# The Valley Megaphone

Newsletter of the
Institute of Electrical and Electronics Engineers, Inc.
Phoenix Section
April 2008, Volume XXII, Number 4

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### *Contacts:*



### *Contents:*



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

Please send announcements for Valley Megaphone to Eric Palmer: ecpalmer@ieee.org.

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The Valley Megaphone is the newsletter of the Phoenix Section of the Institute of Electrical and Electronics Engineers. It is published monthly and reaches about 4000 members. Submit articles, advertisements, and announcements to Eric Palmer at the above email address. Deadline for announcements and advertisements is the third Friday of the month prior to publication.
Advertising Rates: Full page: $200, 3/4page: $125, ½ page: $75, 1/3 page: $50, 1/4 page: $25.
Change of address/email? Call toll free 1-800-678-IEEE. Please allow 6-8 weeks. Section Web Page is: http://www.ieee.org/phoenix

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

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

**Place:** Phoenix Airport Hilton, 2435 South 47th Street
Phoenix, AZ, 85034
Phone: 480-804-6017

**Directions:** From 143, exit University Ave, go west, turn right on 47th street.

**More Info:** Meetings held first Tuesday of month. No meetings in July and August. All interested IEEE members are welcome to attend.

**Contact:** Keith Holbert, Phoenix Section Chairman, holbert@asu.edu

## Life Members Chapter in Phoenix Section

A petition to form Life Members Chapter in Phoenix section has been submitted and approved by the Section executive Committee and Region 6 Director Loretta Arellano.
As of last month there are 435 Life Members in IEEE Phoenix Section. Life Members have long IEEE experience and can contribute significantly to the Section. Life Members Chapter like GOLD Members Chapter, and Consultants Network is an affinity group recognized and supported by the IEEE.
If any Life Member is interested in becoming Chapter Executive Committee Chair, Vice Chair, Secretary, Treasurer or Program Committee Chair, please contact Rao Thallam: Phone (602) 236-8064, Cell: (602) 818-0549, e-mail: thallam@ieee.org

## NSF Scholarships in Electrical & Computer Engineering at Embry-Riddle Aeronautical Univ., Prescott, AZ

Embry-Riddle Aeronautical University is offering individual student scholarships funded through a grant provided by the National Science Foundation of up to $10,000 per academic year (up to four years with qualifying criteria) to academically talented and financially challenged students accepted into either the Electrical Engineering or Computer Engineering degree programs offered at the Prescott, Arizona Campus. These scholarships are provided to assist students in paying Embry-Riddle costs of attendance. Scholarship recipients also receive a minimum assurance of $5,000 per year in other scholarships and grants funded by Embry-Riddle. These scholarship amounts are in addition to assistance for which the student qualifies from other federal and state programs. For complete information visit http://www.erau.edu/pr/news/1007nsf.html or contact Ed Post at john.post@erau.edu .

For more information visit http://www.erau.edu/pr/news/1007nsf.html or email john.post@erau.edu


**Advanced Materials/Failure Analysis (AMFA) Workshop**
**May 2, 2008 • Hyatt Regency Hotel • Phoenix, Arizona**

## Mission

To serve the interests of failure analysis and materials characterization professionals by providing a forum for the presentation and active discussion of timely and pertinent technological issues and trends and to promote the development of new capabilities that fill critical gaps in emerging technologies.

## 2008 Program – Analysis at the Atomic Scale

This year's exciting single day program consists of renowned invited speakers covering a variety of topics emphasizing analysis at the atomic scale in a series of 40 minute presentations, each followed by 20 minutes of facilitator-led audience discussion.

**David Joy** - *Oak Ridge National Labs & University of Tennessee*

**Is There a Future for the SEM?**

Developments in scanning electron microscopy including enhancements in electron sources, the application of aberration correction technology to the lenses, and more selective detector systems, will be discussed. A new high brightness helium ion source offers significant competition and the performance and future potential of scanning electron and scanning ion systems will be compared.

**Zachary Levine** - *NIST*

**Nanotomography by X-ray & TEM: Applications, Challenges, & Emerging Trends**

There are several technologies for 3D imaging at the package and chip levels. This talk will review the history of these developments and discuss the trade-offs among existing and near-future options, including real-space imaging and phase retrieval for x-rays and incoherent bright field imaging for TEM.

**Phillip Russell** - *Appalachian State University*

**Nanoscale Applications of FIB Systems**

Focused ion Beam (FIB) systems have evolved to become a critical tool in any modern semiconductor analytical/microscopy lab. Present generation ion optical systems feature 5 nm spot size for imaging and nanomachining; with simple, quick optical reconfiguration to high current beams (of larger size) for rapid removal of sample material. This makes the FIB system an ideal tool for micromachining to gain access to internal areas of complex 3-D devices, and nanomachining of areas of interest to thicknesses required for atomic resolution TEM/STEM imaging, chemical and electrical analysis. In addition to the latest capabilities of standard failure analysis sample prep, this talk will demonstrate the use of FIB to prepare live, electron transparent samples with electrical contacts intact for not only atomic resolution imaging but also full STEM based electrical characterization using EBIC and CL as well. Novel methods of FIB/nanomanipulator based rewiring will also be demonstrated, as well as FIB based fabrication of plasmonic sensors. The use of ion beam induced/assisted chemistry will be highlighted in all examples shown.

**Alan Street** - *Qualcomm*

**Failure Analysis in an IFM Environment**

The process development and yield enhancement cycles are critical components in the time-to-market equation and the ability of a fabless designer to work with the foundry to shorten the cycle is a primary determinant of success in the competitive marketplace. To this end, a number of fabless companies are now adopting failure analysis, design-debug and process development techniques that are well established among integrated device manufacturers (IDMs). The range of failure analysis techniques employed by the fabless manufacturer is very close to those employed by the the IDM, with the exception of materials analysis techniques specifically used for process monitoring (i.e., magnetic sector SIMS for dopant profiling). Where things differ is in how these techniques are deployed. In the Integrated Fabless Manufacturing (IFM) environment, the failure analysis work is deployed as close as possible to the end users of the FA results. For design debug, the FA team acts as the "eyes and ears" of the circuit design team, allowing them to see what's really happening in their circuits. For yield enhancement/defect reduction, this not only means doing failure analysis at the foundry with the IFM and foundry FA teams working closely together to share design information and analytical results. It also means developing methods to share enough IP to rapidly drive down defect density, yet protect critical design and process IP from disclosure in a way that doesn't stifle collaboration. Finally, it also requires hybrid methods of sample preparation and fixturing that bridge the gap between wafer based and package based failure analysis.

**Martino Poggio** - *IBM*

**Ultrasensitive Force Detection Applied to Nuclear Magnetic Resonance**

Magnetic resonance imaging (MRI) is a powerful imaging technique that typically operates on the scale of millimeters to micrometers. Conventional MRI is based on the manipulation of nuclear spins with radio-frequency fields, and the subsequent detection of spins with induction-based techniques. An alternative approach, magnetic resonance force microscopy (MRFM), uses force detection to overcome the sensitivity limitations of conventional MRI. Recently we demonstrated that two-dimensional imaging of nuclear spins can be extended to a spatial resolution better than 100 nm using MRFM [1]. I will discuss this effort and the significant progress we have made since then, reaching a true three-dimensional resolution of better than 10 nm.

**Brian Gorman** - *University of North Texas*

**3-D Atomic Scale Characterization of Semiconductors Using Atom Probe Tomography**

3-D characterization of semiconductor devices at the near atomic level is increasingly important, especially for semiconductor logic and memory devices as well as quantum structured photovoltaics. In order to properly understand these devices, chemical resolution down to the ppm level is needed while maintaining sub-nm spatial resolution. Atom probe tomography is capable of these detection levels, but has previously been utilized primarily in metallurgy. Utilizing atom probe in semiconductor devices requires new reconstruction and specimen preparation techniques due to the widely varying materials present in devices. To that end, our recent work on FIB specimen preparation as well as cross-correlating atom probe with TEM tomography will be highlighted. Materials systems particularly highlighted in this talk will include high-k dielectrics, doping in Si devices, and III-V quantum well layers.

**Rod Ruoff** - *University of Texas*

**In-situ Nano-manipulation for New Science**

In-situ testing methods have been used to measure the mechanical properties of 1-dimensional nanostructures, specifically carbon nanotubes and various inorganic nanowires. The approaches and some of their limitations will be discussed.

## Registration

Online registration is now open: http://www.amfaworkshop.org/registration.html

Standard Fees: $250.00 for IEEE or EDFAS members, $300.00 for non-members.

**Registration for the AMFA workshop provides the following:**

- A full day of talks on a variety of emerging and high-impact subjects from speakers invited on the basis of exceptional new content and presentation expertise.
- Participation in break-out discussions.
- Two breaks and a buffet lunch.
- A CD containing the full set of presentations.

Early Bird Discount expires **APRIL 11, 2008.**
Online registration closes at 5pm on **MAY 1, 2008.**
On-site registration will be available on **MAY 2, 2008** from 7am to noon.

**For general workshop information, visit Http://www.amfaworkshop.org/ or contact:**

**Cheryl Hartfield, 2008 Workshop Chair**
**Omniprobe, Inc.**
10410 Miller Rd., Dallas, TX 75238
Ph: (214) 572-6804; Fax: (214) 572-6801
hartfield@omniprobe.com
http://www.omniprobe.com

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Toll Free: 866-701-6614

The 2008 AMFA Workshop is financially sponsored by Omniprobe, Inc., FEI Company, and Gatan.

Technical co-sponsors include the IEEE Reliability Society and the Electronic Device Failure Analysis Society.





# Student Activities Chair Needed

The IEEE Phoenix Section needs a member to fill the critical position of Student Activities Chair. This person is a voting member of the Executive Committee. The duties of the Student Activities Committee Chair include the following:

- Act as a filter regarding student requests (financial or otherwise) in order to convey historical section practice, conformance to IEEE rules, etc;
- Facilitate interaction between the student branches and student branch chapters in the Phoenix section area;
- Act as liaison between the student branches and the Phoenix section;
- Coordinate the student branch reports at the monthly Executive Committee meeting;
- Encourage student participation in regional meetings;
- Keep and update the list of student branch officers and advisors;
- Organize the Phoenix student paper contest;
- Coordinate the Scholarship Awards process; and
- Encourage nominations and assist in the selection of student related awards for the annual Phoenix section awards banquet.

There are five student branches within the Phoenix Section: (1) Arizona State University (ASU) in Tempe, (2) ASU Polytechnic, (3) DeVry University, (4) Embry-Riddle Aeronautical University in Prescott, and (5) Northern Arizona University in Flagstaff.

If you are interested in encouraging and promoting the IEEE with tomorrow's leaders---today's students, then please contact Keith Holbert, Chair, IEEE Phoenix Section, (480) 965-8594, holbert@asu.edu .

# Publicity Chair Needed

The IEEE Phoenix Section needs a member to fill the critical position of Publicity Chair. This person is a voting member of the Executive Committee. The duties of the Publicity Chair include the following:

- Publishing The Valley Megaphone, a monthly newsletter
- Relaying information on conferences, technical meetings, and other events that are of interest to all or part of the IEEE Phoenix Section members
- Working with the Web Master to provide content for the Phoenix Section Webpage

If you are interested in this position, then please contact Keith Holbert, Chair, IEEE Phoenix Section, (480) 965-8594, holbert@asu.edu .

# IEEE Phoenix Area Consultants Network April Meeting:

# Developing for the Global Markets: Internationalization

**Date:** Thursday, April 10, 2008

**Time:** Networking begins at 6:30 PM
Dinner begins at 7:00 PM
Program starts at 8:00 PM

**Place:** Denny's Restaurant
3315 N. Scottsdale Rd. (at Osborn)
Scottsdale, Arizona 85251

**Abstract:**

In our interconnected world, it has become increasingly important to tailor our technology products to an international market. Vaughn Treude will give a presentation about Internationalization and Localization in software and product development, with an emphasis on multiple language support.

**For more information, contact Vaughn Treude, vaughn@nakota-software.com, or see the IEEE PACN website, ieeepacn.com.**

# Phoenix Chapter of the IEEE Computer Society
# April meeting

## Speaker: James Spindler
## Date: 6:00 P.M., Wednesday, April 2, 2008
## Location: DeVry University,

**2149 West Dunlap Ave, Phoenix, AZ 85021 (1 mile east of I-17 on Dunlap, SE corner of 22nd Ave and Dunlap). Networking will be in the Courtyard (6-7PM with light meal), presentation at 7PM.**
**Free, everyone is welcome. Please tell others about this meeting.**

**For more information about this meeting, contact joy.shetler@computer.org**

### Description

**ANSR** (Arizona Near Space Research) is a Phoenix, Arizona based non-profit 501(c) (3) organization that promotes science and education by exploring frontiers in amateur radio and high altitude balloons. These projects cover a wide range of disciplines. All the designs are released under the GNU General Public License for non-commercial usage.

The helium filled weather balloons reach a typical altitude of 90,000 to over 105,000 feet before bursting. A parachute allows the payload to fall at a controlled speed to the ground. The balloons take skyward a variety of small packages that contain a variety of electronics and experiments. The electronics include APRS (Automatic Position Reporting System), cross-band voice repeaters, and ATV (Amateur Television). APRS is a digital system that transmits position and altitude from a GPS receiver to a ground station. A cross band repeater receives voice or data signals on one frequency and simultaneously transmits the same voice or data on a different frequency. Because the balloon is at high altitude, it allows amateur radio operators to make contact over a long distance. ATV is used to relay the pictures from a small camera on the payload to a ground receiver much the same way a television station broadcasts its signal.

### About the Speaker

James Spindler is the Vice-President of Arizona Near Space Research, or "ANSR". ANSR is a non-profit organization whose goal is to promote science and engineering education thru high altitude ballooning and Amateur radio.

### For more Information

See http://www.ansr.org and http://www.kd7lmo.net

# May meeting
# Wednesday, May 7, 2008

## Presentation: Intel Mobile Platform Hospital IT Enabling Research
## Speaker: Highland Mary Mountain, Intel Corp.

**Description:**
This presentation focuses on a platform developed by Intel to aid hospitals and specifically the mechanism developed for the patient identification process (for purposes such as medication administration, blood administration, sample identification, treatment, meal service and patient billing). Background information on the challenges faced in the hospital environment will be described. The novel aspects of the Intel platform as well as the software developed to overcome these challenges will be discussed.

**Speaker Biography:**
Highland is 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 SkyeTek 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. She has patent applications pending for her work.

Early 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.

Highland obtained her MS in Computer Science from Rochester Institute of Technology and her BA in Mathematics with a Computer Science Minor from the SUNY College at Geneseo, graduating Summa Cum Laude.

Additional professional background information may be found at: www.linkedin.com/in/highlandmary

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## Upcoming Meetings

## June to September – Summer Hiatus, No Meetings

### Wednesday, October 1, 2008
"I-19 Wireless Corridor Project," by Galen Updike, Arizona Broadband Telecommunications

### Wednesday, November 5, 2008
TBD

### Wednesday, December 3, 2008
TBD

Would you like to be a speaker at a future meeting? We are always looking for interesting speakers to cover computer related topics. Contact C.Vasquez-Carrera@computer.org for more information on becoming a speaker today.

For more information about Past Meetings, see http://www.ewh.ieee.org/r6/phoenix/compsociety

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## LinkedIn Update

The Phoenix Chapter of the Computer Society has formed a group on LinkedIn. If you are interested in joining the group, please send an email to Louis Rayes or Joy Shetler (email addresses are listed on the Computer Society website). For more information about LinkedIn, please check out the description on Wikipedia:

http://en.wikipedia.org/wiki/LinkedIn

Or the LinkedIn Website.

# PES Announcements

**April Technical Meeting**

*Date:* Thursday, April 17, 2008

*Time:* 11:30am – 12:00noon: Registration
12:00noon: Lunch served
12:30pm: Program begins

*Location:* SRP PERA Club
http://ewh.ieee.org/soc/pes/phoenix/images/PERAMAP.pdf
1 E. Continental Drive; Tempe, AZ

*Speakers:* Daniel Goodrich, P.E., Principal Engineer, System Protection, SRP

*Topic:* The purpose, structure and activities of the Power System Relaying Committee of IEEE PES

*Cost:* Lunch $5.00 (Students Free)
Program only Free

*Reservations:* Contact Michelle at 602-437-0469 or submit your reservation on the Chapter website at http://ewh.ieee.org/soc/pes/phoenix/. **Reservation deadline is Monday, April 14, 2008.**

If you are not currently receiving email notices of PES Phoenix meetings, please email a request to Michelle@arizonasunsales.com to have your email address added to the distribution list.

*Abstract:* The Power System Relaying Committee (PSRC) is one of 14 technical committees of the Power and Energy Society (PES) of the IEEE. Today, Daniel will share the purpose, structure, and activities of the PSRC.

*Biography:* Daniel Goodrich received his BSEE from Arizona State University in 1985 and has been employed at the Salt River Project for 22 years, working in the System Protection, Distribution Operations and Transmission Planning departments. Daniel is currently a Principal Engineer in SRP's System Protection Department, a Registered Professional Engineer in the State of Arizona and a Distinguished Toastmaster. He is a Senior IEEE Member and an active member of several sub-committees of the Power System Relaying Committee.

**September Golf Tournament**

The PES Phoenix Chapter's 51st annual golf tournament is scheduled for Saturday, September 27 at the Antelope Hills Golf Club (http://www.cityofprescott.net/services/golf/) in Prescott, AZ. Further details will be available soon but reserve the date now!

IEEE ANNOUNCEMENTS

**INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS**

**WAVES AND DEVICES PHOENIX CHAPTER**

*Meeting Open to Non-IEEE Members*

**April 25, 2008 MTTS Meeting**

**Freescale Semiconductor, Tempe, AZ**

# Advanced ESD Protection Design for RF/AMS ICs

Albert Wang, PhD

**Laboratory for Integrated Circuits and Systems, Dept of Electrical Engineering**

**University of California, Riverside, CA 92602**

## Abstract

ESD (Electro-Static Discharge) failure becomes a major IC reliability problem as semiconductor IC technologies continues migrate into the VDSM (very-deep-sub-micron) regime. On-chip ESD protection circuitry design emerges as a grand challenge to RF/mixed-signal IC designs recently. Yet traditional trial-and-error approaches still dominate in ESD design practices, which become increasingly unacceptable to RF/MS IC designs. This lecture discusses various key aspects for ESD protection design including ESD protection principles, mixed-mode ESD design method, RF ESD design evaluation and ESD design prediction, etc. Practical ESD protection circuit design examples will be presented

## Biography

**Albert Wang** received the BSEE degree from the Tsinghua University, China, and the PhD EE degree from The State University of New York at Buffalo in 1985 and 1995, respectively. He has more than six years of industrial experience, most recently with the National Semiconductor Corporation in the Silicon Valley. In 1998, He joined the faculty of the Department of Electrical and Computer Engineering at the Illinois Institute of Technology (IIT), where he directed the Integrated Electronics Laboratory. In 2007, he joined the Department of Electrical Engineering, University of California, Riverside, as a Professor and Director for the Laboratory for Integrated Circuits and Systems. His research interests focus on Analog/Mixed-Signal/RF ICs, Advanced on-Chip ESD Protection, IC CAD and Modelling, Systems-on-a-Chip (SoC), and Nano Devices, etc. Wang received the *CAREER* Award from the National Science Foundation in 2002 and the inaugural *Sigma Xi Award for Excellence in University Research* from IIT in 2003. He is the author for the book "*On-Chip ESD Protection for Integrated Circuits*" (Kluwer, 2002) and 120+ peer-reviewed papers in the field, and holds six U.S. patents. Wang is Editor for the IEEE *Electron Device Letters*. He was Associate Editor for the IEEE *Transactions on Circuits and Systems I*, Associate Editor for the IEEE *Transactions on Circuits and Systems II*, Guest Editor for the IEEE *Journal of Solid-State Circuits* and Guest Editor-in-Chief for the IEEE *Transactions on Electron Devices*. He has been an IEEE *Distinguished Lecturer* for both the Electron Devices Society and the Solid-State Circuits Society since 2001. He currently serves as Vice President for IEEE Electron Devices Society (EDS). He is committee member for the SIA *International Technology Roadmap for Semiconductor (ITRS)*, the *IEEE VLSI Technology and Circuits Committee* and the *IEEE Analog Signal Processing Technical Committee*. He has been serving for many IEEE conferences as Program co-Chair, Organization co-Chair, Steering Committee Member, TPC Member, Subcommittee Chair and Session Chair, e.g., ASICON, IEDST, ICSICT, CICC, RFIC, APC-CAS, ASP-DAC, ISCAS, IPFA, ICEMAC, NewCAS, ISTC, IRPS, AP-RASC, MAPE, EDSSC, MIEL, etc.

**Date: April 25, 2008**

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

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

For more information, please call Chuck Weitzel (Chapter Chair) at (480) 413-5906 chuck.weitzel@freescale.com.

IEEE STUDENT BRANCH S-PAC **April 18, 2008**

# *The Challenge of Choice*

## April 18th Student Professional Awareness Conference (S-PAC)

ASU Polytechnic IEEE student group is hosting an S-PAC (Student Professional Awareness Conference) entitled *The Challenge of Choice.* The central topics are Ethics and Policy in Technology, great topics for an election year! This event will expose students to the breadth of potential contributions expected from them and potential opportunities extended to them as future engineering graduates. This is a great opportunity for students to network with corporate sponsors and get great advice from professionals; it is also an excellent way to meet peers from other schools and departments. The conference will feature two keynote speakers, an ethics case study competition with cash prizes, student poster presentations, and company sponsor exhibits. Please mark your calendars for this event. We look forward to your participation!

Tickets are $10 for student IEEE members, $15 for student non-IEEE members, $25 for non-students. **Please RSVP on or before April 11th**, with your name and email address and menu choice. You may either contact your student branch chair, or Polytechnic IEEE Student Branch advisor, Barbara Rempel, brempel@asu.edu, 480-727-1164, or Department Business Manager, Cheryl Roberts, cheryl.roberts@asu.edu, 480-727-1514.

### Agenda: April 18th, 2008

| | | |
|---|---|---|
| **Contestants:** | 9:30 – 10 am | Competition Orientation |
| | 10 am – 12 noon | Ethics Competition |
| | 12 noon – 12:30 pm | Lunch (speakers & contestants |
| | 12:30 – 2:30 pm | Contest Presentations/Company sponsor set-up |
| **All Guests:** | 2:30 – 3:30 pm | Company Sponsor Exhibits & Student Posters |
| | 3:30 – 5:30 pm | Keynote Speakers |
| | 5:30 – 6:30 pm | Panel Discussion |
| | 6:30 7:30 pm | Dinner (Chicken Picatta or Grilled Salmon Filet w/ Pesto) |
| | 7:30 – 8 pm | Awards |

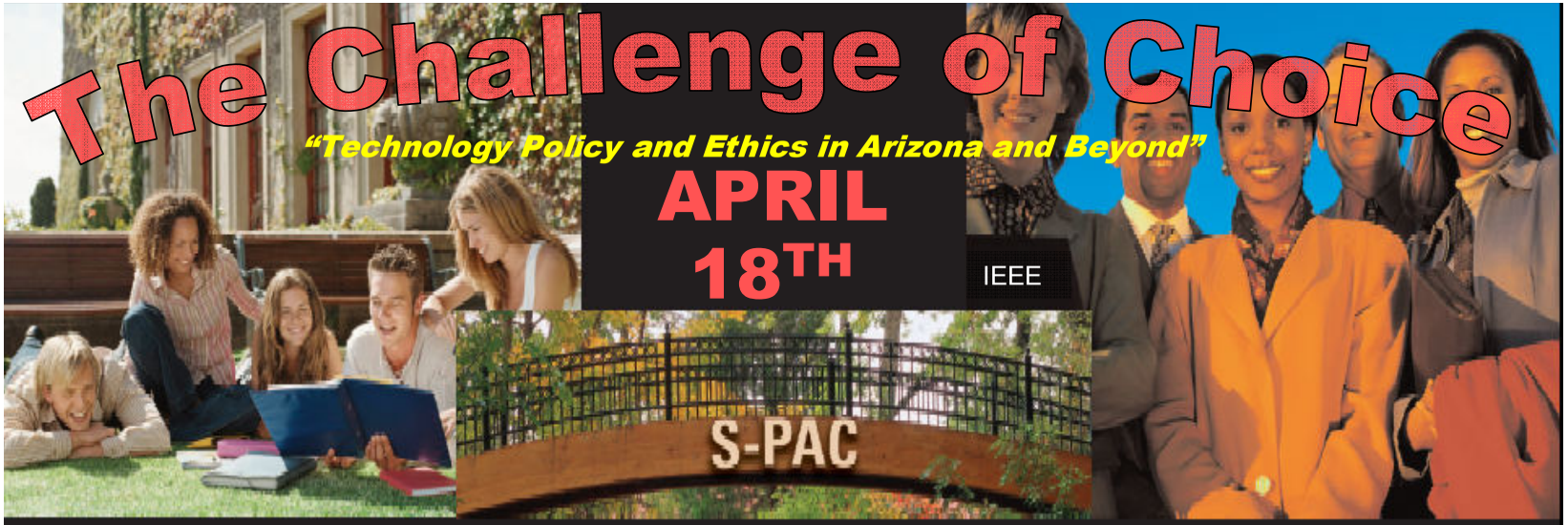
**Student Ethics Competition:** A competition comprised of up to eight two-person student teams will compete in an ethics competition designed by IEEE. Contestants are invited to attend a complementary lunch with the guest speakers and cash prizes will be awarded to the top teams. If you do not have a team but are interested in a random pairing team situation, please respond. There is only enough time to accommodate eight teams, so make your team reservation for participation soon!

**Student/Company Networking:** Students will have an opportunity to talk to corporate representatives from around the Valley.

**Student Posters:** All student attendees are encouraged to present posters on their projects. This is an opportunity to showcase your work!

**Conference:** The ***Challenge of Choice*** conference will feature keynote speakers and panelists who are experts on corporate and personal ethics and governmental technology policy. The speaker who will address Technology Policy in Energy is Lewis Alton.

> Mr. Alton is the director and founder of the non-profit coalition Azure Sky, which focuses on improving air quality in Arizona and in promoting alternative energy solutions (primarily solar) with the legislature and Arizona Corporation Commission. He also worked for 30 years in the San Francisco investment banking industry, including starting and operating an investment bank. Mr. Alton is also the founder of the CIC group, a Phoenix based merchant bank focusing on companies that manufacture products or deliver services to the construction industry, including "green build" product companies.
>
> The two other speakers are Deborah Rudolph, the Technology Policy Manager for IEEE National, who will speak on Tech Policy in general, and the student's role therein, and Dr. Joseph Herkert, ASU's Lincoln Associate Professor of Ethics and Technology, will speak on "Engineering Ethics and the Challenge of Sustainable Development".




## Featured Speakers:

| | | |
|---|---|---|
| **Lewis Alton** | **Director and founder of AZure Sky non-profit corporation** | **EcoElectric Power : Opportunities within the challenges of Arizona and beyond** |
| **Deborah Rudolph** | **IEEE National Technology Policy Manager** | **Will speak about the student's role in Technology Policy** |
| **Joseph Herkert** | **ASU Lincoln Associate Professor of Ethics and Technology** | **"Engineering Ethics and the Challenge of Sustainable Development"** |

## Agenda:

| | | |
|---|---|---|
| **Contestants:** | **9:30am – 2:30pm** | **Ethics Competition (contestants only)** |
| **All Guests:** | **2:30 – 8:00pm** | **Featured speakers, student posters, company exhibits, and contestant awards** |

## Contacts:

Tickets are $10 for student IEEE members, $15 for student non-IEEE members, $25 for non-students. **Please RSVP on or before April 11th**, with your name and email address and menu choice. You may either contact your student branch chair, or Polytechnic IEEE Student Branch advisor, Barbara Rempel, brempel@asu.edu, 480-727-1164, or Department Business Manager, Cheryl Roberts, cheryl.roberts@asu.edu, 480-727-1514. We Take VISA, Master Card, American-Express, and Discover.

IEEE-USA

www.ieeeusa.org/committees/spac

IEEE

# GENSIPS'2008

## IEEE International Workshop on Genomic Signal Processing and Statistics

Phoenix, Arizona
**June 8–10, 2008**
**http://gsplab.tamu.edu/gensips2008**

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Recent advances in genomic studies have stimulated synergistic research in many cross-disciplinary areas. Genomic data, especially the recent large-scale microarray gene expression data, present enormous challenges for signal processing and statistics, which has led to the development of the new field of Genomic Signal Processing (GSP). This workshop is the sixth in a series of international scientific meetings devoted to the area of GSP and its applications in biology and medicine. The workshop addresses the emerging need for demonstrating to the signal processing community the potential for using signal-processing and statistical tools to uncover complex biological phenomena. The scientific program will include invited talks, tutorials, contributed papers and poster presentations. Participants will have the opportunity to be exposed to the most recent developments in the field and meet colleagues from all around the world.

**AREAS OF INTEREST**

Topics of interest to the conference include, but are not limited to:

- Signal processing and statistical approaches for functional genomics problems
- Statistical inference of biological networks from experimental data
- Pattern recognition methods for functional genomics
- Control theory and systems theory techniques for systems biology
- Models for cellular metabolism and intercellular signaling
- Modeling and simulation of biological regulatory networks
- Novel architectures and implementation methods for large-scale functional genomics
- High-throughput hardware and software approaches to genome-scale network modeling
- Integration of heterogeneous data
- Microarray image and data analysis
- Signal processing methods in sequence analysis
- Computational methods for modeling and simulation of biological regulatory networks

**VENUE**

GENSIPS'2008 will be held at the Embassy Suites Biltmore, in Phoenix, Arizona, which is located in the Biltmore area of Phoenix, home of fine dining, shopping, and other attractions, all within walking distance of the hotel.

**ORGANIZING COMMITTEE**

General Chair: **Aniruddha Datta**, Texas A&M University, College Station
Technical Program Chairs: **Paola Sebastiani**, Boston University
**Gustavo Stolovitzky**, IBM T.J. Watson Center
**Ciprian Doru Giurcaneanu**, Tampere University of Technology
Tutorial Chair: **Ilya Shmulevich**, Institute of Systems Biology
Plenary Speaker Chair: **Ioan Tabus**, Tampere University of Technology
Special Session Chair: **Tewfik Ahmed**, University of Minnesota
Finance Chair: **Ranadip Pal**, Texas Tech University
Publication Chair: **Yufei Huang**, University of Texas at San Antonio
Local Arrangement and Registration: **Jianping Hua**, Translational Genomics Research Institute
Publicity Chairs: **Ulisses Braga-Neto**, Texas A&M University
**Seungchan Kim**, Translational Genomics Research Institute and Arizona State University

**PROGRAM COMMITTEE**

**Tatsuya Akutsu**, Kyoto University
**Gil Alterovitz**, Massachussetts Institute of Technology
**Junior Barrera**, University of São Paulo
**Michael Bittner**, Translational Genomics Research Institute
**Xiaodong Cai**, University of Miami
**Yidong Chen**, National Cancer Institute, NCI/NIH
**Paul Dan Cristea**, University of Bucharest, Romania
**Nevenka Dimitrova**, Philips Research
**Simon Godsill**, University of Cambridge, UK
**John Goutsias**, The Johns Hopkins University
**Arjang Hassibi**, University of Texas at Austin
**Robert S. H. Istepanian**, Kingston University, UK
**Ivan Ivanov**, Texas A&M University
**Stephen Marshall**, University of Strathclyde, UK
**Lijun Qian**, Prairie View A&M University
**Gail Rosen**, Drexel University
**Dan Schonfeld**, University of Chicago
**Chao Sima**, Translational Genomics Research Institute
**Anne Stomp**, North Carolina State University
**Qi Tian**, University of Texas at San Antonio
**Xiadong Wang**, Columbia University
**Z. Jane Wang**, University of British Columbia
**Stephen Wong**, The Methodist Hospital Research Institute
**Rui Yamaguchi**, University of Tokyo
**Byung-Jun Yoon**, Texas A&M University
**Xiaobo Zhou**, Harvard Medical School

# Engineering and the Environment Conference and Exhibition

For additional information, contact Michael Andrews, m.andrews@ieee.org , (602) 368-6013

Volunteers are needed to serve on the Organizing and Technical Committees for the first Engineering and the Environment Conference and Exhibition planned for March 2009.

The **ENGINEERING AND THE ENVIRONMENT CONFERENCE AND EXHIBITION** offers engineers and technical professionals the opportunity to:

- Share experience, concepts, innovations and technologies that address various environmental issues
- Demonstrate constructive concern from a global technical community
- Promote public awareness of engineering solutions to environmental issues
- Involve and inspire students, both university level and K-12, by including them in discussions, demonstrations and exposure to emerging technologies
- Provide a public event that will enhance the public image of the engineer and technical professional
- The event that is politically supportive/neutral and represents an untapped, unbiased knowledge base

The **ENGINEERING AND THE ENVIRONMENT CONFERENCE AND EXHIBITION** is designed to provide an opportunity for the engineering and technical community to address environmental issues of concern by the engineering community and design considerations that address sustainability. The Exhibition will provide an opportunity for organizations to spotlight emerging technologies and create innovative solutions for a number of environmental concerns.

Presentations can be a combination of technical track presentations, forums and tutorials. The **technical program** would be organized and managed similarly to other IEEE technical conferences with Track/Program Chairs, formal call for papers and refereed papers. The **forum** will be hosted by the conference with speakers invited based on a specific area of expertise or field of interest. **Tutorials** would be classroom-based presentations that provide conference attendees and the general public with implementable solutions to specific problems.

## Technical Tracks

- **Energy**
  - Energy conservation, building materials, lighting systems and controls, low voltage, starters, thin film, etc.
  - Renewable power generation, biomass, building materials, fuel cells, geothermal, hydrogen, nanomaterials and nanocells, nuclear, solar, wind, etc.
- **Green Materials**
  - Standards
  - Consumer and Industrial Electronics
  - Building and construction materials
  - Integrated elements
  - Infrastructure elements

- **Impact of Emerging Nations**
  - Use of natural resources
  - Design of new manufacturing and distribution facilities
  - Pollution control systems
  - Regulations and self-regulated development
- **Nanotechnology**
  - Nanotoxicology
  - Nanopollution
  - Nanosensors and control systems
- **Manufacturing**
  - Consumer electronics
  - Emerging economies
  - New manufacturing and distribution facilities, processes and systems
- **Sustainability**
  - Green engineering (process, building and infrastructure improvements)
  - Industrial Ecology (improved operating efficiency and waste reduction)
  - Ecological Engineering (systematic resource restoration)
  - Earth Systems Engineering (mitigation systems)
  - Energy systems
  - Water use, reclamation and reuse
  - Buildings
  - Transportation systems

**Forum:**

In addition to the technical tracks identified, the conference could host a forum(s) that specifically address:

- A specific environmental issue
- National initiatives
- Funded research initiatives
- Transferable or repeatable approaches in manufacturing that positively impact the environment
- Award winning systems

## 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
Membership Chair, Phoenix Section

# RE-SEED

## Retirees Enhancing Science Education through Experiments & Demonstrations

### Overview

RE-SEED (Retirees Enhancing Science Education through Experiments and Demonstrations) is a Northeastern University program that prepares engineers, scientists, and other individuals with science backgrounds to work as volunteers, providing in-classroom support to upper elementary and middle school science teachers with teaching the physical sciences.

After completing a comprehensive free training program, participants volunteer in middle school classrooms on the average once a week for at least one year. RE-SEED began in 1991 with six volunteers. To date close to 500 RE-SEED volunteers have worked in schools in about 100 communities throughout the country offering about 500,000 hours of their time.

Nationally, 75 percent of 7th and 8th grade students are taught physical science by teachers who do not have a major or a minor in the subject (The National Science Board, Science and Engineering Indicators 2000). RE-SEED volunteers possess talent and expertise that complement those of science teachers. They bring with them a wealth of knowledge and experience that allows them to make science interesting and relevant to everyday situations.

RE-SEED volunteers work closely with the host science teachers to help them enrich and implement their school curriculum. Overall the volunteers become involved members of their schools' and even their districts' teaching team, sometimes taking part in curriculum adoption decisions.

Please contact us by email at reseed@neu.edu or phone 888-742-2424; Shelia Kirsch at Sheila.Kirsch@asu.edu and / or Deirdre Weedon, d.weedon@neu.edu. if you are interested in learning more about these training programs.