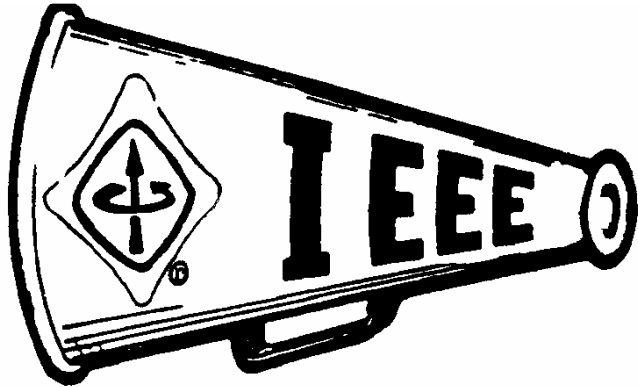


The Valley Megaphone



Newsletter of the
**Institute of Electrical and
Electronics Engineers, Inc.**
Phoenix Section
November 2007, Volume XXI, Number 11

Executive Committee

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This Issue of The Valley Megaphone Features:

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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 Eric Palmer: ecpalmer@ieee.org.

Chapters

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Solid State Circuits

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Waves & Devices Society

Chuck Weitzel, 480-413-5906
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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, 1/2 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>

IEEE ANNOUNCEMENTS

<p>Student Branches</p> <p>ASU Main, Engineering Chair: Cory P. Murphy ieeasuchair@gmail.com Advisor: Cihan Tepedelenlioglu, (480) 965-6623, Cihan@asu.edu</p> <p>ASU Main, Computer Society Chair: Luis Tari luis.tari@asu.edu Advisor: Joseph Urban, 480-965-3374, joseph.urban@asu.edu</p> <p>ASU Polytechnic Chair: Brian Siskoy bsiskoy@gmail.com Advisor: Barbara Rempel Barbara.Rempel@asu.edu</p> <p>DeVry, Phoenix Chair: Richard Taylor RLTaylor@ieee.org</p> <p>DeVry, Computer Society Chair:</p> <p>NAU, Engineering Chair: Advisor: Phil Mlsna, 928-523-2112 Phillip.Mlsna@nau.edu</p> <p>Embry-Riddle, Prescott Chair: Maria Nzmebi Ngomba ngomb7db@erau.edu Advisor: John E. Post postj@erau.edu</p>	<p>Phoenix Section Executive Committee Meeting – First Tuesday of the month.</p> <p>Time: 6:00 pm to 8:00 pm</p> <p>Place: Phoenix Airport Hilton, 2435 South 47th Street Phoenix, AZ, 85034 Phone: 480-804-6017</p> <p>Directions: From 143, exit University Ave, go west, turn right on 47th street.</p> <p>More Info: Meetings held first Tuesday of month. No meetings in July and August. All interested IEEE members are welcome to attend.</p> <p>Contact: Rao Bonda, Phoenix Section Chairman, r.bonda@ieee.org</p>
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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



Phoenix Section

*Components, Packaging and Manufacturing Technology Society Chapter
& Waves and Devices Chapter*



Tuesday, December 11th, 2007
7:00 AM - 5:00 PM
ASU Memorial Union (Arizona Room)
Arizona State University, Tempe, Arizona 85287

Images courtesy of Argonne National Laboratory, NASA Ames Center for Nanotechnology, Stanford University, Sandia National Laboratories (SUWMIT™ Technologies) and Nanorex, Inc.

present an all-day workshop on

EMERGING DEVICE AND PACKAGING TECHNOLOGIES

ABSTRACT

The semiconductor industry is entering an era with tremendous opportunities to exploit emerging technologies for the benefit of diverse markets. Moore's Law requires intensive materials innovations to maintain its momentum. New markets in the areas of bioelectronics and sensors are leveraging the existing manufacturing infrastructure while incorporating new materials and processes. This one-day workshop will bring together experts from industry, academia, research labs, and consortia to share technology visions and discuss technical opportunities for both Moore's Law and More-Than-Moore.

We are excited to present morning and afternoon keynote addresses by two noteworthy authorities. Dr. Herb Goronkin, IEEE Fellow, will give the keynote 'A Nanotechnology Value Proposition.' Dr. Goronkin served as Vice President and Director of Motorola's Physical Research Laboratories until 2003. He is presently active in the nanotechnology field as President of Technology Acceleration Associates, Inc.; as a venture partner in Lux Capital; co-chair of the NanoBusiness Alliance; and a member of the Governing Board of the Center for Integrated Nanotechnologies in New Mexico. He is also involved with the California Nanotechnology Initiative for Defense and serves on numerous company and advisory boards.

The keynote 'The Big Integration - Accelerated Supply Chain and SIP Technology Integration,' will be presented by Dr. Ho-Ming Tong, IEEE Fellow & Distinguished Lecturer, and GM & Chief R&D Officer at the ASE Group. Dr. Tong has held key advanced package development management positions at both ASE and IBM. He has authored or co-authored over 70 patents, more than 100 technical publications, and three books on electronic packaging.

COMMITTEE MEMBERS

Workshop Chair
 Dr. Vasudeva P. Alluri
 (480) 564-0380
vpalluri@ieee.org

Technical Program Committee
 Chair: Mel Miller
 Co-chair: Debendra Mallik

Vendor Committee
 Chair: Steve Rockwell
 Co-chair: Dr. Aleksandar Aleksov

Electronic Media Committee
 Chair: James E. Dreye

Workshop Co-Chair
 Dr. Charles E. Weitzel
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chuck.weitzel@freescale.com

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 Co-chair: Dr. Sergio Pacheco

Arrangements Committee
 Chair: Dr. Shane Johnson
 Co-chair: Victor Prokofiev

Publicity Committee
 Chair: Dr. Ankur Agrawal

For additional information and vendor registration
www.ieee.org/phoenix

Online Registration
www.acteva.com/qv/eeephxsecworkshop2007

AGENDA

Morning Session

- 7:00AM - 8:00AM Registration and Continental Breakfast**
- 8:00AM - 8:10AM Workshop Welcome**
 Dr. Vasu Alluri, *Workshop Chairman, IEEE Senior Member and Program Manager, Intel*
- 8:10AM - 8:40AM Keynote: A Nanotechnology Value Proposition**
 Dr. Herb Goronkin, *IEEE Fellow and President, Technology Acceleration Associates, Inc.*
- 8:40AM - 9:10AM Power Efficient, Multi-gigabit I/O Design for Terascale Microprocessor Platforms**
 Mr. Randy Mooney, *Intel Fellow, Intel*
- 9:10AM - 9:40AM ESD and Latchup in RF and Power Technologies**
 Dr. Steve Voldman, *IEEE Fellow & Distinguished Lecturer*
- 9:40AM - 10:00AM Break**
- 10:00AM - 10:30AM The Limits of the Continuum Dielectric Model**
 Dr. Mark Van Schilfgaarde, *Professor, ASU School of Materials*
- 10:30AM - 11:00AM Impact of Micro and Nano Scale Devices in Chemical and Biological Applications**
 Dr. Samhita Dasgupta, *Manager, Device Integration Lab, Micro & Nano Structure Technology, GE Global Research*
- 11:00AM - 11:30AM Reliability Challenges for Active Implantable Medical Devices**
 Dr. David Erhart, *Director of Reliability & Product Analysis, Medtronic*

11:30AM - 1:00PM Lunch

Afternoon Session

- 1:00PM - 1:30PM Keynote: The Big Integration - Accelerated Supply Chain and SIP Technology Integration**
 Dr. Ho-Ming Tong, *IEEE Fellow & Distinguished Lecturer, GM & Chief R&D Officer, ASE*
- 1:30PM - 2:00PM Technologies Enabling 3D Integration - Thru-Silicon Via Focus**
 Mr. Paul Sibley, *VP ElectroChemical Deposition, Semitool*
- 2:00PM - 2:30PM Opportunities and Challenges for Use of Nanotechnology & Nanomaterials - A Speculative Perspective**
 Dr. Vijay Wakharkar, *Materials Manager, Assembly & Test Technology Development, Intel*
- 2:30PM - 2:50PM Break**
- 2:50PM - 3:20PM Flexible Displays and Flexible Electronics**
 Dr. David Allee, *Assoc Professor of Electrical Engineering & Backplane Electronics; R&D Director, Flexible Display Center, ASU*
- 3:20PM - 3:50PM Active Matrix Backplane Technologies for Flexible Displays and Electronics**
 Dr. Kalluri Sarma, *IEEE Senior Member and Senior Research Fellow, Honeywell*
- 3:50PM - 5:00PM Panel Discussion: Future Challenges and Opportunities for Emerging Technologies**
 Chair: Dr. Steve Goodnick, *IEEE Fellow and Assoc. VP for Research, ASU*



ALL DAY VENDOR DISPLAYS



IEEE ANNOUNCEMENTS
INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
COMPONENTS, PACKAGING AND
MANUFACTURING TECHNOLOGY SOCIETY
ECTC Components & RF Program Committee
CPMT RF & Wireless Technical Committee



**58th ECTC May 27 – May 30, 2008
Orlando, Florida USA**

The CPMT RF & Wireless Technical Committee and the ECTC Electronic Components & RF Program Committee encourage you to submit an abstract to ECTC 2008 in the area of passive components & networks, RF and Microwave components and modules and subsystems. ECTC is the premier Electronic Components and Packaging conference held annually and attended by about 1000 delegates with equal participation from companies and academia. As in the past, Components, RF & Microwave related papers are solicited for focus sessions during this prestigious conference.

Discrete Passive Components

Design, materials, processes and manufacturing considerations for discrete passive components- resistors, capacitors, inductors and passive networks.

Integrated and Embedded Passive Components

Design, materials, processing, modeling, manufacturing, and characterization of integrated and embedded passive components on silicon, organic, ceramic and glass type substrates for digital, mixed signal, & RF applications

Materials, Processing, Reliability, and Manufacturing of Electronic Components

Design, Materials , Processing, yield and reliability aspects of electronic components

New Technology Development for Electronic Components

Technologies for on chip integration of passive components – silicon through vias, wafer level RDL, nano materials and processes

Technologies for substrate level integration – embedded passive and active components, component integration on ultra thin substrates

RF and Microwave Components

Integrated antennas, filters, baluns, RFID/sensors, RF MEMS, tunable devices and switches, high power and high efficiency RF/Microwave power amplifiers- design, technology and high frequency characterization

RF and Microwave Modules

Module Integration technologies in semiconductor, organic and glass substrates – System in Package, System on Chip, Package on Package, 3D integration

SUBMISSIONS:

Please submit abstracts using the ECTC web site: www.ectc.net by October 15, 2007. Abstracts must comply with the guidelines outlined at the website. To have your paper considered for inclusion in the “Components & RF” focused sessions YOU MUST SELECT “**Electronic Components & RF**” committee as your **PRIMARY subcommittee preference** when you submit your abstract at the ECTC web site. Again, to have your paper considered for the RF & microwave components sessions, please do the following:

IEEE ANNOUNCEMENTS

- STEP #1: Submit abstract through the ECTC web site (www.ectc.net) and select **“Electronic Components & RF” as PRIMARY subcommittee** preference
- STEP #2: Email abstract copy and author’s email & contact information to: Craig Gaw at c.a.gaw@ieee.org & Mahadevan Iyer at mahadevan.iyer@ece.gatech.edu

Craig Gaw, Chair - CPMT RF & Wireless TC
Freescale Semiconductor Inc.
c.a.gaw@ieee.org

Mahadevan K Iyer, Chair - ECTC RF & Components TC
Georgia Institute of Technology
mahadevan.iyer@ece.gatech.edu



ARFTG 70th Microwave Measurement Symposium
High Power RF Measurement Techniques

Tempe Mission Palms Hotel, Tempe, AZ

Nov 27th – 30th, 2007

www.arftg.org

ARFTG CONFERENCE

Keynote presentation: "Characterization Challenges for Cellular Base-Station", Jaime Plá, Freescale Semiconductor

Technical papers describing original work in the areas of microwave and millimeter wave measurements for high power technologies will be presented on the following topics:

- Load-pull techniques: active and passive, fundamental and harmonic
- RF system measurement addressing linearity, efficiency, pre-distortion
- Linear and nonlinear device and behavioral modeling
- Calibration methods and techniques (1-port, 2-port, multi-port, high-power)
- Other areas of RF, microwave, and millimeter wave measurement theory and practice

Accepted papers for the technical program will be posted on www.arftg.org after September 24, 2007.

RF PA DESIGN SHORT COURSE

Join us in a practical tutorial describing modern RF power amplifier design techniques that will be presented by Dr. Steve Cripps, of *Hywave Associates*.

Day 1: A review of classical reduced conduction angle amplifier modes: Class A, AB, B, C; high efficiency amplifier modes: Class E, F, J; Doherty amplifier design; waveform measurement and verification techniques; RF PA nonlinearities.

Day 2: Linearization techniques: feedback and feedforward basics; pre-distortion basics and digital pre-distortion (DPD) techniques.

Conference Chair Mohamed Sayed mmsayed@sbcglobal.net +1-707-318-5255	Technical Program Chair John Wood John.Wood@freescale.com +1-480-413-5732	Local Organization Gayle Collins gcollins@rfmd.com +1-480-763-4686	Local Organization Mike Majerus Michael.Majerus@freescale.com +1-480-413-3461
Exhibits Chair Joe Tauritz jltauritz@ieee.org +31-53-4894330	Short Course Chair Basim Noori Basim.Noori@freescale.com +1-480-413-3360	Nonlinear Workshop Peter Aaen Peter.Aaen@freescale.com +1-480-413-6505	Signal Integrity W/shop Tom Ruttan Thomas.g.ruttan@intel.com +1-503-456-1245





SCHEDULE OF EVENTS

Tuesday, November 27 8.00am – 5.00pm Wednesday, November 28 8.00am – 12.00pm	RF PA Design Short Course
Tuesday evening	Short Course Dinner
Wednesday, November 28 1.15pm – 5.00pm	Nonlinear Measurement Workshop
Wednesday, November 28 5.00pm – 7.00pm	NVNA Users' Forum
Thursday, November 29 8.00am – 5.00pm Friday, November 30 8.00am – 12.00pm	ARFTG 70 th Measurement Conference
Thursday evening	Reception & Award Banquet
Friday, November 30 1.15pm – 5.00pm	Signal Integrity Workshop

NONLINEAR MEASUREMENT WORKSHOP

In this workshop we shall focus on the challenges of measurement of high power microwave transistors and amplifiers, and describe some of the techniques used to overcome thermal problems, memory effects, and the characterization of the impedance environment presented to the device. Talks include:

- Pulse Measurement Techniques*
Jean-Pierre Teyssier, University of Limoges
- LSNA Measurements for PA Characterization*
Marc Vanden Bossche, NMDG
- Characterization of High-Power Transistors: Waveform Measurement and Engineering*
Paul Tasker, University of Cardiff
- Active, closed-loop, harmonic load-pull systems*
Andreo Ferrero, Politecnico di Torino
- Digital Pre-Distortion Characterization of RFPAs*

SIGNAL INTEGRITY WORKSHOP

- Paul Draxler, UC San Diego
- High speed signal integrity is a topic of great interest in the industry today. There is large demand for higher speed data transfer rates from computer and communications systems for fast internet downloads, streaming video, CAD applications, etc. This workshop presents microwave modeling and measurement techniques applied to these problems.
- Building Bridges between Digital & Microwave*
M. Resso, Agilent Technologies
- Measurement-based Modeling for High Speed Semiconductor Test Interface Boards*
Heidi Barnes, Verigy
- Measuring Multiple Aggressor Differential Crosstalk*
Bob Schaefer, Agilent Technologies
- A Supercomputer in a PCI-express Form Factor*
Greg Edlund, IBM
- Why do we need Multiport VNAs for Signal Integrity?*
Brett Grossman, Intel Corp.



IEEE ANNOUNCEMENTS

LOCATION

The Tempe Mission Palms hotel is centrally located in downtown Tempe. A shuttle is available from the Phoenix Sky Harbor airport. All sessions will be held in the hotel.

Tempe Mission Palms Hotel,
60 East 5th St.,
Tempe, AZ 85281
Tel: +1-480-894-1400
www.missionpalms.com

ARFTG Room Rate is \$159.00 per night, plus local taxes and amenities.

Reserve your hotel room before November 2, 2007, to get the special ARFTG Conference rate; this rate is also available for accommodations three days before and after the conference dates. The Group Code for the ARFTG special rate is 2T9478. Reservations can be made online, or by telephone: 1-800-547-8705.

Special Awards Banquet Presentation:

Guest speaker Mike Golio (Microwave magazine) will talk about "Engineering Your Retirement"



REGISTRATION FORM

Last Name _____
First Name _____
Company _____
Mail Stop _____
Address 1 _____
Address 2 _____
City _____ State _____ Zip _____
Country _____
Phone _____
Fax _____
Email _____
RF PA Short Course, inc. NLM W/S \$450 \$ _____
ARFTG Conference, inc. NLM W/S \$495 \$ _____
ARFTG Conference, inc. SI W/S \$495 \$ _____
ARFTG Conference, + both W/S \$595 \$ _____
Nonlinear Workshop only \$150 \$ _____
Signal Integrity Workshop only \$150 \$ _____
RF PA + ARFTG Conf + NLM W/S \$745 \$ _____
RF PA + ARFTG Conf, both W/S \$850 \$ _____
• Check (payable to "ARFTG", in \$US on US bank)
• Credit card: _____ Visa _____ MC _____ AmEx
Name on Card _____
CC # _____
Expiration Date _____
Signature _____

Mail, Fax or email this form and payment to:

Ray Tucker,
ARFTG Member Services
PO Box 228
Rome, NY 13442-0228
Phone: 315-337-6938 Fax: 315-338-0531
Email: tuckerr@twcny.rr.com

Registration forms are also available online at:
www.arftg.org



**November Meeting
Announcement for the
Phoenix Chapter of the
IEEE EMC Society**



Date: Wednesday, November 7th, 2007

Place: Garcia's Mexican Restaurant at Embassy Suites Hotel

Address: 4400 South Rural Road, Tempe, Arizona

Address: Just South of U.S. 60 on West side of Rural Rd.

Time: 5:30PM Social, 6PM Dinner (order off menu), 7PM Meeting and Presentation

Title: An Update on Commercial Products Shielding Effectiveness Testing

Speaker: Joe Butler, Chomerics Division of Parker Hannifin

Abstract: Shielding effectiveness data provided by vendors of EMI shielding materials such as EMI gaskets, paints, shielded windows and vents continues to be presented to consumers based on proprietary test methods. These test methods for shielding effectiveness range from variants of the long ago retired MIL-STD-285 to the more recent IEEE-STD-299. For military oriented products, the shielding data is quite often a result of a modified MIL-DTL-83528 test method. The majority of shielding effectiveness data tends to be derived from radiated field testing methods. While many large corporations that have EMC groups on staff may use transfer impedance and reverberation chamber test methods due to their more inherent accuracy and repeatability, most vendors of shielding components have not followed their lead. The reasons for this difference in approach run from factors such as lack of resources, the comfort level of the vendor EMC engineers in interpreting the internally generated data, to the inherent frequency limitations of the these latter test techniques when contrasted against the market need for 30 MHz to 40 GHz shielding effectiveness test data needed to market the products. The presentation will address these and other related issues, and will comment on some new shielding effectiveness test standard activities.

About the Speaker: Joseph Butler currently has the dual roles of New Business Development Manager and Conductive Elastomers and Compounds Product Development Manager for the Chomerics Division of the Parker Hannifin Corporation. His current responsibilities include providing marketing and business development support and new product development/R&D leadership for the conductive compounds and conductive elastomer business units at Chomerics. Joe has over 35 years experience as an electromagnetic compatibility engineer, having worked in both the military and commercial industry for Raytheon, GenRad, and RCA in addition to his past 21 years at Chomerics. He is a senior life member and Past-President of the Institute of Electrical and Electronic Engineers (IEEE) Electromagnetic Compatibility Society (EMCS). Joe is also a past member of the IEEE EMCS Standards Committee and has been involved with EMC standards development within the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), the Association for the Advancement for Medical Instrumentation (AAMI) and the SAE (Society of Automotive Engineers). He has also previously been involved with EMC standards work with the Radio Technical Commission for Aeronautics (RTCA), the Electronic Industries Alliance (EIA), and the Scientific Apparatus Makers Association (SAMA). He is a National Association of Radio and Telecommunications Engineers (NARTE) certified EMC engineer and is a past member of the Board of Directors of NARTE. Joe has a BS in Engineering Physics from Merrimack College, an MA in Physics from Williams College, and an MBA from Northeastern University.

RESERVATIONS: Please call Daryl or Mary at Kimmel Gerke Associates in Mesa AZ at 480-755-0080. (If no answer, please leave a voice mail.) You may also register by email at dgerke@emiguru.com. There is no charge for meetings, but you pay for your own meal and drinks. Since we order off the menu, we do not need an exact number, so if you decide at the last minute, please come anyway. You don't need to be an IEEE or EMC Society member to attend -- all are welcome.



IEEE ANNOUNCEMENTS
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

WAVES AND DEVICES
PHOENIX CHAPTER



November 15, 2007

MTTS Meeting
5:30 PM Freescale Semiconductor
www.eas.asu.edu/~wadweb

Heterogeneous Wireless Communication Devices: Present and Future

Vijay Nair

Communications Technology Labs, Intel Corporation, Hillsboro, Oregon

Abstract

Convergence of communication and computing technologies is rapidly changing the requirement of wireless devices. While wireless wide area network (WWAN) based on cellular radios was evolving, a new set of wireless LAN networks which are fundamentally different from cellular networks emerged. Devices for applications in the wireless LAN networks (WLAN), wireless personal area networks (WPAN) and wireless metro area networks (WMAN) are being deployed in increasing numbers. Bluetooth and Ultra Wideband (UWB) technologies have been introduced for high-bandwidth wireless connectivity in personal area networks. Location identification technologies like GPS are getting integrated with wireless products as well.

However, network heterogeneity also brings with it enormous challenges, as devices will have to be extremely capable in order to intelligently roam around heterogeneous networks operating under a wide range of protocols. As network diversity increases the important challenges of the future communication devices will be coexistence, interoperability and seamless transfer among networks.

This talk will elaborate the vision, the attributes and technical challenges of heterogeneous wireless communication system. In particular advancements of RF component technologies from antennas to baseband ICs will be elucidated. The evolution of different standards and their impact on the mixed network communication will also be discussed.

Biography

Vijay Nair joined Intel Corporation in September, 2003. He currently leads a team researching novel antennas and the integration of antennas into RF front-end modules for mixed network radio applications. His research areas include RF and microwave devices, monolithic IC's, and wireless subsystems. Prior to joining Intel, he was with Motorola, Inc. where he was a Fellow of the Technical Staff. His group at Motorola developed low power RF devices, high efficiency power amplifiers, and MMIC's for communication applications. He holds 15 US patents and has published over 100 papers in refereed journals or presented at international conferences. He has written several chapters for technical books and has co-authored a book entitled "RF and Microwave Circuit and Component Design for Wireless Systems". He has served on numerous IEEE conference technical program committees and was Technical Program Chair for the International Microwave Symposium held in Phoenix in 2001. He was elected IEEE Fellow in 2000 in recognition of his work in the development of low power RF devices and integrated circuits. He was elected by MTT society as a "Distinguished Microwave Lecturer" in 2007.

Location: Group Conference Rm, Bldg 94, Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ. Use Freescale Main Entrance (South) facing Elliot Road

Time: 5:30 - 6:30 pm Presentation, Pizza will be served after the Presentation

For more information, please call Chuck Weitzel (Chapter Chair) at (480) 413-5906.

IEEE Phoenix Area Consultants Network November Meeting

Date: Thursday, November 8, 2007

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:

To be announced. Sorry, at the time of publication we had not confirmed our speaker. The presentation will be on a current technical topic.

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

Engineering and the Environment Conference and Exhibition

Article - Announcement

October 22, 2007

For Immediate Release:

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**

IEEE ANNOUNCEMENTS

- 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 PHOENIX SECTION ANNUAL BANQUET



Saturday, February 9th, 2008

Hilton Phoenix Airport - Grand Ballroom, Phoenix, Arizona

AWARD NOMINATION INSTRUCTIONS

1. This Awards Guide lists the awards along with the selection criteria that will be implemented for selecting the award recipient.
2. Please read through this awards guide to help you in selecting the award category for nomination.
3. Complete the award nomination form given at the end of this document and submit ONLY as an email attachment to the IEEE Phoenix Section Annual Banquet Organizing Committee member responsible for the award category along with a copy to Dr. Vasu Atluri, Awards Committee Chair. Dr. Vasu Atluri's email address is vpatluri@ieee.org and telephone number is (480) 227-8411. The list of contacts is as follows:

For Member Category Nominations, please send the form along with supporting documents to Dr. Rao Bonda, Chair, at r.bonda@ieee.org. He can be reached by telephone at (602) 413-6121.

For Chapter / Society Category Nominations, please send the form along with supporting documents to Dr. Rao Bonda, Vice Chair, at r.bonda@ieee.org. He can be reached by telephone at (480) 413-6121.

For Non-Member Category Nominations, please send the form along with supporting documents to Dr. Keith Holbert, Secretary, at keith.holbert@asu.edu. He can be reached by telephone at (480) 965-8594.

For Corporate Category Nominations, please send the form along with supporting documents to Dr. Vasu Atluri, Awards Committee Chair, at vpatluri@ieee.org. He can be reached by telephone at (480) 554-0360.

For Educational Category Nominations, please send the form along with supporting documents to Mr. James E. Drye, Student Activities Coordinator, at jdrye@ieee.org. He can be reached by telephone at (480) 650-8826.

4. Nominator can submit a form for self or for others. All sections of the form should be completely filled by typing in bold and capital letters. If needed, submit additional documents such as resume in support of the nomination.
5. Deadline for submission of the nomination form is Friday, January 4th, 2008. Awards Banquet Committee will review the forms and inform the selected candidates and nominators by Friday, January 18th, 2008.

If you have any additional questions, please contact Dr. Vasu Atluri, Awards Committee Chair, at (480) 227-8411 or by email at vpatluri@ieee.org.



IEEE PHOENIX SECTION



ANNUAL BANQUET

Saturday, February 9th, 2008

Hilton Phoenix Airport - Grand Ballroom, Phoenix, Arizona

AWARDS GUIDE

(UPDATED OCTOBER 2007)

The scope and purpose of the Section Awards program is to plan, promote and implement award and recognition programs that recognize outstanding performance in furthering the objectives and professional aims of the IEEE Phoenix Section, the IEEE and the IEEE-USA, and to stimulate others to pursue such achievements of excellence.

The Phoenix Section has established the following general award and recognition categories:

- Member
- Chapter/Society
- Non-member
- Corporate
- Educational
- Special Chair

AWARD AND RECOGNITION CATEGORIES

A. Member:

The Section recognizes individual members in two categories:

- Young Engineer of the Year
- Engineer of the Year

The **Young Engineer of the Year** award is offered to recognize an individual of Member Grade in the section with 10 years or less experience in the profession. Ten years include graduate degree study period. Nominations for this award may be offered by individuals, by a company or by a Society Chapter. Qualifications for the award must satisfy at least one of the following criteria:

- Be recognized by his/her employer for important contributions to a project or company mission
- Made important contributions to the Section/Chapter/Conference, profession or the community through leadership activities related to an event(s)
- Publish at least one refereed technical paper
- Hold at least one U.S. patent

The **Engineer of the Year** award is offered to recognize an individual of Member or Senior Member Grade in the section with over 10 years experience in the profession. Nominations for this award may be offered by individuals, by a company or by a Society Chapter. Qualifications for the award must satisfy at least one of the following criteria:

- Be recognized by his/her employer for important and significant contributions to the organization projects or towards the company mission
- Publish at least two refereed technical papers

IEEE ANNOUNCEMENTS

- Hold at least two U.S. patents
- Made significant contributions to the community or profession

The Section also recognizes members who attain advanced member grade levels including Fellow and Senior Member. Criteria are established by the IEEE.

Fellow recognizes unusual distinction in the profession and is conferred only by invitation of the Board of Directors upon a person of outstanding qualifications and experience in IEEE designated fields. It is conferred to a person who has made important individual contributions to one or more of the IEEE designated fields. The Fellow Grade is the highest membership grade which can be achieved within IEEE. Total number selected in any one year does not exceed one-tenth percent of the total voting institute membership.

Senior Member Grade is the highest for which application may be made and requires experience reflecting professional maturity. Candidate should be an engineer, scientist, educator, technical executive, or originator in IEEE designated fields. Candidate should have shown significant practice for at least ten years and significant performance over a period of at least five of those years.

B. Chapter/Society:

The Chapter/Society may provide one award to recognize individual, team or organization using a variety of criteria including technical, professional, chapter / society contribution or other special category. Awards should recognize specific contributions, achievements and efforts (individual or team) in the development and implementation of the criteria used for the award.

An “Outstanding Society Chapter Award” for the IEEE Phoenix Section may also be awarded each year. The Section shall solicit and qualify chapters for the Outstanding Society Chapter Award. Nominees are either provided by the Society Chapters or decided by awards committee. The Section may recognize a Society Chapter using a variety of criteria including technical, professional or other special category. Awards should recognize specific contributions, achievements, and efforts including the number of meetings, workshops, etc. consistent with membership size of the Society Chapter, in the development and implementation of the criteria used for this award.

The Chapter/Society award nominations should be approved and submitted by the Chapter Chair or a Chapter Officer assigned by Chapter Chair. The assigned officer name should be informed by Chapter Chair by email in advance to both Dr. Rao Bonda, Annual Banquet Organizing Committee Member responsible for Chapter / Society Category Nominations, and to Dr. Vasu Atluri, Awards Committee Chair.

C. Non-Member:

The Section may recognize non-IEEE members for exemplary contributions (technical and/or professional) to the engineering profession through their efforts within their company, the community or for the Section.

D. Corporate:

The Section recognizes companies in two categories:

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- Large Company of the Year
- Small Company of the Year

The companies are recognized for their outstanding technical and / or professional contributions in furthering the objectives and professional aims of the IEEE Phoenix Section, the IEEE, the IEEE-USA and the field of Electrical Engineering. The Technical Contributions should include significant contributions or advancements in technology or the application of technology in the electronics or electro-technology fields. The specific area of technology is not restricted and may include, but is not restricted to, design and manufacturing processes, new products or creative applications to existing technologies. The Professional Contributions include significant contributions made to further the professional goals and programs of IEEE. Companies may be recognized for specific contribution, achievements and efforts that promote the professionalism goals of the section and IEEE. Nominations may be for a variety of professionalism related areas including support of IEEE members, employee development and training initiatives, community involvement or other programs that improve the general image of the engineer or engineering profession. Companies with less than or equal to 500 employees are considered Small Companies and those with greater than 500 employees are considered Large Companies during the award selection.

E. Educational:

The Section recognizes educational institutions and educators in the following categories:

- Outstanding IEEE Student Branch
- Outstanding Pre-college Educator
- Outstanding Faculty

The Section shall solicit and qualify award candidates for the Student Branch award. Nominees are provided by the student branch, branch advisor, administrators or Society Chapters. The Section may recognize a Student Branch using a variety of criteria including technical, professional or other special category. Awards should recognize specific contributions, achievements and efforts (individual or team) in the development and implementation of the criteria used for this award.

Nominations for Outstanding Pre-college Educator and Outstanding Faculty may be submitted by any member of the Section. Awards should recognize specific contributions, achievements, programs and efforts completed by an individual who promotes technical literacy, or the technical or professional goals of the Section, the IEEE or the IEEE-USA.

The section also recognizes student scholarship winners selected during the year by a committee consisting of section officers. The criteria for selection are based on academic excellence, participation in IEEE activities, contributions to IEEE and financial need.

F. Special Chair:

The Section Chair may wish to provide up to three special awards to recognize individuals or organizations for activities that support the goals of the Section that are not specified within the above categories, such as public service. The Section Chair may solicit inputs and recommendations from the Awards Committee, Section Officers, and Members of the Section.

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The Section Chair may recognize IEEE or Non-IEEE members for contributions to IEEE, the engineering profession, and volunteer work. The section chair also recognizes current section officers for their contributions for advancement of the section.



IEEE PHOENIX SECTION



ANNUAL BANQUET

Saturday, February 9th, 2008

Hilton Phoenix Airport - Grand Ballroom, Phoenix, Arizona

Award Nomination Form

Completely filled form should be submitted as an email attachment ONLY to the appropriate award committee member Award committee chair should be copied on the email – Award committee contact list are listed on first page

Candidate's Name: (including Dr., Mr. and Ms.)	<input type="text"/>		
Address:	<input type="text"/>		
	<input type="text"/>		
	<input type="text"/>		
Telephone Number:	<input type="text"/>	Fax Number:	<input type="text"/>
Email:	<input type="text"/>		
IEEE Member:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Student <input type="checkbox"/>
			Membership # <input type="text"/>
Award Categories: (please select one)			
A. Member:	Engineer of the Year <input type="checkbox"/>	Young Engineer of the Year <input type="checkbox"/>	
B. Chapter / Society:	Technical <input type="checkbox"/>	Professional <input type="checkbox"/>	Special Category <input type="checkbox"/>
	Chapter / Society Contribution <input type="checkbox"/>		
	Outstanding Society Chapter <input type="checkbox"/>		
C. Non-Member:	Contributions to the IEEE / Engineering Profession <input type="checkbox"/>		
D. Corporate:	Large Company of the Year <input type="checkbox"/>		
	Small Company of the Year <input type="checkbox"/>		
E. Educational:	Outstanding Student Branch <input type="checkbox"/>		Outstanding Faculty <input type="checkbox"/>
	Outstanding Pre-College Educator <input type="checkbox"/>		
F. Special Chair:	IEEE / Engineering Contributions <input type="checkbox"/>		Non-IEEE Contributions <input type="checkbox"/>
Award Citation: (Limit to Maximum Twenty Words)	<input type="text"/>		
	<input type="text"/>		
	<input type="text"/>		



IEEE PHOENIX SECTION



ANNUAL BANQUET

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Award Nomination Form

Completely filled form should be submitted as an email attachment ONLY to the appropriate award committee member Award committee chair should be copied on the email – Award committee contact list are listed on first page

Please provide information in support of the nomination in the space provided below – if needed use additional sheets. Submit other documents such as resume in support of the nomination.

Nominator's Name:

IEEE Member: Yes No Student Member #

Affiliation: Section Chapter / Society Student Branch None

Affiliated Organization Name:

Telephone Number: Email:

IEEE ANNOUNCEMENTS

Attention IEEE Students and Advisors;

It is time to consider the "2008 IEEE Student Paper Contest," and the 2008 IEEE Scholarships Applications.

Paper Contest:

At the Phoenix Executive Committee Meeting on October 2, 2007, we voted to raise the awards for the student paper contest.

The cash awards were raised as shown in the forms to:

1st place: \$500

2nd place: \$300

3rd place: \$100

The due dates established for "The Student Paper Contest" are:

Written Papers due: March 1, 2008

Oral Presentations: March 15, 2008

Scholarships:

There are two \$1000 scholarships available.

The due dates for the IEEE Phoenix Section Scholarships are:

Applications due: December 22, 2007

Selection and announcement: January 2008

Regards;

Jim Drye

IEEE Phoenix Section

Student Activities Coordinator



IEEE PHOENIX SECTION SCHOLARSHIPS

Applications Due: December 22, 2007
Awardees Announced: January 2008

Institute of Electrical & Electronics Engineers

IEEE Student Member Scholarships

- For full-time undergraduates who are members of IEEE: approved majors are Electrical/Electronic Engineering, Computer Systems Engineering, Electrical Engineering Technology, Computer Engineering Technology, or Computer Science
- Must attend a university in the Phoenix Section during 2006-07 (*i.e.*, ASU, ASU Polytechnic, DeVry, Embry-Riddle, or NAU)

Scholarship Application Requirement

- Application form (attached) with general information and qualifications including:
 - financial aid statement, and
 - one-page personal statement of attainments, interests and goals
- Official transcripts of all college work
- Recommendation letters (optional, but helpful to the selection committee)

For any further Information Please Contact:

Jim Drye
jdrye@ieee.org
(480) 650-8826

Send Completed Application Materials to:

Jim Drye
Student Activities Chair
705 E. Bates St.
Mesa, AZ 85203

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IEEE PHOENIX SECTION
SCHOLARSHIP APPLICATION
(Due: December 22, 2006)

Applicant IEEE Member No. _____

Name _____
Last/Family , First , Middle

Home Address _____
Number Street Apt
_____ City State Zip Code

Telephone No. () _____ E-mail _____

Social Security No. _____ Date of Birth _____
Month/Day/Year

Are you an Arizona resident? Yes No

Present School _____ GPA (and scale) _____

Class (Fr/So/Jr/Sr) _____ Academic Probation/
Suspension Yes No

Name of Instructor familiar with your qualifications _____ Her/His Telephone _____

College Attending Next Year _____ Expected Graduation Date _____

College Major _____ Specialty within Major, if any _____

*Please complete pages 2 and 3 (Financial Aid Statement and Personal Statement),
And Attach Official Transcripts from Present School/College.*

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IEEE PHOENIX SECTION SCHOLARSHIP
FINANCIAL AID STATEMENT

Name _____

Marital Status: Married _____ Single _____

Can anyone claim you as a dependent? Yes _____ No _____

Number of dependents you are able to claim _____

Who sponsors your education? Yourself _____ Other _____ (please specify) _____

Projected College Costs and Financial Resources (for the 2006-2007 School year)

Projected Expenses

Tuition and Fees:	\$ _____
Books and Supplies:	\$ _____
Transportation (Car/Bus/Insurance)	\$ _____
Room & Board (Dorm/Apt/Food/Utilities/Phone)	\$ _____
Personal (Clothes/Insurance/Recreation)	\$ _____
Total Expenses:	\$ _____

Projected Financial Resources

Education Loans	\$ _____
Government Grants	\$ _____
Federal Benefits (GI Bill/Social Security/etc)	\$ _____
Scholarships	\$ _____
Parent and/or Spouse Support	\$ _____
Employment (your job income)	\$ _____
Total Resources:	\$ _____

I certify that the information in this scholarship application is true to the best of my knowledge.

Signature

Date

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**IEEE PHOENIX SECTION SCHOLARSHIP
PERSONAL STATEMENT**

Name _____

Please provide a one-page statement summarizing your interests, academic accomplishments, school & athletic activities, community service, education and career goals, and employment history (position, company, dates).

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IEEE Phoenix Section Student Paper Contest 2008

The IEEE Student Prize Paper Contest offers the undergraduate IEEE Student member opportunities to exercise and improve both written and verbal communication skills. Throughout an engineer's career, (s)he will be constantly called upon to communicate ideas to others. Researching, writing, and presenting a paper provides a student with invaluable early experience in expressing ideas related to engineering. Since the paper contest primary function is to improve the engineering student's communicative skills, no student should be discouraged from entering the contest due to a false requirement of technical sophistication.

This undergraduate student paper contest consists of a written paper and an oral presentation. The written paper should be in the IEEE region 6 standard, which is available at <http://www.ewh.ieee.org/reg/6/MemberStudentActivities/IEEERegionalStudentPaperContestGuidelines.doc>. (note: I have downloaded a copy and it is attached). Briefly, the type-written papers are 15 pages maximum, double-spaced with 12 pt font. The written paper, as either an MS Word or an Acrobat pdf file, should be emailed to jdrye@ieee.org by 6 p.m. on **March 01, 2008**.

The oral presentations are 15 minutes plus a 5-minute question & answer period. The oral portion of the contest to be held the morning of Saturday **March 15, 2008**, at the ASU Tempe campus in the ASU Memorial starting at 8 a.m. A computer with projector will be provided for the contestants to use, since PowerPoint slides are the recommended approach. The best place to park that day should be the visitor section of Parking Structure 1 which is located near the intersection of Apache Blvd. and Normal St., and which is a short walk to the south of the Memorial Union (see <http://www.asu.edu/map/>).

The local cash awards for the paper contest winners are (1) First Place – **\$500**, (2) Second Place – **\$300**, and (3) Third Place – \$100. The five judges are IEEE members from local industries.

The top entrant from each Local Student Branch (ASU Main, ASU Polytechnic, DeVry, Embry-Riddle, and NAU) is eligible to present their paper to the IEEE Region 6 Southwest Area contest to be held April 2008 in “Tucson. AZ”.

If you have any questions, please contact:

Jim Drye
Student Activities Chair
Phoenix Section

Voice: (480) 650-8826
Email: jdrye@ieee.org

IEEE Regional Student Paper Contest Guidelines

Purpose

The IEEE Student Prize Paper Contest offers the undergraduate IEEE Student member opportunities to exercise and improve both written and verbal communication skills. Throughout an engineer's career, he will be constantly called upon to communicate ideas to others. Researching, writing, and presenting a paper provides a Student with invaluable early experience in expressing ideas related to engineering. Since the paper contest primary function is to improve the engineering student's communicative skills, no Student should be discouraged from entering the contest due to a false requirement of technical sophistication.

A. Eligibility

1. The entrant must be an undergraduate student at a school in the Region at which there is an IEEE Student Branch at the time of entry and presentation at the Branch contest.
2. A Student must complete and submit an application for membership in IEEE prior to entry in the Branch Contest.
3. An entrant may collaborate writing a paper with additional students, all whom meet the above criteria.

B. Number of Entries

1. There shall be no limit of entries in the local Branch contest. If there is only one entry, the Counselor may declare the author submitting the paper the Branch winner.
2. Each Branch normally enters the first place winning paper in the next level contest.
3. No paper may be entered in the Area or Regional contest without the prior approval and certification of the Branch Counselor.

C. Prizes and Travel Expenses

1. The Institute Life Member Fund will provide the funds for the prize money.
2. Additional prize money may be made available at the option of the Chairman of each contest.
3. The schools represented by the winning Regional papers may receive appropriate recognition from their Region.
4. Co-authors shall share equally in the allocation of cash awards.
5. Regional Student Activities Committee budget shall support the Area and Regional contest expenses, including travel, unless other funds are available.

D. Subject Matter

1. Papers should cover technical, engineering, management, or societal aspects of subjects reasonably within or related to the areas with which the author is familiar, either from courses, hobbies, summer work, or other similar experiences.
2. The work need not be original in content since the primary function of the Student prize paper contest is to improve the student's communication skills. The work should, however, be original in treatment and concise in coverage of the author's contribution to the subject.

E. Written Preparation

1. All papers must be typewritten, double spaced on one side only of eight and one-half by eleven inch paper. An equation or symbol that cannot be typed may be written in.
2. The pages of the paper must be numbered consecutively. The Introduction, Body, Conclusion, Tables, and Diagrams may not exceed 15 pages while the above sections with the Appendices may not exceed 20 pages.
3. In general, the contents of a Student prize paper shall be organized as follows:

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- (1) Removable fly-leaf page: Since the judges must handle the papers without knowledge of the identity of the author or his school, it is required that the paper itself show no identification other than the title. The title, name of the author, school and Branch Counselor's name, author's IEEE member number, and his current address must be shown on a fly-leaf which can be removed.
- (2) Title page: On the title page, only the title of the paper should appear. The title should consist of the minimum number of key words necessary to portray accurately the contents of the paper. Reader interest is stimulated by a well-chosen title. The author's name should **NOT** appear on the title page, nor should any other persons or schools.
- (3) Table of Contents: The table of contents should consist of a list of the parts of the paper and the page numbers, in order in which they occur.
- (4) Abstract: The abstract should not describe the paper, but should give, in brief, the essential facts of its contents; for example, a brief of the problem or objective and a concise summary of the results or conclusion, touching upon methods or other details only if they are unique or if they are of some particular significance. The abstract should be no longer than 100 words.
- (5) Introduction: The introductions should lead to the development of the subject so that the reader may obtain a clear understanding of the significance of the paper or article prepared. This can often be done by briefly giving the state of the art as background and then by bringing out the added advantages of the method of approach and emphasizing the importance of the results or conclusions.
- (6) Body: To assist the judges in maintaining objectivity, all mention of the author's name and school should be restricted to a single introductory page. Thus, no mention of the author's name or school should be made in the article. Any references to the author's school should read "the university" without giving the actual name. The main argument of the subject is carried out in the body of the paper, complete with supporting data. The argument should proceed in a logical sequence according to a prepared outline. The writing should be in the third person. Support data and results can be presented most effectively as curves, charts, or tables. Standard graphical symbols and abbreviations should be used on all drawings. (Ref. Graphic Symbols for Electrical and Electronic Diagrams, IEEE STD 315.) Well known abbreviations may be used in the text but should be defined where used the first time followed by the abbreviation in parentheses. Generally the use of abbreviations should be confined to tables and illustrations. Illustrations and tables should supplement, not duplicate, text materials; likewise, they should complement, not duplicate each other.
- (7) Conclusion: The conclusion are often considered the most important part of a paper. They should be stated concisely in a separate section at the end of the paper. If there are three or more conclusions, better emphasis can be obtained by numbering each conclusion and setting it off in a separate paragraph.
- (8) Tables: Generally, each table should be typed on a separate sheet and numbered consecutively using Roman numerals: Table I, Table II. Small tabulations or listings may be made in the text where necessary for continuity. Each table should be titled by giving the brief description as a heading following the table number at the top. Ditto marks should not be used in tables, but brackets may be used to group information on several lines.
- (9) Figures: Figures should be numbered consecutively using Arabic numerals: Figure 1; Figure 2, etc. Three types of figures may be used: photographs, oscillogram, and line drawings. The reading material on illustrations should be kept to a minimum. In short, the reading material should be included in the captions. Portions of the illustrations may be identified by letters and explained in the captions. Whenever feasible, several curves should be combined on the same coordinates. Their identifying letters or numbers should be in clear spaces between cross section lines. Readers generally prefer having the figures distributed through the article, although it is also permissible to bind them together at the end.

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(10) Appendices: Detailed mathematical proofs, development of equations and examples which are subordinate to the main argument in the body of the paper, but not essential to following the argument, should be treated in the appendices. Main equations as they are developed should be numbered consecutively, with the number in the right margin. The equations, figures, and tables in the Appendices should be numbered consecutively following the numbers used for the equations, figures, and tables in the text (such as, if table IV were last in the text, table V would be first in the Appendices.)

(11) References: To enable the reader to consult important works used by the author incidental to the preparation of his manuscript and other related literature which might be helpful, a suitable reference list should be appended. References should be numbered consecutively and should follow the form shown below:

For a periodical: R.N. Hall, Power Rectifiers and transformers, Proc. IRE, Vol. 40, pp. 1515-1518, November 1952.

For a book: W.A. Edison, Vacuum Tube Oscillators, John Wiley and Sons, Inc., New York, New York, pp. 170-171, 1948.

For an article: B. Lawrence, B.H. Weil, and M.H. Graham, Making online search available in a industrial research environment, Journal of the American Society for Information Science, pp. 364-369, Nov-Dec. 1974.

4. The Contest Chairman of each contest shall determine the number of copies of each paper that shall be submitted for entry in the contest.

5. Regional winners will receive further information from the Manager, Student Services at IEEE Headquarters concerning the required format of papers for publication in IEEE STUDENT PAPERS.

F. Oral Presentation

1. Fifteen (15) minutes shall be allotted for the oral presentation and five (5) minutes for questions from the audience.

2. The paper contest chairman shall arrange a timing system, with the following characteristics:

(1) A Signal will be given at the beginning of the oral presentation.

(2) A warning signal will be given at the end of thirteen (13) minutes.

(3) A stop signal will be given at the end of fifteen (15) minutes.

(4) The contest should cease talking when the stop signal is given. The contest judges will assess penalties for running overtime.

(5) The contestant will be stopped by the judges at the end of twenty (20) minutes if he continues past the stop signal.

(6) In addition to the fifteen and five minutes periods, the judges shall be given up to ten (10) minutes to complete their evaluations between presentations.

3. Individuals asking questions during the discussion period shall state their name and affiliation. If the audience does not present any questions, the judges should do so. Questions will be stopped at the end of five (5) minutes.

4. Demonstration or display apparatus may **not** be employed as a part of the contest presentation. Visual aids such as slides, placards, charts, view graph pictures and motion picture films may be used.

5. Each contestant is responsible for making arrangements with the paper contest chairman for audio-visual equipment if needed.

G. Judging

1. Papers will be evaluated and judged on the basis of twenty equally weighted judging criteria. Evaluation and judging is based on 55 percent given to the written presentation and 45 percent weight given to the oral presentation. (Note that 65 percent of the judging criteria is related to the

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student=s written and verbal skills, emphasizing that the paper contest=s primary function is to improve an engineering student=s communication abilities.)

Judging Criteria

Written Presentation Evaluation

Form - 35%

- | | |
|--|----------------------|
| 1) Concise, informative abstract. | 1 2 3 4 5 6 7 8 9 10 |
| 2) Adequacy of introduction. | 1 2 3 4 5 6 7 8 9 10 |
| 3) Logical development and analytical treatment in the body. | 1 2 3 4 5 6 7 8 9 10 |
| 4) Adequacy of conclusion. | 1 2 3 4 5 6 7 8 9 10 |
| 5) Compliance with paper contest guidelines on format. | 1 2 3 4 5 6 7 8 9 10 |
| 6) Clarity and direction in exposition. | 1 2 3 4 5 6 7 8 9 10 |
| 7) Grammar, spelling, style, and choice of words. | 1 2 3 4 5 6 7 8 9 10 |

Score _____

Subject Matter - 20%

- | | |
|--|----------------------|
| 8) Originality of ideas, experimental procedures, processes, results, or conclusions due primarily to this author. | 1 2 3 4 5 6 7 8 9 10 |
| 9) Originality of analysis, interpretation, restatement of inference based upon the work of others. (If the paper and its contents are entirely the work of the author, enter #8 score into #9.) | 1 2 3 4 5 6 7 8 9 10 |
| 10) Quality and level of technical, social, or management content. | 1 2 3 4 5 6 7 8 9 10 |
| 11) Factual and technical accuracy. | 1 2 3 4 5 6 7 8 9 10 |

Written Score _____

Judging Criteria

Oral Presentation Evaluation

Form - 30%

- | | |
|--|----------------------|
| 12) Organization--has introduction body and conclusions with transitions between each. | 1 2 3 4 5 6 7 8 9 10 |
| 13) Logical development. | 1 2 3 4 5 6 7 8 9 10 |
| 14) Poise, eye contact, and platform manners. | 1 2 3 4 5 6 7 8 9 10 |
| 15) Grammar, fluency, and choice of words. | 1 2 3 4 5 6 7 8 9 10 |
| 16) Clarity and directness in exposition. | 1 2 3 4 5 6 7 8 9 10 |
| 17) Use of graphic aids. | 1 2 3 4 5 6 7 8 9 10 |

Score _____

Subject Matter - 15%

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- 18) Apparent technical and factual accuracy and grasp of the subject. 1 2 3 4 5 6 7 8 9 10
19) Use of examples and analogies. 1 2 3 4 5 6 7 8 9 10
20) Discussion--judges should be prepared to stimulate discussion. 1 2 3 4 5 6 7 8 9 10

Score _____

Written Score _____

Total Oral and Written Score _____

3. Each of the twenty categories will be scored between 1 and 10. Accordingly the following guidelines should be helpful:

- 1) Maybe some one should suggest that he change his major.
 - 2) Did he even think about his point?
 - 3) Two more tries might have helped.
 - 4) Needs some polish to smooth the rough spots.
 - 5) Not bad.
 - 6) What is expected of someone at this level.
 - 7) Very Smooth.
 - 8) The individual must have put special emphasis on the area.
 - 9) So logical and correct that the words seemed to form in your mind as the contestant spoke or wrote them.
 - 10) What Moses felt on Mt. Sinai.
4. There shall be five (5) to seven (7) judges. The use of the same judges for both the Written and Oral presentations is optional but encouraged.
5. The judges shall be selected to represent a cross section of various disciplines in electrical, electronics and related fields of engineering. The Section and Regional SAC should be called on to assist in the selection of judges at all levels of the paper contest.
6. The judges should have a record of experience in written and oral communication of ideas

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.