

## SCANNER

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March–April 2007

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## March 10 Workshop Offers Chapter Leadership Training

Experienced IEEE leaders will share their knowledge with new chapter officers and other interested IEEE volunteers at the National Capital Area Leadership Training Workshop on Saturday, March 10.

Every chapter and affinity group should send at least one officer to the workshop, which is sponsored by the Northern Virginia and Washington Sections and open to all IEEE members. Student branch officers are encouraged to attend.

The half day of presentations, discussion and networking will help get new IEEE leaders off to a good start, and provide a refresher for those with some experience.

Attendees will learn about meeting planning, publicity, membership development, officer roles and responsibilities, finances, reporting, awards and recognition, and other aspects of

running a successful chapter.

Participants will also have the opportunity to share ideas with other chapter officers, and to meet section and region leaders.

IEEE provides a wealth of materials, tools and other resources to help organizations be successful. The Leadership Training Workshop is an excellent opportunity to learn how to

take advantage of these resources to strengthen your chapter.

Registration is free and a continental breakfast and lunch are included. The workshop will be held at the Mitre facility in McLean, Virginia, and will conclude in the early afternoon.

Preregistration is required for food and materials planning. See Calendar listing on page 3 for details.

## EMBS Guest Speaker Discusses Hyperspectral Analysis Techniques

By Debi Siering and Paul Otto

The Washington and Northern Virginia Chapter of the Engineering in Medicine and Biology Society held their first meeting of the year with a

presentation by Joseph Kujawski, a senior systems engineer from Lux-Analytica, LLC. He presented his study on "Investigations in the use of Hyperspectral Analysis Techniques to Replace and Augment the Use of Chemical Staining in Pathology," followed by a brief question answer session.

Hyperspectral data is imaging data collected over a very large number of spectral bands. Hyperspectral data sets typically have more than 32 bands (as opposed to standard RGB images which encompass only three bands—red, green, and blue). This collection technique has been used for years in the remote sensing community and has novel applications in the biomedical field. One application is the processing of unstained tissue samples. Currently, tissue must be stained to generate pathologist readable images. The staining process is time consuming and requires the use of carcinogenic chemicals. One of the study's goals is to develop pathologist-readable images from unstained tissue samples.

Mr. Kujawski showed how they are trying to achieve this goal through data capture techniques using a hyperspectral-imaging microscope combined with classification algorithms to pickup unique structures in the samples. He also elaborated on some of the challenges they face with improving the image's dynamic range and the radiometric calibration.

This novel interface of the remote sensing and biomedical world has the potential to improve the speed of

April 28 Banquet to include Awards, Keynote Speech by Alcatel-Lucent's Bell Labs Head



Dr. Jeong H. Kim

Dr. Jeong H. Kim, president of Alcatel-Lucent's Bell Labs, will speak about the dimensions of innovation in his keynote address at the IEEE National Capital Area Awards Banquet on Saturday, April 28.

The 2007 IEEE Fellows from the local sections will be recognized at the banquet, and awards will be given to IEEE volunteers who made significant contributions to the success of the sections, chapters and affinity groups during 2006.

This year's banquet is being hosted by the Northern Virginia Section at the Hyatt Fair Lakes in Fairfax, Virginia. For complete details, please see the Calendar, p. 5, and reservations form, p. 8.

diagnosis procedure which is especially advantageous in time-critical applications (such as examining biopsies while a patient is still on the operating table). For further information, please contact Mr. Kujawski via email at [joe@kujawski.org](mailto:joe@kujawski.org).



**Passing the Gavel**—Dr. Haik Biglari (left), 2006 chair of the Washington Section, passes the gavel used by founding member and director Alexander Graham Bell to Dr. Kiki Ikossi, 2007 chair.

More than a century ago, Bell and 22 others came together in Washington, D.C., to form a society of engineers who were interested in the science of engineering, particularly telephony, telegraphy, and radio. The group soon became a branch of the American Institute of Electrical Engineers, which merged with the Institute of Radio Engineers to form IEEE in 1963. To learn more about the history of the Washington Section, see <http://ewh.ieee.org/r2/washsec/history.html>.

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## Editorial Policies and Procedures

### Calendar Items and Announcements

Please submit calendar items in the format used in the Calendar of Events. You can send email to [ncac-scanner@ieee.org](mailto:ncac-scanner@ieee.org). If possible, include a synopsis of the event and a biographical sketch of the presenter including academic background, current position, notable achievements, and IEEE and other professional affiliations.

Other contributions, such as reports on chapter events and other member activities, reviews of books by or of interest to members, are most welcome. Please submit them to the managing editor, electronically if possible, at [ncac-scanner@ieee.org](mailto:ncac-scanner@ieee.org).

### On the Web

#### eSCANNER Calendar of Events

The calendar is available at [www.ieee.org/escanner](http://www.ieee.org/escanner). Check here for events submitted too late for print publication.

#### IEEE National Capital Area Virtual Community

Exchange ideas and participate in discussions with local IEEE members at [www.ieee-communities.org/ncac](http://www.ieee-communities.org/ncac).

### Advertising

Contact the advertising manager about ad rates and to place advertising orders. Ads must be submitted by the deadline below.

### Deadlines

The editor reserves the right to set policies and procedures necessary to provide members with a newsletter that is informative and timely. Deadlines must be strictly adhered to to keep the publication on schedule. If you are planning an event and have insufficient information by the deadline, please contact the managing editor.

The deadline for the upcoming issue will always be published on this page.

*The deadline for the May-June issue is April 1, 2007*

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## CALENDAR OF

## events

**Tuesday, March 6, 2007****Washington Section Administrative Committee Meeting**

**Time:** Dinner at 6:00 pm; meeting at 6:30 pm  
**Place:** Bethesda Marriott, 6711 Democracy Blvd., Bethesda, MD  
**Directions:** From Silver Spring, take I-495 West to Exit 36 North (Rt. 187, Old Georgetown Rd.), turn right onto Old Georgetown Rd., then left onto Democracy Blvd. and look for the Marriott on the right. From Rockville, take I-270, follow the signs for Northern Virginia at the divide, then take Exit 1 (Democracy Blvd.), turn left onto Democracy Blvd. and look for the Marriott on the left (make a U-turn at Fernwood Rd.). From Northern Virginia, take I-495 to I-270, then take Exit 1 (Democracy Blvd. East), and proceed as above.  
**More Info:** All interested IEEE members are welcome.  
**Contact:** Debra Meale at 703-492-0047 or nca-admin@ieee.org. Please include the term IEEE in the subject line of your email.

**Saturday, March 10, 2007****National Capital Area Leadership Training**

**Time:** 8:30 am to 1:30 pm  
**Place:** Mitre Corporation, Building 2, Conference Room 1N100 A/BA, 7515 Colshire Drive, McLean, VA  
**Directions:** See [www.mitre.org/about/locations/mitre2\\_map.html](http://www.mitre.org/about/locations/mitre2_map.html).  
**More Info:** Learn from IEEE's experienced leaders what it takes to run a successful chapter or program. This half day of presentations, discussions and networking will help get you off to a good start. The training is open to all members, but we particularly encourage every chapter to send at least one officer to the session.  
**Cost:** Free, including continental breakfast and lunch.  
**Contact:** To register, contact Debra Meale at 703-492-0047 or nca-admin@ieee.org by Tuesday, March 6. Please put "IEEE Leadership Training Registration" in the subject line of your email.

**Tuesday-Wednesday,  
 March 13-14, 2007  
 Fourth Annual Career Fly-In**

**Sponsor:** IEEE-USA  
**Time:** Tuesday: Briefing 2:00 pm, dinner 6:00; Wednesday: Capitol Hill Visits 8:00 am to 6:00 pm  
**More Info:** This event brings IEEE members from across the U.S. to Washington to meet your legislators, explain your profession, and discuss H-1B visas, student visas and high-skill immigration. IEEE-USA will arrange your meetings for you and will fully prepare you in advance. All IEEE members, includ-

ing students and GOLD members, are welcome and needed. For additional details, please see [www.ieeeusa.org/policy/flyin/career/default.asp](http://www.ieeeusa.org/policy/flyin/career/default.asp).  
**Cost:** Free for IEEE members, including dinner.  
**Contact:** Russell T. Harrison, IEEE USA Legislative Representative - Grassroots Affairs, at 202-530-8326 or r.t.harrison@ieee.org.

**Wednesday, March 14, 2007****Northern Virginia Section Administrative Committee Meeting**

**Time:** 6:30 pm  
**Place:** Olive Garden Restaurant, 12980 Fair Lakes Shopping Center, Fairfax, VA  
**Directions:** Take I-66 to Exit 55 North (Route 7100, Fairfax County Pkwy). Turn right at Fair Lakes Pkwy. Go 0.3 mile and turn right at Fair Lakes Circle. Go 0.6 mile and turn left at Fair Lakes Shopping Center.  
**More Info:** All interested IEEE members are invited to attend.  
**Contact:** Debra Meale at 703-492-0047 or nca-admin@ieee.org. Please include the term IEEE in the subject line of your email.

**Thursday, March 15, 2007**
**◆ One Substation Test Answers  
 1000 Questions**

**Sponsors:** Power Engineering Society, Industry Applications Society  
**Speaker:** John Matthews, MET Electrical Testing/Substation Test Company  
**Time:** 6:00 pm  
**Place:** Thomas Jefferson Library, 7415 Arlington Boulevard, Falls Church, VA  
**Directions:** From the Beltway, take Exit 50B, Rte. 50 East (Arlington Boulevard). Go through the first light and look for the library on the right, just before the traffic light at Allen Street. Free parking.  
**More Info:** See Diamond story, p. 5.  
**Cost:** Free for IEEE members. A \$10 donation is requested from guests.  
**Contact:** Fred Pearson at [fred.pearson@unisys.com](mailto:fred.pearson@unisys.com) or Jeff McWhirt at [jmcwhirt@mitre.org](mailto:jmcwhirt@mitre.org).

**Thursday, March 15, 2007****◆ IPv6: The Next Generation Internet**

**Sponsor:** Communications Society, Washington Chapter  
**Speaker:** Dr. Wei Chen, JDSU Communications Test Group  
**Time:** Light dinner and networking 6:30 pm, presentation 7:00 pm  
**Place:** JDSU, One Milestone Center Court, Germantown, MD  
**Directions:** From the Washington area, take I-270 to Exit 16A East (Father Hurley Blvd./Damascus) and go right toward Damascus. Turn left at the first traffic light onto Observation Drive. Turn left at a blinking yellow light onto Milestone Center Drive, then turn left onto

Shakespeare Blvd. Take the first right into JDSU and go around to the front of the lower of the two buildings. See [www.jdsu.com/company/locations/usa-md-gmtwn.html](http://www.jdsu.com/company/locations/usa-md-gmtwn.html).

**More Info:** IPv6 is the first major revision to the addressing scheme of the internet. As the number of embedded and portable devices grows, this change is needed to keep up. IPv6 also provides additional features such as improved routing, address configuration and security. This presentation will provide a good fundamental understanding of the changes and engineering design considerations. See Diamond story, p. 5. As an added bonus, attendees may play with several "tech toys" (telecommunications test equipment and analyzers).  
**Cost:** Free  
**Contact:** Please RSVP by Tuesday, March 13 to Brenton C. Miller at 240-997-3566 or [bmiller@marylandtechrev.com](mailto:bmiller@marylandtechrev.com).

**Tuesday, March 20, 2007****State-of-the-Art Photonic Nanostructure Devices**

**Sponsor:** Lasers and Electro-Optics Society  
**Speaker:** Prof. Toshihiko Baba, Yokohama National University, Japan  
**Time:** Light refreshments and socializing 6:00 pm, lecture 6:30 pm, optional dinner following lecture with the speaker at a local restaurant.  
**Place:** University of Maryland, A. V. Williams Building, Room 2460, College Park, MD  
**Directions:** From the north or I-495, take Route 1 South. Approx. 2 miles south of the Beltway, turn right onto Campus Drive, then immediately take Paint Branch Drive and the A.V. Williams Building will be on the right. From the south on Route 1, turn left onto Campus Drive, and follow above directions. Free parking is available after 4:00 pm in selected lots (read signs carefully). See [www.parking.umd.edu/themap](http://www.parking.umd.edu/themap).  
**Contact:** Dominique Dagenais at 301-951-7095 or [dominique\\_dagenais@avanex.com](mailto:dominique_dagenais@avanex.com), or Mary Tobin at 301-587-0971 or [mtobin@ieee.org](mailto:mtobin@ieee.org).

**Tuesday, March 20, 2007****Women in Engineering Technical Meeting**

**Speaker:** Cheryl Santia, Ambiance Lighting  
**Time:** 7:00 pm  
**Place:** Mitre Corporation, Building 2, 7515 Colshire Drive, McLean, VA  
**Directions:** See [www.mitre.org/about/locations/mitre2\\_map.html](http://www.mitre.org/about/locations/mitre2_map.html).  
**More Info:** Ambiance Lighting is a full-service lighting agency servicing Maryland, DC and Northern Virginia, and represents about 50 different manufacturers.

CALENDAR  
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## CALENDAR

continued from page 3

Light snacks will be provided before and during the meeting, and afterwards everyone is welcome to join us at the Cheesecake Factory for food, drinks, networking and socializing.

**Contact:** Please RSVP by March 15 to Charity Burd at [charity.burd@ieee.org](mailto:charity.burd@ieee.org).

**Wednesday, March 28, 2007****Life Members Meeting**

**Sponsor:** Life Members Affinity Group  
**Speaker:** TBA  
**Time:** 12:00 noon  
**Place:** Dolley Madison Library, 1244 Oak Ridge Ave, McLean, VA  
**Directions:** Take Exit 46 from the Beltway headed toward Washington and proceed on Route 123 to McLean, VA, about 2 miles. After crossing Old Dominion Dr., turn left at the next street, Ingle-side Ave. Proceed one block to the library on the left.  
**Contact:** John Margosian at 301-365-1257 or [jmargo@ieee.org](mailto:jmargo@ieee.org).

**Wednesday, March 28, 2007****◆ View of Earth from Space: An Astronaut's Perspective**

**Sponsor:** Geoscience and Remote Sensing Society  
**Speaker:** Paul Richards, GOES-R Observatory Manager, NASA Goddard Space Flight Center  
**Time:** Refreshments 3:00 pm; lecture 3:30 pm  
**Place:** NASA Goddard Visitor Center, GSFC, Greenbelt, MD  
**Directions:** See [www.nasa.gov/centers/goddard/visitor/directions/index.html](http://www.nasa.gov/centers/goddard/visitor/directions/index.html).  
**More Info:** See Diamond story, p. 5, and [http://ewh.ieee.org/r2/no\\_virginia/grss](http://ewh.ieee.org/r2/no_virginia/grss).  
**Contact:** Wei Xia-Serafino at [xia@gst.com](mailto:xia@gst.com), or James C. Tilton at [james.c.tilton@nasa.gov](mailto:james.c.tilton@nasa.gov).

**Friday, March 30, 2007****Career Fair**

**Sponsors:** Capitol College Office of Career Services and IEEE Student Branch  
**Time:** 12:30 to 3:30 pm  
**Place:** Capitol College, William G. McGowan Academic Center, 11301 Springfield Road, Laurel, MD  
**Directions:** Take the Baltimore-Washington Parkway to the Powder Mill Road exit. Turn west (towards Beltsville) on Powder Mill Road, then immediately turn right onto Springfield Road and go one mile to the college on the right.  
**More Info:** Open to all IEEE members and the public. More than 30 employers will be recruiting for coop, internship, entry level and advanced positions in engineering, computer science, information technology and business. For additional details, see [www.capitol-college.edu/careerfair](http://www.capitol-college.edu/careerfair).  
**Cost:** Free.  
**Contact:** Tony Miller at [careers@capitol-college.edu](mailto:careers@capitol-college.edu).

**Tuesday, April 3, 2007**  
**Washington Section Administrative Committee Meeting**

**Time:** Dinner at 6:00 pm; meeting at 6:30 pm  
**Place:** Bethesda Marriott, 6711 Democracy Blvd., Bethesda, MD  
**Directions:** From Silver Spring, take I-495 West to Exit 36 North (Rt. 187, Old Georgetown Rd.), turn right onto Old Georgetown Rd., then left onto Democracy Blvd. and look for the Marriott on the right. From Rockville, take I-270, follow the signs for Northern Virginia at the divide, then take Exit 1 (Democracy Blvd.), turn left onto Democracy Blvd. and look for the Marriott on the left (make a U-turn at Fernwood Rd.). From Northern Virginia, take I-495 to I-270, then take Exit 1 (Democracy Blvd. East), and proceed as above.  
**More Info:** All interested IEEE members are welcome.  
**Contact:** Debra Meale at 703-492-0047 or [nca-admin@ieee.org](mailto:nca-admin@ieee.org). Please include the term IEEE in the subject line of your email.

**Wednesday, April 11, 2007**  
**Northern Virginia Section Administrative Committee Meeting**

**Time:** 6:30 pm  
**Place:** Olive Garden Restaurant, 12980 Fair Lakes Shopping Center, Fairfax, VA  
**Directions:** Take I-66 to Exit 55 North (Route 7100, Fairfax County Pkwy). Turn right at Fair Lakes Pkwy. Go 0.3 mile and turn right at Fair Lakes Circle. Go 0.6 mile and turn left at Fair Lakes Shopping Center.  
**More Info:** All interested IEEE members are invited to attend.  
**Contact:** Debra Meale at 703-492-0047 or [nca-admin@ieee.org](mailto:nca-admin@ieee.org). Please include the term IEEE in the subject line of your email.

**Tuesday, April 17, 2007****◆ Millimeter Waves: Myths and Reality**

**Sponsor:** Microwave Theory and Techniques Society  
**Speaker:** H. Bruce Wallace, MMW Concepts LLC, Havre De Grace, MD  
**Time:** Reception 5:30 pm, dinner 6:00 pm, lecture 7:00 pm  
**Place:** American Center for Physics, One Physics Ellipse, College Park, MD  
**Directions:** See [www.acp.org/map.html](http://www.acp.org/map.html). Ten-minute walk from College Park Metro station (Green line).  
**More Info:** See Diamond story, p. 5. Please join the speaker and MTTS members for dinner (catered buffet) at the lecture site.  
**Cost:** Lecture free; \$15 for dinner.  
**Contact:** Please RSVP for dinner only by COB Friday, April 13 to Roger Kaul at [r.kaul@ieee.org](mailto:r.kaul@ieee.org) or 301-394-4775.

**Tuesday, April 17, 2007**  
**Women in Engineering Social Meeting**

**Time:** 7:00 pm  
**Place:** TBD  
**More Info:** Come celebrate spring with us as we meet for food, drinks, networking and

socializing. The agenda will be emailed to all who RSVP, for our first paperless social meeting.

**Contact:** Please RSVP by April 12 to Charity Burd at [charity.burd@ieee.org](mailto:charity.burd@ieee.org).

**Thursday, April 19, 2007****◆ IMS: Converging Wireless and Wire-line Networks**

**Sponsor:** Communications Society, Washington Chapter  
**Speaker:** Barry Constantine, JDSU Communications Test Group  
**Time:** Light dinner and networking 6:30 pm, presentation 7:00 pm  
**Place:** JDSU, One Milestone Center Court, Germantown, MD  
**Directions:** From the Washington area, take I-270 to Exit 16A East (Father Hurley Blvd./Damascus) and go right toward Damascus. Turn left at the first traffic light onto Observation Drive. Turn left at a blinking yellow light onto Milestone Center Drive, then turn left onto Shakespeare Blvd. Take the first right into JDSU and go around to the front of the lower of the two buildings. See [www.jdsu.com/company/locations/usa-md-gmtwn.html](http://www.jdsu.com/company/locations/usa-md-gmtwn.html).  
**More Info:** As more and more services are added to our telecommunications devices (streaming video, instant messaging, video conferencing to name a few) the complexity of integrating them increases. IMS (IP Multimedia Subsystems) is an architecture that promises to simplify integration while allowing more sophisticated capabilities. This presentation and demonstration will explain the architecture and design fundamentals of IMS and the market drivers behind it. See Diamond story, p. 6. As an added bonus, attendees may play with several "tech toys" (telecommunications test equipment and analyzers).  
**Cost:** Free  
**Contact:** Please RSVP by Tuesday, April 17 to Brenton C. Miller at 240-997-3566 or [bmiller@marylandtechrev.com](mailto:bmiller@marylandtechrev.com).

**Wednesday, April 25, 2007**  
**Graduate Student Poster Competition**

**Sponsors:** Lasers and Electro-Optics Society, Washington and Northern Virginia Chapter and Baltimore Chapter  
**Time:** 6:00 pm  
**Place:** Johns Hopkins University Applied Physics Laboratory, Howard County Room 3, 11100 Johns Hopkins Road, Laurel, MD  
**Directions:** APL is located approx. 1/2 mile west of Route 29. See [www.jhuapl.edu/newscenter/visitor/directions.asp](http://www.jhuapl.edu/newscenter/visitor/directions.asp).  
**More Info:** The LEOS chapters are hosting a graduate student poster competition to foster industry-academia collaboration and knowledge transfer covering all areas of optical science and technology. We welcome original or recently published

CALENDAR  
 continues on page 5

March-April 2007



# DIAMOND STORIES



**Thursday, March 15, 2007**

## One Substation Test Answers 1000 Questions

John Matthews will answer dozens of our questions about substation testing. Learn the answers to these and other questions: Why does electrical testing have to be done? Can't it be skipped or deferred? Who has to do this kind of testing? Who should do it? Who can avoid it? What is a substation? What else gets tested? How does the equipment get tested? What are some of the standards? What are some of the techniques and equipment for performing these tests? Are some methods better than others? What are the pros and cons for different methods? When does it get done? What about squirrels?

John Matthews looks after sales for MET Electrical Testing/Substation Test Company. He previously worked for Pepco Building Services, focusing on mechanical and electrical project work, along with civil construction and remote monitoring. Prior work included 15 years with Chromalloy Gas Turbine in marketing and quality assurance, helping utilities and airlines throughout North America. Prior to that, he worked for Solar Turbines in San Diego, and People's Gas Company in Chicago.

**Thursday, March 15, 2007**

## IPv6: The Next Generation Internet

The Internet is built upon a protocol suite called TCP/IP. When your computer communicates with the Internet, a unique IP address is used to transfer and receive information. Yesterday's IP standard is called IPv4 and was standardized back in September 1981.

IPv4 defines a 32-bit address. This means there are  $2^{32}$  (4,294,967,296) unique IPv4 addresses available. This may sound like a big number. It is not, most of the IP addresses have already been tied up and the Internet is simply running out of them. The address shortage problem is aggravated by the fact that portions of the IP address space have not been efficiently allocated. The recent broad adoption

of always-on technologies such as DSL and cable modems, coupled with the pending integration of PDAs and cellular phones into always-addressable Mobile Information Appliances, significantly elevates the urgency to expand the address space.

IPv6 introduces the following features to fix IPv4 limitations: new header format to minimize header overhead; larger address space of 128-bit or over  $3.4 \times 10^{38}$  possible addresses; efficient and hierarchical addressing and routing infrastructure; stateless and stateful address configuration to further simplify host configuration; built-in security; better support for QoS; new protocol for neighboring node interaction; and extensibility.

Although IPv6 accounts for a tiny percentage of the live addresses in the publicly accessible Internet, which is still dominated by IPv4, it is gaining more and more momentum worldwide. The U.S. government has specified that all federal agencies must deploy IPv6 by 2008. Japan, Korea and China have announced plans for large-scale IPv6 deployment. In Japan, several service providers offer commercial IPv6 services, and equipment makers such as NEC have been shipping IPv6 products in Japan for some time. More recently, China's five major carriers started to build the IPv6-based China Next Generation Internet (CNGI), to be readied in time for the 2008 Olympics.

Wei Chen received a Ph.D. from the University of California at Irvine in 1987 and an M.A. from the University of Rochester in 1984. He has more than 20 years experience in embedded system development. He is currently working at JDSU Communications Test Group as a principal software engineer. He has been involved in the Acterna/JDSU test product development for metro Ethernet/IP/MPLS/VPLS networks.

**Wednesday, March 28, 2007**

## View of Earth from Space: An Astronaut's Perspective

The experience of viewing earth from space has given Astronaut Paul W. Richards a unique per-

spective. Now a NASA manager, he will be speaking on his experience as a mission specialist aboard Shuttle Discovery, earth observing satellites, and geostationary weather satellites.

Richards received a B.S. degree in mechanical engineering from Drexel University in 1987 and an M.S. degree in mechanical engineering from the University of Maryland in 1991. He was selected by NASA to become an astronaut in 1996, and after two years of training and evaluation, he qualified for flight assignment as a mission specialist. He flew on STS-102 and logged more than 307 hours in space, including 6.4 EVA hours. He was also assigned as a back-up crewmember for ISS Expedition-7.

Richards left NASA in 2002 to become an aerospace consultant, then returned to NASA Goddard Space Flight Center in 2004 as the Observatory Manager for the Geostationary Operational Environmental Satellite (GOES-R) series. GOES-R is the next generation of advanced weather satellites being developed by the National Oceanic and Atmospheric Administration (NOAA) in partnership with NASA.

Richards is a member of the American Society of Mechanical Engineers, National Society of Professional Engineers, American Institute for Aeronautics and Astronautics, American Society of Naval Engineers, and United States Naval Reserves. Among many other NASA awards, Richards received NASA's prestigious Silver Snoopy Award in 1994.

**Tuesday, April 17, 2007**

## Millimeter Waves: Myths and Reality

Over the years, interest in millimeter-wave (MMW) technologies has varied greatly depending on the constantly changing military needs or the opportunities in the commercial sector. There are common misconceptions and erroneous data references that continue to appear that set back the progress of the development of MMW systems.

This presentation, originally presented as a plenary talk at the 2006 SPIE Defense and Security Symposium, will discuss three issues that crop up in MMW applications that are commonly addressed through the application of hearsay and superficial analysis. These issues involving scaling target signatures, eliminating multipath, and atmospheric attenuation, will be discussed both from an analytical and historical perspective.

H. Bruce Wallace is an internationally recognized expert on millimeter-wave (MMW) and sub-MMW technology. He received a B.A. degree in physics from the Johns Hopkins University in 1971 and the M.S.E.E. degree from the University of Delaware in 1984.

In 1974, after serving in the US Army, he joined the Ballistics Research Laboratory where he investigated the application of millimeter-wave techniques to weapon systems. Key among these studies was an MMW sensor system which combined radar and radiometry into a single sensor. For his work, he received the U.S. Army Research and Development Award in 1981.

From 1996 to 2004, he was the Chief of the RF & Electronics Division at the Army Research Laboratory where he was responsible for the research that led to development of the Army's Multifunction

## CALENDAR

*continued from page 4*

poster presentations from graduate students in the Baltimore-DC-Northern Virginia area. An independent panel of judges will evaluate the posters, and cash awards and merit certificates will be awarded to the best posters. Refreshments will be served during the poster competition. See [www.ieee.org/BaltimoreLEOS](http://www.ieee.org/BaltimoreLEOS) or [http://ewh.ieee.org/r2/wash\\_nova/leos](http://ewh.ieee.org/r2/wash_nova/leos) for more details regarding rules and submission guidelines.

**Contact:** Poster submission and attendee RSVP deadline is April 18, 2007. Thomas Clark at 443-778-7220 or Mary Tobin at 301-587-0971.

**Saturday, April 28, 2007**

## ◆ IEEE National Capital Area Awards Banquet

**Sponsors:** Northern Virginia and Washington Sections

**Speaker:** Dr. Jeong H. Kim, President, Bell Labs

March-April 2007

**Reception:** Registration and reception at 6:30 pm; dinner at 7:30 pm; awards presentation at 8:30 pm

**Place:** Hyatt Fair Lakes, 12777 Fair Lakes Circle, Fairfax, VA

**Directions:** From the Washington Beltway (I-495), take I-66 West. Take Exit 55B, Route 7100 North (Fairfax County Parkway). At the first traffic light, turn right onto Fair Lakes Parkway, then at the next light, turn right again onto Fair Lakes Circle. The Hyatt is 1/4 mile on the left.

**More info:** Join us to recognize distinguished IEEE members in the local area for their contributions. See Diamond story, p. 6, for information about the keynote speaker.

**Cost:** \$50 per person, tables of 10 are \$500.

**Contact:** Reservations are required by Saturday, April 14. Please send the names of all attendees and a check payable to "IEEE NOVA Section" to Debra Meale, P.O. Box 6814, Woodbridge, VA 22195. A reservation form is printed on p. 8 of this newsletter.

**DIAMOND STORIES**  
*continues on page 6*

## DIAMOND STORIES

continued from page 5

Radio Frequency System.

Wallace is currently president of his own firm consulting in MMW and Sub-MMW technology. He is a Fellow of the IEEE Geoscience and Remote Sensing Society.

Thursday, April 19, 2007

## IMS: Converging Wireless and Wire-line Networks

IP Multimedia Subsystems, or IMS, was developed and promoted by 3GPP, the wireless standardization body that developed the GSM standard. Although it was originally meant to serve the needs of GSM wireless carriers, it has been adopted by several CDMA wireless carriers and wire-line service operators. Cable MSOs have also incorporated a version of the standard to support VoIP and other IP-based multimedia services with their networks.

IMS will fundamentally change the way telecom operators deliver services. By implementing this technology, wireless and wire-line service operators hope to leap frog into the Internet age. For many wire-line operators, revenues and margins are under intense competitive pressure and evolving towards IMS is a necessity for their survival.

Some of the IMS topics to be discussed will include market drivers, applications (real and hyped), a technology overview, and a demonstration of simple SIP communication (SIP is the foundational protocol of IMS).

Barry Constantine received an M.S.E.E. from the University of Maryland in 1986 and a B.S.E.E. from West Virginia University in 1984. He has more than 15 years of experience in telecommunications and enterprise network management. He is currently working in the Office of the CTO, JDSU Communications Test Group, as a principal member of the technical staff.

Saturday, April 28, 2007

## IEEE National Capital Area Awards Banquet

Keynote speaker Jeong H. Kim is president of Alcatel-Lucent's Bell Labs, overseeing the communication industry's most heralded research organization. His team, which spans four continents, is responsible for designing the products and services that are at the forefront of communications technology as well as conducting fundamental research in a wide variety of fields such as optical networking/photonics, nanotechnology, wireless/mobility, advanced services/applications, physical sciences, computing and information sciences, and network software.

Dr. Kim originally joined Lucent Technologies in May 1998 when Lucent acquired Yurie Systems, Inc., a high-tech communications equipment company, which he founded in 1992.

During his tenure at Lucent, Dr. Kim initially served as the president of Lucent's former Broadband Carrier Networks, and in 1999, he was named chief operating officer and later president of Lucent's Optical Network Group.

Dr. Kim left Lucent in 2001 to join

## Senior Members

Congratulations to the following new Senior Members:

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David Alvey (NV)  
Robert Bieri (NV)  
William Burton (W)  
Jim Chen (NV)  
Zhongjian Chen (W)  
Charles Chen (NV)  
Crit Cook (NV)  
Jonathan Curtiss (W)  
Milorad Cvijetic (NV)  
Walter Cybrowski (NV)  
Huong Do (NV)  
Carol Espy-Wilson (W)  
Mark Gianturco (NV)  
Michael Griffin (NV)  
Ramy Guirguis (NV)  
William Halpin (NV)

Joseph Januszewski (W)  
Douglas Johnson (NV)  
Fuqin Li (W)  
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Yan Luo (W)  
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Narendra Mangra (W)  
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Olajide Olaniyan (W)  
Frederick Pearson (NV)  
Thomas Russell (NV)  
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John Stine (NV)  
Michael Walder (NV)  
Thomas Wellington (W)  
David West (NV)  
Duminda Wijesekera (NV)  
Lei Yao (NV)

If you are interested in becoming a Senior Member, please consult [www.ieee.org/seniormember](http://www.ieee.org/seniormember) for qualification requirements. For help with references, contact Monica Mallini at [m.a.mallini@ieee.org](mailto:m.a.mallini@ieee.org) for Northern Virginia (NV) Section members, or Kiki Ikossi at [ikossi@ieee.org](mailto:ikossi@ieee.org) for Washington (W) Section members.

the University of Maryland faculty, with joint appointments in both the department of electrical and computer engineering and the department of mechanical engineering. He rejoined the company in April 2005 as president of Bell Labs.

Dr. Kim's early career encompassed computer design, satellite systems design and data communications, and included seven years as a Nuclear Submarine Officer in the U.S. Navy.

Dr. Kim holds a Ph.D. in reliability engineering from the University of Maryland, a master's degree in technical management and bachelor's degree in electrical engineering and computer science from Johns Hopkins University. Dr. Kim is a member of the National Academy of Engineering.

## GlobeCom 2007

The GlobeCom 2007 conference in Washington on Nov. 26-30 will include a Design and Developers Forum aimed at communications practitioners. Help is needed to develop the list of topics for the sessions and panels, review proposals, and chair sessions. For more information about the forum, contact Jeff Friedhoffer at [jafried@ieee.org](mailto:jafried@ieee.org) or 410-997-5366. For more information on GlobeCom 2007, see [www.comsoc.org/confs/globecom/2007](http://www.comsoc.org/confs/globecom/2007).



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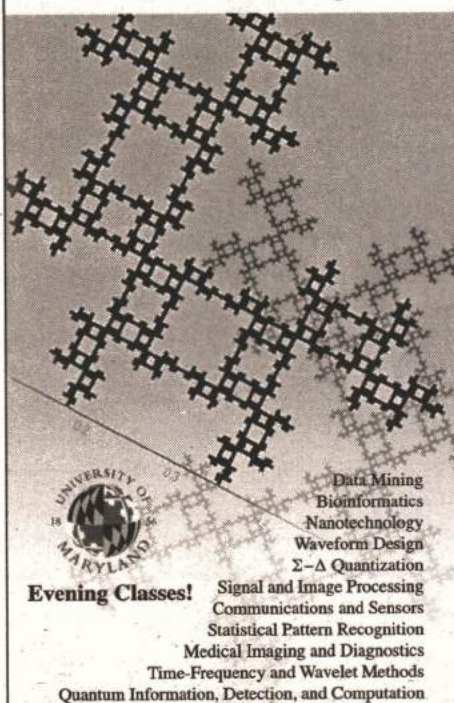
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## 2006 Washington Chair's Farewell Message

## Dedicated Efforts of Volunteers Make Achievements Possible

By Dr. Haik Biglari

My colleagues, I extend greetings to all IEEE and affiliate organization members of the National Capital Area. As the new slate of officers is assuming the responsibility of serving the Capital Area, it is time to recognize the contributions of the officers from the past year. Although my term as the Chair of the Washington Section ends, my affiliation and loyalty to IEEE will remain intact. It was an honor to serve you, and the achievements of the last year would not have been possible without the dedicated efforts of the officers, directors and delegates.

In particular, I would like to thank Kiki Ikossi for her support throughout the year. I would also like to recognize the enthusiasm of Gerard Christman as the section secretary and the spearheading of a new accounting system by Richard Benjamin, our section treasurer. Furthermore, the great leadership efforts of Doug Holly have paved the way for GlobeCom 2007, which will take place in Washington, D.C. in November! My sincere gratitude goes to Tim Weil for his steadfast editorship of the Scanner and his superb skill as our webmaster.

My thanks go to Saj Durrani for his charismatic leadership of the District of Columbia Council of Engineering and Architectural Societies (DCCEAS). I would like to thank John Margosian for being an unwavering source of encouragement for all of us—at the age of 90, John enthusiastically continues to be active in our section.

The section continued supporting several local programs to encourage future generations of engineers, namely the Science and Engineering Fair under the leadership of Shyam Bajpai; the FIRST Robotics program under the leadership of Mike Gilliam; the Solar Decathlon program under the leadership of Harry Sauberman; and the Future City Program under the leadership of Saj Durrani.

Last, but certainly not least, Jerry Gibbon's insight and experience with this section, his support of all chapter chairs and affinity groups, and knowledge of the IEEE were instrumental in helping the leaders navigate throughout the last year.

In closing, I would like to thank all of you for giving us the opportunity to serve you and do our part to instill a positive image of our chosen profession.

## IMAGINE 2007 Conference

The IEEE MAGnetism In Nanotechnology & Electronics (IMAGINE) Conference will be held Monday, June 25, 2007 at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland.

The event is sponsored by the Washington and Northern Virginia Chapter of the IEEE Magnetics Society, and offers an opportunity

for magnetism researchers in this region and nearby to meet, interact, and exchange ideas. In addition, this is a good opportunity for postdoc/junior researchers and graduate students to present their research and gain exposure in the magnetism community.

See [http://ewh.ieee.org/r2/wash\\_nova/mags/ieeeimagine](http://ewh.ieee.org/r2/wash_nova/mags/ieeeimagine) for details.

## Two for the Price of One

By Wally Lee  
Washington Section Editor

"What will I get from the Consultants' Network?" asked Wally Lee at the December 19 meeting of the National Capital Area Consultants' Network.

In the latest installment of his short presentation series, Wally cited numerous benefits that have accrued to him as a long-time IEEE volunteer and past Consultants' Network chair.

Monica Mallini, current chair of the Consultants' Network, attributes multiple life changing experiences to her IEEE affiliation.

Monica and Wally formed a

business partnership after a Consultants' Network meeting with no featured speaker. The "Networking Meeting & Ideas Exchange" proved fruitful in more than one way. A week later, they were developing their business plan in a coffee shop. Soon after, the Consultants' Network picnic and rock festival was being planned in a lakeside gazebo. On December 19, the two were married.

"Wait a minute... What was that third item?"

Yes! That is what it said. Wally and Monica were married on December 19.

Be afraid, Consultants. Be very afraid. This can happen to you.

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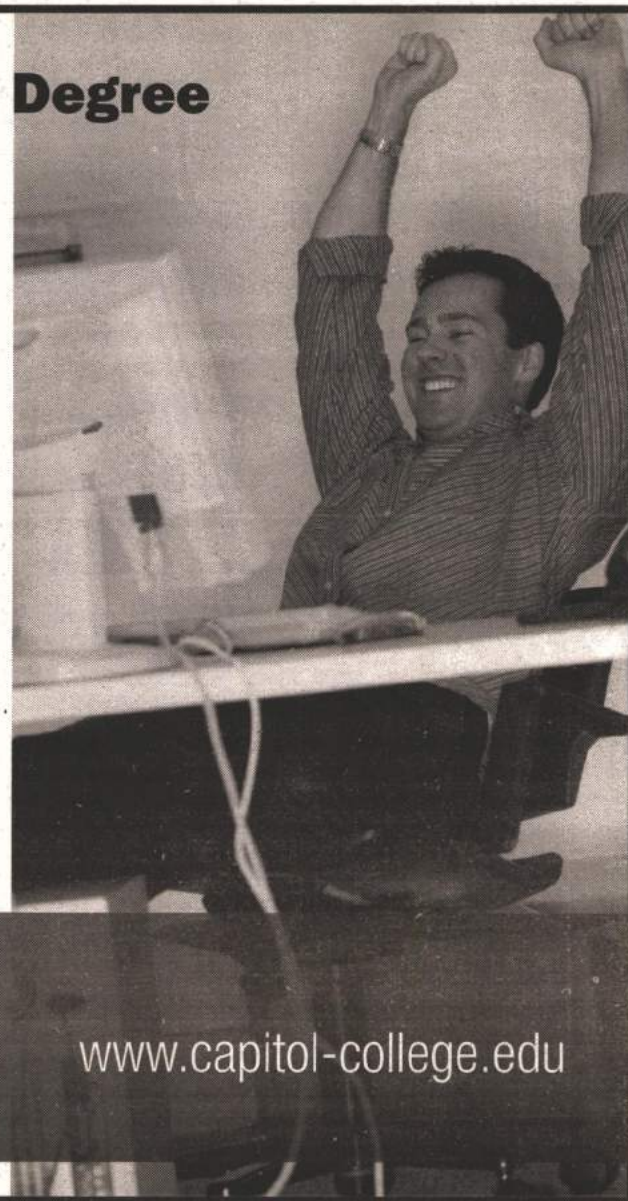
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## IEEE National Capital Area Annual Awards Banquet

Saturday, April 28, 2007

Hyatt Fair Lakes  
12777 Fair Lakes Circle  
Fairfax, Virginia  
See Calendar, p. 5, for Directions.

Reception: 6:30 pm  
Dinner: 7:30 pm  
Awards Presentation: 8:30 pm

### Reservations:

Please make reservations by Saturday, April 14. Mail this Reservation Form with the names of attendees and a check to Debra Meale, P.O. Box 6814, Woodbridge, VA 22195.

**Keynote Speaker:**  
**Dr. Jeong H. Kim, President,**  
**Alcatel-Lucent's Bell Labs**

### Reservation Form

(The cost is \$50 per person or \$500 for a table of ten)

Name: \_\_\_\_\_ \$ \_\_\_\_\_

Guest: \_\_\_\_\_ \$ \_\_\_\_\_

Table(s) \_\_\_\_\_ for 10 at \$500 ..... \$ \_\_\_\_\_

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Please provide \_\_\_\_\_ vegetarian meal(s).

If you wish to be seated with your group (chapter or affinity group), please specify \_\_\_\_\_

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## Design Contest Focuses on Power Amplifiers

MTT-5, a committee of the IEEE Microwave Theory and Techniques Society (MTT-S), is sponsoring the third High Efficiency Power Amplifier Competition at the MTT-S International Microwave Symposium (IMS) in Hawaii in June.

This competition is open to all students and graduate students registered at an educational establishment. The competitors are required to design, construct, and measure a high efficiency power amplifier, at a frequency of their choice above 1 GHz but less than 20 GHz, and having an output power level of at least 5 watts, but less than 100 watts. For more information about the contest rules, see [www.ieee.org/escanner/pa07.pdf](http://www.ieee.org/escanner/pa07.pdf).

The winner will be judged on the design that demonstrates the highest power added efficiency (PAE). The power amplifiers must be brought to IMS 2007 where they will be tested to verify their performance. A representative of the design group must be present at the testing to assist with the evaluation. Support for the testing is being provided by Agilent Technologies.

The winner will receive a prize of \$1,000, and will be invited to submit a paper describing the design for the *IEEE Microwave Magazine*.

Contestants must inform the MTT-5 committee of their intention to compete in the contest by notifying Dr. Kiki Ikossi at [kossi@ieee.org](mailto:kossi@ieee.org) before April 1, 2007. This notification should include information on the university or educational affiliation of the entry, and the power amplifier's approximate power level, dc voltage requirements and frequency of operation.

# SAVE THE DATE

## 26-30 November 2007

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