutorial sessions. We have made a deliberate effort to make the tutorial sessions attractive to working engineers and want to get the word out to as many people as possible.

For further information, our conference web site is at <http://vlab.ee.nus.edu.sg/~isic2003/>

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Logan, UT 84322-4120

Phone: (435)797-2924

Fax: (435)797-2003

email: moorek@ece.usu.edu

COMSOC Wins Award

Houston Communications Society announces that they have won a "2003 Chapter Achievement Award" from the IEEE Communications Society. It comes with a certificate and a \$500 honorarium that the COMSOC group hopes to use for one or more awards at the Houston Science Engineering Fair.

The presentation of the award will be made in December at GlobeCom2003 in San Francisco.

Details are at www.comsoc.org, and the announcement is attached.

Winning this award is a great honor for our Chapter, and it is a recognition of the hard work that officers and members have put in over the last several years, developing Houston ComSoc from a faltering chapter to one that serves as an excellent small-chapter model for the Region.

Thomas P. O'Brien, P.E. COMSOC-Chair

IEEE-USA NEWS

Jim V. Leonard, P.E.

2003 IEEE-USA President

President's Column, July/August 2003

IEEE-USA, created 30 years ago to promote the career and public-policy interests of the IEEE's U.S. members, is an organizational unit of the IEEE. I'd like to highlight some of our professional activities on behalf of the IEEE's 235,000 U.S. members.

Volunteer leaders serving on the IEEE-USA Board of Directors and committees work closely with IEEE-USA staff to represent what we feel are the best interests of our U.S. members. We know that with such a large and diverse membership, we can't please everyone. But we hope the majority agrees with our positions and the direction we seek to lead the organization.

IEEE-USA's position statements are passed by our Board of Directors and serve as the basis for our lobbying and public-relations efforts. IEEE-USA also acts as an adviser to Congress. For example, we led a technological and legislative briefing on nanotechnology for congressional staffers on Capitol Hill in June. Our volunteers visit Washington, D.C., and home-district congressional offices, and invite you to join us.

Last year we submitted an *amicus curiae* brief before the Supreme Court that served as the basis of its ruling in a landmark patent rights case. This year we filed another brief before the high court in support of reverse engineering.

IEEE-USA promotes engineering awareness and public understanding by actively participating in National Engineers Week each February. Next year we will spearhead IEEE's role as lead society, and will increase Future City Competition participation by sponsoring three additional teams' trips to Washington for the national finals.

In the career-enhancement area, we'll soon present the findings of our latest salary survey. With our most respondents ever, we believe the data is the best collected and analyzed. It serves as the basis of the new IEEE-USA Salary Database. We're also offering online leadership courses for the first time. For more information, visit our careers page at <http://www.ieeeusa.org/careers/>.

As a sign of support for our nation's military, the IEEE-USA Operating Committee will meet in October in West Point, N.Y., home of the United States Military Academy. Our committees also support our nation's homeland security effort.

The depth of IEEE-USA activities cannot be summarized in this short space, so I recommend you visit our homepage at <http://www.ieeeusa.org/>. I also encourage you to vote in the upcoming IEEE elections. The ballots include some very capable candidates for IEEE-USA offices of President-Elect and Member-at-Large.

IEEE Career Alert

IEEE CAREER ALERT for 2 July 2003

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

IN THIS ISSUE:

1. U.S. Job Market: It's Cold Out There
2. EE Salaries: It Could Be Worse
3. Going Global
4. Computing Profession at a Crossroads

1. U.S. Job Market: It's Cold Out There

The U.S. unemployment rate rose to 6.4 percent in June, according to the U.S. Bureau of Labor Statistics. That's high, but not as high as the 7 percent jobless rate among U.S. electrical engineers in the first quarter of this year. Many of them have been out of work for extended periods, have long ago exhausted their unemployment benefits, and have taken lower-paying work in other fields, or are struggling as consultants or part-timers. And the longer they remain outside the field, the harder it seems to get back in. For more on the current state of the U.S. engineering job market, go to

<<http://www.spectrum.ieee.org/careers/careerstemplate.jsp?ArticleId=n070103>>

2. EE Salaries: It Could Be Worse

Despite the current employment climate, median EE salaries still appear to be moving upward faster than inflation. According to preliminary results from the latest IEEE-USA salary survey, EE salaries broke through the six-figure barrier in 2002, to US \$101,000 (or an inflation-adjusted \$96,700), up from \$93,100 in 2000. For more on engineering salaries in the U.S. and elsewhere, go to

<<http://www.spectrum.ieee.org/careers/careerstemplate.jsp?ArticleId=n070203>>

3. Going Global

More and more, global work teams are becoming commonplace, as engineers are assigned to projects that cross national borders or cross cultures within a single country. Being successful in this global environment demands a knowledge of and sensitivity to different cultures — both business and personal. For more on the global workplace, go to <<http://www.todayseengineer.org/June03/global.asp>>

4. Computing Profession at a Crossroads

In response to the rising importance of computers over the last two decades, institutions from universities to community colleges to mom-and-pop training centers rushed to expand existing computing programs or start new ones. "The fallout from this trend included a curriculum irrelevant to overall industry needs and a lack of pragmatic and enforceable curriculum standards, quality control, resources, and an identity for the discipline itself." So says Venkat N. Gudivada, a visiting professor of computer and information science at the University of Michigan, Dearborn, in the latest issue of IEEE Computer magazine. If computing is to continue to thrive as a profession and a discipline, Gudivada, changes will be needed. Read on at

<<http://www.computer.org/computer/homepage/0503/profession/>>

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 email news service. For more information on subscribing to other WHAT'S NEW newsletters, visit <<http://whatsnew.ieee.org/>>

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IEEE-USA News

FROM Washington, DC: *IEEE-USA TODAY* July 2003
 YOUR Monthly U.S. IEEE MEMBER E-ZINE on "Building Careers & Shaping Public Policy"
<http://www.ieeeusa.org>

IN THIS ISSUE:

1. IEEE-USA Leaders Express Concern About 500,000 U.S. IT Jobs Projected to Move Overseas
2. U.S. EE Unemployment Drops Slightly in Second Quarter
3. IEEE-USA Recommends Additions to 'Genetic Information Nondiscrimination Act'
4. In This Month's *Today's Engineer* Webzine: Enhancing Communications Skills, Steps to Follow in Career Changes, Evaluating Job Offers
5. IEEE-USA President's Column: Celebrating 30 Years of Professional Activities
6. Latest Technology Policy News Covered in *IEEE-USA Eye on Washington*

1. IEEE-USA LEADERS EXPRESS CONCERN ABOUT 500,000 U.S. IT JOBS PROJECTED TO MOVE OVERSEAS

One-half million jobs, or 10 percent of the U.S. IT professionals currently working in IT services firms, will be displaced in the next 18 months as their jobs move overseas, according to Gartner, Inc. Go to the news release at: <http://www.ieeeusa.org/releases/2003/072103pr.html>.

2.U.S. EE UNEMPLOYMENT DROPS SLIGHTLY IN SECOND QUARTER

Unemployment for U.S. electrical and electronics engineers dropped below 7 percent in the second quarter, but remains well above the rate for other high-tech professionals. Go to the news release at : <http://www.ieeeusa.org/releases/2003/071103pr.html>.

3. IEEE-USA RECOMMENDS ADDITIONS TO 'GENETIC INFORMATION NONDISCRIMINATION ACT'

On 18 June, IEEE-USA's Medical Technology Policy Committee sent a letter to Members of the Senate Committee on Health, Education, Labor and Pensions recommending additions to the Genetic Information Nondiscrimination Act of 2003 (S.1053), which would prohibit discrimination in employment and health insurance based on genetic information. Go to the letter at: <http://www.ieeeusa.org/forum/POLICY/2003/061803b.html>.

4. IN THIS MONTH'S *TODAY'S ENGINEER* WEBZINE: ENHANCING COMMUNICATIONS SKILLS, STEPS TO FOLLOW IN CAREER CHANGES, EVALUATING JOB OFFERS:

Also included in the July webzine are articles on "Is Aerospace Worth Saving?"; Upgrading FAA Technology and Boosting Related R&D; and Maintaining World Leadership in Nanotechnology. Go to the latest issue at: <http://www.todaysengineer.org>.

5. IEEE-USA PRESIDENT'S COLUMN: CELEBRATING 30 YEARS OF PROFESSIONAL ACTIVITIES

IEEE-USA President Jim Leonard highlights some of IEEE-USA's professional activities on behalf of U.S. IEEE members in his latest president's column. Go to: <http://www.ieeeusa.org/newspubs/presidentscolumn/leonard/leonardjul-aug03.html>

6. LATEST TECHNOLOGY POLICY NEWS COVERED IN *IEEE-USA EYE ON WASHINGTON*

The 18 July issue includes articles on the L-1 visa, pension legislation, the energy bill, the Senate hearing on U.S. leadership in supercomputing, homeland security R&D, and the Commerce Department of reorganization of technology agencies. Go to the latest issue at: <http://www.ieeeusa.org/forum/EYEONWASHINGTON/03eow11.html>.

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IEEE-USA Today

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500,000 U.S. IT Jobs Projected to Move Overseas by Year-end 2004; IEEE-USA Sees Continued Loss in U.S. Economic Competitiveness, National Security

WASHINGTON (21 July 2003) - One-half million jobs, or 10 percent of the U.S. information technology (IT) professionals currently working in IT services firms, will be displaced in the next 18 months as their jobs move overseas, according to Gartner, Inc., the Stamford, Conn.-based research firm. The Gartner projection, in a 15 July research note by Diane Morello, would bring total IT job losses to one million, when added to the 500,000 IT professionals estimated by the Bureau of Labor Statistics to have lost their jobs in the United States since 2001.

In addition, Gartner urged business executives not to “trivialize” the impact of offshore outsourcing on their businesses and employees, stating that executives should pay attention to the loss of future talent and intellectual assets, as well as the potential negative impact of outsourcing on organizational performance.

Commenting on the projection of U.S. IT job losses, IEEE-USA President-Elect John Steadman said: “In the rush to cut costs through offshore outsourcing and increased use of guest workers, companies are undermining the U.S. IT profession and are increasing the vulnerability of their core competencies and knowledge base.”

Dr. Steadman, who will become IEEE-USA’s president in 2004, added: “The emphasis on outsourcing to cut costs may help boost quarterly earnings, but it is also putting our nation’s long-term economic competitiveness and national security at risk as we give up our technology edge for short-term profits.”

IEEE-USA leaders are also concerned about increased industry reliance on non-immigrant high-tech guest workers resulting in more offshore outsourcing.

According to IEEE-USA R&D Policy Committee chair Ron Hira, “Many high-tech guest workers are brought here specifically to facilitate offshore outsourcing arrangements.” Dr. Hira added: “Other guest workers are taking the acquired knowledge of U.S. technology and business practices home with them, combining that know-how with low labor costs to help foreign businesses compete more effectively with U.S. companies.”

IEEE-USA is an organizational unit of The Institute of Electrical and Electronics Engineers, Inc., created in 1973 to advance the public good, while promoting the careers and public-policy interests of 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-USA Article

Competing With The \$800 a Month (or less) Engineer

By Paul Kostek

We hear plenty about the positive impact globalization is having on the marketplace. Unfortunately for many engineers and other high-tech professionals, the impact has been devastating.

Engineering jobs in all sectors of the economy are being contracted out and moved outside the United States at an alarming rate. By 2015, 3.3 million white-collar jobs - including more than 472,000 in information technology and mathematics - are expected to move to low-cost countries, according to Forrester Research Inc. analyst John C. McCarthy. The predicted loss in wages is a staggering \$136 billion. The loss to the U.S. economy is far greater.

To take advantage of much lower salaries in other parts of the world, major corporations are already building overseas design centers. For the CEO under pressure to improve the corporate bottom line, the economics are hard to beat. You can hire a skilled non-U.S. engineer for about \$800 a month, about what many U.S. engineering grads earn per week. The \$5,000-a-year software programmer is another global reality.

Business Week magazine recently reported that for \$650 a month you can employ an aerospace engineer in Russia with a master's degree in math or aeronautics. His U.S. counterpart makes about \$6,000 a month.

So how do U.S. engineers compete in this new global marketplace? The answer has profound implications for the future of technical innovation in the United States, which sustains our nation's economic competitiveness, national security and overall standard of living.

Obviously U.S. engineers won't be able to compete on price by accepting salaries that are below U.S. poverty levels, leaving superior skills and proximity as their best hopes for maintaining a competitive edge. But even if the U.S. engineer enjoys a skills edge, how can an employer not take advantage of the increased productivity inherent in a salary differential that allows hiring 5-10 engineers overseas for the price of one here?

Is it an advantage for engineering functions to be performed close to the company site or in the same time zone? Many argue that companies prefer to keep their engineering design jobs close at hand in order to safeguard the company's intellectual property. But the offshore outsourcing trend clearly encompasses engineering design services. And what is proximate to the large global or virtual corporation that engages in 24-hour-a-day operations by moving work from time zone to time zone?

While jobs are being sent overseas, news on the home front is also discouraging. The unemployment rate for electrical engineers rose to an unprecedented 7.0 percent in the first quarter of 2003, according to the U.S. Department of Labor, Bureau of Labor Statistics, and stood at 6.4 percent for the second quarter. The most recent report also showed a 7.5 percent unemployment rate for computer programmers, 5.7 percent for computer hardware engineers and 5.6 percent for computer scientists and systems analysts. The rate for all workers was 5.6 percent.

Despite this record-high engineering unemployment, industry continues to defend increased outsourcing and the use of guest labor (such as H-1B and L-1 visa workers) by arguing that not enough U.S. students are entering engineering programs or pursuing technical careers. Government is starting to join the chorus as the large Cold War generation of government engineers reaches retirement age. But if all an engineering career can promise is job insecurity and low pay on one hand, or red tape and a government salary on the other, why would

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America's best and brightest choose engineering as a career path?

Lacking a clear edge in price, skills or proximity, what is the future for U.S. engineers? Do we just need to abandon certain areas and fields of engineering in the same way that the U.S. said good-bye to textiles and steel in the name of free trade?

Will job opportunities be limited to government-related work or infrastructure-related industries such as electric power generation and transmission, or phone service where U.S. citizenship or proximity is imperative?

As an engineer who has had to reinvent myself a dozen times during a 24-year career in order to stay competitive, I have to ask myself if an overseas competitor in Belarus, Beijing or Bangalore possesses the same skills that I do, and if proximity isn't important, and if they'll work for \$800 a month, then why hire me at \$8,000 a month? It's a question that is increasingly hard to answer. For the next generation considering a career in engineering, it will be even harder.

Paul Kostek is the 2003 Chair of the American Association of Engineering Societies and a past president of The Institute of Electrical and Electronics Engineers ? United States of America (IEEE-USA). The views expressed here are his own.

IEEE Standards Candidates

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As one of your membership benefits, you have the opportunity to help guide IEEE-SA by voting for its future leaders. The following is the 2003 slate of candidates who will lead the IEEE-SA in 2004 and beyond. Look for election ballots in September. We extend our appreciation and best wishes to all of the candidates.

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