DISCOVER ENGINEERS WEEK
IEEE-USA Leads 2014 Celebration

IEEE-USA will serve as lead engineering society, partnered with DuPont, to co-chair annual Engineers Week, a national celebration begun in 1951, dedicated to bringing engineering to life for kids, parents, educators, and especially to inspiring a future generation of engineers.

This year's local extravaganza will feature Discover Engineering Family Day at the National Building Museum (February 22) and the Future City Competition finals (February 15-19).

The Future City Competition began as a brainstorm of the 1992-93 EWeek co-ordinators, including IEEE's Public Relations Manager Pender McCarter, when IEEE was the lead society for EWeek 1993 and the theme was energy. The first national championship was awarded to Tilden Middle School in Rockville, Maryland for the team's "Tilden Town." The winning team was announced at the competition by Secretary of Energy Hazel O'Leary. The Tilden team was accompanied to the White House by McCarter, IEEE President Martha Sloan, and National Society of Prefessional Engineers President Joe Paul Jones to meet President Clinton.

The EWeek Foundation decided to continue the Future City Competition as an annual event.

In addition to overall Future City awards, individual groups sponsor category prizes. IEEE-USA sponsors the Best Communications System award.

Learn more about Engineers Week at http://www.discovere.org/.

New Research Program in the European Union
### - U.S. Collaboration Opportunities With Horizons 2020

On Tuesday, November 12, IEEE Women in Engineering (WIE), Washington GOLD, Washington Section, and the Information Theory Society (Washington/NOVA chapter) met with others from the Washington Metro Area at the Embassy of the European Union to hear about opportunities for cooperation, research funding proposals, and directions in the EU's Horizons 2020 program, which begins in January 2014. After an introduction to themes and strategic directions, the evening's speaker, Mr. Errol Levy, the First Secretary for Research and Innovation, and Deputy Head of the Science, Technology in the Delegation of the European Union to the United States of America at the European Commission, provided details about programs and priorities.

After the presentation, the audience, speaker and some of the staff from the Embassy enjoyed a reception and refreshments. Future programs with topic areas of interest to members of IEEE and other technical professional society members will be announced soon. Contact Dr. Carolyn Carroll, IEEE Women in Engineering Chapter Chair, at carolyn@stattech.com for more information.

Check **eScanner** often for winter meeting updates

Like this new **calendar** addition . . .
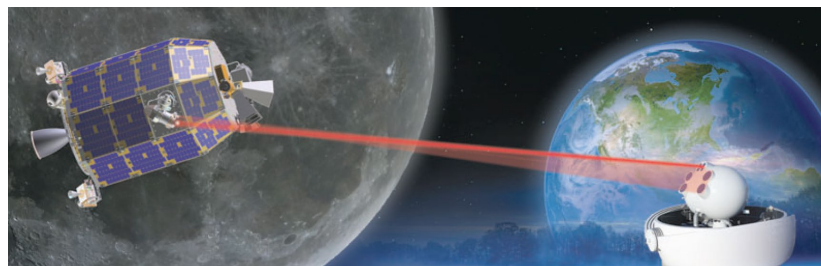
The Washington-Northern Virginia Photonics Society Chapter will host NASA-Goddard's Dr. Don Cornwell for The Lunar Laser Communication Demonstration (LLCD) on January 15. See page 3 for details of this and more meetings, conferences, and workshops. Additional information and updates are found at www.ieee.org/escanner.

Northern Virginia Loses IEEE Senior Member and Cousin
Remembering Mark Thomas Powell, PE

Mark Thomas Powell, 54, a member of the United States Coast Guard Senior Executive Service, died unexpectedly on August 26, 2013 at his home in Arlington, Virginia. His survivors include his son, Stephen Powell of Midlothian, IL; his fianceé, Dr. Esmè Brown; his mother, Bettye Jo Powell of Henderson, TN; his siblings, Reverend Jeffrey Powell of Henderson, TN, Lee Powell of Barlett, TN, and Ann McQuiag of Thompson, GA; and many other friends and family. Mark was a cousin of IEEE Washington Section Director Wally Lee.

Mr. Powell was born in Memphis, Tennessee on November 6, 1958. He received a Bachelor of Science degree in Electrical Engineering from the University of Tennessee in 1981. After graduation, he worked for a number of years in private industry at several locations, including NASA's Goddard Space Flight Center. At Goddard, he was a member of the team that developed and maintained the hardware and software for the NASA networked communication system supporting satellite and space shuttle missions.

In 1988, Mr. Powell joined the Naval Research Laboratory in the Space Systems Development Department. While at NRL he was involved in the development of GPS-based transceiver technology, high-speed networking technology, software defined radios, mobile command posts, and phased array antenna technology. He also participated in the C4ISR architecture development and design of the Navy's DD21 next generation destroyer and made significant contributions to the design, test, launch, and operation of several DoD and NASA satellite systems. During his employment at NRL, Mr. Powell received a Bachelor of Science degree in Computer Science from the University of Maryland and a Master of Science degree in National Security Strategy from the National War College. He also earned the Juris Doctor degree from University of Maryland at Baltimore School of Law in 1993.

In 2002, Mr. Powell became the Chief Technology Officer for the Command, Control, Communications, and Computer Systems Directorate (J6) of the Joint Staff. There, he served as the senior technology advisor to the Director and Vice Director of J6 on advanced technology related to Command, Control, Communications, and Computer (C4) systems. In 2005, Mr. Powell was appointed a Federal Executive as the Director, Information Technology Research and Development / Chief Technology Officer for the Federal Aviation Administration. In this position he provided leadership to the agency in the areas of enterprise architecture development, information security, process improvement, and technology insertion. He played a key role in the Joint Planning Development Office (JPDO), a joint interagency office tasked to develop the Next Generation Air Transportation System (NextGen).

In 2008, Mr. Powell was appointed to the Senior Executive Service as the Director of the Command, Control, Communications, Computers, Information Technology (C4IT) Service Center. In 2012, Mr Powell was transferred into the position of the Deputy Assistant Commandant for C4IT / Deputy Chief Information Officer (CIO). In that position, he was accountable for the systems and equipment comprising the Coast Guard C4IT enterprise and coordination with DHS and DOD on information technology, electronics, information assurance, and cyber issues.

He received numerous awards for his contributions, including the Office of the Secretary of Defense Exceptional Civil Service Award, the Navy Unit Commendation Award, the NRL Technology Transfer Award and the Coast Guard Commandant's Superior Achievement Award..

Mr. Powell was a registered professional engineer in Maryland and a senior member of IEEE and the IEEE Professional Communication Society wih 30 years of IEEE membership. He was Level III certified in Program Managment and was a member of the National Society of Professional Engineers (NSPE).

Mr. Powell was buried at Memorial Park Cemetery in Memphis, TN. The family suggests that memorial contributions be made to St Jude Children's Research Hospital, the Coast Guard Foundation, the University of Tennessee Engineering Department, or the charity of your choice.

Mark Thomas Powell, PE (1958 - 2013)

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eScanner Calendar of Events
The calendar is available at www.ieee.org/escanner. Check there often for eschedule changes and 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.ieeecommunities.org/nca.

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Information Updates

Officers: Please send corrections and updated information to the Editor at nca-scanner@ieee.org. Thank you for helping us keep this page current and accurate!

calendar *of* events

SECTION ADMINISTRATIVE MEETINGS

Mondays: Dec 9, 2013 / TBA 2014

Baltimore Section Executive Committee Meetings

Time:	6:00pm dinner, 6:30pm meeting
Place:	Conference Room, National Electronics Museum, 1745 W. Nursery Rd, Linthicum, MD (410) 785-0230
Website:	http://www.ieee.org/baltimore
More Info:	Meetings are usually the 2nd Monday of the month. For the most current information on 2014 meetings, check the Section website.

Tuesdays: Jan 7 / Feb 4, 2013

Washington Section Administrative Committee Meetings

Time:	6:30 p.m.
Place:	American Association for the Advancement of Science (AAAS), 2nd Floor Conference Room, 1200 New York Avenue NW, Washington, DC.
Directions:	Use the 12th Street entrance. The AAAS building is one block from Metro Center (Red, Orange and Blue lines). Parking is available in the garage on 12th Street directly across from the AAAS building.
More Info:	All interested IEEE members welcome.
Contact:	Email the Section Secretary by the day prior to the meeting with agenda items and RSVP.

Wednesdays: Dec 18, 2013/Jan 8 /Feb 12, 2014

NoVA Section Administrative Committee Meetings

Time:	6:30 p.m.
Place:	Olive Garden (Tyson's Corner), 8133 Leesburg Pike Vienna, VA 22182
More Info:	All interested IEEE members welcome.
Contact:	Please RSVP to the Section Secretary by Noon of the day prior to the meeting.

CHAPTER EVENTS

Tuesday December 10, 2013

WMATA Silver Line Substations

Sponsor:	VTS Chapter/ASME Rail Transportation Division
Time:	11:30am lunch and speaker
Place:	American Public Transportation Association 11th Floor Conference Room 1666 K Street, NW, Washington, DC
Cost:	$15.00 cash at the door
Speaker:	Paul Forquer, Powell Electrical Systems
Directions:	Red Line: Farragut N. (K Street Exit) or Orange /Blue Line Farragut W. (17th Street)
Registration:	Please register by NOON on Friday Dec. 6 by email to vts.ltc.dc@gmail.com and indicate regular or vegetarian meal.

Tuesday December 10, 2013

State-of-the-Art Undersea Fiber Optic Communications

Sponsor:	Communications Society Baltimore Chapter
Time:	5:30pm refreshments, 6:30pm program
Place:	National Electronics Museum, 1745 W. Nursery Rd, Linthicum, MD
Speakers:	Alexei Pilipetskii, Tyco Subcom
Registration:	www.nca-scanner.org/vtools/22207
Contact:	Curtis Menyuk at menyuk@umbc.edu
More Info:	See **Diamond Story**, p. 4

Wednesday December 11, 2013

Modeling III-V Devices for Advanced Communication Systems

Sponsor:	Microwave Theory and Techniques Society and Electron Devices Society Chapters
Time:	5:30pm (social), 6:00pm (optional dinner), 7:00pm lecture
Place:	American Center for Physics, One Physics Ellipse, College Park, MD 20740, (301) 209-3000 (Note location change)
Cost:	FREE lecture; optional dinner $10 (RSVP)
Speaker:	Dr. Iltcho Angelov, Associate Professor, Microtechnology and Nanoscience, Chalmers University, Sweden
Map:	http://www.acp.org/map.html
Registration:	Please register by COB on Monday Dec. 9 by email to Roger Kaul at r.kaul@ieee.org or (301) 394-4775.
More Info:	See **Diamond Story**, p. 4.

Thursday December 19, 2013

The 21st Century Distribution Utility: Challenges and Opportunities

Sponsor:	IEEE Power and Energy Society (Baltimore)
Time:	11:00am - 1:00pm
Place:	RBC South Conference Center (BGE Facility) 7225 Windsor Boulevard Baltimore, Maryland 21224
Cost:	FREE
Speaker:	Calvin Timmerman, Assistant Executive Director, Maryland PSC
Registration:	www.nca-scanner.org/vtools/22087
More Info:	Pizza and refreshments will be provided. If you have any dietary restrictions, please let us know by email. See **Diamond Story**, p. 4.

Wednesday January 15, 2014

There is Plenty of Room at the Bottom:
Applying Systems Engineering Methodologies to the Micro and Nanoscale Realm

Sponsor:	International Council on System Engineering, Chesapeake Chapter
Co-Sponsor:	IEEE Nanotechnology Council Chapter
Time:	6:00pm dinner, 7:00pm lecture
Place:	Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Rd Laurel MD 20723
Cost:	Lecture FREE; dinner $25 (members $20 by Jan. 10)
Speaker:	Ann G. Darrin, Johns Hopkins APL
Registration:	http://www.incose-cc.org/registration/
More Info:	See **Diamond Story**, p. 5.

Wednesday January 15, 2014

The Lunar Laser Communication Demonstration (LLCD)

Sponsor:	Photonics Society Wash/NoVA Chapter
Time:	5:30pm (light refreshments), 6:00pm (chapter meeting and seminar), 7:15pm (optional restaurant dinner with speaker)
Place:	University of Maryland, 1146 A. V. Williams Building (ISR Conference Room)
Speaker:	Don Cornwell, NASA Goddard
Contact:	George Simonis at simonis.george@ieee.org

CONFERENCES

December 8-11, 2013 (Sun-Wed)

Winter Simulation Conference (WSC13)

Place:	JW Marriott Hotel, 1331 Pennsylvania Avenue, Washington, DC
Sponsors:	ACM/SIGSIM, IIE, SCS, INFORMS-SIM
Co-Sponsors:	IEEE/SMC, ASA, ASIM, and NIST
Website:	www.wintersim.org

December 9-11, 2013 (Mon-Wed)

2013 IEEE International Electron Devices Meeting (IEDM)

Place:	Hilton Washington and Towers
Sponsor:	IEEE Electron Devices Society
Website:	http://www.his.com/~iedm/
More Info:	Conference registration includes membership in the IEEE Electron Devices Society

December 11-13, 2013 (Wed-Fri)

2013 International Semiconductor Device Research Symposium (ISDRS)

Place:	Hyatt Regency Bethesda
Sponsors:	NIST, Maryland Nanocenter (UMD)
Website:	www.isdrs2013.org

February 19-22, 2014 (Wed-Sat)

2014 IEEE Innovative Smart Grid Technologies Conference (ISGT)

Place:	Grand Hyatt, Washington, DC
Sponsor:	IEEE Power and Energy Society
Website:	http://ieee-isgt.org
More Info:	Tutorial sessions on Saturday, February 22.

February 20-21, 2014 (Thu-Fri)

February Fourier Talks

Place:	Norbert Wiener Center, University of Maryland, College Park, MD
Sponsor:	University of Maryland
Cost:	FREE for students, government, or workshop only; $50 otherwise ($75 after Jan. 31)
Website:	http://www.fft2014.org
More Info:	See **Diamond Story**, p. 5.

diamond ◆ stories

For the latest calendar information, go to www.ieee.org/escanner.

Tuesday, December 10, 2013

State-of-the-Art Undersea Fiber Optic Communications

Abstract: Undersea fiber optic transmission systems are the longest ones with transmission distances in some cases exceeding 12 Mm. Thus long-haul data transmission presents a unique set of challenges. The talk will review the progress made in the last two decades and the enabling technologies. The talk will then focus on the recent advancements using coherent detection techniques, its impact on the system design and achievable transmission capacity, and show how the challenges of long haul transmission are being met. The talk will also review the most recent record breaking research results.

Biography: Alexei Pilipetskii received the MS degree in Physics in 1985 from Moscow State University. He then joined General Physics Institute Russian Academy of Sciences where his research interests were focused in the area of nonlinear fiber optics. He received his Ph.D. in 1990. In 1994 he joined UMBC as a research associate where he worked with Prof. Curtis Menyuk. During this period Alexei's research interests shifted to the fiber optic data transmission. In 1997 he moved to work for then AT&T Submarine Systems (now TE Subcom). He currently leads a research group at TE Subcom whose main focus is centered on the next generation transmission technologies for the submarine long haul transmission systems. He is an author and co-author of more than 200 journal and conference papers and more than 20 patent applications.

Wednesday December 11, 2013

Modeling III-V Devices for Advanced Communication Systems

Abstract: This talk discusses specifics of modeling and efficient extraction procedure for large-signal (LS) models for GaAs, GaN microwave transistors used in advanced communication systems. We try to link the model parameters directly to experimental data, focus on critical issues to trace process variations and get good quality LS models. By optimizing measurement sequence, the extraction procedure is speeded up. Accurate models, suitable for CAD tools, working at high frequencies, can be obtained by combining direct extraction of basic parameters and fine tuning the optimization using the LS VNA waveforms. The GaN HEMTs modeling is difficult task (we push the device to the limits) so special attention is paid on the consistency of the DC, small-signal and LS waveforms. Examples of large-signal modeling of GaAs and GaN transistors will be reported.

Biography: Iltcho Angelov was born in Bulgaria and received the MSc. in Electronics (Honors) and PhD in Physics and Mathematics from Moscow State University. From 1969-1992, he was with Inst. Electronics, Bulgarian Acad. Sciences (IE BAS) Sofia as Researcher, Research Professor and Head of the Department of Microwave Solid State Devices (1982). Since 1992 he is with Chalmers University, Göteborg, Sweden as a Research Professor. As a researcher, he has worked with various microwave devices: Impatt, Gunn, BJT, FET, low noise & power amplifiers, oscillators, synchronization & phase modulation, frequency dividers, multipliers and low noise receivers up to 220 GHz. In the recent years, Dr. Angelov's main activity is related to FET and HBT modeling. Together with CAD companies FET GaAs, and later GaN HEMT models were implemented in various CAD tools.

Thursday, December 19, 2013

The 21st Century Distribution Utility: Challenges and Opportunities

Abstract: This event is a wonderful opportunity to learn how utilities are integrating Smart Grid and Distribution Automation systems with traditional system and service restoration planning approaches from the perspective of the Maryland Public Service Commission. The Baltimore IEEE PES Chapter is proud to offer this opportunity at no cost, with pizza and refreshments provided.

Biography: Calvin Timmerman is an Assistant Executive Director on the Staff of the Maryland Public Service Commission. He joined the Maryland PSC in 1989. He has managed the Staff's gas and electric restructuring and retail competition activities since 1994 and the Staff's energy efficiency, peak demand reduction and energy supply resource activities since 2001. Mr. Timmerman has been the Staff policy witness in numerous rate, merger, energy policy, low income assistance and corporate reorganization proceedings. His current focus is energy efficiency, conservation, demand response, smart grid and electric cost reduction initiatives. He currently chairs the Smart Grid Implementation Working Group and the EmPower Maryland Working Groups.

Mr. Timmerman has B.A. and M.A. degrees in History and a Specialist in Education degree from the University of Florida. He was a Graduate Exchange Fellow at Eberhard Karls University in Tuebingen, Germany. Mr. Timmerman received his M.A. degree in Economics from the University of Maryland, College Park.

Saturday, January 11, 2014

Digital Signal Processors and Development Tools (4-hour course)

Abstract: Digital Signal Processors (DSPs) are used in a wide range of applications. Low-priced versions have made them very attractive in many applications that were considered too costly up until recently. With the introduction of the Texas Instruments TM320C6x processor architecture, DSPs started supporting features that facilitate the development of efficient high-level language compilers. Powerful programming tools like the Code Composer Studio (CCS) have enhanced programming productivity, while the addition of new hardware modules have improved connectivity, real-time operation, and execution speed. This, along with the introduction of a Real-Time Operating System (RTOS), the DSP-BIOS, and combination with Field-Programmable-Gate-Array (FPGA) technology has led to unprecedented expansion of DSP-based systems. This free, four-hour, mini-course will examine the origins of DSPs, their stages of development, and will cover the basics of getting started as a DSP developer. We will examine details of the most basic designs, analyze applications that include basic functions such as Fast Fourier Transform (FFT), digital filter design and implementation, signal synthesis (wave generation), compare using C- vs. Assembly language, Floating Point (FP) vs. Fixed point applications and much more. The course will focus on the C6713 processor and two development platforms – Traquair's c6713 Compact and TI's DSP starter kit (DSK), both using the Code Composer Studio's Integrated Development Environment (IDE). The course is appropriate for EE engineers wishing to acquire new knowledge and skills in the DSP area, system designers, embedded system programmers, senior undergraduate and first year graduate students, and anybody interested in computer engineering in general. Knowledge acquired may be used in communication systems design, instrumentation design, medical electronics, real-time signal processing, embedded system design, and many other areas.

Biography: Dr. Boris Gramatikov earned his BE degree in Biomedical Engineering from the Technical University of Ilmenau, Germany, and his Ph.D. degree from the Technical University of Sofia, Bulgaria. He has worked on numerous projects in electrophysiology, cardiology, neurophysiology, pulmonology and ophthalmology in Europe and the US. In 2000 he moved to the Ophthalmic Optics Lab at the Wilmer Eye Institute of Johns Hopkins, and is currently an Assistant Professor there. His expertise covers computer software and hardware, analog hardware, signal processing, ophthalmic optics and electronics, polarization optics, computer modeling, instrument design and others. He is the author or co-author of 27 peer reviewed articles, a book chapter, over 70 conference papers, and several invention disclosures and pending patents.

Dr. Gramatikov is the 2006 Past Chair of the IEEE Baltimore Section and a Past Chair of the IEEE Baltimore Engineering in Medicine and Biology Society Chapter. He is the presently Baltimore Section's Director of Educational Activities and Continuing Education.

diamond ◆ stories

Wednesday January 15, 2014

There is Plenty of Room at the Bottom:
Applying Systems Engineering Methodologies to the Micro and Nanoscale Realm

Abstract: On December 29, 1959, physicist Richard Feynman gave a lecture entitled, "There's Plenty of Room at the Bottom," now considered a seminal event in the foundation of nanotechnology. Today, micro-scale and nano-scale technology developments have the potential to revolutionize smart and small systems. The application of systems engineering methodologies that integrate standalone, small-scale technologies and interface them with macro technologies to build useful systems is critical to realizing the potential of these technologies. This talk covers the expanding knowledge base on systems engineering principles for micro and nano technology integration starting with a discussion of the drivers for applying a systems approach. Technology development on the micro and nano scale has transitioned from the laboratory curiosity to the realization of products in the health, automotive, aerospace, communication, and numerous other arenas.

Biography: Ann Garrison Darrin has worked at The Johns Hopkins University Applied Physics Laboratory for more than 15 years. She is the Managing Executive of the Space Department at the Laboratory and a member of the principal staff. She is the author of numerous papers and an author and editor of the book MEMS and Microstructures for Aerospace Applications and on Micro and Nano Structures Systems Engineering. As a technologist, Ann has participated in numerous exciting technology "firsts" in space. Ann is the founder and co-chair of the MEMS Alliance Mid-Atlantic and holds degrees from the Pennsylvania State University and the University of Maryland, University College. Ann sits on the board of the Maryland Space Business Round Table and the Science Council of the Maryland Science Center. Ms. Darrin is the 2005 recipient of the Women's Leadership Award the Johns Hopkins University Women's Network and has authored or coauthored over 40 papers, numerous book chapters and holds several patents.

Friday - Saturday, February 20-21, 2014

February Fourier Talks

Abstract: The aim of the annual FFT is to bring together researchers from academia, government, and industry, as a means to spur innovation and foster interaction in Harmonic Analysis and its Applications. This year, UMCP is excited to welcome Professor Gerald Folland of the University of Washington, who will give the Norbert Wiener Colloquium, and Professor Ronald DeVore of Texas A&M University, who is welcomed as the Norbert Wiener Distinguished Lecturer.

There is an exciting program planned for Thursday evening. It will feature a general audience keynote lecture by Professor Nathan Crone of the John Hopkins University Medical School. Dr. Corne's talk will be preceded by a brief overview of this year's activity at the Norbert Wiener Center. A light reception will begin at 7:30 pm in the Mathematics building Rotunda.

About the Speakers: There is a lineup of fifteen superb 30-minute talks from these top researchers:

- » Glenn Easley - The MITRE Corporation
- » Vivek Goyal - MIT
- » Youngmi Hur - John Hopkins University
- » Rodney Kerby - Morgan State University
- » Ioannis Konstandtinidis - University of Houston
- » Jacqueline LeMoigne - NASA
- » Bradley Lucier - Purdue University
- » Morten Nielsen - Aalborg University
- » Louise Rafael - Howard University
- » Rajarshi Roy - University of Maryland
- » Gilbert Walter - University of Wisconsin, Milwaukee
- » Sijue Wu - University of Michigan
- » David Messinger - Rochester Institute of Technology
- » Alberto Grunbaum - University of California, Berkeley
- » Peter Balazs - Acoustics Research Institution (Austrian Academy of Science)

Check the website at http://www.fft2014.org for the most up-to-date information. Hope to see you there!

WORKSHOPS & TRAINING

Saturday January 11, 2014

Digital Signal Processors and Development Tools (4-hour course)

Sponsor:	IEEE Baltimore Section Continuing Education
Time:	10:00 am - 2:00 pm
Place:	Pioneer Hall, National Electronics Museum, 1745 W. Nursery Rd, Linthicum, MD (410) 785-0230
Registration:	www.nca-scanner.org/vtools/22065
Cost:	FREE for IEEE members. Non-members who would like to attend should contact Dr. Gramatikov by email ahead of time and can only be included if the course is not filled with IEEE members.
Contact:	Boris Gramatikov at bgramat@jhmi.edu
More Info:	Attendees can obtain a CEU credit and a certificate from the IEEE by sending an email (in addition to vTools registration) to Boris Gramatikov (bgramat@jhmi.edu, subject: "CEEE") indicating IEEE status, IEEE member #, and current employer. No exceptions. See **Diamond Story** p. 4.

Saturday January 25, 2014

IEEE Region 2 South Area Sections Leadership Training Workshop

Sponsor:	IEEE Washington, Northern Virginia, and Baltimore Sections
Time:	8:30am - 1:30pm
Place:	University of the District of Columbia (LRD Auditorium A-03) 4200 Connecticut Ave. NW, Washington, DC 20008
Contact:	Mónica Taysing-Lara, m.taysinglara@ieee.org
More Info:	All section and chapter officers and prospective new volunteers and any interested members are encouraged to attend this valuable workshop. Registration link coming soon through vTools.

Young Engineers Meet Engineering!

JDSU Hosts College Visit

by Darpan Shah and Nadine-Marie Bell

Last month, students of Germantown's Montgomery College Professor Monica Mallini's classes EE 150, EE 244, and ES 104 had a field trip visit to JDS Uniphase (JDSU), one of the top Engineering companies in the United States.

During this trip, students had the pleasure to visit the Communications, Test & Measurement unit of the company located in Germantown, just a few minutes away from MC's Germantown Campus. Students got an opportunity to have direct interaction with the engineering director of the site and a few engineers who are currently employed there. The interaction was also joined by the director of business development, Mr. Douglas Holly.

Through this visit, the engineering students were able to see and realize how and what tasks an actual engineer performs and how they implement all the skills and techniques learned in class. Students saw various models of working digital and analog systems prepared by the company and how they are used by the nation's telecommunications industry.

The most informative part of the visit was when the engineers opened up the floor for questions, as students were able to have direct conversation with the Electrical, Computer and Mechanical Engineers present in the room. The employees in their answers explained very well how various fields of engineering are blended together and how engineering can be beneficial for almost any industry. The speakers were from different universities and held a Graduate or Undergraduate degree.

Students in class study about circuits, digital logic, and processes, but rarely get a chance to see their actual field implementation. In this visit, students not only saw how these devices are made, but also witnessed how various tests are performed and other behind the scenes activities that it takes in launching almost any electronic device and how the knowledge gained through all the years of their Undergraduate / Graduate studies come into play.

While attending the field trip at JDSU, the speakers provided advice that encouraged me in my choice of study. They informed us of the daily tasks that engineers will usually face and gave a general idea on how to solve a plethora of problems. It was interesting to learn that I can broaden my engineering skills after I have mastered the basics.

A lot of the young speakers began in one field of engineering then switched to one that was more suitable for them. If an engineers enjoys his field, he is most likely very good in that particular field.

The speakers also inspired me to begin a personal project. This will help increase one's knowledge of the type of engineering as well as fuel your passion.

Continuous practice and experience is a must. Not only will personal projects be fun; they will add to the skills in your future career and be appreciated by your future employer.

The speakers emphasized how important it is to fully understand the material you are studying. Nearly everything we learn will be used in the workplace. We must also stay up-to-date on new knowledge and advancements in engineering. JDSU, for example, is a competitive business. Their technology must meet the needs of the client. Their biggest challenge is to make advanced technology simple. This is a challenge we should practice conquering right now.

I also noted the importance of meeting deadlines. Whatever project I am working on should have a set deadline. At JDSU, if a deadline is not met, the entire project might as well be deemed unproductive. They will begin losing money. Meeting deadlines is of the utmost importance, and being on time with assigments and projects is a skill that needs to be mastered. Overall, I learned that team work, time management, the willingness to learn new things, project management, passion, and fully understanding the basics of engineering are all necessary to enjoy your field of study and succeed in your future career.

Darpan Shah is a sophomore computer engineering student and Nadine-Marie Bell is a sophomore electrical engineering student at Montgomery College.

Seasoned Practitioners Model Career Success at JDSU

by Douglas H. Holly, IEEE Senior Member

Three Germantown Engineers, Kai Hsu, Anand Gajjala and David Kruger spoke with 12 engineering students from Montgomery College Monday evening Oct 21st. The students and engineers spent over an hour discussing what it is like to be an engineer, how they chose their career path, the excitement of creating products and working with customers. After sharing pizza and soda they then went on a tour of our labs to give them a first-hand look at our products and development environment.

The students are first and second year engineering students in a program exploring careers put on by Professor of Engineering, Monica Mallini. Many topics were discussed but one theme of major concern was the interest in how to find a job. Having experience was clearly one of the most important suggestions, either from part time jobs, internships or projects with college professors. Although studying and grades were thought to be important, having a balanced college life doing more than just focusing on academics was key. The students came away well informed and appreciative of the personal insights and experiences shared with them.


Thank you to Kai Hsu, David Kruger and Anand Gajjala for taking the time and staying late to talk with the students. Thanks also to Wally Wardak for hosting the meeting and to Donna Hill for handling the arrangements for the students' visit.

Doug Holly, Director of Business Development at JDSU in Germantown, Maryland, is a long-time IEEE volunteer in the Washington Section and Chair of the Technology Management Council Chapter. Doug will facilitate the IEEE Leadership Workshop on January 25.
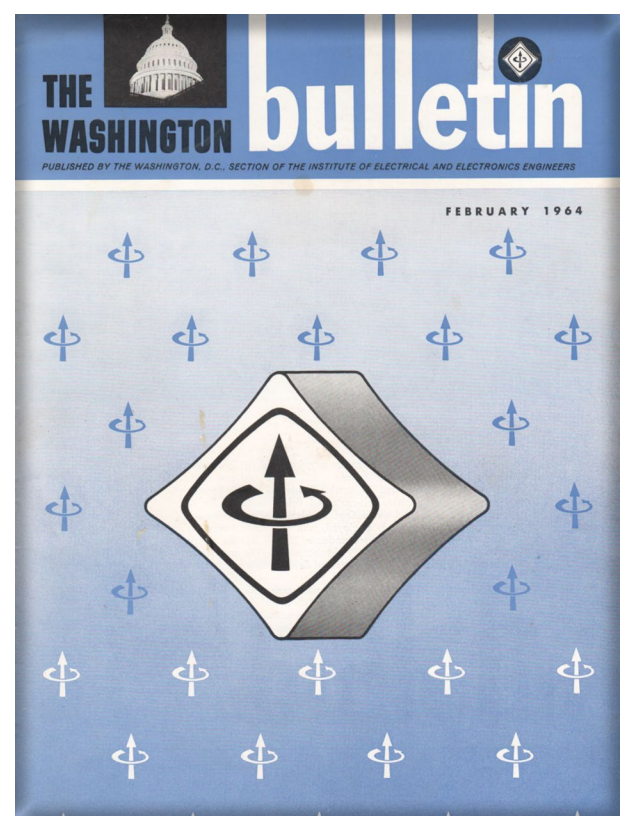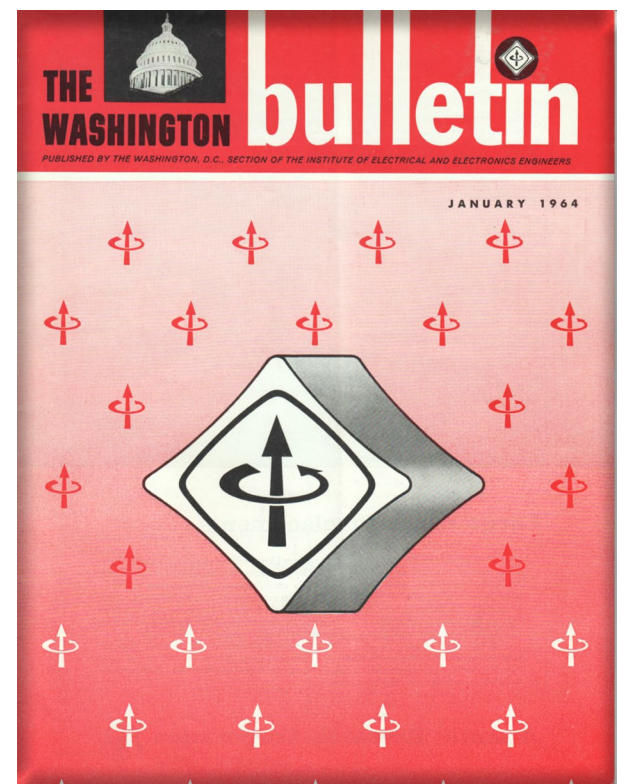
To celebrate IEEE's 50th anniversary year, the Scanner is sharing its archive of 50-year old Bulletins with our readers. Unfortunately, we are missing several issues from 1963. If anyone has these issues, we would like to make a copy for our archive. Please contact us at nca-scanner@ieee.org. Here is the first installment of 1964 for your enjoyment. Notice that the issues report meetings of the IEEE Baltimore Section, proof that the collaboration between our Sections is a decades-long tradition. Go to the electronic edition to download complete issues.
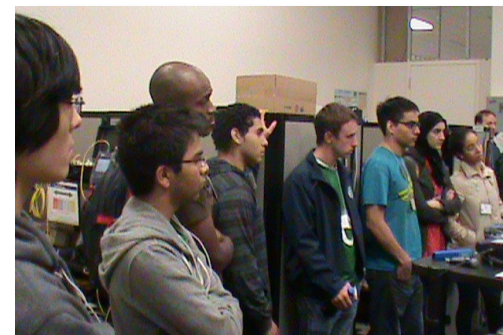
IEEE Volunteers Have Fun
This Won't Hurt a Bit

The IEEE Region 2 South Area Sections would like to set up a membership development booth in conjunction with the North America Quality Engineered Software and Testing Conference (QUEST), which will visit the Baltimore–Washington area April 7-11, 2014.

QUEST is an IT conference, EXPO, and classroom training experience designed by software professionals for managers and practitioners in business analysis, project management, software development, QA testing, and process engineering. For a preview of the 2014 conference and past conference archives, see their website at: http://www.qaiquest.org/.

IEEE is looking for volunteer representatives from the three South Area Sections (Baltimore, Washington, DC and Northern VA) who would like to help out in this membership effort, "meet and greet" visitors to the IEEE booth, hand out membership materials, and answer questions about benefits of IEEE membership.

Volunteers are needed to take charge of the booth for at least 2 days. IEEE is working with the organizers to provide complimentary admission on the days you volunteer. With two volunteers daily, you will have the opportunity to attend the sessions by planning your sessions with your partner. There should always be one person in the IEEE booth.

If you are interested or have any questions, please contact IEEE R2 South Area Chair Carole C. Carey, c.carey@ieee.org, as soon as possible.

- Carole Carey, Region 2 South Area Chair

Credit: QUEST 2014 Quality Engineered Software and Testing Conferences

Baltimore Section Offers Leadership Roles

We are looking for someone to take over as the *WATT'S NEW* newsletter editor. I have had this position for the past ten years. I believe that it is time for someone else to take over.

In addition, I would like to pass the Signal Processing Society Baltimore Chapter chair to someone else. I have held that position since 2005, and it is time for someone new to fill that role. And Dave Price has said that he would like someone to take over as chair of the Aerospace and Electronic Systems Society Baltimore Chapter.

So we need three volunteers. If anyone is interested, contact Colin Krepps at krepps@ieee.org or Kate Duncan at kduncan@ieee.org. They are nominated for next year's chair and vice chair, respectively. If you come to one of our IEEE Baltimore Section Executive Committee meetings, I can tell you about the positions. Colin or Kate can tell you when the meetings will occur.

The IEEE Baltimore Section is always encouraging its members to become involved in the section activities. Contact Colin and Kate for more information.

- Ron Aloysius, *WATT'S NEW* Editor
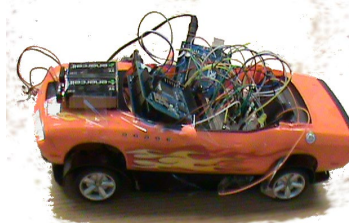
This Arduino-equipped toy car, built by Montgomery College engineering student Natnael Zewdie, has an IP address and can be controlled wirelessly from anywhere in the world.

Hands-on Build-it Offers Quick Fix
Get hooked in an afternoon with Arduino, Raspberry Pi, old and new friends and colleagues

Sunday, November 10 was the day that Women in Engineering (WIE) members, friends, and guests met at a member's house to examine some Arduino kits and projects. One completed project had been designed to fit into an old briefcase to make storage easy. This project had been designed as a Halloween welcome to visitors. Upon detecting a visitor, heads moved and eyes flashed red. No screams or moans, however!

The group is planning some other build-it meetings for December and January. Initial plans call for a skills plus-up via beginning kits and then more elaborate projects. Some of the projects we are considering can be found at http://www.instructables.com/id/Arduino-Projects/ or for a longer list http://playground.arduino.cc/projects/arduinoUsers.

Interested in joining us next time? Send an email to carolyn@stattech.com.

- Carolyn Carroll, Women in Engineering Chapter Chair

I use Arduino kits to teach intermediate computer programming to community college engineering students. The projects reinforce the aim of the course to generalize programming skills, and most students appreciate a chance to work with hardware. Half the students who undertake projects purchase their own personal kit during the semester. Arduino also provides a common connection between students and professionals across all ages and experience levels. Arduino is the most revolutionary teaching tool that I have ever encountered.

- Monica Mallini, Associate Professor
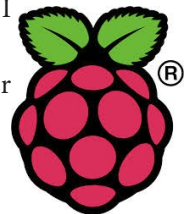
Share your Raspberry Pi knowledge!

If you have hands-on knowledge about Raspberry Pi (and we are not talking about your culinary skills) and willing to share with your IEEE colleagues in a workshop, please contact Murty Polavarapu at murtyp@ieee.org. We hope to organize a local event on a Saturday in March or April 2014. Raspberry Pi is a Linux operating system (OS) based, credit-card-sized single-board computer developed by the Raspberry Pi Foundation with the intention of providing an inexpensive hardware and freeware software platform for continuing education, innovation and STEM outreach.

The Arduino name, logo and the graphics design of its boards are a protected trademark of Arduino and its partners. Raspberry Pi is a trademark of the Raspberry Pi Foundation.

IEEE Consultants and Employment Network Use College Connections
Career Consultants Spark 'Aha!' Effect for Networkers

Jean O'Brien spoke at our IEEE Employment Network meeting on April 18, 2013, hosted at DeVry University in Arlington, Virginia. The goal of her presentation was to train the members of the group on how to perform networking in a professional manner.

She got rave reviews from the members. Everyone came away talking about how they "got it" and how they intended to put her ideas into action. Besides a set of notes she provided to jog everyone's memory, Jean demonstrated her ideas by her own delivery: her body language, voice, and how she handled questions.

I recommend Jean without hesitation.

- Richard Swerdlow, PMP

The National Capital Area Consultants Network appreciates the opportunity to participate in the October Northern Virginia Employment Network event, held at the DeVry University campus.

The two speakers from IAI, senior executives Joseph Brickey and William Jugus, gave advice to jobseekers that was spot-on. If everyone approaches networking with the attitude, "let's see how many connections I can facilitate" and gives "WII-FM" (what's in it for me) a back seat, we will all benefit in the short- and long-term, with the right people finding their way into the right jobs.

Joe Brickey (IAI's CEO) is a swell guy (Go Vols!) and a motivational speaker. He and Bill are welcome at the Consultants Network any time. Thanks to all for a great evening.

- Wally Lee, IEEE NCA Consultants Network Chair

Dear Montgomery College,

Thank you for the pleasure of meeting with your IEEE group last evening at the Fall Fiesta! I hope the presentation offered some principles to guide their ongoing networking. Here is another opportunity that I thought you might like to share, and a good LinkedIN Group to participate and practice what we talked about!

The group is Washington Network Group (http://www.linkedin.com/groups?gid=36652). Please share with the group, and I will keep you posted on other resources as I come across them.

Very best regards,
Phyllis

Phyllis Pouyat Thibodeau, MDE, CMC
CEO, Executive Career Consultant
Chesapeake Career Consulting, LLC

The IEEE Women in Engineering (WIE) Washington/Northern Virginia Chapter and IEEE Washington Section participated in Hispanic Heritage Month Family Day at the National Air and Space Museum's Steven F. Udvar-Hazy Center in Chantilly, Virginia on September 21. There families learned about contributions of Latin Americans to aviation and space exploration. This was an awesome event for the entire family. At our table, families were informed about careers in engineering and IEEE student clubs. They were very enthusiastic; some girls selected magazines as resources for high school science projects; others, as in the photo, asked for a do-it-yourself kit. Photo by Mónica Taysing-Lara

Local Sections Conduct Annual Officer Elections

Election 2014

Northern Virginia Section Opens Voting in 2014 Election

IEEE Northern Virginia Section announcers its final slate of candidates for the 2014 Officer Election (listed below in reverse alphabetical order by office).

Candidate biographies, photos, and *unabridged statements* are published on the Section's website at http://ewh.ieee.org/r2/no_virginia/election.html (alias ieee-nova.org). This article includes the candidate statements, subject to a nominal limit of one page (approximately seven column inches) per candidate. Northern Virginia Section members of grade Member or Graduate Student Member or higher may cast their votes at the vtools ballot site through December 13.

Voting Instructions:

1. Between November 15 and December 13, 2013, navigate to https://voting.vtools.ieee.org/.

2. Log in with your IEEE web credentials. You will be presented with a menu of open elections for which you are eligible to vote.

3. Select the Northern Virginia Section 2014 ExCom ballot.

4. Follow the instructions in the ballot. You will be asked to select one candidate for each Officer position and up to four candidates for the Director positions.

5. Submit your ballot.

6. Return to the Northern Virginia Section Election web page to view results, which will be published on approximately December 18, 2013.

The election closes at 11:59pm on Friday, December 13, after which results will be reviewed and certified by the section's Election Committee for announcement at the December AdCom meeting.

Chair Candidates

Sam Musa, Graduate Student Member

1 year of cumulative IEEE membership

Professor Musa has over 16 years of experience in Leadership and Information Security field. He is an adjunct professor at the University of Maryland University College. He teaches Computer Engineering and Cyber Security courses. Professor Musa also serves as a Deputy Chief Information Security Officer for a federal agency. Professor Musa served as the Chair of the Change Management Board for multiple federal agencies. Professor Musa is a committee member of the Federal CIO information security and identify management group, where he assisted the federal government by establishing national policies, standards, and proce-

dures.

Position Statement:

I am seeking this position because I believe in technological innovation and excellence for humanity. I am a visionary leader who possesses many skills, such as strategic negotiation, collaboration, project management, leadership, and team working skills. I believe IEEE provides the advanced tools and knowledge necessary to focus on engineering innovation that serves to make positive impact on society by solving societal challenges and providing solutions for generations to come. With your support, we will be able to foster and manage innovation and embrace global opportunities; we will be able to create the world of tomorrow, today.

Michael A Cardinale, Senior Member

28 years of cumulative IEEE membership
IEEE Member 1984, Sr Member 2002

Over thirty years of experience as a working scientist and engineer. Working in small engineering firms from 1981 to 2006, I managed corporate engineering programs, and I provided design and systems engineering support to various Navy aircraft and submarine programs developing and integrating communications, navigation, countermeasures, electro-optical and radar systems. I also worked as a systems engineer and program manager on the development of electro-acoustic test systems for the Navy and acoustic detection and location systems for the Army. From 2006 to the present, I have been working for the Department of Defense as a physical scientist and project manager developing acoustic, RF and lightwave systems, chemical and biometric sensors, and identity protection systems.

IEEE Service:
1992 – 1994, Northern Virginia (NoVA)/Washington/Baltimore AESS Joint Chapter Vice-chair;
1994 – 1997, NoVA/Washington/Baltimore AESS Joint Chapter Chair;
1999 – 2001, NoVA Section Treasurer;
2000 and 2005 International Radar Conferences Planning Committee;
2000 – Present, Aerospace and Electronics Systems Society (AESS) representative to the Journal of Lightwave Technology Steering Committee.
2001 – 2003, NoVA Section Vice-Chair;
2002 - 2004, AESS Board of Governors;
2004 and 2006, NoVA Section Chair;
2007 – 2008, Region 2 Membership Development Chair
2007 – 2011, NoVA Section Conferences Chair
2008 – 2009 and 2012-2013, NoVA Section Director;

2013, NoVA PACE Chair
2013, Region 2 Technical Chapters Liaison
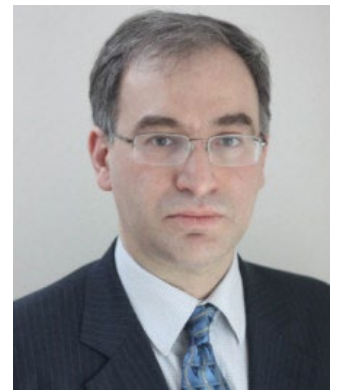**IEEE Awards:**
IEEE Millennium Medal - 2000
NoVA Section James F. Strother Meritorious Service Award - 2002

Vice-Chair Candidates

Zareh Soghomonian, Senior Member

14 years of cumulative IEEE membership

Dr. Zareh Soghomonian is a world recognized expert in electrical electronics and systems engineering, specializing electromagnetics, electrical machinery, power electronics and power systems engineering. He has 23+ years of international experience in innovative research, design & engineering, complemented by the publication of 30+ technical patents, 17 professional awards, and 20+ technical publications & 10 white papers. In his current role at QinetiQ North America, Inc., Dr. Soghomonian provides technical and engineering oversight on mega-watt class power conversion technologies, electrical power systems, power system integration and interfacing, as well as the integration of disparate power sources, transmission and control on naval platforms for Office of Naval Research, DARPA, NAVSEA, NSWC, USCG, USMC and DHS. His is currently working on Naval Hybrid electric drive systems, pulsed power loads, military sealift platforms, expeditionary and forward operating land-based systems based on hybrid MVAC/MVDC zonal power distribution, distributed prime power and different renewable energy assets and energy storage systems for various DoD programs.

Prior to his current position, he was director of power system technologies at BMT Syntek Technologies, and a technical manager at General Atomics, Electromagnetic Systems. He has also held management and lead engineering positions at BAE Systems, Wavecrest Labs, ABB (UK), and Cogent Power (UK).

Dr. Soghomonian was recently a key note speaker at the 2013 International Conference on Electrical Systems for Aircraft, Railway and Ship propulsion (ESARS) in Italy, and also at the 2013 Micro Grid World Forum in Irvine CA. He was also a member of the technical committee of the 2013 Innovative Smart Grid Technology Symposium ISGT and the technical chair of the American Society of Naval Engineers' ASNE Day 2013. In addition, Dr. Soghomonian was also involved with the European PhD School Program on Power Systems, and the 6th Smart Grid Latin American Forum and Europe-

an Innovative Smart Grid Technology in 2013. Looking ahead, he will be fully involved with the 2014 edition of the ESARS and ISGT conference series, as well as heading the power and energy subcommittee for ASNE Day 2014.

Joel I Goodman, Member

21 years of cumulative IEEE membership

Joel Goodman is a senior research engineer at the Naval Research Laboratory in Washington, DC. Prior to this, Joel was a technical staff member at MIT Lincoln Laboratory (MIT LL), most recently serving on the Chief Technology Officer's technical advisory group that allocates MIT LL IR&D funding for advanced research. He has been involved in developing algorithms for data distribution in distributed sensor networks and algorithms for physical layer communications, and most recently developing nonlinear signal processing algorithms for communications, SIGINT and radar applications. He was an invited lecturer for an IEEE advanced signal processing symposium on the topic of nonlinear signal processing. He is a recipient of the Naval Research Laboratory's Alan Berman award for outstanding publications, as well as a recipient of the Eastman-Kodak technical achievement award for his work on magnetic imaging systems. He has published a number of peer reviewed papers on the topic of nonlinear signal processing, as well as over 100 papers, patents and book chapters on the topics of communications and signal processing. Joel received his BS and MS in electrical engineering from Boston University in 1989.

As NOVA Vice-Chair I will promote and facilitate regional seminars and short courses that specifically target current and emerging R&D being conducted at NOVA government labs and commercial companies. I will organize networking events to bring together employers and employees, as well as initiate a series of invited talks from entrepreneurs and consultants to share their experience and advice. I will work to facilitate academic and industry/government collaboration through short courses and summer workshops. My objective is to be a strong advocate for our profession, facilitate events that bring more IEEE conferences and seminars to NOVA, and to perform my duties with good financial stewardship to insure that our dues are spent wisely.

James D "Dan" Cross-Cole, Senior Member

8 years of cumulative IEEE membership

Professor Cross-Cole retired as Chair of Network Communications Management and Network Systems Administration Programs at DeVry University in 2008 and now serves as a Visiting Professor. He works on curriculum development for Microprocessor Programming and Digital Signal Processing. Previously, he served as an Electronics Engineer for the Department of Navy for 22 years, mostly as Team Leader for R&D Projects in Radiation Instrumentation. He is presently the Treasurer for the IEEE Northern Virginia Section and volunteers for the Children's Science Center.

He received a B. A. (University Major) from the University of Virginia (1974) and an M.S. in Applied Physics from Johns Hopkins University (1978).

Dan has published articles on Digital Signal Processing and Radiation Instrumentation.

His hobbies include Amateur Radio, Embedded Microprocessors, and constructing acoustical guitars. He has used Digital Signal Processing to characterize the response of guitars. His latest project is using an Arduino Due board to feed measurements to a Visual C++ display.

Treasurer Candidates

Nima Zahadat, Graduate Student Member

1 year of cumulative IEEE membership

Mr. Nima Zahadat has been teaching Information Systems and Computer Science courses for over 12 years. He has taught at NVCC, Georgetown, George Washington, George Mason, and Westwood College. Professor Zahadat has also been a consultant within the industry, consulting with the State Department, the Pentagon, the US Air Force, the US Army, and a host of private companies. He is currently the Department Chair for the School of Information Technology at Westwood College, a full-time faculty member for the School of Management at George Mason University, and an adjunct faculty for the College of Professional Studies at George Washington University. Professor Zahadat has developed and taught over 90 different technical courses, holds 25 industry certifications, and is a graduate of George Washington and George Mason universities. He is an active member of the IEEE, ISSA, ISACA, ACM, INCOSE, and KMA. Professor Zahadat and his family reside in Northern Virginia. For recreation, Mr. Zahadat enjoys skiing, racquetball, bicycling, and traveling.

Why I am seeking the office of Treasurer:

I joined IEEE to be part of the network of engineers and information system professionals. I very much like to participate in the regular activities of IEEE. By chance I attended a local chapter meeting which was arranged for me by the President of the local ISSA chapter. At that meeting, I was approached and asked to consider running for the Treasurer. I believe I will do well as the Treasurer. I am the Program Chair of my school of IT and part of my work deals with handling budgets, dealing with expenses, trainings, and scheduling. Furthermore, I was the HOA President of my community for one year and learned a great deal about budgets and legal consideration when dealing with such monies. I have also been a Director of a mid-sized corporation in the past and am familiar with the roles of management of people and resources. While this position will be something new and will require new approaches and of course new learning on my part, I feel confident I can do it well. I appreciate the Committee's consideration in accepting my running for this position.

Thomas A Tullia, Senior Member

36 years of cumulative IEEE membership

Thirty-six years as an IEEE member… Thirty one with the Federal government… A life of service that has helped me really understand that "No work's too hard for someone who doesn't have to do it." I place great value on individual industry and accountability and have a deep and abiding respect for each and every one. I appreciate those individual and collective contributions and seek to assure that progress and successes are recognized and rewarded.

Like many IEEE members in Northern Virginia, I had a lifetime of family moves mandated by the military... That same military made school a reality for me at Georgia Tech for a B.S. in Applied Physics and at Carnegie-Mellon University for an M.S. in Electrical Engineering. During the years that followed, I served in a variety of capacities—engineer (radar, communications, satellite systems), information technologist (database technology manager, resource manager, information assurance specialist), and science and technology manager—supporting defense and international programs in a variety of organizations, to include the U.S. Army Missile Laboratory, the Defense Information Systems Agency, the Defense-wide Information Assurance Program, and the Defense Threat Reduction Agency. Along the way, I also taught in the Electrical Engineering Departments of the U.S. Military Academy and U.S. Naval Academy and even had a stint in the commercial sector. Now with the Department of Homeland Security, I serve the Chief Information Officer of the Domestic Nuclear Detection Office as an enabler, an expediter, helping "connect the dots" through information security as well as enterprise and data architecture—connecting people, processes, and technology.

CANDIDATE'S STATEMENT

I seek your support--and vote--for me to serve as Treasurer of the IEEE Northern Virginia Section. IEEE is an extraordinary venue with methods and means to advance personally and professionally through technical and regional activities at all levels in the organization. But, IEEE also provides opportunities for quiet service. I do not seek to advance through the chairs and lead the Section and perhaps the Region. Like many before me, I've done that… I seek the Treasurer position in the NoVA Section because I can provide a level head and a steady hand to support Section operations and fulfill its stewardship and accountability needs.

Volunteers are the lifeblood of the IEEE. Help me rejoin your ranks. I have been at the sideline for much too long. Thank you for your IEEE membership and your vote.

Secretary Candidates

Sandra L Hyland, Senior Member

11 years of cumulative IEEE membership

Sandra Hyland, Ph.D. has worked in research, development, and manufacturing roles in the semiconductor industry for over 25 years, in crystal growth, photovoltaics, CMOS, and infrared sensors. She began her career at the Jet Propulsion Laboratory performing laboratory work and managing programs to transition space photovoltaic to terrestrial applications and, after obtaining her Ph.D., Dr. Hyland was an advisory engineer in IBM's Federal Systems manufacturing facility providing radiation-hardened microelectronics for space-based applications. Following that, she supported four customers as on-site etch process engineering support for Tokyo Electron (TEL) and was part of the TEL start-up for the facility at the Albany NanoTechnology Center. She is currently a senior semiconductor engineer at BAE systems working as a product engineer for a MEMS-based infrared sensor product used in military night-vision equipment. She has also served as chair of a National Research Council committee for the Transportation Security Administration on approaches to reduce false alarms in checked baggage screening. Dr. Hyland has a Ph.D. in materials science and engineering from Cornell University, an M.S. in electrical engineering from Rutgers University, and a B.S. in electrical engineering from Rensselaer Polytech-

nic Institute. Dr. Hyland has been a member of IEEE for five years. She is a fellow of the Society of Women Engineers.

Candidate's Statement

I have been a member of IEEE for five years and am looking for a way to get more involved with IEEE. I have held a secretary position for The Society of Women Engineer's Region E and believe the section secretary is a good way to see how the section works. I look forward to supporting the section leadership and finding new ways to support IEEE's important missions in the Washington area.

Rhonda L Farrell, Member

4 years of cumulative IEEE membership

Dear IEEE N. VA members:

I am pleased to have the opportunity to run as a candidate for the Secretary of the IEEE N. VA section. I have been serving in this capacity since mid-to-late 2012, under the auspices of Jeff Poston and Mithun Banerjee. I also support the section as the IEEE-CS Chair for N.VA and DC since the late 2011 time-period.

I am organized, trustworthy, respectful to leadership, and willing to serve the members in this capacity for the 2014 time-period. I wish to work with leadership and membership to not only execute the duties as outlined in the By-laws, but also work towards building value for all via expanded program offerings and membership growth.

I would appreciate your vote for me as your Secretary of IEEE N.VA and in turn promise to serve the section in good faith and with high energy.

Best Regards,
Rhonda Farrell

Director Candidates

Emily A Sopensky, Senior Member

22 years of cumulative IEEE membership

A business consultant, Emily Sopensky specializes in strategies for technology companies, large and small. After 20 years working in Central Texas, she became the second IEEE-USA Fellow to the U.S. State Department in 2004, relocating to Arlington, Virginia. Major interests have been Internet and web development as well as the technologies and applications of radio frequency identification. She worked with Texas Instruments' RFID group for six years (1996-2002). Ms. Sopensky, a Wharton MBA, receives her technology training on the job and through IEEE. Long an enthusiastic IEEE member and volunteer, Ms. Sopensky has provided her business acumen, experience and education (Wharton MBA) to IEEE for more than 20 years. Besides organizing IEEE's RFID interests across OUs, Ms. Sopensky has held numerous positions in societal, regional, technical and corporate IEEE activities.

IEEE Activities – (A'92-M'98-SM'01) COMMITTEES/BOARDS: MGA liaison to IEEE-USA 2013. IEEE Conferences Committee, IEEEUSA rep 2010-2012. IEEEUSA Board Member-at-Large 2009-2010. Publication Services and Products Board, IEEEUSA rep 2009. IEEE Awards Board, Publicity & Presentation Committee, Chair, 2006-08; Member, 2004-05; Member-at-Large, 2003; IEEEUSA Committee on Communications Policy, Chair 2006-07; Vice Chair, 2008, RFID Policy Lead, 2005-08; Member 2003-Present.. IEEE-USA Technology Policy Council, Technology Forum Chair, 2004-05; IEEE-USA Government Fellows Committee, Member, 2007-09; IEEE-USA Communications Committee, Member-at-Large, 2008; Resource Member 2009-10; IEEE-USA Committee on Transportation & Aerospace Policy Committee, Member-at-Large, 2005-2008; Division X Director Nominating Committee, Member, 2004-05; TAB New Technology Directions, Member and RFID Lead, 2006-08; Women in Engineering Committee, IEEE-USA Liaison, 2004-06; Women in Engineering Committee, Awards Board Liaison, 2004-06; Women in Engineering, ITS Society Liaison, 2008; Intelligent Transportation AdHoc Committee, Secretary/Treasurer, 2003. AFFINITY GROUP: WIE Austin Affinity Group, Co-founder, 2002; WIE Member 2002-2006.

While chairing the Awards Board Presentation and Publicity Committee for three years, we were able to bring order to the myriad of vendors contributing to the annual Awards Booklet for the Honors Ceremony, condensing to one vendor at an affordable price. In addition, we were able find a one-time savings of $100,000 to distribute the booklet to members digitally rather than in print. The Honors Ceremony itself, guided by each President, has also continued to improve each year with a good rigorous lessons learned practice. Finally, my committee recommended the ceremony be held every three years in conjunction with Sections Congress in order that members from all Sections have an opportunity to attend. Sections Congress now hosts the IEEE Honors Ceremony.

Frederick W Seelig, Senior Member

30 years of cumulative IEEE membership

I started volunteering somewhere in the Paleolithic era, before cell phones were things that could fit in your pocket. The first job I had was with Harris Corp in Florida, designing electronic circuits for satellites. For fun, we'd design our own computers, complete with primitive OSes, on breadboards and brassboards, with 4K RAM. No kidding. My first calculator was a Hewlett Packard 45, which I still think was just about the sexiest thing ever.

Tried to get my two daughters interested in science. Didn't happen. They only remember Dad's excitement when he talked about math. In turn, they tried to work on my clothes' color coordination. That didn't happen either.

Started volunteering here for Northern Virginia's Communications Society. We had loads of fun. The meetings were huge! We would bring in people from all over the country to be our speakers and to feed our brains. Wound up being named one of IEEE's Best technical chapters, one year.

Biography: Born in Cleveland, OH. First generation American (parents were German). Purdue University, BSEE, with minors in mathematics and physics. Georgia Tech, MSEE with minor in mathematics. Enrolled in George Washington University's program for ScD, EE, but didn't finish. Have worked in communications systems engineering, wireless engineering, and spectrum management for such companies as Harris Corp, Linkabit (the progenitor of Qualcomm), Stanford Telecomm, Orbcomm, MITRE, and Shared Spectrum. I tutor high school students in mathematics and physics. A member of the American Physics Org. Writing a nonscholarly textbook of modern Euclidean geometry. I run for fun.

Platform: If you want to elect a fossil with a sick sense of humor as your director, I'm your man!

Martin A Schulman, Senior Member

25 years of cumulative IEEE membership

I earned a BS Physics from Case Western Reserve University, an MS Physics from Carnegie Mellon University, an MS EE from The Johns Hopkins University, and a Professional Degree in EE from The George Washington University. Most of my career I designed internetworks at companies that include Sprint International, Bell Atlantic (now Verizon), Cisco Systems, and Juniper Networks. I have also authored a John Wiley & Sons book, been awarded two patents, taught graduate data communications and networking courses at Loyola College, and served as an expert witness. I am currently a Technical Director at Symantec Corporation where I design and develop secure systems. My hobbies include amateur radio and embedded system hardware and software development.
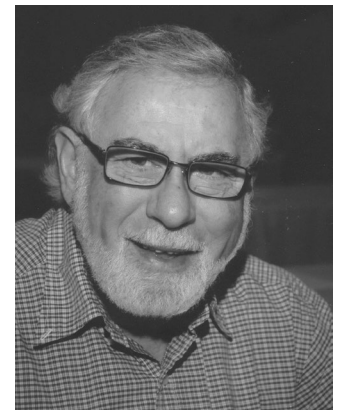
For eight years I've been a special awards judge for the IEEE Northern Virginia Section at local science fairs. If elected as a director I will become familiar with the section operations manual and IEEE bylaws, actively participate in ADCOM meetings and conference calls, respond promptly and directly to section email, and seek to increase active involvement among newer members.

Nadim F Haddad, Fellow

21 years of cumulative IEEE membership

Nadim F. Haddad is a Fellow/IEEE and a member of NPSS and EDS. He received his B.A. in Physics and Mathematics in 1965 from Kansas Wesleyan University and his M.S. in Electrical Engineering in 1966 from Michigan State University. He joined IBM Components Division in East Fishkill, NY and became a manager of Yield Diagnostics, then transferred to the Federal Systems Division in Manassas, VA as a manager of Semiconductor Technology Development. He then rejoined the technical team as a Senior Technical Staff Member, and served as a principal investigator for the VLSI Independent Research and Development. Nadim was the lead engineer for the development of radiation hardened technology for the Very High Speed Integrated Circuit (VHSIC) Program, Radiation Hardened Microelectronics Program, among others; and was instrumental to the development of nine generations of radiation hardened technology and products at IBM, Loral, Lockheed Martin and BAE Systems. His approach capitalized on significant commercial investment in driving forward the development of radiation hardened technologies and products for space in support of military, civil and commercial applications. He retired in 2012 from BAE Systems as a Technical Director and Engineering Fellow.

Nadim was an active participants in several technology forums including the IEEE Nuclear and Space Radiation Effects Conference (NSREC), Hardened Electronics and Radiation Technology (HEART), Government Microcircuit Applications and Critical Technology Conference (GOMACTech), IEEE International SOI Conference, Radiation and its Effects on Components and Systems (RADECS), and Single Event Effects Sym-

posium (SEE) as an author/presenter, paper reviewer, short course instructor, session chair and technical program chair. He authored or co-authored over 100 publications and is credited with 26 inventions.

Arye R Ephrath, Life Fellow

39 years of cumulative IEEE membership

Arye R. Ephrath (M'75; SM'80; F'93; LF'09) is Principal Consultant at Mythology, Inc. which provides systems engineering consulting to the U.S. government. He taught undergraduate and graduate courses and directed doctoral-level research at Tufts University, M.I.T., and the University of Connecticut. Following his academic career he joined Bell Laboratories and, later, Bell Communications Research, where he was Director of Systems Engineering and Director of Usability Engineering, respectively.

Dr. Ephrath previous IEEE activities include membership on the IEEE Technical Activities Board (TAB), Chair of the Technical Committee on Human-Computer Interactions, and several volunteer positions within the IEEE Systems, Man and Cybernetics Society culminating in two terms as the Society's president.

Dr. Ephrath is a member of the Editorial Boards of the Information, Knowledge, and Systems Management (IKSM) and Systems Engineering technical journals. He is an IEEE Life Fellow and a recipient of the IEEE Centennial Medal and Third Millennium Medal.

My Statement:

Over the years I have benefitted immensely from my association with the IEEE and, since moving to Virginia in 1997, from my membership in the IEEE NoVA Section and the National Capital Area Consultants' Network. I hope to repay the IEEE by serving as a Section Director and, possibly, injecting a fresh point of view into the Section's activities.

Baltimore Section Announces Officer Elections

Baltimore Section announces that its annual Officers Election is in progress and open for voting. The ballot will be available through December 8. Baltimore Section members of Member grade or higher may vote by navigating to https://voting.vtools.ieee.org where you will be asked to log in with your IEEE web credentials to cast your ballot. If you have any questions, comments or complaints about registering to vote or your voting experience, please don't hesitate to contact dkisak@ieee.org. Thank you for your continued support of IEEE and the Baltimore Section - and thank you for participating in the election of Baltimore Section Officers. The slate is as follows:

Chair: Collin Krepps
Vice Chair: Kate Duncan
Treasurer: Vinod Mishra
Secretary: Charles Johnson-Bey

Candidate biographies have been published in recent issues of WATT'S NEW, the Section newsletter, and can be accessed through the newsletter archive link on the Section website at *www.ieee.org/baltimore*. For election results, please check the Section website after December 8. Results will be reported soon after the ballot closes on December 8 .

Barry G Douglass, Member

7 years of cumulative IEEE membership

After receiving a B.S. in Aeronautical Engineering from Rensselaer Polytechnic Institute and an M.B.A. from the University of Texas at Austin, Dr. Douglass began his career as an engineer with the Large Rotating Apparatus Division of the Westinghouse Electric Corporation in Pittsburgh, PA. He worked on International efforts by Westinghouse to sell Hydroelectric Generators on the International market, and Steam-Turbine Generators domestically. He left Westinghouse to work for the Allis-Chalmers Corporation in their Electric Utility Pollution Control operation, as a sales supervisor for Flue Gas Desulphurization, Fly-ash Bag-houses and Electrostatic Precipitators.

He returned to Rensselaer to complete a Ph.D. in Computer and Systems Engineering. He has published Journal Articles in the IEEE Transactions on Computers, the IEEE Transactions on Communications, as well as a book chapter and numerous IEEE conferences. He also has three patents in the area of Computer Chip electronic circuitry. He has worked as an Assistant Professor of Electrical Engineering at Texas A&M University in College Station, as a self-employed researcher and patent developer, and as the Chair of the College of Electronics Technology at ITT Technical Institute in Charlotte, North Carolina. He recently began working in his current position at DeVry University in the Washington DC Metro as Associate Dean, College of Engineering and Information Sciences, overseeing the College at their campuses in Arlington, Manassas, and Bethesda.

Dr. Douglass will work to assist the IEEE Northern Virginia section in its efforts to become more active, and to support the goal of increasing membership and involvement, especially among University engineering and computer science students, who are the future of the IEEE. Dr. Douglass has pledged to fully involve himself and to encourage his own university colleagues in helping to successfully bring about the new IEEE International Engineering Security and Project Professionals Conference (ESP) for next year.

Volunteers: Accept the Challenges

18th Robot Challenge Wants YOU

The Robot Challenge, sponsored by the IEEE Baltimore Section, will be held in 2014 on Saturday, April 5 and Sunday, April 6, at the Baltimore Museum of Industry. Open to teams from Maryland High Schools and surrounding areas, the Challenge would particularly like to welcome new teams from DC and West Virginia. There are 6 levels of challenge, with kit prices ranging from $49 (for 2 to 4 students) to $200. Go to www.robotchallenge.org for more information.

Student teams learn to perform like engineers, build walking robots from very basic materials (available as kits), create artistic bodies for them, and prepare extensive written reports on what they have achieved. At the April event, they compete with teams from other schools over a 6 foot course with two hurdles that they have to climb over. Each team then present their accomplishments to groups of two practicing engineers, who critique their efforts and offer suggestions on their robots as well as career planning.

Kits are available from the Baltimore section by contacting Jay Gamerman at jay.gamerman@ieee.org. Baltimore Section has sponsored the event for 18 years, and it has grown to participation by 50 teams. Volunteers are encouraged to join the fun by contacting Neville Jacobs at nevilleed@aol.com or 410-653-4176. Many volunteers are needed to staff a variety of support roles during the event.

Additional volunteer opportunities are listed at www.nca-scanner.org/r2/challenges.pdf for similar events. To help with those events either show up or contact Jeff Friedhoffer (jafried@ieee.org).

Photo Credit: Jeffrey A. Friedhoffer

IEEE Northern Virginia Section 2014 Officer Election Ballot

The Northern Virginia Section election is open through December 13, 2013. All Northern Virginia Section IEEE members in good standing of the grade Member or higher (including Graduate Student Member) are eligible to vote. Ballots must be **received** by Friday, December 13, 2013 at 11:59pm.

Members who have Internet access are encouraged to cast their ballot through vTools by navigating to **https://voting.vtools.ieee.org/**, signing in with IEEE web credentials, and following instructions in the site. Duplicate ballots will be disqualified. Election results will be announced on or about December 18, 2014.

Instructions: Choose one candidate for each Officer position and up to four Director candidates. Please mark the ballot clearly with your selections. Complete the ballot with your name, IEEE membership number, and contact information and send it by first class mail to:

J. Magee, 6620 FORBUSH CT ALEXANDRIA VA 22310-2418

Candidates:

Chair (choose 1):
☐ Michael A Cardinale
☐ Sam Musa

Vice-Chair (choose 1):
☐ James D "Dan" Cross-Cole
☐ Joel I Goodman
☐ Zareh Soghomonian

Treasurer (choose 1):
☐ Thomas A Tullia
☐ Nima Zahadat

Secretary (choose 1):
☐ Rhonda L Farrell
☐ Sandra L Hyland

Directors (choose 4):
☐ Barry G Douglass
☐ Arye R Ephrath
☐ Nadim F Haddad
☐ Martin A Schulman
☐ Fred W Seelig
☐ Emily A Sopensky

Member's Name: _____

IEEE Number: (required) _____

Phone number or email address: _____
(only used if the Election Committee needs to contact you)

calendar *of* events

Save the Date for IEEE Vehicular Technology Society Lunch Talks
co-sponsored by ASME Rail Transportation Division

*Tuesdays: 11:30am ~ January 14 / February 11 / March 11*

Date: January 14, 2014
Speaker: Jun Kobayashi, Japan Railway / AAR
More Info: See below

Date: February 11, 2014
Speaker: Bob Stewart, National Association of Railroad Passengers (tentative)
More Info: See below

Date: March 11, 2014
Speaker: Mike Madden, Maryland MTA
More Info: See below

Details

Cost: $15.00 cash at the door (subsidized by the IEEE VTS Chapter)
Place: American Public Transportation Association 11th Floor Conference Room 1666 K Street, NW, Washington
Directions: Red Line: Farragut North (K Street Exit) or Orange/Blue Lines: Farragut West (17th Street Exit)
Registration: Please register by NOON on Friday before the meeting by email to vts.ltc.dc@gmail.com and indicate regular or vegetarian meal.
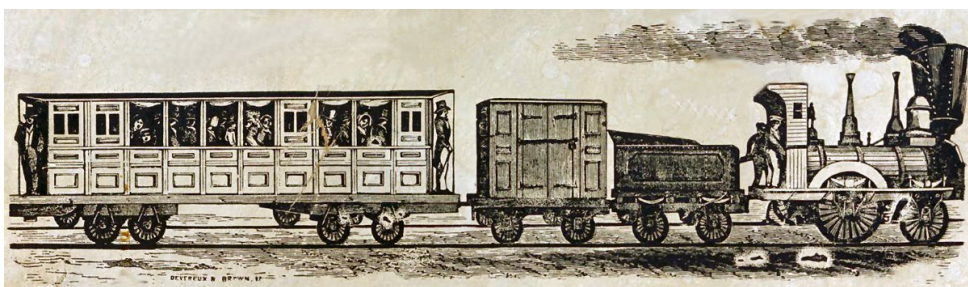
1853 wood cut advertisement by C&R Westover, Elmira, NY. Credit: New York Historical Society, The Carnegie Arts of the United States Collection. Source: University of Georgia Libraries / ArtStor URL: library.artstor.org

Congratulations!

The following local members were elevated to Senior Member grade recently:

Northern Virginia Section: Francis Detaranto, Carl Dohrman, John Gorman, Juan Luo, Christopher Maxey, Phillip Wherry

Washington Section: Mohammad Bukhari, Yi Shi

All members with 10 years of professional experience are invited to apply for elevation to IEEE Senior Member. For assistance with this process, please contact your Section Chair.

scanner Advertising Gets Results

So says Virginia Tech, which ran a small button ad in the eScanner for 30 days:

"We have already started looking at the applications and are ready to start interviews."

- K. Kirstein, Office Coordinator

The scanner wishes to convey its most gracious thanks to the advertisers and patrons of the Washington and Northern Virginia Sections for your loyalty and support during 2013. We look forward to continuing a mutually beneficial partnership as we enter the new year.

Thank you, friends of the scanner and IEEE National Capital Area:

Capitol College
Virginia Tech
George Washington University
University of Maryland
DeVry University
International Semiconductor Device Research Symposium
Greentech Conference
Sensors Conference
Accelerated Development and Support Corporation (ADS)

Best wishes,

scanner Ad Team
Jerry
Wally Rex
Harry
Monica

Late Breaking News
IEEE MGA Announces 2013 Awardees
New Brunswick, NJ (21 November 2013) – Two Region 2 volunteers are among the slate of 2013 MGA award honorees. Carole Carey, of Baltimore Section, is the Innovation Award recipient, for creating new opportunities for member engagement and the promotion of technical and professional development. Northern Virginia Section's Monica Mallini was named as an MGA Achievement Award winner, for fostering member engagement and collaboration through the scanner. Congratulations!

IEEE National Capital Area Digital and Print Advertising Opportunities

The National Capital Area Scanner is accepting advertising reservations for its Spring 2014 issue. We are pleased to announce the introduction of new sponsored event listings on the eScanner website! Publicize your conference or symposium to 16,000 Scanner subscribers in Virginia, Maryland, and Washington, DC. Sponsored events will be posted on the eScanner index page, calendar, and in multimedia format and distributed to subscribers by email and in the printed Scanner. Electronic button and banner ads may also be reserved for placement on the eScanner website. With subscribers in Washington, Baltimore, and Northern Virginia Sections, the Scanner is your best outreach tool to the electrotechnology community. Additional information and deadlines can be found in the Scanner's media kit, which may be downloaded at www.nca-scanner.org/ad. Discounts are available for multiple insertions, and IEEE members and entities may claim an additional 10% courtesy discount. Custom ad sizes and layout assistance are available. Scanner advertising is designed to fit every budget, with ad opportunities starting at less than $100. Please contact the Scanner's Advertising Manager, Jorome "Jerry" Gibbon, IEEE LSM, for a personal consultation and to place your ad. The deadline for the Spring 2014 issue is February 15, 2014, and eScanner placement is subscribed on a month-to-month basis.