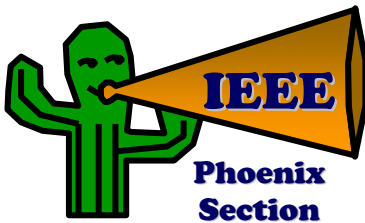


# The Valley Megaphone

**Newsletter of the**

**Institute of Electrical and  
Electronics Engineers, Inc.  
Phoenix Section**

**April 2009,  
Volume XXIII, Number 4**



## Executive Committee

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[holbert@asu.edu](mailto:holbert@asu.edu)

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*This Issue of the Valley Megaphone  
features:*

### Contacts:

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IEEE Phoenix Section Executive Committee meeting minutes can be found at:  
<http://www.ieee.org/phoenix>

Please send announcements for Valley Megaphone to Sam Karikalan at [samk@broadcom.com](mailto:samk@broadcom.com)

## Chapters

**Communication & Signal Processing**  
Harvey Thornburg, 480-727-7902  
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**Computer Society**  
Joy Shetler  
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**Consultants Network (PACN)**  
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**CPMT Society**  
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**Life Members**  
George Karady, 480-965-6569  
[karady@asu.edu](mailto:karady@asu.edu)

# U – News

(for Student Members)

The next IEEE Phoenix Section Executive Committee Meeting is being held on April 7th and all Branches are being requested to submit Reports by Friday April 3rd utilizing the new Report Format to standardize reporting and referencing the officers from each branch. Reports should continue to be submitted directly to me at [nleonardi@ieee.org](mailto:nleonardi@ieee.org).

Many students are focused on their upcoming graduation, the decision to attend graduate school or continuing the interviews for employment in their selected field. One additional important item for Student Branch Officers is the process of defining those officer positions which will be vacated by graduates in upcoming months. The pending definition, review and selection of incoming officers is critical to keep Student Branch activity momentum for the returning students and new graduate student members going into the second half of 2009.

For Student Branch members, this "U-News" (University News) page will be a regular feature in Valley Megaphone. Student feedback will continue to be requested related to all aspects of membership, improving participation and for ways to enhance IEEE Regional Committee support to Student Branches.

Regards,  
*Nicholas Leonardi*  
 Student Activities Chair – IEEE Phoenix Section  
[nleonardi@ieee.org](mailto:nleonardi@ieee.org) 480-736-1970 x 23

## Student Branches

**ASU Main, Engineering**  
 Chair: Ramesh Bodakunta  
[ieeemasuchair@gmail.com](mailto:ieeemasuchair@gmail.com)  
 Advisor: Cihan Tepedelenlioglu,  
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**ASU Main, Computer Society**  
 Chair: Nicholas Vaidyanathan  
[nvaidyan@asu.edu](mailto:nvaidyan@asu.edu)  
 Advisor: Guoliang Xue  
 (480) 965-6218 [xue@asu.edu](mailto:xue@asu.edu)

**ASU Polytechnic**  
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[justin.burrell@asu.edu](mailto:justin.burrell@asu.edu)  
 Advisor: TBD

**DeVry, Phoenix**  
 Chair: Mason Surerus  
[msurerus@ieee.org](mailto:msurerus@ieee.org)  
 Advisor: Dion Benes

**DeVry, Computer Society**  
 Chair: TBD  
 Advisor: Diane Smith

**NAU, Engineering**  
 Chair: Kenji R. Yamamoto  
[kry3@nau.edu](mailto:kry3@nau.edu)  
 Advisor: Niranjan Venkatraman  
[v.niranjan@ieee.org](mailto:v.niranjan@ieee.org)

**Embry-Riddle, Prescott**  
 Chair: Caleb Young,  
[young27f@erau.edu](mailto:young27f@erau.edu)  
 Advisor: John E. Post  
[postj@erau.edu](mailto:postj@erau.edu)

## U-Newsbytes

- ✚ Nick Leonardi had the opportunity to present to the Student Branch at ASU Main on March 5th. The topic was Current Trends in the Electronics Industry prepared by SEMICON Research Corp. SEMICO ([www.semico.com](http://www.semico.com)) is an industry leader in market studies and information to industry.
- ✚ **IEEE and Eta Kappa Nu Honor Society sign Merger Agreement.** See the press release (**page 10**).
- ✚ With graduation for some Student Branch Chairs only a few months away, Branch Chair Openings will be posted in Valley Megaphone, including an Application Form for review and submission.
- ✚ ASU IEEE Computer Society collaborates with Sun Microsystem's Open Source University Meetup (OSUM) Program. Sign-up Today! (Page 3).

## IEEE – EDS Masters/Ph.D Student Fellowship

The IEEE Electron Devices Society has established the Masters and Ph.D. Student Fellowship Programs to promote, recognize, and support advanced degree study and research within the Electron Device Society's fields of interest. The application deadline is May 15, 2009. Please contact Chuck Weitzel, the Publicity Chair of the IEEE Phoenix – Waves Devices Chapter, at E-mail: [c.weitzel@ieee.org](mailto:c.weitzel@ieee.org) for more details.



## IEEE Computer Society at ASU Open Source University Meetup

[IEEE Computer Society at Arizona State University](#) has a history of dedication to collaboration and innovation, and is a firm believer in the power of open source software. We are also passionate about helping our students network and succeed. In this spirit, we are proud to announce collaboration with [Sun Microsystems](#) and their [Open Source University Meetup \(OSUM\)](#) program!

Sun Microsystems has rapidly emerged as a leader in the open source community, making a large variety of their platforms open including [OpenOffice](#), [OpenSolaris](#), [OpenJDK](#), and even [OpenSPARC](#). You know a company is serious about open source when it makes its hardware open! In their passion for open source, they have created a community called the Open Source University Meetup which exists as a social networking tool for developers to meet others who are passionate about open source and learn more about Sun technologies. Members of the OSUM community include students from all around the world, Sun staff, and any developer who has a passion for expanding his or her own knowledgebase.

Beyond the obvious networking opportunities, [members of OSUM also get free, well-written and authoritative training](#) on Sun technologies through the [Sun Academic Initiative](#), and *extremely* reduced-cost sun certification exams! This is an amazing deal for those seeking to enhance their skill-set or prove that they have mastered a particular tool, and the best part is it's free and easy!

So what are you waiting for, an invitation? Well, here it is: go to <http://osum.sun.com> to sign up. Need more information? Please contact Nicholas Vaidyanathan at [Nicholas.Vaidyanathan@asu.edu](mailto:Nicholas.Vaidyanathan@asu.edu).

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### Job Opportunity – Electrical Instructor

**ELA INSTITUTE FOR FACILITY MANAGEMENT EDUCATION** has an upcoming evening position for an **Electrical Instructor** for our Facility Maintenance Technician Program, Thursday evenings, beginning August 13, 2009.

The ideal candidate will have recent experience in a managerial position in a large facility, and will have a thorough knowledge of electrical fundamentals, installation, operation, maintenance, troubleshooting techniques and safety procedures. 15 years minimum electrical related experience is required, and Community College teaching approval or any teaching experience is a big plus.

All resumes will be considered.

For more information, or to fax or e-mail your resume, contact  
**Yolanda L. Price, Director of Education & Programs**  
Fax: 602-277-9881 [yprice@electricleagueofarizona.org](mailto:yprice@electricleagueofarizona.org)



## Phoenix Chapter of the IEEE Computer Society

### April '09 Meeting Announcement

**Date:** April 1, 2009  
**Speaker:** Highland Mary Mountain, Intel Corporation  
**Topic:** SW Application Planning and Design – Localization Perspectives  
**Venue:** Intel Corporation, 5000 W Chandler Blvd, Chandler, AZ

Localization (L10N) – The process of customizing or translating the separated data and resources needed for a specific language-locale pair. More background details about the localization process are discussed on the following webpage: [http://en.wikipedia.org/wiki/Language\\_localisation](http://en.wikipedia.org/wiki/Language_localisation)

In applications that Intel is developing, there may be more than 26 different languages for a given chat localization. Highland's presentation focuses on the following topics:

1. **Objective/Scope of Presentation**
2. **Localization (L10N) Defined**
3. **L10N Organization Overview**
4. **L10N and the SW Development Lifecycle**

#### ***About the Speaker***

Highland is the Localization (L10N) Engineering manager within Intel's Mobility Group's Client Components Group (CCG). The Software Engineering Services (SES) L10N Team develop software products requiring L10N range from BIOS to network management applications. This Arizona based team localizes client platform components such as Active Management Technology - AMT vPro, graphics driver UIs, storage configuration UIs and their associated installers across as many as 26 languages.

Previously, Highland was the Digital Health Enabling (DHe)'s Software Engineering Research Lead. Her work has focused on RFID reader API development, mobile platforms and Real Time Location Systems (RTLS) for Mobile Point of Care usage models. She proposed a "Reader" class hierarchy encompassing the higher level notion of reader (including Barcode reader and RFID reader) along with lower level RFID tag protocol classes, including an ISO 18000-6C RFID Reader Class API (C1G2) definition. The RFID Reader API which resulted from this was released in 2007 via Intel's Open Source Mobile Platform SDK 1.2 release. The development platform was MS Windows XP, VS2003, VS2005, C# and C++ using SkyTek HF RFID Reader development modules. She also led a cross organizational team (including SSG application enabling, Digital Health marketing/strategic planning and product engineering) to create the Mobile Clinicians Assistant (MCA) next generation software roadmap.

Earlier in her career at Intel, she was the Senior Software Engineering lead for the device management architecture within NBI's RFID Operations. She enjoyed leading the device management feature set development, integrating various software modules into a comprehensive architecture, presenting her work to external customers and implementing customer product suggestions.

Prior to joining Intel, Highland also worked at Xerox Corporation's Office Products Division. This organization designed and implemented Network Controller components embedded in Multifunction Printing Devices. Her responsibilities included the design and specification of new device features utilizing network protocols such as TCP/IP, SNMP, HTTP and SMTP. Interfaces to the network, management software, printer engine, user interface and scanner were defined for each feature component. Programming tasks were in a Solaris/Unix environment. Her work resulted in 2 US Patents for device management via distributed systems. She has other patent applications pending.

Additional Profession Background Information may be found at: [www.linkedin.com/in/highlandmary](http://www.linkedin.com/in/highlandmary)



## Phoenix Chapter of the IEEE Computer Society

### *Notes on April 1, 2009 Meeting Venue*

**Intel location: 5000 W. Chandler Blvd, Chandler, AZ**

Chandler Blvd can be reached via I10, the 202 or the Loop 101 (SouthEast Valley).

I10 route – Take Chandler Blvd exit; head east (past N. Kyrene Rd.); take left hand turn at Intel Way.

202 route – Take N. Kyrene Rd. exit; take a right hand turn (east) at Chandler Blvd; take a left hand turn at Intel Way.

Loop 101 - Take Chandler Blvd exit; head west (past Rural Rd); take a right on Intel Way.

Once on campus: Proceed north along the campus, taking left hand turns. You will see a building with a large C4. You can park in visitor or employee spaces in any parking lot or the parking garage. Meet at the C4 lobby for check-in and escort to the patio and/or conference room. There's a small patio area where we can have the light dinner and socialization before proceeding to the ADT meeting and conference room.

Networking will be in the Patio (6-7PM with light meal), presentation at 7PM.

## **Future Technical Meetings**

- **May 4, 2009 – Emerging Trends for Security and Technology Careers in the Coming Decade, Debbie Christofferson, CISSP, CISM**
- **October, 2009 Advances in Digital Image Processing, Jorge Caviedes, Intel Corp**
- **November, 2009 – TBA**
- **December, 2009 - TBA**

Would you like to be a speaker at a future meeting? We are always looking for interesting speakers to cover computer related topics. **Contact [joy.shetler@computer.org](mailto:joy.shetler@computer.org) OR [Jon.Candelaria@motorola.com](mailto:Jon.Candelaria@motorola.com) for more information on becoming a speaker today.**



**INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS  
WAVES AND DEVICES CHAPTER**

<http://ewh.ieee.org/r6/phoenix/wad/>

*Meeting Free & Open to Non-IEEE Members*

**April 16<sup>th</sup>, 2009, APS Meeting**

**Freescale Semiconductor, Tempe, AZ**

**Group Conference Room – 4:00 PM**



## **Emerging Wireless Standards for Gigabit Applications**

**Bruce Bosco**

**Bruce Bosco Consulting LLC**

e-mail: [bruceabosco1@cox.net](mailto:bruceabosco1@cox.net)

### **Abstract**

Demands in file size and transfer rates for consumer-orientated products have escalated in recent times. This is primarily due to the emergence of high definition video content. Now factor in the consumer desire for convenience, and we find that wireless service is the preferred approach for inter-connectivity. Consumers expect wireless service to emulate wired service with little to virtually no difference in quality of service (QoS). Several standards worldwide are attempting to address these requirements. This presentation examines the current emerging standards that are targeting applications requiring a minimum of one Gb/s sustained throughput with excellent QoS for consumer and enterprise wireless personal area networks (WPAN). Each of the standards discussed arrived at a similar conclusion that the unlicensed 60 GHz band provides the best prospect in achieving these types of data rates, using modest modulations schemes, in available unlicensed spectrum.

### **Biography**

Bruce Bosco graduated with a BSEE from Arizona State University in 1986. His first RF/Microwave engineering position was with M/A-COM where he designed circuits and modules for military and aerospace application. His next position was with Amtech Systems Corporation where he was involved in the design and manufacturing of RFID systems for automotive and railroad applications. After this, he was a senior microwave engineer at Comtech/EFDATA where he served as program lead on several complex microwave transceiver projects at both C and Ku bands. His next stop was at Motorola where he began designing MMICs at millimeter wave frequencies up to 60+ GHz. Bruce also became involved in system design and modeling, high frequency packaging, modulation techniques and standards and regulations. Currently, he is on extended vacation and looking at several new opportunities.

**Date:** April 16, 2009

**Location:** Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ  
"Group" Conference Rm, Bldg 94.

**Time:** 4:00-5:00 PM Presentation

Pizza will be served following the Seminar

For more information, please call:

Steve Rockwell (Chapter Chair) at (480) 241-9891 [steve.rockwell@ieee.org](mailto:steve.rockwell@ieee.org)

Chuck Weitzel (Chapter Publicity) at (480) 292-0531 [c.weitzel@ieee.org](mailto:c.weitzel@ieee.org)





INSTITUTE OF ELECTRICAL AND ELECTRONICS  
ENGINEERS

WAVES AND DEVICES CHAPTER

<http://ewh.ieee.org/r6/phoenix/wad/>

*Meeting Free & Open to Non-IEEE Members*

EDS Meeting

April 23<sup>rd</sup>, 2009, 4:00PM

Arizona State University, Tempe, AZ

Graham Conf Rm,  
Memorial Union



## Ion Channel Biosensors on Silicon

**Dr. Michael Goryll**

Assistant Professor, Department of Electrical Engineering  
Ira A. Fulton School of Engineering, Arizona State University  
e-mail: [michael.goryll@asu.edu](mailto:michael.goryll@asu.edu)

### Abstract

Ion channels are proteins in the cell membrane that allow a selective transport of specific ions into the cell or out of the cell. Since ion channels are common drug targets, monitoring the ionic current through these channels in presence of a specific drug can prove the efficiency of a medication and reveal potential adverse reactions. Genetically engineered ion channels can be used for a wide variety of applications, ranging from biochemical detection to DNA sequence readout. For this to be possible, the nanometer-sized ion channels have to be inserted into a bilayer lipid membrane, mimicking the natural environment of these channels. Currently, these membranes are hosted on apertures in polystyrene or polytetrafluoroethylene (PTFE) that have been created mechanically with a size of typically 150 $\mu$ m. This talk will present a silicon device that can act as a replacement for the plastic substrate. By being based on silicon microfabrication, the aperture is scalable and the integration of planar reversible electrodes is possible. By coating the surface with a plasma-polymerized fluoroethylene, hydrophobicity and thus a reproducible formation of planar lipid bilayers across the aperture can be accomplished, with electrical seal resistances in the range of tens of Gigaohms. Ion channels can be readily incorporated and single ion channel activity can be recorded. The silicon devices have been passivated to provide a low capacitance, which is necessary to achieve a low noise in the recordings. The presentation will include a discussion on the noise sources and show possible pathways how to reduce these sources. A discussion on the amplifier technology needed to record the ionic currents in the picoampere range with a high signal-to-noise ratio will be part of the presentation, pointing out how the integration of analog electronics and biological membranes can lead to compact sensors based on ion channels.

### Biography

Dr. Michael Goryll received his Diplom (1997) and PhD (2000) degrees all in physics from the RWTH Aachen University, Germany. He has held a research position at the Institute of Bio- and Nanosystems at the Research Center Juelich, Germany from 1996 to 2007, where he worked on Ge and SiGe nanostructure growth and the development of a strain relaxed buffer process for sSOI substrates using chemical vapor deposition. Besides his efforts in the materials science he became involved in the process development for a vertical nano-MOSFET and a field-effect transistor for whole-cell-based sensing that featured an optimized geometry for cell attachment. He held a post-doc position at Arizona State University, USA from 2003 to 2005, where he started his research on ion channels. He is currently an Assistant Professor at the Department of Electrical Engineering at Arizona State University, USA, since 2007. Dr. Goryll has published several journal and conference papers and is a reviewer for international journals, spanning the field from semiconductor devices to biophysics. Dr. Goryll's current research interests are in the field of silicon processing for biosensors and the development of low-noise electronics for the recording of ionic currents in the pA range for the integration with biochemical transducers. Dr. Goryll is a member of the Materials Research Society as well as the Biophysical Society.

**Date: April 23, 2009**

**Location: Graham Conf Rm, Memorial Union, Arizona State University, Tempe, 85287**

**Time: 4:00-5:00 PM Presentation** Pizza will be served following the Seminar

For more information, please call:

Steve Rockwell (Chapter Chair) at (480) 241-9891 [steve.rockwell@ieee.org](mailto:steve.rockwell@ieee.org)

Chuck Weitzel (Chapter Publicity) at (480) 292-0531 [c.weitzel@ieee.org](mailto:c.weitzel@ieee.org)



## Power & Energy Society Announcements

### April 2009 Technical Meeting

*Date & Time:* **Thursday, April 16, 2009 – 12 Noon**

*Location:* **SRP PERA Club**, Map - <http://ewh.ieee.org/soc/pes/phoenix/images/PERAMAP.pdf>

*Speaker:* **Peter Heiman, Western Area Power Administration**

*Topic:* **Introduction to Blackstart.** See PES website for more information as it becomes available <http://ewh.ieee.org/soc/pes/phoenix/>

### Schedule of Upcoming 2009 events

Thursday, May 21st	May 2009 Lunch Meeting - Engineers Without Borders Speaker TBA APS Deer Valley Building N-1 Conf.Room E, 12 Noon <a href="#">Map</a>
June - August	Summer Break: no PES Phoenix Chapter meetings will be held
Thursday, September 17th	September 2009 Lunch Meeting - Topic TBA Speaker TBA SRP PERA Club, 12 Noon <a href="#">Map</a>
Saturday, September 26th	52nd Annual IEEE PES Phoenix Chapter Golf Tournament <a href="#">Antelope Hills Golf Club, Prescott</a>
Thursday, October 15th	October 2009 Lunch Meeting - Topic TBA Speaker TBA APS Deer Valley Building N-1 Conf.Room E, 12 Noon <a href="#">Map</a>
Thursday, November 19th	November 2009 Lunch Meeting - Topic TBA Speaker TBA SRP PERA Club, 12 Noon <a href="#">Map</a>
December	No PES Phoenix Chapter meeting

If you have an idea for a speaker, please contact any of the PES Phoenix Chapter [Officers](#).





## IEEE Phoenix Area Consultants Network April '09 Meeting announcement

Our next meeting will be the **PACN** annual picnic, and it will be held at **Lane Garrett's house** on **April 25th**, starting at **2:00 PM**. The address is 8502 E Cactus Wren Rd, Scottsdale AZ 85250. Spouses are welcome. Each attendee or couple should bring a dish or a desert for the group.

The March meeting of the IEEE Phoenix Area Consultant's Network was held at the offices of ETA Engineering, Inc., 4040 E Presidio Drive. Mesa Arizona, on March 12, 2009. The program topic was "Income Tax Requirements for Consultants", and was presented by David Issac. Mr Isaac gave a very informative presentation that was much appreciated by the 20 attendees.

We made some interim selections for Webmaster and Advisor editor, and initiated steps to list our PACN web site on the IEEE Consultant's Network page, so other members can find us. Our officers are:

President	Ronald L. Sprague, P.E.	<a href="mailto:r.sprague@ieee.org">r.sprague@ieee.org</a>
Vice President	C. Bruce Johnson	<a href="mailto:cbj@johnsonscientific.com">cbj@johnsonscientific.com</a>
Treasurer	Bill Morgan	<a href="mailto:bill.morgan@cox.net">bill.morgan@cox.net</a>
Secretary	Ed Mischen	<a href="mailto:ed.mischen@cox.net">ed.mischen@cox.net</a>
Webmaster	Mike Pyska	<a href="mailto:m.pyska@ieee.org">m.pyska@ieee.org</a>
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Program Chairman	Robert Petro	<a href="mailto:Robert.petro@systemdatasolutions.com">Robert.petro@systemdatasolutions.com</a>
Member at Large	Land Garrett, P.E.	<a href="mailto:lanegarret@aol.com">lanegarret@aol.com</a>
Member at Large	Ed Bawolek	<a href="mailto:bawolek@ieee.org">bawolek@ieee.org</a>
Website		<a href="http://www.ieeepacn.com">www.ieeepacn.com</a>

We have established a tentative schedule of programs for the rest of the year, so we can all plan for future attendance. Our meetings are held on the second Thursday of the month, unless otherwise indicated.

April 25	PACN Picnic
May 14	Professional Liability (Errors & Omissions) Insurance for Consultants - Jeff Gerrick
June - August	Summer Break
September 10	"Renewable Energy" Lane Garrett, P.E.
October 8	"IEEE National Consultant's Network Programs" C Bruce Johnson
November 12	"How to Conduct an Assignment" Jim Soudriette, and Tom Funk
December 10	Annual business meeting and election of Officers

Mike Pyska will be looking for other locations for meeting places. Harvey Alstadter has made an excellent suggestion in light of the current recession, (AKA depression). He suggested the PACN check with IEEE USA to see if there is an Employment Assistance Program that has been or can be established for the Phoenix area similar to one that had been formed in the Long Island Section some 10+ years ago after the aerospace bust.

We invite any of the IEEE Phoenix Section members and student members to attend our meetings, and we would like some inputs on program topics. Some of the topics we are considering for future meetings are:

- SCORE assistance for Small Business Startups
- The State of Arizona Mechanic's Lien Laws and their application to consultants
- Engineering Registration requirements for offering Professional Engineering services

We will be happy to add any new topics, if they are of interest to the Phoenix Section Membership.



## IEEE and Eta Kappa Nu Honor Society Sign Merger Agreement

**Media Contact:**  
Francine Tardo  
+1 732 465 5865  
[f.tardo@ieee.org](mailto:f.tardo@ieee.org)

**PISCATAWAY, NJ, USA, 24 February, 2009** – IEEE, the world's largest technical professional society, signed a merger agreement with the honor society Eta Kappa Nu (HKN), a nonprofit, public-service organization comprising nearly 200 university chapters, 14 February 2009. The merger, which will go into effect by mid-2009 pending final approval, will make HKN the official honor society of IEEE, recognizing scholarship and academic excellence and identifying student leaders, young professionals and eminent scholars in the IEEE's technical fields of interest.

Under the agreement, HKN will become an organizational unit of IEEE, governed by the new IEEE-HKN Board of Governors. A restricted endowment will be created in the IEEE Foundation to support HKN's educational, societal, and recognition activities. In addition to holding HKN's current assets, the new endowment will receive an initial donation of US\$1.2M from IEEE.

The agreement was signed by Dr. Bruce Eisenstein, President of HKN; Dr. Richard Gowen, President of the IEEE Foundation; and Dr. John Vig, IEEE President and CEO, during the IEEE meeting series in Puerto Rico, at a ceremony attended by more than 200 members of IEEE and Eta Kappa Nu. The pending merger was approved by HKN chapters and the HKN Board of Governors; the IEEE Assembly (representing the members of IEEE) and IEEE Board of Directors; and the Board of Directors of the IEEE Foundation.

"Upon the merger, we expect that HKN will strengthen and flourish. It will attract and retain exceptional students and young professionals from all over the world, and from all technical fields of interest of IEEE," said Dr. John Vig, IEEE President and CEO. "IEEE is committed to make HKN the exemplary leading honor society in engineering, science and computing."

The IEEE and HKN merger will extend the relationship between the two organizations that spans nearly a century of cooperation. IEEE and HKN currently hold joint award and recognition ceremonies, and a large number of service activities are organized jointly by IEEE student branches and HKN chapters. These activities include tutoring to students, outreach to high schools, and sponsorship of technical competitions and scientific presentations.

"Over the last few years it became clear that IEEE and HKN will be able to enhance each other in terms of their scope of activities and their appeal to students and young professionals. Both organizations will end up winners," said Bruce Eisenstein, President of HKN.

### **About IEEE**

IEEE (Institute of Electrical and Electronics Engineers, Inc.), the world's largest technical professional society, is commemorating its 125th anniversary in 2009 by "Celebrating 125 Years of Engineering the Future" around the globe. Through its more than 375,000 members in 160 countries, IEEE is a leading authority on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. Dedicated to the advancement of technology, IEEE publishes 30 percent of the world's literature in the electrical and electronics engineering and computer science fields, and has developed nearly 900 active industry standards. The organization annually sponsors more than 850 conferences worldwide. Additional information about IEEE can be found at <http://www.ieee.org>.

### **About ETA KAPPA NU**

Founded on October 28, 1904, HKN is a membership organization dedicated to encouraging and recognizing excellence in the electrical and computer engineering fields. HKN is a nonprofit, public service organization comprising nearly 200 university chapters, close to 1000 active member volunteers, and approximately 100,000 living inductees. Members consist of students, alumni and other professionals who have demonstrated exceptional academic and professional accomplishments. Additional information about HKN can be found at <http://www.hkn.org>.

### **About the IEEE Foundation**

The IEEE Foundation cultivates resources and relationships to advance IEEE's core purpose to foster technological innovation and excellence to benefit humanity. The IEEE Foundation fulfills its purpose by: (1) awarding grants to new and innovative projects that seek to improve the worldwide technological literacy of society from childhood through adulthood, and (2) serving as the fund administrator for educational, historical preservation, and peer recognition programs of IEEE units. Additional information about the IEEE can be found at <http://www.ieee.org/foundation>.



## IEEE Strategies to Help School Science Teachers

The national office of the IEEE has had an active program for a couple of years now to train science teachers in improved ways to teach science and engineering to school children. Called **TISP – Teacher In-Service Program** – the program is a response by the institute to the widely acknowledged appallingly low quality of science and mathematics knowledge among graduating school children, and the rapidly decreasing number of students who opt for a degree and a career in engineering rather than in business management, finance or law. The institute recognizes that a large part of the problem is the lack of knowledge and experience of engineering matters among the science teachers, this leading to a lack of exposure of children at a young age to real science or the encouragement of any child that might have an interest. In fact, studies show if children have not been exposed to science before high school it is really too late for them to get into it. Along with that, by 5<sup>th</sup> grade students need to know that going to college is a possibility for them.

Hence, a major part of the national IEEE program is the creation of a growing set of teaching modules / lessons plans, each module being structured around a particular engineering problem such as electric motors, structure loads, etc. Each module emphasizes the teaching of the relevant engineering, science and mathematics principles through a practical project performed by the students. These modules are freely available to any teacher on the institute website: [www.tryengineering.org/lesson.php](http://www.tryengineering.org/lesson.php).

The TISP program is an effort sponsored and promoted by the national office but run at the local chapter level. The Phoenix Section lead on TISP is Mike Poggie. To further help the process, the national office has been running a series of workshops to train IEEE member volunteers in achieving two goals: to train teachers in better ways to teach engineering and science principles, and to provide in classroom assistance to the science and mathematics teachers. A small group from the Phoenix Section participated in the last session in November held in San Francisco; it was a lot of fun and very inspiring! But it is clear that to manage and implement TISP over the whole Phoenix Section, we have to divide up the tasks into manageable subsets, each subset under a different lead and all the subsets coordinated by Mike Poggie. A subset could be a distinct grouping such as retirees, or a town remote from Phoenix like Flagstaff, or even quite possibly a particular school.

As a first subset we are seeking to enlist the help of the talented retirees in the IEEE. Retirees represent a tremendous pool of engineering talent and knowledge associated with its application in the real world of industry, academia, government, etc. They are very capable of being able to show school children in science classes how what they are being taught relates to the real world and how science and math studies can lead to a fruitful and enjoyable career in engineering. Plus they have more time they can devote to this cause than do our colleagues in full-time employment and with young families. This subset is being organized by John Purchase. So any retiree interested in joining this effort should please email John Purchase at: [jpurchase@cox.net](mailto:jpurchase@cox.net). Once he has responses he will organize a meeting in the new year to explain, discuss and plan this outreach effort to help secure a future for our children as engineers and for our nation as a technical leader in the world.

Plus any non-retiree interested in helping the Chapter's TISP effort should get in touch with Mike Poggie at: [Mike.Poggie@ieee.org](mailto:Mike.Poggie@ieee.org). And the national office continues to run regular TISP workshops (and all travel expenses are reimbursed!); they are well worth attending for anyone interested in working with school children and teachers.



## IEEE Mentoring Connection

IEEE is offering its members the opportunity to participate in an online program which will facilitate the matching of IEEE members for the purpose of establishing a mentoring partnership. By volunteering as a mentor, individuals use their career and life experiences to help other IEEE members in their professional development. I believe this program can be a great tool to provide our newest members of our profession guidance in their careers and provide experienced members a chance to hear first hand from the newly graduated about the latest training the next generation is receiving. This is a program for higher level members and is provided to help ease the transition out of school and into a career.

As a mentee, you lead your partnership by selecting your mentoring partner from among those who have volunteered to serve in this capacity. I ask that you review the time and effort commitment to the program to ensure a successful mentoring partnership. Participation in the program is voluntary and open to all IEEE members above the grade of Student Member.

If you are interested, please go to <http://www.ieee.org/mentoring> for information on the roles and responsibilities of each mentoring partner. I encourage you to take advantage of the IEEE network of technical professionals or offer your expertise and sign up for the online mentoring program today.

### Who can be an IEEE Mentor?

IEEE higher-grade members (above Student Member grade) who are, but not limited to:

- Willing to give time and effort to the mentoring partnership (we suggest minimum of two hours per month)
- Able to communicate effectively with others
- Willing to share some career successes and failures
- Individuals who may be or have been executives, consultants, or in middle or upper management, or in research
- Individuals who may be or have been educators, entrepreneurs, or self-employed
- Individuals who may be or have been proven leaders offering inspiration and insight
- Individuals who may be or have been IEEE officers or volunteers
- Willing to review an orientation session to learn guidelines, tools of program and the mentee and mentor's role and responsibilities

### Who can be an IEEE Mentee?

IEEE higher-grade members (above Student Member grade) who are, but not limited to:

- New professionals in their first or second job, or considering entering graduate programs
- Recent graduates entering the professional workforce for the first time
- Professional making a career move or career change
- Passionate for learning
- Willing to give time and effort to the mentoring partnership (we suggest minimum of two hours per month)
- Willing to identify and clarify their developmental goals
- Interested in learning from another professional "who has been there"
- Willing to participate in mentee orientation session to learn guidelines, and tools of program and their role and responsibilities as a mentee

This program deserves your consideration and doesn't require a large amount of time on your part. It can provide of great assistance to the next generation of engineers.

Russ Kinner  
Conferences Chair, Phoenix Section



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## Phoenix Section Executive Committee Meeting – First Tuesday of the month.

### April '09 Meeting:

<b>No Meetings in July and August</b>
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**Date:** April 7, 2009, Tuesday

**Time:** 6:00 pm to 8:00 pm

**Place:** Phoenix Airport Hilton, 2435 S 47th St, Phoenix, AZ, 85034 Tel.: 480-804-6017

**Directions:** From the Hohokam Expressway (AZ 143), exit University Ave, go West and turn right on 47<sup>th</sup> Place.

**More Info:** Meetings are held on the first Tuesday of the month. All interested IEEE members are welcome to attend.

**Contact:** Debendra Mallik, Phoenix Section Chairman, [dmallik@ieee.org](mailto:dmallik@ieee.org)

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## IEEE Phoenix - Calendar of Events for April 2009:

You may access the IEEE Phoenix Section Calendar of Events at  
<http://www.mynetcalendar.com/calendar.php?month=4&year=2009&calendarid=2400>

For inputs and updates to the Calendar, please contact the IEEE Phoenix Section Conferences Chair, Russ Kinner at 602-997-2353 or e-mail: [r.kinner@ieee.org](mailto:r.kinner@ieee.org)