IEEE GLOBECOM Returns to Washington!
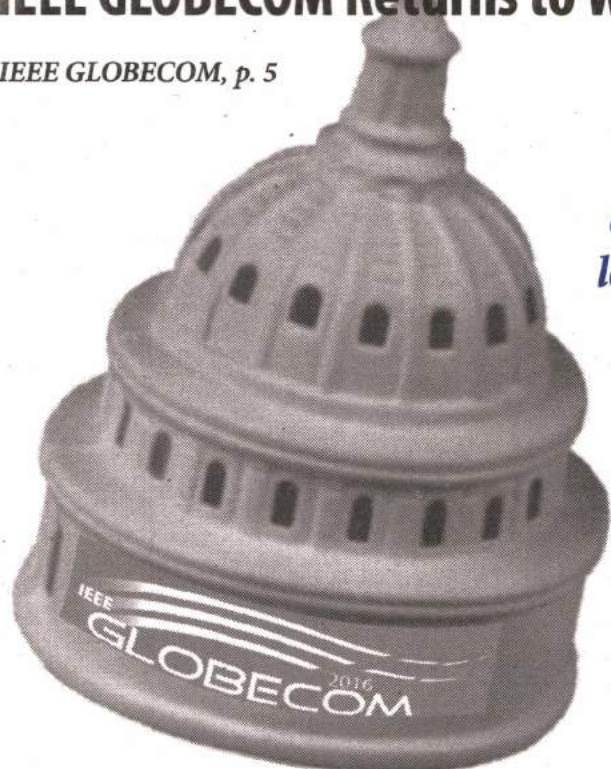
"Without you IEEE does not exist. We are looking to improve how we serve you . . ."

— JIM MAGEE, IEEE NORTHERN VIRGINIA SECTION DIRECTOR

"The time went by quickly and participants asked for more time to finish discussing LINUX on the RPi..."

— DR. BARRY G. DOUGLASS, IEEE EDUCATION SOCIETY CHAPTER CHAIR

IEEE Rebrands GOLD as 'Young Professionals'
Membership Eligibility Expanded to Grads + 15 Years
by Katherine Schoonover, Scanner Intern

In August, IEEE completed the transition of the recent graduates' membership services, IEEE Young Professionals, formerly known as IEEE GOLD—Graduates of the Last Decade. Qualified members are instantly in the group when they sign up or renew their membership. The rechristening occurred after IEEE Member and Geographic Activities (MGA) approved the change in June of last year.

Reasoning behind the change is simple: the original name failed to resonate with the target audience; 'gold' evokes images of maturity and seniority (think Golden Anniversary, gold watch). On the other hand, 'Young Professional' is what it says, no interpretation necessary. Other changes to the program include a new logo and increasing the period after graduation in which members are eligible, from ten to fifteen years.

Kat Schoonover, who joined IEEE as an Associate Member in 2014, is a YP, having graduated from VCU in 2012.

IEEE youngprofessionals

IEEE
National Capital Area
Golden Anniversary
Awards Banquet

"Magnifique!"
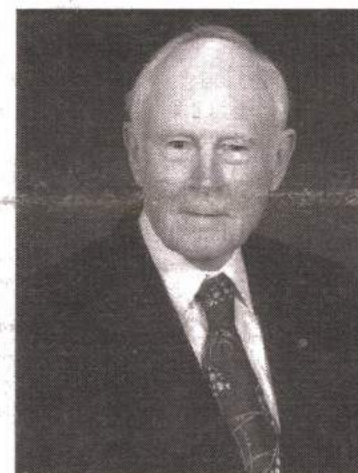
IN MEMORIAM
Edson L. Tennyson, PE, 1922 - 2014

Edson Leigh Tennyson, one of the most respected rail advocates across several decades spanning U.S. passenger rail's decline and recovery, died at his home Monday, July 14, 2014. He was 92.

Ed Tennyson was born in Orange, New Jersey on July 6, 1922. He held two degrees in Management Engineering from Carnegie Institute of Technology (now Carnegie-Mellon University), which he attended on a Westinghouse Memorial Scholarship. He enlisted in the U.S. Army and served as a Transportation Corps Officer during World War II, while his wife Shirley worked for Westinghouse on the Manhattan Project.

Mr. Tennyson had vast experience in all areas of bus and rail transportation. His expansive career included serving as City Transit Engineer for Philadelphia, rising to Deputy Commissioner for Transit Engineering. He subsequently served as Pennsylvania Deputy Secretary for Transportation for more than seven years. In these roles, he built much of the infrastructure that supports SEPTA, Philadelphia's commuter rail system. His vision driven by European light rail successes, he influenced Pittsburgh and Philadelphia's policies to focus on preserving rail transit.

Passionate about commuter rail transit's advantages, Tennyson produced a study for the Transportation Research Board in 1989 titled "Impact on Transit Patronage of Cessation or Inauguration of Rail Service." Tennyson concluded that given a level playing field, "rail transit is likely to attract 34% to 43% more riders than will equivalent bus services." His advocacy was rooted in hard evidence of commuter rail's economy and efficiency over bus and automobile transit.

Following his retirement in 1992, Mr. Tennyson remained an outspoken advocate and advisor in public transportation, especially urban electric transit. He was an original and extremely prolific member of the Light Rail Progress Professional (LRPPro) listserv and a member of the Fairfax County Transportation Advisory Commission. As Public Works Planning Coordinator for Arlington County, he helped bring the Metro Orange line to Vienna. Just weeks ago, Ed was working on a proposal for expansion of the Washington Metro system.

Tennyson is hailed as a potent voice and historical participant among those seeking improved passenger and urban rail transit in North America. He is remembered for his keen analytical ability, and even more, his rare integrity. Tennyson sometimes espoused unpopular views, even at the risk of his livelihood. In July 2013, he took the Washington Post to task for understating benefits of the Dulles Silver Rail Line, noting that the Silver Line will more than double Fairfax County access to MetroRail.†

Ed was a long-time regular attendee and speaker at the Washington, DC IEEE Vehicular Technology Society chapter's joint Land Transportation Committee lunch meetings.

Services were held on Tuesday, July 22, 2014 at the Vienna Presbyterian Church in Vienna, Virginia. Ed Tennyson is survived by his wife of 70 years, Shirley Tennyson, three daughters, Marilyn Tennyson, Marjorie Tennyson, and Connie McCarthy, his brother Walter, and three grandchildren.

†Access Mr. Tennyson's letter to the Post at http://www.thinkoutsidethecar.org/pdfs/Newsletter2013/Tennyson%20Letter.pdf

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ON THE WEB
eScanner Calendar of Events (new!)
The calendar has moved to www.nca-scanner.org. Check there often for schedule 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 (but not large attachments) to the Editor at nca-scanner@ieee.org. Thank you for helping us keep this page current and accurate!

Meeting notices should be posted using vTools at https://meetings.vtools.vtools/main. The information will automatically propagate to the eScanner Calendar page within an hour.

calendar *of* events

SECTION ADMINISTRATIVE MEETINGS

Monday September 8, 2014

Baltimore Section Executive Committee Meeting

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, check the Section website.

Tuesdays: Sep 2 / Oct 7

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.

Contact: Email rathottungal@ieee.org by the day prior to the meeting with agenda items and RSVP.

More Info: All interested IEEE members welcome.

Wednesday September 10, 2014
(No Meeting in August)

NoVA Section Administrative Committee Dinner Meeting, Presentation, and Senior Member Drive

Time: 5:00 pm - senior member drive
6:30 pm - meeting
7:30 pm - speaker presentation
8:00 pm - networking

Place: TEQCORNER, 1616 Anderson Road, Center Conference Room (3rd floor) McLean, VA 21230

Speaker: Professor Eric Burger

Topic: Internet Security and Policy Roadmap

Cost: FREE

Registration: Senior Member Drive: Please register by noon September 8 at https://meetings.vtools.ieee.org/m/27603 Dinner Meeting: Register separately at https://meetings.vtools.ieee.org/m/27601

Contact: sandra.hyland@ieee.org

More Info: Note new location for this month's AcCom dinner meeting, which will include an invited speaker presentation and a senior member drive. All interested IEEE members welcome. Senior member candidates should forward resume to Rhonda Farrell by 5pm September 7 at rhondalfarrell@aol.com. Attendance is limited to the first 75 to register. Bring IEEE member number. See **Diamond Story**, page 4.

SPECIAL EVENTS

Saturday August 16, 2014

Northern Virginia Section Annual Picnic

Time: 12:00 noon - 3:00pm

Place: K of C (Private Club) 5115 Little Falls Rd Arlington, VA 22207

Cost: FREE for all IEEE members and guests

Registration: https://meetings.vtools.ieee.org/m/27465

Contact: Jerry and Elizabeth Gibbon at jtgibbon@hotmail.com

More Info: The Section will provide hot dogs, hamburgers, and drinks. Please bring side dishes and dessert, hot or cold, to share.

CONFERENCES

Tuesday - Friday September 2 - 5, 2014

IEEE 25th International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)

Sponsor: IEEE Communications Society

Place: Capital Hilton, Washington, DC

Website: http://www.ieee-pimrc.org/

Contact: Kamran Sayrafian at ksayrafian@nist.gov

More Info: This important wireless conference returns to the U.S. for the first time since 2001.

Monday - Wednesday October 6 - 8, 2014

IEEE Military Communications Conference (MILCOM)

Sponsor: IEEE Communications Society

Place: Baltimore Convention Center

Cost: Registration is required for all attendees. Full conference registration is FREE for students and government/military affiliated. Small Business registration $525. Exhibit Hall Only $25 to $75. Other fee paying registration categories are available.

Website: http://www.milcom.org/

Contact: Tammy Goehring at tgoehring@afcea.org

Tuesday - Friday October 27 - 30, 2014

IEEE International Conference on Big Data

Sponsor: IEEE Computer Society

Place: Hyatt Regency Bethesda

Website: http://cci.drexel.edu/bigdata/bigdata2014/

Contact: Xiaohua Hu at xh29@drexel.edu

CHAPTER EVENTS

Saturday September 6, 2014

Project Management Seminar

Time: 9am - 3pm

Place: Capitol College, Laurel, MD

Speaker: Douglas Holly

Topic: Getting the Basics Right

Cost: $30 members, $35 non-members, $15 students (includes lunch)

Registration: https://meetings.vtools.ieee.org/m/27633

Contact: Carole Carey at c.carey@ieee.org

More Info: IEEE CEU/PDH credits will be offered. See **Diamond Story**, page 4.

Wednesday September 17, 2014

Big Data Intelligence: 360 Analytical Security

Sponsor: International Council on System Engineering (INCOSE), Chesapeake Chapter

Co-Sponsor: IEEE Computer Society NoVA 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 (IEEE or INCOSE members $20 by September 12)

Speaker: Tejinder Luthra, IBM Global Technical Ambassador

Registration: http://www.incose-cc.org/registration/

Flyer: http://www.nca-scanner.org/INCOSE/flyer.pdf

More Info: See **Diamond Story**, p. 4.

Saturday September 27, 2014

Fusion Energy Research and Development: Starbuilding on Earth

Time: 11am - 1:30pm

Place: National Electronics Museum, 1745 W. Nursery Rd, Linthicum, MD (410) 785-0230

Speaker: John C. Glowienka, PhD, U.S. ITER Program Manager, Office of Science, U.S. Department of Energy

Contact: Carole Carey at c.carey@ieee.org

More Info: This event is sponsored by the Region 2 Outstanding Meeting Program. See **Diamond Story**, page 4.

Late Breaking News

Saturday, September 27 Washington Section Fall Picnic

Time: 12 noon - 3:00pm

Place: Meadowbrook Park, 7901 Meadowbrook Lane Chevy Chase, MD 20815

Contact: Chris Magnan at cmagnan@ieee.org

More Info: vTools registration will be available in early September. For directions, see Montgomery County's website at http://www.montgomeryparks.org/parks_facilities_directory/meadowbrooklp.shtm.

diamond ◆ stories

Saturday September 6, 2014

Getting Project Management Basics Right
Practical Project Management for Everyday Use

Abstract: Like a cohesive soccer team, a project team does its best when it executes the basics well. Whether you are a project manager or team member understanding and practicing the basics of good project management will make the effort more fun and much more successful. This seminar will take you through the basics in an interactive and informative way so you understand the concepts. It will provide a good basis for contributing to your current or next project and growing your skills. The principles covered apply to all projects but particularly those one-month to one-year projects that are the basis of much of our work and do not demand the heavy application of project management tools and controls. A simple set of basic techniques well applied is fundamental to project success.

This seminar interactively engages the participant to address specific concerns and elements of interest to the group. The topics build from the foundations of the project management process through scheduling, estimating and building an effective team. Points are illustrated through practical examples and real life stories. A critical part of the discussion will be the balance between the implementation of tools versus keeping it simple and only applying as much management as needed to be successful. Each participant will go away with a playbook of concepts discussed and a tool set to assist in the practical application of what is covered.

Topics covered:
1. Project management and the project management process
2. Setting clear expectations – the charter and requirements
3. Identifying and working with stakeholders
4. Building the project plan – tasks, schedules, costs, estimates and risk
5. Getting the project done – achieving objectives, solving problems and keeping track of progress
6. Building the team and keeping them engaged
7. Closing –finishing the project and learning for the next one

Biography: Doug Holly has over 30 years experience in project management ranging from software and product development to mergers and acquisitions. As a student of project management he has synthesized the essential lessons learned into a core set of practical practices. In this engaging and informative seminar Doug provides the participants with a useful set of basic practices and tools for the projects generally encountered in business.

Doug is currently a Principal Consultant at Eagle Management Group helping businesses with performance optimization, strategic planning, M&A and project management. He is also an Affiliate Professor at Loyola University's Sellinger School of Business with a focus on Innovation. He has worked at IBM, JDSU, Acterna and TTC in the fields of telecommunications, avionics, system integration and services. He has held a number of roles from director of engineering for test equipment and avionics to executive leading a global program management organization and a merger and acquisition practice.

He is a senior member of IEEE and chair of the Washington/Northern Virginia Technology Management Council and past chair of the Washington Communications Society.
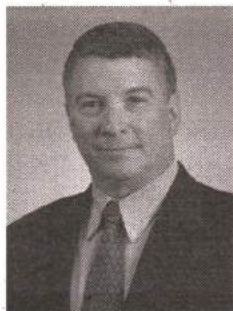
Wednesday September 17, 2014

Big Data Intelligence:
360 Analytical Security

Abstract: Security data is used to analyze activities and metrics associated with risk management, incident detection/response, regulatory compliance, and investigations/forensics. Many of these investigations now include analysis of nontraditional data sources such as social media, customer browsing history, and business transactions. To support business requirements, manage risk, and respond to security events, CISOs collect, retain, and analyze a larger repository of data than they did in the past. Security data growth and utilization will only increase in the future. In this session, we will discuss IBM's comprehensive approach leveraging a deep portfolio of security analytics to improve situational awareness at the federal mission level, and how mission planners can harness the power of Big Data through advanced security, predictive and entity analytics as a preemptive defense from external and internal threats.

Biography: Tejinder S. Luthra is a Global Technical Ambassador at IBM, serving as a consulting Senior Big Data Technical Specialist. He also serves as a member on multiple Customer Advisory Boards representing IBM. He is certified in various database and Hadoop technologies and has authored a book on Data Lifecycle and Management. His focus is around reference architectures for Next Best Action, 360 degree view around customer and Data Warehouse Modernization. In the past, Tej has served as a lead in IT Operations overseeing extremely large, complex, and diverse implementations of databases and applications.
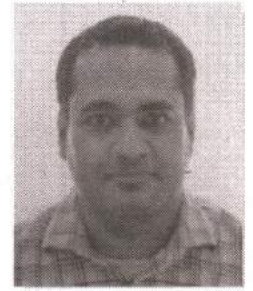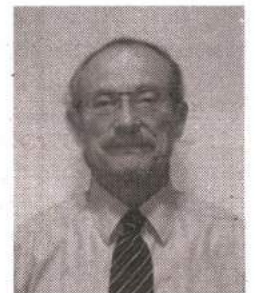
Saturday September 27, 2014

Fusion Energy Research and Development:
Starbuilding on Earth

Abstract: History and update on the Fusion Energy Project. For a number of years, the US has been looking at fusion energy because the fuel cost would be low, and there seems to be an endless supply of it. The idea is that At the temperature of the sun, hydrogen nuclei fuse to give Helium and Energy. The problem to date is that achieving and maintaining this temperature is very, very difficult – and expensive. The US has been working for years to achieve a demonstration of a "break even" process, one that yields as much energy as it consumes. This has been achieved on a small scale for a short period of time.

Currently, a large effort, known as ITER, is sited in France, with the collaboration of 35 nations, including the U.S., in research and support toward building a fusion-based power plant. There are other smaller efforts also.

Biography: Dr. Glowienka received his BS EE ('71), M EE ('73), and PhD EE ('75) from Rensselaer Polytechnic Institute. He then served in the U.S. Air Force as an officer and research staff member of the SHIVA experimental group, Phillips Laboratories, at Kirtland AFB, Albuquerque, NM. Following an assistant professorship in the Nuclear Engineering Program, University of Illinois, Champaign/Urbana, he began, in 1977, a 30-year career with Oak Ridge National Laboratory (ORNL), Oak Ridge, TN. During the first half of his ORNL career, he served as a member of the research staff of the Fusion Energy Division, where he contributed to the research and management of the ELMO Bumpy Torus and Advanced Toroidal Facility experiments. During the second half of his ORNL career, he managed Laboratory activities dealing with safety, performance management, and performance assessment. For example, he directed the Laboratory's Y2K preparations. Dr. Glowienka retired from ORNL in 2007 and joined the U.S Department of Energy (DOE) as a physical science staff member within the DOE's Office of Science, Office of Fusion Energy Sciences, U.S. ITER Program Office.

Dr. Glowienka is a Senior Member of IEEE and a member of the American Physical Society. He is an instrument-rated pilot, soccer referee, licensed radio amateur, and woodworker.

calendar *of* events

Second Tuesdays: 11:30am

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

Dates:	September 9, 2014 October 14, 2014 November 11, 2014 December 9, 2014
Cost:	typically $15.00 - $20.00 cash at the door
Place:	APTA 11th Floor Conference Room 1666 K Street, NW, Washington, DC
Directions:	Red Line: Farragut North (K Street Exit) or Orange/Blue Lines: Farragut West (17th Street Exit)
Registration:	Please register by NOON Friday before the meeting to vts.ltc.dc@gmail.com and indicate your choice of regular or vegetarian meal.
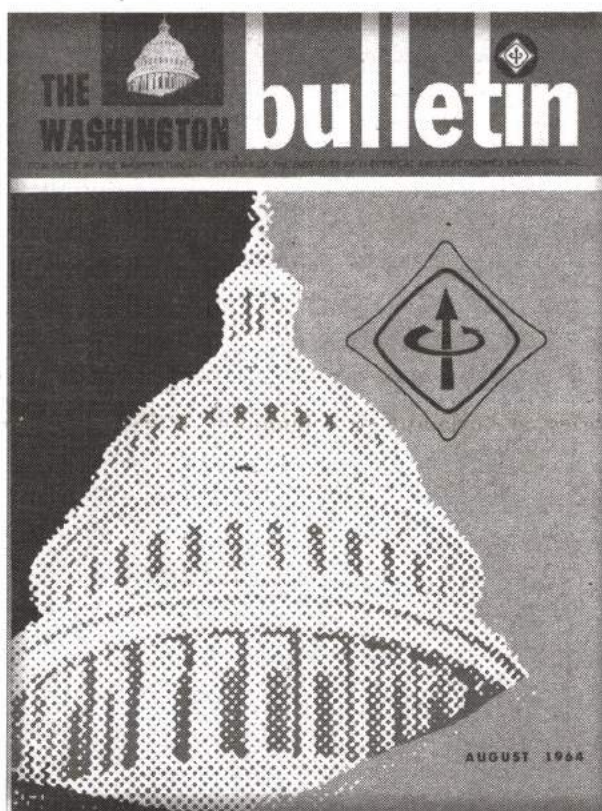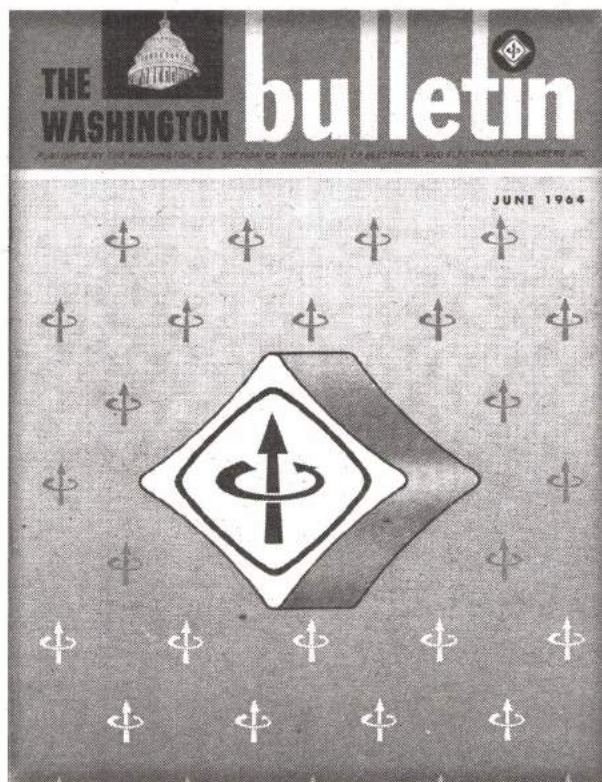
To celebrate IEEE's 50th anniversary year and beyond, the Scanner is sharing its archive of 50-year old Bulletins with our readers. Unfortunately, we are missing several issues from 1963-4. If anyone has these issues, we would like to make a copy for our archive. Please contact us at nca-scanner@ieee.org. Here is our archive from the summer of 1964 for your enjoyment. (See, we are missing July!) Click on the covers in the electronic edition to download complete issues.

Washington, DC Welcomes Return of IEEE GLOBECOM 2016
An opportunity to participate in a world class telecommunications conference
by Doug Holly, Washington Section Scanner Editor

IEEE GLOBECOM 2016

conference (GC2016) is coming to the National Capital area, and this event presents an exciting opportunity for members to participate in one of IEEE's flagship communication conferences. The GC2016 conference will feature a wide variety of technical seminars and tutorials as well as industry sessions and exhibits. The conference will take place December 4 – 9, 2016 at the Washington DC Hilton Conference Center. Check out the web site for GC2014 at www.ieee-globecom.org for a preview of what GLOBECOM conferences are all about and/or to attend this years' conference in Austin TX.

The National Capital Area IEEE groups hosted a very successful GC2007, and we plan to host an even better event in 2016. The basic organizing team is in place to get the program started, but we will need a broader base of participation to make a strong program, so we are reaching out to industry, academia, and government organizations and to our own members. The benefit to volunteers is personal growth in building leadership and organizational skills as well as the opportunity to meet and network with technology leaders in the communications industry.

There are many ways to participate in the conference from writing and presenting a technical paper to helping your company host a booth and/or to put on an industry forum. We are also looking for help finding contacts in local companies so we can offer them the opportunity to participate as a patron and get the benefit of the publicity and exposure as a recognized leader and sponsor in the industry. Also consider volunteering to participate in the conference, as a young engineer, seasoned manager, or as an educator, you are guaranteed to gain experience and insight into the industry.

The Executive Chair is Dr. Paul Cotae, professor of electrical and computer engineering at the University of the District of Columbia and also past chair of the local Communications Society Chapter and Washington DC Section. Assisting Paul is Jerry Gibbon the Vice Executive chair, who also chaired GC2007 and has held leadership positions on many IEEE GLOBECOM conferences. Volunteers from all three local sections (Baltimore, Washington DC and Northern Virginia) have already signed up, but there are many opportunities to participate so please consider joining us to put on an exciting conference. Watch for the next organizing meeting we have planned for early October. Please contact Jerry at j.t.gibbon@ieee.org or Paul at pcotae@udc.edu.

Doug Holly, a Principal Consultant at Eagle Management Group , is an IEEE Senior Member and a long-time volunteer in the Communications Society, with a leading role in IEEE GLOBECOM 2007 in Washington. Doug Chairs the IEEE Technology Management Council of Washington/Northern Virginia.

Sections Open Officer Nominations
Volunteers Encouraged to Apply for Leadership Positions

Summer in IEEE is not just about picnics and conferences. The annual officer elections will be here soon, and qualified candidates are needed to heed the call for leadership. Present and former officers, chapter chairs, and new volunteers are encouraged to apply. There is a role for every volunteer at every experience level, including a number of appointed committee positions. Each section is seeking candidates for the following offices:

1. Chair
2. Vice-Chair
3. Treasurer
4. Secretary
5. Directors (2-year staggered terms)

Terms for the four officer positions run from 01/01/2015 through 12/31/2015. Two-year Director terms run from 01/01/2015 through 12/31/2016. Nominations will be open for a minimum of 30 days, after which each section's Nominations Committee will certify candidate qualifications and present the ballot to the section's Executive Committee for approval. More information will be available at each section's respective web site. Nominations and questions about the process should be directed to:
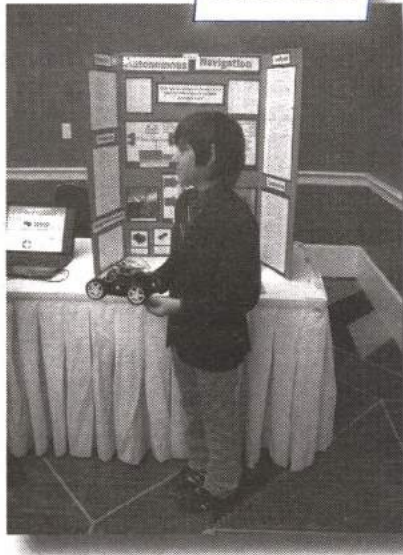
- Baltimore - Dave Kisak, dkisak@ieee.org
- NoVA - Michael Cardinale, nova.chair@ieee.org
- Washington - Richard Hill, richardhill@ieee.org

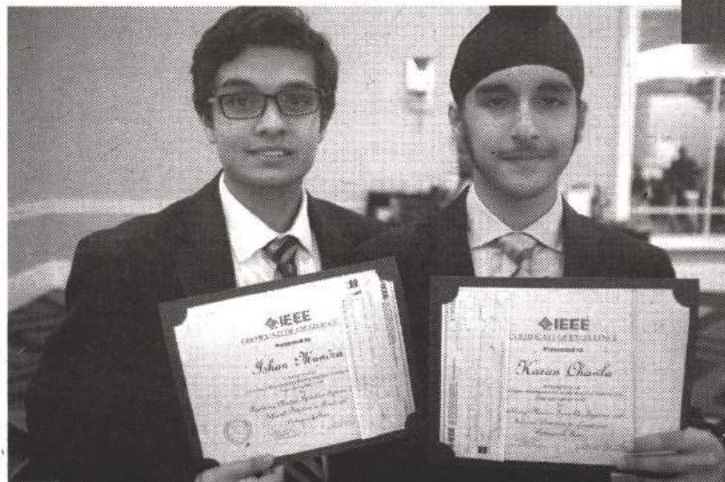# Golden Anniversary Banquet Glitters

50th Anniversary of 'First Annual Banquet' Sets a High Mark

26 April 2014

8 FEB 1964

First Annual **BANQUET**

Saturday, February 8, 1964
6:30 p.m.–1:00 a.m.
Statler-Hilton Hotel
Washington

Banquet
At this point we are looking forward to the Banquet; all hopes and expectations are for a bang-up affair.
– Chairman Swift, 1964

Banquet Organizing Committee

Chair: Mónica Taysing-Lara, Washington Section Past Chair
Co-Chair: Barry Tilton, PE, Northern Virginia Section Past Chair
Members:

Michael Cardinale, Northern Virginia Section Chair
Dr. Carolyn Carroll, Washington Section Vice-Chair
Valerie Davis, Banquet Coordinator
Jerry Gibbon, NCA Scanner Ad Manager
Richard Hill, Washington Section Chair
Jim Magee, Northern Virginia Section Director
Christopher Magnan, Washington Section Treasurer
Dr. Brian Riely, Washington Section Director
Harry Sauberman, PE, Washington Section Director
Dr. Fred Semendy, Northern Virginia Section AdCom Member
Dr. Mary Tobin, Washington Section Director Emeritus
Thomas Tullia, Northern Virginia Section Treasurer

Keynote speaker Dr. Sheldon Hochheiser, historian and archivist at the IEEE History Center, presented "50 or 51 Years of IEEE History."

Major Awards

John Margosian Meritorious Service Award – Dr. Sajjad Durrani, in recognition of long and distinguished service to IEEE Washington Section

James F. Strother Meritorious Service Award – Martin Schulman, in recognition of outstanding leadership and dedicated service to IEEE Northern Virginia Section

MGA Achievment Award – Monica Mallini, for increasing member engagement and fostering collaboration between IEEE Sections, serving as Editor-In-Chief of the IEEE Scanner Newsletter in Region 2.

The First Annual Banquet was held in Washington, DC February 8, 1964 the day after the close of the first IEEE Winter Power Meeting in New York February 2-7, 1964

Now you know!

"*Magnifique!*" COMMENT BY GUEST (2014)

Baltimore Section Announces Officer Elections

The IEEE Baltimore Section Executive Committee (ExComm) is seeking nominations for officers for 2015. The ExComm is responsible for managing and coordinating section activities and events, including conferences, continuing education courses, membership growth, and student outreach, just to name a few. For members seeking leadership and growth opportunities, consider nominating yourself or someone else to head one of our society chapters or Affinity Groups. Comprising 13 Society chapters and two Affinity Groups (Young Professionals - YP, and Women In Engineering - WIE), the Baltimore Section encompasses many different members and many different disciplines. Members who seek to hold a leadership position within the Baltimore section can expect a great opportunity to learn and grow new skills that will be very rewarding in career paths and general life goals.

The upcoming IEEE Baltimore Section November election will fill the following officer positions: Secretary, Treasurer, Vice-Chair, and Chair. The Baltimore Section will gather nomina-tions throughout the summer for voting during the fall. If you are interested in filling any of these Chapter or Affinity group leadership positions or know of someone who might be interested, then please contact Dave at dkisak@ieee.org. The nominations process will need to be completed by mid-September in order to distribute candidate information and give our members enough time to complete the voting by November. Thank you for your support.

Recent Events

IEEE Baltimore Women in Engineering (WIE) presented a Professional Development Seminar to the IEEE community on July 26. Highlighting the meeting was an informal roundtable discussion between panelists and meeting participants. The focus was common challenges that face women and young professional members, shared experiences, and recommend solutions moving forward. The program featured a research talk from WIE member Rean-ita Fenner, PhD, an assistant professor of engineering at Loyola University Maryland.

WATT'S NEW *in Baltimore Section*

Once again, IEEE-USA took part in the USA Science and Engineering festival, which returned to the Washington Convention Center in April. The event drew an astonishing 325,000 visitors, including 40,000 on Friday, which included a number of special needs students and chaperones. The IEEE-USA booth was a special draw for hearing-impaired students because it featured lots of blinking, flashing, and steady lights in the 3-way switching, wiring, and power consumption activity. Over the 3-day exhibit, at least 11,000 people visited the booth.

Local volunteers joined IEEE-USA's Chris McManes, IEEE-USA Staff, and IEEE-USA President Gary Blank and his family at the booth. A new face was the newest IEEE volunteer, 16-month-old Lessie, who helped her Dad, Ata Atanasov, at the booth. Maybe when the festival returns in 2016, the Atanasov family of IEEE volunteers will include Lessie's new twin brother and sister!
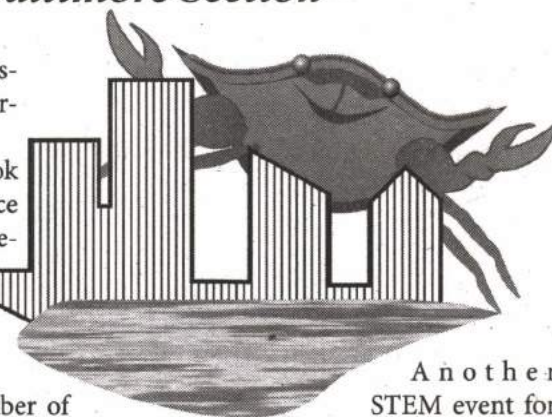
Another STEM event for IEEE Region 2 South Area volunteers (Jeff Friedhoffer, Newton Campbell and Carole Carey) was the Howard County STEM Festival, June 8, 2014, held at Howard Community College in Columbia Maryland. "We were so busy at out table demonstrating our 'kits' with the kids and parents visiting our booth that we forgot to take any pictures!" There were some kindergarteners and pre-K folks sprinkled throughout, with just a few high school students.

Carole Carey, IEEE Region 2 South Area Chair, contributed to this report.

Do You Speak My Language?

New IEEE benefit helps ready members for global opportunities

By Lynn Koblin, IEEE Sponsored Discounts and Insurance Program Manager

For technologists, "mobility" can mean much more than wireless communications: it may well be a description of their careers. Skilled workers and corporate managers are relocating where the jobs are, and the trend to follow employment opportunities across borders is expected to continue. Fluency in multiple languages is a skill that will open many doors. To help members attain that marketable edge, IEEE has introduced language instruction from Rosetta Stone as one of its new benefits.

Full immersion is said to be the "best" way to learn a language, if you can. But career migration today does not always provide that opportunity — the life of an expatriate has changed somewhat. The traditional image suggests the foreign family ensconced in a well-appointed residence, living in comparative luxury amid the locals for a few years. That picture is morphing into a long distance commuter — a road warrior, working in-country for only a few weeks at a time and coming home for weekend visits . According to a series of blog posts about expatriate life, published by IESE Business School at the University of Navarra, when the company or the employee does not want to relocate the job permanently, then the employee may be sent only temporarily abroad as part of a project team; that lifestyle does not afford much time to absorb a new language. Alternatively, equipped with language skills and an internet connection, other entrepreneurial individuals are discovering a refreshing variety of global assignments — from wherever they choose to reside. Employees "on the move" will possess both the technical expertise and the language fluency to participate successfully in these types of career options.

Of course, permanent expat opportunities are still available for the candidates with the right fit. Recruiters want to see language fluency on the resume, and will pay a premium for it at times. One career advice site in the UK noted that candidates with proficiency in Spanish are in high demand there, with that language being the second most influential language in the world after English. The ability to speak Chinese or German, for example, could also raise candidates' employability and salary, according to that source.

Consistent with global trends, many IEEE members anticipate making life-changing moves in the course of their careers, or as managers, expect to relocate talent in their companies to support business objectives in new markets. In a 2010 global member survey about career mobility, 54.2% of IEEE members responded affirmatively that better employment opportunities may lie outside their native country, and approximately 36% said they are likely or very likely to consider those options. Thirteen percent of those surveyed agreed or agreed strongly they would be working in another country in the near term.

When IEEE members were asked about the types of skills they would need to develop or improve in order to consider career opportunities abroad, 60% of members named language skills, compared to 26% who named technical skills. Drawing from members around the world, it was no surprise that the survey found 44.5% of respondents to be bilingual; an impressive 19% indicated they are polyglots. On the other hand, 36.5% of responders speak only their native language. Approximately 77% of responders believe that fluency in English is important or very important for their careers, while approximately 56% believe that fluency in a language other than English is important or very important.

While English is one of the most influential languages in the world, companies that primarily do business in English are finding increasing need to become more linguistically diverse, in order to thrive in multicultural markets. A 2012 study by the Economist Intelligence Unit, "Competing across borders: how cultural and communication barriers affect business," found that fluency is related to a company's financial success, noting, "Around one-half of the executives surveyed for the purpose of this report admitted that ineffective communication or inadequate collaboration had obstructed major international transactions, inevitably resulting in financial loss." The research showed that business leaders see a need for cross-border partnerships in order to succeed, but "cultural and linguistic diversity can make it difficult to collaborate." The study interviewed numerous companies that acknowledged multilingual skills were becoming a factor in recruitment: 39% seek candidates with fluency in at least one non-native language for positions in the home country.

Does your language fluency help or hamper your career?

You can prepare for broader opportunities and increase your likelihood of success by taking advantage of IEEE's latest member benefit for language instruction. Through a new discount negotiated by IEEE, members world-wide can learn any of 24 languages, or improve fluency skills they already have, with Rosetta Stone TOTALe. Rosetta Stone TOTALe is a solution set that can give members the training and situational practice they need, with convenient access online from a computer or mobile device. Users will access multiple types of learning environments including: Rosetta Course, the interactive course software; Rosetta Studio, which brings the learner in contact with a language practice partner; and Rosetta World, the online community where learners can share language with many other participants.

If you are considering giving your career a multi-lingual, competitive edge, then get more information about the Rosetta Stone TOTALe language instruction program and the exclusive IEEE member-only pricing, at IEEE.org/go/discounts.

This article was first published in the IEEE Canadian Review and is reprinted in the Scanner with permission of the author and publisher.

National Harbor Hosts 50th Anniversary IEEE Power & Energy Society General Meeting

FIRST PES GENERAL MEETING HELD IN WASHINGTON, DC IN EVENT'S 50-YEAR HISTORY

The IEEE Power & Energy Society, known at the time of the 1963 IEEE merger as the IEEE Power Group, held its first Winter Power Meeting in New York February 2-7, 1964, taking over the AIEE's Winter General Meeting reservation dates at the New York Statler Hotel.

With a short planning horizon, there was no advance registration for the conference. On-site registration opened on Sunday afternoon with a reception and tea, followed by a five-day conference with 48 technical sessions, an awards luncheon, inspection tours, committee meetings, and a Tuesday evening dinner, floor show, and dance.

Registration for the 1964 Winter Meeting was offered at $10 for members, $12 for non-members, $2 for ladies, and free for students and guests. An "interesting program of activity for the ladies . . . details of which will be announced subsequently" was reported in the November 1963 issue of *IEEE Electrical Engineer* magazine. The very first issue of *IEEE Spectrum*, in January 1964, revealed details of the ladies' program to include a wig fashion show and lunch at the Top of the Fair restaurant at the World's Fair grounds.

Following a 50-year tradition of lofty visions for a very full and successful event, the 2014 PES General Meeting did not disappoint, judging from the ongoing social media discourse in which attendees engaged for five days. Washington, DC even served up perfect weather—cool, dry, and mild—the likes of which one would expect to encounter during July in San Diego.

Some of that dialogue is presented here in our photo essay. All of the photos on this page were shared by meeting participants using the conference's mobile app.

Visit the electronic version of this Scanner issue and click on a photo for an enlarged view.
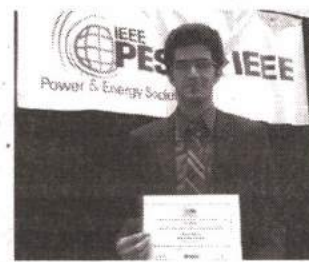
Left: "My first General Meeting dinner gala" - Traian Nicolae Preda. Center: "Congratulations to Mr. Hessam Keshtkar for winning Best Student Poster award. Proud moment for West Virginia University." - Deepak Tiwari. Right: "Breakfast and poster competition ..." - Deepak Tiwari.
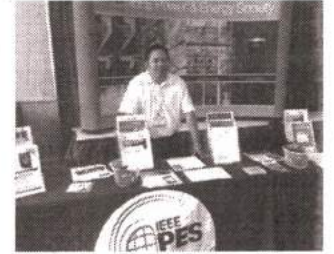
Left: "Here are two women faculty" (Mini Thomas and Monica Mallini) - Noel Schulz. Center: "More women power engineering faculty" - Noel Shulz. Right: "Check the PES booth... Magazines, information to join PES and much more! - Juan Montero.
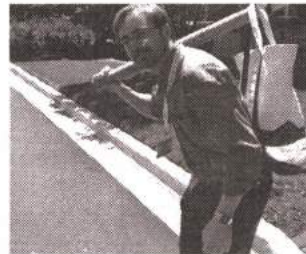

Left: "Paul demonstrates the proper use of this year's conference bag for PhD students; introducing 'The Hobo Bag' —we love it!" - Luigi Vanfretti. Center: "IEEE Division VII Candidates: Alan Rotz and John Paserba. If you see them... talk to them!" - Juan Montero. Right: "More women power engineering faculty" - Noel Schulz.

Upper left: "Beautiful sunset at National Harbor" - Cuong Nguyen. Upper right: "The Irish Gang from Belfast ready to attack ;-)" - Luigi Vanfretti. Lower left: "Award dinner" - Nguyen Duc Tuyen. Lower right: "I hope you attended the IEEE PES Awards dinner at this years General Meeting. It is truly the highlight of the week. So many deserving awardees and so many wonderful stories." - John Paserba

Left: "We're in DC." - Paul Thomas. Center: "Woohoo... we are *still* YOUNG Professionals!" - Natalie McCarthy. Right: "Initial capital investment is large though net value *should* offset long-term. Kurt Kochey comes to mind - he installed solar panels on his house, but it's ugly. Is there a company at #PESGM2014 who could design PV roof tiles?" - Natalie McCarthy.
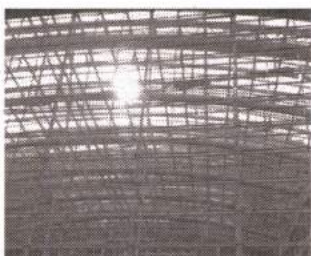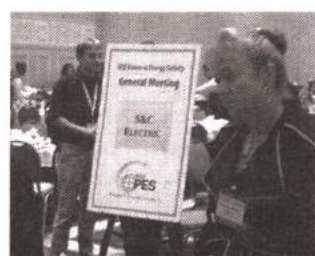

Left: "Little break from big data" - Deepak Tiwari. Right: "More women power engineering faculty." - Noel Schulz.

Left: "Cyber Physical Security Panel" - Jignesh Solanki. Center: "We had a great Awards Ceremony!!!!" - Juan Montero. Right: "Three more women power faculty" - Noel Schulz.

Left: You guessed it -"More women power engineering faculty" - Noel Schulz. (There were 24 women faculty in attendance at this dinner meeting.) Right: "Wanda's deep in conversation with a student hoping to become a future S&C employee" - Natalie McCarthy.
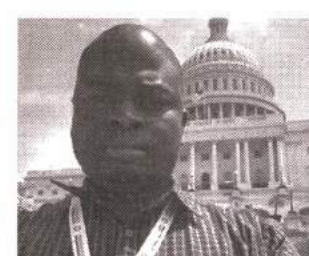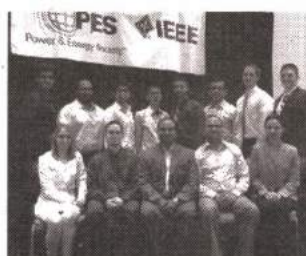
Left: "More pictures from Poster Award contest" - Deepak Tiwari. Center: "Warm feelings at the Capitol" - Oluwafemi Abioye. Right: "And last one including Sarika and me." - Noel Schulz.

Chapter Activities

Thanks to Exponent®, Inc.
Reliability Society Gets a Fail-Safe Start

Up until very recently, the Reliability Society's Washington Chapter had sponsored few talks. This all changed late last year when Dr. Brian D'Andrade, Senior Managing Engineer (CCNP, CCNA, CFEI, CRE, CSQE, PE) and several other members of the Exponent®, Inc. engineering staff (located at 1150 Connecticut Avenue NW, Washington, DC) began working with the IEEE Women in Engineering Affinity group and the Reliability Society to plan and host an informal series of technical talks. The first meeting, held in December 2013, included an overview of Exponent's history and analytical work. News about the Society's most recent meeting on software modeling of RF front-ends can be found in this same issue of The Scanner.

A profile of Exponent®, Inc. is found in the sidebar on this page.

Dr. Carolyn Carroll, Chair of the Washington/Northern Virginia Women in Engineering Chapter, and Dr. Brian D'Andrade contributed to this article.

Northern Virginia Section and Education Society Chapter Sponsor Raspberry Pi Workshop

Several IEEE volunteers, mostly faculty members at DeVry University and Montgomery College, served up Raspberry Pi to a full house on June 6 at DeVry's Crystal City campus.

Surprisingly, young Pi-ers were noticeably absent from the workshop; instead, experienced engineering practitioners turned out in force to hone their electronics, computing, and programming skills and learn new technologies under the tutelage of local experts.

The strong response to this event makes encore workshops a no-brainer. The Chapter will announce at least one more installment of the workshop series before the end of the year, with more to follow in the spring. Stay tuned to the Scanner for announcements.

For more information, contact Dr. Barry Douglass, Chair of the Northern Virginia/Central Virginia/Hampton Roads/Richmond Education Society Chapter.
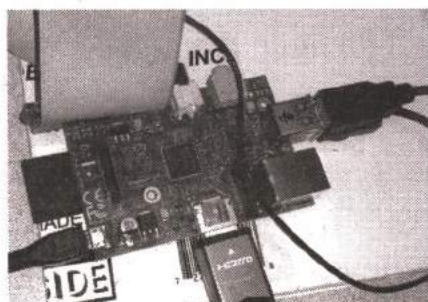
Raspberry Pi in action

Washington Section Past Chair Mónica Taysing-Lara, center, attends the rebirth of the IEEE Reliability Society Washington Chapter at a recent technical meeting co-sponsored by the WIE Affinity Group at Exponent's Washington, DC office.

Reliability, Performance Modeling, Failure Prevention and Spectrum Come Together
WIE and Reliability Society Chapters Co-Host Technical Talks

In May, Exponent®, Inc. hosted a talk on ways and outcomes of applying modeling techniques to RF front-ends for wireless devices of the future. Why a talk such as this?

Have you heard about the 5 *billion* or more people who will be connected wirelessly? Have you wondered what will happen to your wireless devices' performance?

Do you wonder HOW this is going to be accomplished with current bandwidth etc limitations without so much service degradation we wll go back to POTS (pay phones, landlines, etc) and TV?

Women in Engineeering of the Washington Capitol Area (WIE) and the Reliabilty Society (Northern Virginia and Washington DC Sections) sponsored a technical talk to address some of these topics.

"Look inside any modern mobile phone, multimedia device, or home-entertainment control system that relies on the reception and/or transmission of wireless signals and you'll find an RF front end. In the RIM Blackberry PDA, for example, the communication system consists of both a transceiver chip and RF front-end module...."

For more technical insight about this and the problem of connecting so many devices and how modeling RF might help, you can check out "What's an RF Front End" by Christopher Bowick in the February 2008 EETimes (http://www.eetimes.com/document.asp?doc_id=1276331).

If you want to know more about cognitive radios, software radios, and newer ways of modeling RF applications, watch for the next Reliability Society talk early this fall.

For more information, contact Women in Engineering Chapter Chair Dr. Carolyn Carroll at carrollca@yahoo.com.

IEEE Northern Virginia Section and Education Society Chapter kick off the first workshop in the Arduino and Raspberry Pi series on June 6 with a sold-out house.

Company Profile:
Exponent®, Inc.

Exponent dates back to April 1967 when five Ph.D.-level researchers, with expertise in materials science, engineering mechanics, and structural analysis, started a consulting business called Failure Analysis Associates® (FaAA). The company's initial work, which focused on stress and fracture mechanics (how things crack and break), garnered national recognition. Within a few years, the company was investigating and analyzing accidents and failures of all kinds. A little more than 20 years later a holding company, The Failure Group, was formed and shortly afterward went public in August 1990. During the 1990s, the company began to develop alliances with other companies that offered services complementary to those already offered by The Failure Group. A late 1996 acquisition of Environmental Health Strategies (now known as Exponent's Health Centers) formed the basis for one of the company's largest growth practices to evaluate nationally and internationally the full range of environmental and public health issues.

The 1997 acquisition of Performance Technologies, Inc. (dba PTI Environmental Services) formed the cornerstone for what is now known as Exponent's Environmental Practices. Shortly afterward, The Failure Group realized it was offering a broader range of services than traditional failure analysis, which prompted the organization to change its name in March of 1998 to Exponent®, Inc. The term Exponent means, "one who expounds or interprets."

In May 2002, Exponent acquired Novigen Sciences, Inc. (now Exponent's Center for Chemical Registration and Food Safety). Staff in this area specialize in timely, high-quality, creative, and practical solutions to problems that affect clients' ability to conduct business globally.

In June 2005, Exponent opened its first office in China. Exponent Science and Technology Consulting Co., Ltd. (Hangzhou), also known as Exponent China Ltd., is located in the Hangzhou Hi-Tech Development Zone and provides engineering and scientific consulting services to meet the increasing demand for technical support to U.S. and international companies operating in East Asia. In 2008, Exponent added its presence in Europe, opening an office in Switzerland.

Today, Exponent has more than 90 scientific and engineering disciplines. Exponent's staff of approximately 900, located in 20 offices throughout the United States and five international offices, combine unparalleled technical expertise with the ability, when necessary, to focus this knowledge in extremely short time frames. Exponent's multidisciplinary team of scientists, physicians, engineers, and regulatory consultants will perform both in-depth scientific research and analysis, or very rapid-response evaluations, to provide clients with the critical information that both day-to-day and strategic decisions can require.

For more information, please contact Dr. Brian D'Andrade at bdandrade@exponent.com.

IEEE★USA News

by Chris McManes, IEEE-USA Public Relations Manager

Veronika Rabl, Chair of the IEEE-USA Energy Policy Committee, participated in the "Late Breaking News: Energy Policy" panel session at the IEEE Power & Energy Society's General Meeting on Tuesday 29 July.

The session, at the Gaylord National Resort & Convention Center on the Potomac River in National Harbor, MD, included panelists Bill Hederman, a senior adviser to Energy Secretary Dr. Ernest Moniz, as well as representatives from England and Colombia.

Rabl discussed IEEE-USA's National Energy Policy Recommendations. In it, the organization recommends that for the United States to safely and reliably meet its growing energy needs, it must:

- Use energy and economic resources more efficiently
- Expand energy sources for our transportation systems
- Transition our energy systems and our economy to ones that can better manage our environment and emissions
- Prepare an engineering and skilled trades workforce that has the necessary knowledge and skills to design, plan, construct, operate and maintain modern energy delivery systems
- Build flexibility and adaptability into all elements of the physical, regulatory and institutional aspects of our energy infrastructure

At this writing, the PES General Meeting was expected to draw a record-breaking 2,800 power engineers from around the world. IEEE-USA has been an event exhibitor since 2011. (See related story, page 9.)

IEEE-USA Awards

Do you know a fellow U.S. IEEE member whose achievements or outstanding service to IEEE are worthy of recognition? If so, nominate him or her for an IEEE-USA award.

IEEE-USA awards are presented in recognition of professional, technical, entrepreneurial and literary contributions to public awareness and understanding of engineering in the United States. This year's award recipients will be honored during the 2015 IEEE-USA Annual Meeting in Milwaukee. The nomination deadline is 29 August.

Search for "IEEE-USA" and "awards" to find the online link for more information, or contact David Iams at d.iams@ieee.org.

IEEE-USA InSight

This fall, IEEE-USA will debut its new online flagship publication, IEEE-USA InSight, which will replace Today's Engineer and IEEE-USA in ACTION. IEEE-USA InSight will feature stories about public policy and career guidance for IEEE members, as well as the latest technology news and developments from IEEE-USA, including volunteer profiles, conference features, product reviews and student activity updates. Stay tuned.

IEEE-USA Goes Dutch

IEEE-USA President Dr. Gary Blank and his wife, Bonnie, will be among the attendees at IEEE Sections Congress, 22-24 August in Amsterdam, the Netherlands.

IEEE-USA will be unveiling a new exhibit and have plenty of cool giveaways for IEEE members from all over the world. It's booth No. 142 at the Rai Convention Center, so if you're in Amsterdam, make sure you stop by.

The event will include the IEEE Honors Ceremony, which "is designed to recognize technical professionals in a wide variety of disciplines for exceptional achievements and outstanding contributions that have made a lasting impact on technology, society and the engineering profession."

This is the first time Sections Congress will be in Europe. The triennial gathering provides IEEE's grassroots leadership the opportunity to network with other section leaders, learn about best practices used throughout IEEE, attend training programs and contribute to recommendations to guide IEEE's future.

WISE Investments

IEEE student member Preston Stinson presented his public policy research findings 31 July on Capitol Hill in the Washington Internships for Students of Engineering (WISE) program. The event is free and open to the public.

Stinson, a rising senior at Mississippi State University, discussed "An Analysis of Incentives to Encourage Adoption of the NIST Cybersecurity Framework." He is one of 11 WISE participants this summer.

Among the other topics presented were electric vehicle infrastructure, nuclear recycling and "Bioprinting: Organs on Demand." The 20-minute presentations took place in the Rayburn House Office Building.

The WISE program, founded in 1980, brings engineering and computer science students to Washington, D.C., for nine weeks each summer to conduct research and learn how technical professionals can influence public policy on complex technological issues. Projects must be on current engineering-related policy issues.

The research papers since 1997 are published online in the Journal of Engineering and Public Policy and can be accessed at http://www.wise-intern.org/journal/. Applications for the summer 2015 WISE program are due on December 31, 2014, and instructions are found at the same website. Applicants must be a member of one of the sponsoring societies (of which IEEE is one).

Chris McManes is IEEE-USA's public relations manager.

What Can IEEE (and the Section) Do For YOU?

by Jim Magee, Northern Virginia Section Scanner Editor

If you are anything like me when I first joined IEEE I felt I needed to be part of IEEE as a professional obligation (and hopefully a career enhancer). I paid my dues, got some magazines that were often over my head and got little else. I did discover and utilize the great rates IEEE negotiated on Life Insurance but other than that I felt disengaged the process and the people. After more than 10 years, I finally went to an ADCOM meeting to try to get more involved (and make the expense of membership more acceptable). Over time, I have realized some of the value and noted some of the shortcomings. Most importantly, I have noted that member engagement is critical to maintaining the viability of the section and IEEE as a whole. As I talk to other IEEE members in the work place I have noted that my feeling of disengagement is prevalent throughout the membership; of the 4000+ members of NOVA Section, just a little over 80 voted in the last election).

> "*Without you IEEE does not exist. We are looking to improve how we serve you . . .*"
>
> – JIM MAGEE, IEEE NORTHERN VIRGINIA SECTION DIRECTOR

Member growth and satisfaction is a prime concern of the Section and IEEE-USA. The first step to improving that is getting a better idea of what IEEE can do for you. We need you to help us identify what we, as a section, and IEEE-USA as a whole, can do that can make your membership more viable and rewarding. Without you IEEE does not exist. We are looking to improve how we serve you but need your feedback so we can address your needs.

We will start at the local level improving where we can and then report what we hear and what hopefully we have accomplished to IEEE-USA for advisement at the national (and possibly international) level. Please reach out to any of the members of the Section Leadership (contact information in the Scanner, page 2) or the Scanner staff with suggestions/concerns on improving the value of membership. We all want a better, more valuable IEEE but need your input to achieve this.

The NoVA Section does have some initiatives in place now that are aimed at addressing some of the concerns (Baltimore and Washington have similar efforts):

Employment Network

We have an active network in place to help place members in jobs (and provide member's companies a vetted job pool).

Raspberry Pi workshop

First of a continuing series of technology workshops aimed at providing "fun" education to members and the community. (See related story, page 10)

Summer Family Picnic

A fun way to meet other members and Section Leadership in an informal atmosphere.

Volunteer Activities

The Section has so many volunteer activites, to include Science Fair judging, STEM activities, conference planning and execution (2016 IEEE GLOBECOM in DC) and Section activities, that we are always seeking members for support. We are looking at ways though the Scanner and other tools to make it easier to identify volunteer opportunities that fit your busy schedule.

IEEE-USA Government Activities

IEEE is very much involved in "educating" Congress and state government officials on matters of concern for our members. At various times of the year we have "Fly-ins" to encourage members to meet with their representatives to discuss specific issues (energy policy, Internet policy, etc.). IEEE-USA not only advocates for the members, but routinely provides guidance and papers to help Congress understand technological issues and implications.

New Meeting Venues

Plans are being made to hold some events in geographically dispersed areas (e.g. Manassas) and at different times to increase access for more members.

While many of the issues with member satisfaction are at the national and international level, we can start locally to improve life for our members and use our experience to influence the larger IEEE. Please reach out to me (jmagee@ieee.org) or any of your section leadership and let us know what we can do for you.

Jim Magee is a Senior Member of IEEE and a Director of the IEEE Northern Virginia Section.

IEEE volunteers spring into action to improve the IEEE experience for everyone. Photo Credit: IEEE PES

Raspberry Pi Q & A

by Stephen Cole and Dan Cross-Cole (C³)

What is a Raspberry Pi?

The Raspberry Pi is a computer board (2.25" x 3.25" for my board). The board is supported by software that can be downloaded from the Internet. Additional hardware must be supplied by the user. The keyboard and mouse are standard USB devices. My monitor uses the HDMI interface on the Raspberry Pi board. You may need an SD Card with at least 8 Gigabytes if it is not supplied with the board.

After you have assembled the hardware and software, you will have a functioning personal computer that can access the Internet. It will function much like a typical personal computer system that uses Windows, except that it is based on Linux operating systems such as Raspian.

What makes the Raspberry Pi popular among robotics and programming enthusiasts?

The board is supported by books that give examples of how to interface with robotic devices. Software examples exist on the Raspberry Pi websites.

What advantages has the Pi offered over other robotics platforms such as Lego's Mind storm?

I have not been able to get my hands on a Lego project. My main concern is if I can build my own things. The Raspberry Pi has standard interfaces. The customer then decides how to attach any additional interface devices. You need to buy a CODEC board to get an Analog to Digital (A/D) input port. The Lego boards may be designed differently. It depends on what you want to do with the computer system.

Have you undertaken any projects with the Raspberry Pi?

My current project for the Raspberry Pi is to use one of the GPIO (General Purpose Input Output) pins as an input for a temperature monitor. It controls an LED output so that the LED turns on if the input temperature rises above a chosen value. It demonstrates software routines, interfacing to external devices, and how thermistors operate.

Do you recommend the Raspberry Pi for students of any specific field of study?

I recommend the Raspberry Pi for students who want to understand how personal computers work. It is especially for those who have the motivation to shun Windows Operating Systems and support the Linux Operating Systems.

Stephen Cole is an engineering student at Northern Virginia Community College, and Dan Cross-Cole is a IEEE Senior Member (and active volunteer) and retired Chair of Network Communications Management at DeVry University.

Congratulations!

Senior Members

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

Baltimore Section: Brian Bissett, Jack Burbank, Ed Habtour, Collin Krepps, Scott Miserendino

Northern Virginia Section: Stephany Bellomo, Murat Kuzlu, Gerald Stueve

Washington Section: Manik Bali, Sood Bhanu, Paul Black, Robert Drost, Raymond Sedwick, Alexey Shashurin

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. Senior Member drives and individual elevation assistance take place in the local Sections on an ongoing basis, such as Northern Virginia Section's event on September 10. Please take advantage of this opportunity to get the professional recognition you have earned.