

WATT'S NEW  
SPECIAL EDITION NEWSLETTER OF THE BALTIMORE SECTION OF  
THE IEEE

November 2014

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The web site for the Baltimore section of the IEEE is:

<http://ewh.ieee.org/r2/baltimore>

The web site for the Baltimore section newsletters is:

<http://www.ewh.ieee.org/r2/baltimore/WattsNew/IndexWattsNew.html>

The web site for the Scanner is:

<http://www.ieee.org/escanner>

The web site for the full interactive digital version of the Scanner with multimedia content is:

<http://ewh.ieee.org/r2/capitalarea/eSCANNER/digital.html>

The Scanner is published six times per year in January, March, May, July, September, and November, and the email notice will be sent six times per year.

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## **1. Nanotechnology Symposium Hosted by Northern Virginia Community College**

### **When:**

November 10, 2014

9:00 am – 2:00 pm

### **Where:**

Northern Virginia Community College

6699 Springfield Center Dr.

Springfield, VA 22150

### **Abstract:**

Northern Virginia (NOVA) Community College is hosting a Nanotechnology Symposium at the NOVA Manassas Campus. Supporters of the scientific symposium include Nanoscience Instruments, Georgetown University, Nanotechnology Council and the IEEE Engineering in Medicine and Biology Society (EMBS) Baltimore Section Chapter. The symposium will be held at the Colgan Theater from 9 am–2 pm. There is no fee for attendance and it is open to the public with free food and free parking. IEEE members/guests are asked to register in vTools register tool. Further, the IEEE EMB Chapter will also host an exhibit table and membership desk. Volunteers are needed. Contact [c.carey@ieee.org](mailto:c.carey@ieee.org).

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## **2. Presentation on the Important Relationship between Neuro Prosthetics and Advanced Robotics**

### **When:**

November 19, 2014

6:00 pm – 8:00 pm

### **Where:**

Parsons Auditorium at the JHU Applied Physics Laboratory,

11100 Johns Hopkins Rd, Building 1,

Laurel, MD 20723.

### **Title:**

“Intersection of Neural Prosthetics and Advanced Robotics”

**Abstract:**

Until recently, options for those who have suffered upper limb loss, through amputation or neurodegenerative disease have been very limited. For example, upper extremity amputees frequently decline to wear a conventional prosthetic due to the very limited functionality. Recent integration of advances in neuroscience, robotics and autonomy are now opening new options for neurally controlled prosthetics and assistive robots. Beyond prosthetics, the intersection of advances across multiple technical disciplines will provide the ability to intuitively control and interact with complex robotic systems, fundamentally changing our interactions with the machines around us. In this talk we will discuss some of these advances, show some examples of recent advances and discuss some of the challenges to the systems engineer and technical manager.

**About the Speaker:**

Mike McLoughlin is the Chief Engineer for the Research & Exploratory Development Department. In 2009, Mike assumed leadership responsibilities for Defense Advanced Research Projects Agency's (DARPA) Revolutionizing Prosthetics Program (RP) at JHU/APL and is leading efforts to transition use of RP technologies to human subjects. His technical experience includes development of rapidly emerging technologies and sensor systems, technology transfer, program management, signal processing, applied engineering and technology development, aerosol science research, and microbiological laboratory analysis.

**How to Register & Costs:**

The FREE lecture starts at 7 PM at the Parson's auditorium and can be seen in person or via the web at <http://www.incose-cc.org/> or search for INCOSE.CHESAPEAKE on YouTube.

If you do wish to attend at the Parson's auditorium, but would like to satiate your hunger, then attend the social hour before this event. This delicious friendly networking event and buffet dinner will start at 6 pm and will feature scrumptious turkey, stuffing, mashed potatoes and gravy, green beans and cranberry sauce, rolls, dessert, coffee and iced tea. The cost for **INCOSE & IEEE members** is **\$20** and for **guests** is **\$25**, if payment is received by **November 14, 2014**. If received **after November 14<sup>th</sup>**, the cost

will be **\$25** for members and \$30 for guests. To pay by credit card or PayPal, visit our registration webpage for details: <http://www.incose-cc.org/registration/>.

**DIRECTIONS:** Once you are on Johns Hopkins Road, APL is a half-mile west of US Route 29 on your right side. Go past the first entrance, continuing past the pond, and take the next Right turn onto a tree-lined lane. Park in the visitor's lot is on your left side. Enter at the main entrance marked Building 1 (flagpoles and traffic circle in front). See also APL's Visitor Guide for more information:

[www.jhuapl.edu/newscenter/visitor/default.asp](http://www.jhuapl.edu/newscenter/visitor/default.asp).

**For Questions** direct all dinner- related or registration questions please contact INCOSE or please follow the instructions listed above. IEEE Contact person is EMB Chapter Chair, Carole Carey, [c.carey@ieee.org](mailto:c.carey@ieee.org)

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### **3. STEM Career Fair Hosted by Bryn Mawr School and Sponsored by IEEE Baltimore Section**

**When:**

Saturday, November 15, 2014

**Where:**

Bryn Mawr School  
109 West Melrose Ave  
Baltimore, MD 21210

**Abstract:**

IEEE Baltimore Section Women in Engineering (WIE) Affinity Group was invited to host a table and participate in the Bryn Mawr School STEM Career Fair to be held on Saturday, November 15, 2014 at the Bryn Mawr Melrose Campus from 10:00am - 2:00 p.m. Students will have the opportunity to speak with representatives from more than 30 STEM-related companies and organizations representing a range of career options. This event is free to all attendees and organizations, but registration is required.

<http://www.brynmawrschool.org/stemcareerfair>

We have several volunteers from the R2 South Area sections. Our volunteers will “meet and greet” the precollege students to the IEEE Baltimore Section WIE table. The primary goal of this event is to enable high school girls to meet with and learn from women (and men) in diverse STEM careers. The school is expecting a total of about 500 students. Besides brochures and small stuff to give away (compliments of IEEE-USA and IEEE WIE), Neville Jacobs, our esteemed Robot Challenge Program Director will provide the demonstration of the long-running Baltimore Robot project. Our other volunteers: Diane Groth, Bryan Riely, Raenita Fenner, Anna Romaniuk, and Carole Carey. If you are to have any questions, please contact [c.carey@ieee.org](mailto:c.carey@ieee.org).

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#### **4. DiscoverE – Engineers Week Kick-Off Webcast**

**When:**

Tuesday, November 4, 2014

1:00 PM – 1:30 PM

**Where:**

Online at <http://www.discovere.org>

**Abstract:**

DiscoverE is hosting the Engineers Week 2015 Countdown Kick-Off Webcast Make a Difference: Inspiration, Ideas & Tools. Jump-start your 2015 Engineers Week planning by tuning into the kick-off webcast - Live from The Ohio State University on November 4, 2014, at 1:00 – 1:30 p.m. Join panelists from the Ohio State University and our 2015 Co-Chairing organizations, Shell Oil Company and American Society of Agricultural and Biological Engineers. Register at <http://www.discovere.org>. As of October 27, 2014, over 205 have registered for the webcast, so register soon to not miss out on this opportunity. If you have any questions, please contact [jafried@ieee.org](mailto:jafried@ieee.org) or [c.carey@ieee.org](mailto:c.carey@ieee.org)

**Register:**

<http://www.discovere.org>

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## **5. IEEE Signal Processing in Medicine and Biology Symposium (SPMB14)**

### **When:**

Saturday, December 13, 2014

### **Where:**

Temple University, Philadelphia, PA

### **Abstract:**

As advances in signal processing become ever more present, the significance of this field becomes more apparent in other engineering fields. This regional symposium, which expects 125 researchers to attend, will address how these advances will help the development of smarter technology in the field of prosthetics and bioengineering. At the event attendees can be assured of two plenary talks, two oral sessions and two poster sessions.

The conference is encouraging all to develop demonstrations or exhibits at the one day event. Presenters may choose to submit **either** of the following:

- An original 4 to 6 page paper for peer review. If the paper is accepted, then it will be submitted to IEEE Xplore and presented at the symposium.
- A one-page abstract describing recent or ongoing work. If the abstract is accepted, then it will be presented at the symposium in a poster session.

### **Important Dates:**

**Early Registration:** Saturday, November 15, 2014

*For a list of all the topics presented at the symposium, please review the following charter from the symposium:*

[IEEE SPMB 2014](#)

*Please visit the website for more information regarding all the day's events, directions, dates at the following web address:*

<http://www.ieeespmb.org/2014>

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**6. IEEE Aerospace and Electronic Systems and Signal Processing Societies -  
Baltimore Section - Joint Meeting on Satellite Communications**

**When:**

Tuesday, December 16, 2014

6:00 PM – Light refreshments/Social

6:30 PM – Presentation Begins

**Where:**

National Electronics Museum

1745 West Nursery Road

Linthicum, Maryland

Please join the Aerospace Electronic Systems and Signal Processing Societies for a joint meeting on Satellite Communications, presented by IEEE-AESS distinguished lecturer Dr. Saj Durrani! If you have any questions, then please contact David Price, [davidprice@ieee.org](mailto:davidprice@ieee.org).

**Abstract:**

Satellite Communications (satcom) is a thriving industry, and many global, regional and domestic systems are currently providing satcom services throughout the world. This presentation briefly traces the development of commercial satcom systems over the last 50 years, and provides an overview of the subject for a general audience. It describes some of the existing and proposed systems to serve fixed and mobile users, their interaction with terrestrial systems, and the basic technologies involved. It concludes with a discussion of financial and regulatory issues, and major trends and potential capabilities in the near future.

**About the Presenter:**

Dr. Durrani obtained a Bachelor's degree (with Honors) from Pakistan in 1949, a Master's from England in 1953, and a doctorate from the University of New Mexico in 1962, all in Electrical Engineering. His career includes more than 10 years of teaching, 10 years with industry (GE, RCA, Comsat Labs), and 18 years with NASA, where he held research and management positions at the Goddard Space Flight Center and NASA Headquarters. On retiring from NASA in 1992, he worked with Computer Sciences

Corp. until 1998. Since then he has served as: a Guest Lecturer at the International Space University in Strasbourg, France (1998); Consultant to the Space and Upper Atmosphere Research Council in Pakistan under the UN Development Program (1999); IEEE Executive Fellow with the Federal Communications Commission in Washington, DC (2000-2001); and an IEEE Engineering and Diplomacy Fellow (Technical Advisor) with the U.S. Department of State (2004-2005).

Saj was elected a Fellow of the IEEE in 1976 "for contributions to the conceptual design and analysis of space communications systems." • He has been active in the IEEE for more than 40 years, and has served as President of the Aerospace and Electronic Systems Society (AESS), member of the IEEE Board of Directors, and Chairman of the National Capital Area Council. He has received several IEEE awards, including the Educational Activities Board's "Meritorious Achievement Award in Continuing Education" • for giving courses on Satellite Communications in the U.S. and more than 25 other countries. Other honors include three Special Achievement Awards from NASA, and the CSC President's Excellence Award in 1996. He is an Associate Fellow of the AIAA, and a Fellow of the Washington Academy of Sciences, having served as one of its Vice Presidents in 2001-2004. More recently, he was President of the DC Council of Engineering and Architectural Societies in 2006-07. He is listed in several professional directories.

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## **7. IES Baltimore Section Meeting – Lighting, Furniture, and the New Energy Office**

### **When:**

Thursday, November 13, 2014

6:00 p.m. – 7:00 p.m. Social Hour

7:00 p.m. – 7:45 p.m. Dinner

7:45 p.m. – 8:45 p.m. Main Presentation

### **Where:**

Towson University Marriott

10 West Burke Ave. (west of York Road)

Towson, MD 21204

410-324-8100



**Cost:**

\$40.00 – IES Members

\$50.00 – Non-Members

**RSVP:**

Please RSVP on the web at <http://iesbaltimore-nov2014.eventbrite.com> by Monday, November 10, 2014.

Please refer to the above flyer for more information.

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**8. IEEE Baltimore Section – IAS Presentation on “Predictive Maintenance”****Date:**

Wednesday, November 19<sup>th</sup>, 2014

**Time:**

6:00 - 7:00 Social Hour / Open Bar

7:00 - 8:00 Dinner

8:00 - 9:00 Program

9:00 - 9:30 Follow-up / Social

**Location:**

Olive Grove Restaurant

705 N. Hammonds Ferry RD,

Linthicum Heights, MD 21090

410-636-1385

**Topic:**

Predictive Maintenance

**About the Speaker:**

Ed Kochanek is the Director of Sales – Eastern Region for FLIR. He has worked in the infrared camera business in both selling and management capacities. Prior to working for FLIR, Ed worked at Rexnord as a sales person selling bearings, gearboxes, and motors. During his career Ed has developed a great background for using thermal imagers for predictive maintenance of electrical and mechanical equipment. Ed graduated from Drexel University with a BS in Commerce and Engineering in 1989.

**Abstract:**

Ed will discuss the proper use of thermal image technology to predict and prevent potential issues with existing mechanical and electrical equipment.

For more information please see the following bulletin:

[IAS November 2014 Meeting/Presentation](#)

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**9. IEEE Baltimore Section – ComSoc Seminar on “Long Distance Relations: Communication with New Horizons Spacecraft on its Encounter with Pluto”****When:**

November 11, 2014

5:30 PM - 6:00 PM – Social Half-Hour

6:00 PM – End of Seminar - Presentation

**Location:**

National Electronics Museum

1745 W. Nursery Rd

Lithicum Heights, MD 21090

**Title:**

Long Distance Relations: Long Distance Relations: Communication with the New Horizons Spacecraft on its Encounter with Pluto

**Abstract:**

The New Horizons Mission to the Pluto and subsequent exploration of the Kuiper Belt structure in our outer solar system is expected to achieve a major science goal during its reconnaissance of the Pluto-Charon double planet in July 2015. This talk will review

the New Horizons mission plan, science goals, and instrument suite, framing the requirements and challenges to both the onboard communication system and the NASA Deep Space Network. The talk will highlight the deployment of the JHU/APL digital non-coherent transceiver, and its benefit to supporting communication with a system whose critical operations will occur at a range approaching 9 hours in round-trip light time.

**About the Speaker:**

Gregory L. Weaver is a member of the Principal Professional Staff of JHU/APL and works within the RF Engineering Group of the Space Department. He is a technologist with extensive background in both the technical and business aspects of the frequency control industry and has held positions as a senior design engineer, technical manager and marketing strategist over a 30 year career history, including vice president positions with Bliley Technologies Inc. and the former Piezo Crystal Company. He received his M.S. in Technology Management from the University of Pennsylvania in 1993 and his B.S. in Physics from Dickinson College in 1982. He is a licensed professional engineer in the state of Pennsylvania, member of the IEEE and the UFFC Society. He has contributed frequently to a variety of technical proceedings including the IEEE International Frequency Control Symposium, Precise Time and Time Interval Systems and Application Meeting and the European Frequency and Time Forum. He was the Technical Program Chair for the Precise Time and Time Interval Systems and Application Meeting, and the IEEE International Frequency Control Symposium in 2012 and 2014, respectively.

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**10. IEEE Baltimore Section – Watts New - Editor**

Dear IEEE Offices & Members,

If your chapter of IEEE Baltimore Section would like to contribute to the newsletter in the future months with articles, events or discussion topics to the newsletter, then please send [me](#) an e-mail. I look forward to working with all of you in the future and I appreciate the opportunity!

Ryan Klein  
*IEEE Baltimore Section Newsletter Editor*

