The Valley Megaphone

Newsletter of the
Institute of Electrical and Electronics Engineers, Inc.
Phoenix Section
June 2008, Volume XXII, Number 6

Executive Committee

Past Chair
Rao Bonda, 480-413-6121
r.bonda@ieee.org

Chair
Keith Holbert, 480-965-8594
holbert@asu.edu

Vice Chair
Debendra Mallik, 480-554-5328
dmallik@ieee.org

Secretary
Henning Braunisch, 480-552-0844
braunisch@ieee.org

Treasurer
Jim Hudson
Jim.Hudson@srpnet.com

Publicity
Eric Palmer
ecpalmer@ieee.org

PACE
Mike Andrews, 480-991-1619
m.andrews@ieee.org

Membership
Victor Prokofiev
victor.prokofiev@intel.com

Student Activities
Jim Drye, 480-413-5685
jdrye@ieee.org

Conferences
Russ Kinner, 602-997-2353
r.kinner@ieee.org

Awards
Vasudeva P. Atluri, 480-554-0360
vpatluri@ieee.org

Inter-Society
Mike Andrews, 480-991-1619
m.andrews@ieee.org

Web Master
Monica H. Braunisch
mhbraunisch@ieee.org

This Issue of The Valley Megaphone Features:

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.

Chapters

Communication & Signal Processing
Gang Qian
gang.qian@asu.edu

Computer Society
Joy Shetler
jsshetler@juno.com

Consultants Network (PACN)
Vaughn L. Treude, 602-750-3662
vaughn@nakota-software.com

CPMT Society
Qing Zhou
qing.a.zhou@intel.com

Education Chapter
Martin Reisslein, 480-965-8593
reisslein@asu.edu

EMBS Chapter
Ahmed Abdelkhalek
ahmed_a@acm.org

EMC Society
Harry Gaul, 480-441-5321
harry.gaul@ieee.org

GOLD
Mat Mets
Matt.Mets@freescale.com

Power Engineering Society
Barbara McMinn
barbara.mcminn@aps.com

Solid State Circuits
Bahar Jalali-Farahani
Bahar.Jalali@asu.edu

Teacher-in-service
Mike Poggie
Mike.Poggie@ieee.org

Waves & Devices Society
Chuck Weitzel, 480-413-5906
Chuck.weitzel@freescale.com

Life Members
Rao Thallam
thallam@ieee.org

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

Student Branches

ASU Main, Engineering
Chair: James Stape
ieeeasuchair@gmail.com
Advisor: Cihan Tepedelenlioglu,
(480) 965-6623, Cihan@asu.edu

ASU Main, Computer Society
Chair: Luis Tari
luis.tari@asu.edu
Advisor: Joseph Urban, 480-965-3374,
joseph.urban@asu.edu

ASU Polytechnic
Chair: James (Bon) Brannan
jbrannan@asu.edu
Advisor: Barbara Rempel
Barbara.Rempel@asu.edu

DeVry, Phoenix
Chair: Mason Surerus
MSurerus@ieee.org

DeVry, Computer Society

NAU, Engineering
Chair: Kenji R. Yamamoto
Kry3@nau.edu
Advisor: Niranjan Venkatraman
v.niranjan@ieee.org

Embry-Riddle, Prescott
Chair: Maria Nzmebi Ngomba
ngomb7db@erau.edu
Advisor: John E. Post
postj@erau.edu

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

INSTRUCTORS NEEDED NOW FOR FALL SEMESTER:

Electrical Instructors needed in:
Solid State Fundamentals
Electric Motor Controls
All aspects and levels of Solar
Positions available:
Part-time, Evenings & days
Phoenix Metro Area
Fax or email your resume to:
Yolanda L. Price
Director of Education & Programs
Fax: 602-277-9881
yprice@electricleagueofarizona.org

The Electric League of Arizona was founded in 1960

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 .

Power Supply Design Engineer Tempe, AZ

We are recruiting for a creative design/project engineer experienced in the development of power conversion equipment. You must have strong communication and applications engineering skills in order to interface with and build relationships with the customer's engineering staff.

The successful candidate will design power conversion equipment that meets both the customer's specifications and the business's internal requirements for performance, reliability, maintainability and cost.

Must have a BSEE and a minimum of 4 years of switching power converter development, to include development to the component level in Aerospace and Military grade equipment.

6 Month Contract Assignment. Contact cindy@techstaffaz.com for details on this opportunity or one of the many direct hire or contract jobs available in Arizona at this time.

TECHSTAFF™
THE TECHNICAL
PLACEMENT SPECIALISTS℠

Call for Fellow Nominations

Nominations are being accepted for the IEEE Fellows class of 2010. The rank of IEEE Fellow is the institute's highest member grade, bestowed on an IEEE Senior Member who has had an extraordinary record of accomplishments in any of the IEEE fields of interest. The deadline for nominations is 1 March 2009.

Senior Members can be nominated in one of four categories: application engineer/practitioner, research engineer/scientist, educator, or technical leader.

The Fellows Web pages contain information regarding the history of the IEEE Fellows program, the nomination process, access to the Fellows Nomination Kit, lists of Fellows who are eligible to be references and more about the Fellow program. Please visit the Fellows website at http:/www.ieee.org/fellows.

GENSIPS'2008

IEEE International Workshop on Genomic Signal Processing and Statistics

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

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

IEEE Phoenix Area Consultants Network June Meeting: Photovoltaic Power – A Real-Life Report

Date: Thursday, June 12th, 2008
Time: Feel free to come around 5:30 and socialize.
We take dinner orders around 6:30 PM
Meeting begins around 7:30 PM
Place: Denny's Restaurant
3315 N. Scottsdale Rd. (at Osborn)
Scottsdale, Arizona 85251

Abstract:

All electronic devices have at least one common requirement – a power source. Come hear how Clark Jones has approached filling this need in an "environmentally friendly" fashion! The presentation will include:

- an evaluation of the economics, based upon his real-world experience with owning a utility-inter-tie photovoltaic (PV) system,
- a brief overview of the system,
- actual data gathered from the system and
- a comparison with some other options.

About the Speaker:

Clark earned a B.S. in Computing and Information Sciences from the University of New Mexico in 1980. He worked for 23 years as an engineer in the semiconductor industry, mostly designing and writing highly-specialized compilers. He has also worked as a factory electronics technician and a broadcast engineer. He "retired" in 2003, and now spends his time on managing his investments in the oil and gas industry, and on his position in Mensa (the "high-IQ society") of Regional Vice Chairman for the Far West Region (meaning he's on the national board of directors of American Mensa).

Clark holds both commercial and Amateur Extra Class licenses from the FCC. He serves on the Board of Directors for a 501(c)(3) organization that, amongst other things, assists other charities with "behind the scenes" work for their fundraising events, helping to raise over $2 million annually

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

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
WAVES AND DEVICES PHOENIX CHAPTER

Meeting Open to Non-IEEE Members
June 10, 2008
Freescale Semiconductor, Tempe, AZ
Bernoulli Conference Rm, 3:30 PM

Acoustic MEM's Actuators and Sensors

Hongyu Yu
School of Earth and Space Exploration
Electrical Engineering
Arizona State University

Abstract

MicroElectroMechanical System (MEMS) stands for a class of batch-fabricated devices, consisting of mechanical, electrical and other components to simulate macroscopic functions on a micro scale. This interdisciplinary technology offers the great potential of reducing the cost, size and power consumption for scientific instruments, which will benefit Earth research and Space mission tremendously.

Three types of novel MEMS devices and their applications will be discussed:

1) Microfluidic Self-Focusing Acoustic Transducers consisting of flat zone Fresnel half-wave band acoustic sources to focus the acoustic wave in liquid through a constructive wave interference without any complex lens. The focused high intensity acoustic wave enables droplet ejection and atomization in an upward direction or pumping and mixing the fluid in a lateral direction with various biomedical applications.

2) Bulk Acoustic-wave Resonators (BAR) have very small size and high quality, and can be employed in wireless communication and biosensing applications.

3) A catheter-based flexible cardiovascular shear-stress sensor for animal model to demonstrate translating bench-top experiment to in-vivo deployment.

In the last part of presentation, a variety of potential Earth and Space exploration applications will be discussed and shared.

Biography

Hongyu Yu received the B.S. and M.S. degrees in Electronics Engineering from the Tsinghua University, Beijing, China, in 1997 and 2000, respectively, and the Ph.D. degree in Electrical Engineering from the University of Southern California, Los Angeles, in 2005.

Hongyu Yu works on developing MicroElectroMechanical System (MEMS) for Earth and Space applications and holds the joint position between SESE and Electrical Engineering at ASU. The research he is interested in includes wireless sensing systems, microfluidic analysis systems, acoustic transducers and micro fuel cells. The goal of his research is to provide miniaturized portable platforms and instruments for Earth, Planet and Space scientists to study a variety of projects, such as seismology, biogeochemistry, astrobiology, volcanology and space exploration.

Date: June 10, 2008
Location: Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ Bernoulli Conference Rm, Bldg 99.
Time: 3:30-4:30 PM *Presentation* - Pizza will be served after the Seminar
For more information, please call Chuck Weitzel (Chapter Chair) at (480) 413-5906
chuck.weitzel@freescale.com.

PES Announcements

The PES Phoenix Chapter is currently on its summer hiatus for technical meetings. The next one is scheduled for Thursday, September 18 at APS's Deer Valley Facility located at 21st Avenue and Cheryl Drive. The speaker is scheduled to be Bob Smith, APS Director of T&D Maintenance, who will provide an update on the TransWest Express project. Please visit the Chapter's web site at http://ewh.ieee.org/soc/pes/phoenix/ for additional information.

51st Annual IEEE-PES Golf Outing

Date:	September 27, 2008
Time:	1:00 pm
Place:	Antelope Hills Golf Course One Perkins Drive Prescott, AZ 86301
Fee per Player:	$85.00 – Includes Greens Fees, Golf, Range Balls and Dinner
Prizes:	Prizes for top three teams plus individual skills will be awarded. A raffle will be held.
Dinner:	Will be held at the course at 7:00 pm and is included. To add a guest for dinner is $25.00. No host bar opens at 6:00 pm.
Reservations:	Mail form with check payable to: IEEE-PES c/o Arizona Sun Sales 120 N. 44th St. #420 Phoenix, AZ, 85034

Please include all requested information. Also, include email addresses for team members not in our original mailing.

TEAM (please print)

Player _____Hdcp or Avg Score_____

Email_____

Player _____Hdcp or Avg Score_____

Email_____

Player _____Hdcp or Avg Score_____

Email_____

Player _____Hdcp or Avg Score_____

Email_____

Additional Dinner Guest: _____

_____

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.