

**PHILADELPHIA SECTION of the IEEE**

Membership in these counties: Bucks, Chester, Delaware, Montgomery, Philadelphia, (PA), Burlington, Camden, Gloucester (NJ)

# Almanack

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September 2014

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**September 2014**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	<b>1</b> Labor Day.	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b> Adcom EMC chapter	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b> IEEE Night	<b>17</b> PES/IAS Cyber Security Conference	<b>18</b>	<b>19</b>	<b>20</b> Maker Faire
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b> Employment Network AES Chapter Rosh Hashanah	<b>26</b> Robot Kit Tournament	<b>27</b> Benjamin Franklin Symposium
<b>28</b>	<b>29</b>	<b>30</b>				

# IEEE NIGHT

## Philadelphia Section Meeting

Joint with: Power Engineering Society (PES), Engineering in Medicine and Biology (EMBS)

Date: Tuesday, September 16, 2014

Time: Dinner is at 6 pm. Program starts at 7 pm, and 8 pm.

Location: Sheraton University City, 36th and Chestnut, Philadelphia

Cost of dinner is \$25.00 (students \$15.00); meeting only is free (Real cost of dinner is higher, which is mostly subsidized by section)

Reservations are needed, call 484.270.5136 or email the section office.

[sec.philadelphia@ieee.org](mailto:sec.philadelphia@ieee.org) or use vtools in the web site

Indoor parking is at location and paid by section. Bring ticket to be stamped.

**Note:** In the event of bad weather please call the Sheraton after 1pm the day of the meeting at (215) 387-8000. Ask the front desk if the meeting has been canceled.

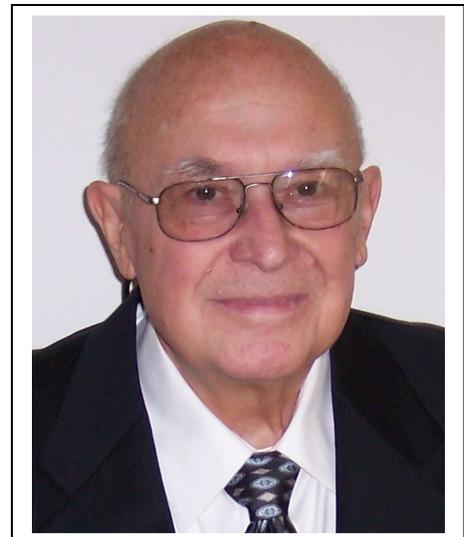
**Speaker:** *Donald W Zipse, P.E., IEEE Life Fellow*

**Topic: Grounding: The Good, the Bad and the Stupid**

Mr. Zipse's presentation begins on February 5, 1880 with Thomas Alva Edison's Pearl Street electrical generating station, which had a serious grounding problem that was rectified five years later. In the intervening 125 years the electrical industry has forgotten Edison's mistake and his solution. The origins of the multi-grounded neutral distribution system prevalent in North America, and the 1932 City of Chicago transformer problem, has resulted in a serious electrical connection in 90 to 95% of the homes in North America (Based on trial cross-examination statements) that can, and has, resulted in damage to sensitive electrical equipment will be discussed.

In addition, Mr. Zipse will discuss the prevalent misconceptions concerning equipment grounding electrodes, ground rods, and Ufer grounds. The misconception due to lack of knowledge of the insertion of dangerous and hazardous equipotential planes into the National Electrical Code will be covered. He will elaborate on the simple test that proves conclusively that equipotential planes are a figment of imagination and are dangerous and hazardous to humans and dairy cows. He will comment on the effectiveness of paralleling and/or increasing the neutral conductor size and the installation of additional grounding electrodes to eliminate the dangerous and hazardous stray current situations.

Mr. Zipse has obtained permission to disclose the inconceivable and unimaginable future change to electrical systems concerning grounding that has been quietly installed without fanfare; change initiated. As he testified in a legal case in June 2013, "I never expected to live long enough to see (deleted) replaced. I saw such an installation in December 2012." Under cross-examination Mr. Zipse concluded with, "Now I guess I can die." He has been supplied with photographs over the past six months showing the construction of such an electrical installation.



**Donald W. Zipse** (S'58-M'62-SM'89-F'94-LF'97) graduated from the Williamson Free School of Mechanical Trades with honors where he gained practical experience in electrical construction and in power plant operation. He received his electrical engineering degree from the University of Delaware and went to work for Cutler-Hammer as an area sales engineer. He spent 16 years Central Engineering Department of ICI America, Inc as a companywide electrical specialist.

He was with the FMC Corporation in their Engineering Service organization, functioning as an Electrical Engineering Consultant, responsible for providing electrical design of new facilities and consulting service to the total worldwide corporation, both chemical and mechanical groups.

He is a registered Professional Engineer. He represents the IEEE on the National Electrical Code Making Panel (CMP) #19, *Agricultural and Mobile Homes* and has served on CMP 14, *Hazardous Locations and CMP Emergency Systems*. He has served on the Lightning Standard NFPA 780 and is a member of the International Association of Electrical Inspectors. He serves on the National Electrical Safety Code Grounding Subcommittee. He has served on many IEEE committees, participated in the color books (IEEE Recommended Practice), and standards groups, including the Standards Board and the Standards Board's Review Committee. He is a member of the IEEE National Electrical Safety Code (NESC) Grounding Committee. He is a member of the IEEE COMAR, Committee on Man and Radiation and Standards Correlating Committee #28, International Committee on Electromagnetic Safety (ICES). Mr. Zipse received the Standards Medallion for his work in and promoting standards.

He has published technical papers on such diverse and controversial subjects as Unity Plus Motors, Computers, Neutral to Ground Faults, NEC Wire Tables, Health Effects of Electrical and Magnetic Fields, Measuring Electrical and Magnetic Fields, Lightning Protection Systems: Advantages and Disadvantages, the NESC and the NEC: Are They Dangerous to Your Health? Electrical Shock Hazard Due To Stray Current and has participated on National Electrical Code panels and in teaching the Code.

He was President of Zipse Electrical Engineering, Inc., a consulting firm. For the past fifteen years, he has been a forensic engineer and expert witness in electrical accidents and electrocutions and for the last ten years, he has been involved in legal cases concerning stray current incorporating humans and dairy cows. He is now President of Electrical Forensics, LLC.

### ***Rahul Mangharam, Ph.D.***

#### **Closing-the-loop with Cyber Physical System Modeling**

Cyber-Physical Systems are the next generation of embedded systems with the tight integration of computing, communication and control of "messy" plants. I will describe our recent efforts in modeling for scheduling and control of closed-loop Cyber-Physical Systems across the domains of medical devices and energy-efficient buildings.

*In medical devices:* the design of bug-free and safe software is challenging, especially in complex implantable devices that control and actuate organs whose response is not fully understood. Safety recalls of pacemakers and implantable cardioverter defibrillators between 1990-2000 affected over 600,000 devices. Of these, 200,000 or 41%, were due to software issues that continue to increase in frequency. There is currently no formal methodology or open experimental platform to test and verify the correct operation

of medical device software within the closed-loop context of the patient. I will describe our efforts to develop the foundations of formal modeling, synthesis and development of *verified medical device software* and systems from *verified closed-loop models* of the pacemaker and the heart.

*In buildings:* heating, cooling and air quality control systems operate independently of each other and frequently result in temporally correlated energy demand surges. As peak power prices are 200-400 times that of the nominal rate, this uncoordinated activity is both expensive and operationally inefficient. While several approaches for load shifting and model predictive control have been proposed, we present alternative approaches for fine-grained coordination of energy demand by scheduling energy consuming control systems within a constrained peak power while ensuring custom climate environments are facilitated. By incorporating the dynamics of the plant in the scheduling scheme, we have developed a new class of scheduling for CPS, called Green Scheduling. With tools for integrated modeling and controls for energy-efficient buildings, we enable transfer of control algorithms from simulation to buildings in a systematic manner.

**Rahul Mangharam** is an Associate Professor in the Dept. of Electrical & Systems Engineering and Dept. of Computer & Information Science at the University of Pennsylvania. He directs mLAB: Real-Time and Embedded Systems Lab and xLAB: Experience Design and Technology Lab at Penn. His interests are in real-time scheduling algorithms for networked embedded systems with applications in medical devices, energy efficient buildings, automotive systems and industrial wireless control networks.



He received his Ph.D. in Electrical & Computer Engineering from Carnegie Mellon University where he also received his MS and BS in 2007, 2002 and 2000 respectively. He has worked on ASIC chip design at FORE Systems (1999) and Gigabit Ethernet at Apple Computer Inc. (2000).

In 2002, he was a member of technical staff in the Ultra-Wide Band Wireless Group at Intel Labs. He was an international scholar in the Wireless Systems Group at IMEC, Belgium in 2003.

Rahul received the 2014 IEEE Benjamin Franklin Key Award from the IEEE Philadelphia Section, 2013 NSF CAREER Award, 2012 Intel Early Faculty Career Award and was selected by the National Academy of Engineering for the 2012 US Frontiers of Engineering. He was the Stephen J. Angelo Term Chair Assistant Professor at the University of Pennsylvania from 2008-2013.

## **IEEE PHILADELPHIA SECTION CONGRATULATES OUR MANY NEW SENIOR MEMBERS!**

We have advanced quite a few and expect more as a result of the Workshop held on June 30. Contact Robert Lawson at [rclawson@ieee.org](mailto:rclawson@ieee.org) if you want to advance this year.

The A&A panel held June 14 in Providence RI resulted in four of our Members advancing to Senior Member. **Congratulations to**

**Lunal Khuon** also in Engineering in Medicine and Biology Society and Solid State Circuits Society

**Paul Stauffer** also in Engineering in Medicine and Biology Society and Microwave Theory and Techniques Society

**Navaratnam Suganthan**

**Zhen Zhao**

The A&A panel held in Minneapolis MN on July 12 resulted in five of our Members advancing to Senior Member. Congratulations to.

**Eric Benshetler**

**John Bourne**

**Suh Han** also in Dielectrics and Insulation Society and Power and Energy Society

**Benedetto Piccoli** also in Communications Society and Control Systems Society

**Grazia Todeschini**

The A&A panel held in Berlin, Germany on August 9 resulted in one of our members advancing to senior Member. Congratulations to:

**Jennifer Kay** also in Computer Society

## **IEEE Philadelphia Employment Network Group**

**Date:** Thursday, September 25, 2014 Time: 7:00 PM - 9:00 PM

**Topic and Speaker:** IEEE Employment Network - Job search topics, open discussion roundtable and professional networking – Moderated by George Butts

### **Location:**

Drexel University Campus

Building: Bossone Enterprise Center

Room Number: Room 709, 7th Floor

3128 Market Street

Philadelphia Pennsylvania 19104

**Cost:** No Charge, snacks and drinks will be served

**Parking:** Parking: Nearby lots: (1) On the left side of Market Street just before 31st Street; (2) on the right side of Market Street, just past 31st Street; (3) from Market make Left on 36th to University City Sheraton garage. Public Transportation: SEPTA (Rail: 30th-Street Station; Subway and Trolley: The Market-Frankford Line (the Blue Line) stops at 30th and 34th Streets and all trolley trains (the Green Lines) stop at 30th and 33rd Streets.)

*Click to register for this event:*

[https://meetings.vtools.ieee.org/meeting\\_registration/register/27805](https://meetings.vtools.ieee.org/meeting_registration/register/27805)

\*\*\* join our group on LinkedIn for the latest updates and articles related to IEEE Employment around the Philadelphia Region - Search LinkedIn Groups for "IEEE Philadelphia Employment Network" \*\*\*

## More memories

*Ernest's Page, by Ernest Cohen, Ph.D*

July 19, 2014

Back in May, I wrote about some of my early experiences related to electricity, and technology in general. Perhaps the most interesting was my entry in the Middle School Hobby Fair: I played records backwards. Then in my teens, I worked several summers in my father's factory, designing production equipment, and making some of the parts in the machine shop.

Memories from several decades of professional work came back when we decided to clear out file drawers filled with papers and memos. If the paper was in good condition, and the back was blank, we saved it for printing drafts. Interesting memories but no longer relevant were from my years as an electrical engineer at United Engineers.

Now, some job history; I came to the Delaware Valley in 1956 for a computer programming job. A few years later, I applied for a job at the General Electric Space Division. They wanted to hire me as a "missions analyst," but the opening had the title "Systems Engineer." Luckily, they decided that my teen experience in designing machines qualified me for the position, even though I had no engineering degree. After eight and a quarter years at General Electric, which put me through graduate school for a Ph.D. in Electrical Engineering on their Systems Engineering Development Program, nobody picked me up for their group in the Space division because they had lost some contracts and were laying off staff. Besides the word had gotten around that I had annoyed the head of the Re-entry Division.

So, I networked with people I knew, and morphed into a Management Scientist for Atlantic Richfield (ARCO). One of the things I learned there is that management often does not know what is really going on in the field, which can be bad for the company. As a pilot test for selling gasoline at car washes, they converted a station near the Pittsburgh business district. The Marketing Department had noted all the gasoline stations for several miles around, but had not noted an existing car wash, with a big parking area, nearby. Guess what: almost at once this competitor put in gasoline pumps.

I enjoyed that position very much, but after three years, ARCO decided to transfer this office in Los Angeles. With children in school here, and many friends, I did not want to move, so I looked around again. United Engineers had a government contract on long range energy planning, and I was from the petroleum industry, so I was picked up quickly. I spent the next few months looking into aspects of the energy situation, and planning how to proceed with the study, when the contract was canceled. Having used my contacts just a few months before, I felt "I was up the creek without a paddle." I contacted the chief electrical engineer at United, hoping to get some leads, and he said to me, "I can always use a man who can think."

So I took a demotion and was assigned as an electrical engineer on a big coal burning power plant project in West Virginia. I found myself writing specifications for various items and procuring them: the emergency battery power, back up diesel power, the communication system, including the cables for it. I learned a lot, and now I saved copies of some of the specifications for my granddaughter, at Cornell University. (I had used some of this material when, a few years later, I taught a course in "Engineering Project Management" at Wilkes College.)

The lights in the plant were supplied through ALS (aluminum sheathed) cable. I asked one salesman if the communication cable could be aluminum sheathed. He checked

with the factory, “We can run any cable through the aluminum sheathing machine.” The procurement was canceled replaced with one asking for ALS. All the other cable companies took exception, and bid the usual cable. We got cable that was cheaper to buy, more fire resistant (It would take any temperature until the aluminum melted) and was cheaper to install.

On the back up diesel power, we specified, “designed as a diesel engine, not a modified gasoline engine.” A few years back, when American automobile companies tried to market diesel cars, they did not get this lesson. Their diesel engines were modified gasoline engines and very unreliable.

### *Section Executive Office*

#### **IEEE PHILA. SECTION OFFICERS**

**Chair:** Philip Gonski, P.E., [pgnski@gmail.com](mailto:pgnski@gmail.com)

**Vice Chair:** Adam Fonteccio, Ph.D., [sec.philadelphia@ieee.org](mailto:sec.philadelphia@ieee.org)

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**Secretary:** Leonardo Urbano, [sec.philadelphia@ieee.org](mailto:sec.philadelphia@ieee.org)

**Past Chair:** Mark Soffa, [msoffa@kns.com](mailto:msoffa@kns.com)

Adcom meets second Tuesday of the month (Sept. 9.) at the Sheraton University City. Members are welcome to attend. Reserve a seat by calling the office by the Friday before.

#### **Almanack Staff**

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Deadline for the **October** issue is **September 12, 2104**

New & improved web site: [www.ieeephiladelphia.org](http://www.ieeephiladelphia.org)

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[sec.philadelphia@ieee.org](mailto:sec.philadelphia@ieee.org)

## **Bus Trip to New York to Attend the 2014 World Maker Faire**

*By John Ianuzzi*

*Maker Faire is the Greatest Show (and Tell) on Earth-a family-friendly festival of invention, creativity and resourcefulness, and a celebration of the Maker movement. Bring the entire family and enjoy a fun-filled day! <http://makerfaire.com>*

### **MEETING DETAILS**

Date: Saturday, September 20, 2014

Time: 7:30 A.M. - 6:30 P.M.

Location: New York Hall of Science, Queens NY

### **Registration & Information:**

Saturday, September 20, 2014

Bus departure: 7:30 A.M.

Departing from: Old Pathmark, Church Road and Lenape Road in Cherry Hill, NJ

Bus departure to return home: 4:00 P.M.

Departing from: New York Hall of Science, Queens, NY

Note: The Group will travel by a Charter Coach Bus to attend the Maker Faire.

Pricing reflects a 15% discount on all tickets. Price includes bus accommodations and admission to the Maker Faire.

*Adult (18-61) - \$61*

*Seniors (62+) - \$57*

*Student (with proper I.D.) - \$53*

*Youth (2-17) - \$48*

Additional information will be provided prior to trip.

**OTHER PAYMENT METHODS:** You may pay with a personal check or money order payable to IEEE-Phila. Mail payment to: IEEE Philadelphia Section 11 Bala Avenue Bala Cynwyd, PA 19004 [www.ieeephiladelphia.org](http://www.ieeephiladelphia.org).

Maker Faire is an exposition/celebration for do-it-yourselfers (DIYs) driven to build or "make" things...anything. Over 60,000 (tons of families) attended the event featuring literally hundreds of tables and booths (600 +) where DIYs can exhibit their projects, share and exchange ideas in an open, family friendly environment.

In addition to the projects and demonstrations, there were walk-in workshops for soldering, woodworking, building and launching air-propelled rockets and paper airplanes. These workshops enabled new DIYs (a lot of them kids) to pick up some helpful hints and allowed more experienced DIYs to share their skills. Short technology seminars were also held every couple of hours or so, describing technologies and applications.

Makers are kids, students, teachers, entrepreneurs, moms and dads, virtually all DIYs that have a strong desire to bring a vision or idea to life. Entire families share experience and knowledge with parents and kids working together for a common goal.

For questions and more information, please contact the Philadelphia Section office at [sec.philadelphia@ieee.org](mailto:sec.philadelphia@ieee.org) or 484.270.5136.

## Editor's Comments

*By Peter Silverberg*

This space is usually for the message by the Chair (Phil Gonski). The deadline conflicted with the Sections Congress (SC) where his attendance was mandatory. I am taking his space to explain what this important event is. The current meeting was August 22-24, at the RAI Convention Center, Amsterdam, Netherlands. Add some travel time and planning for sessions and the conflict with our deadline becomes obvious.

IEEE has over 400,000 members and so a general meeting of all is clearly impossible. Many smaller meetings are needed to function. We have professional staff who report to the Board of Directors. The Board is elected by Regions and Divisions and meets twice a year to conduct business. It is a little removed from the members. There needs to be more contacts. Meetings of Regions and Societies are one route. Sections Congress is another.

IEEE Sections Congress, held every three years since 1984, provides IEEE Section leadership with a priceless opportunity to impact the future of IEEE. It is stated that Sections Congress is the ideal place to network and share knowledge and SC provides a means to increase leadership skills and a working knowledge of IEEE; and SC is a venue for expressing opinions and concerns through recommendations for action, which will be used by the IEEE Board of Directors to guide IEEE into the future.

The goals of SC2014 are three-fold:

1. Provide an opportunity for delegates to gain information and training skills;
2. Network and build relationships with other volunteers within IEEE;
3. Serve as a forum for Section representatives and other local leaders,

enabling them to voice – on behalf of the collective membership – the ideas, issues, and recommendations which will impact the development and growth of IEEE throughout the world, reinforcing its vitality and relevance to those it serves.

In addition to the individual growth and networking fostered by Sections Congress, there are more far-reaching results.

The caucuses will generate specific, practical recommendations for action. During the Closing Ceremony, the delegates will have the opportunity to assign a priority level to each of the recommendations through the balloting process.

The results will be announced as part of the Ceremony and will be delivered to the IEEE Board of Directors for implementation in strategic planning for the future of IEEE.

Breakout sessions are where the learning takes place. During IEEE Sections Congress 2014 (SC2014) Breakout Sessions, speakers share information on specific topics with attendees, leaving time for a question and answer period. The following three program tracks (10 topics per track) have been established:

- Enhance Member Satisfaction;
- Improve Volunteer Experience;
- Reach Globally with Local Touch.

In addition to attending five 75-minute traditional Breakout Sessions throughout the weekend, attendees were offered several new program options, including Learning Labs and IGNITE! (Ignite Sessions are five-minute presentations on specific topics intended to spark interest on a particular subject.)

## **Rowan Student Branch Running Sumo Robot Workshops**

*By Jeffrey Eker Jr. and Peter Silverberg*

Rowan University is hosting a series of sumo robot related workshops and tournaments in conjunction with Philadelphia Section IEEE. Other student branches were invited to join.

Our tournaments will be held using the Zumo Kit from Pololu, and we are excited to invite teams of up to six members (maximum five EEs to encourage interdisciplinary participation) to take part in our tournaments. The first five teams to register will receive a free Zumo Robot Kit for the competition (\$150 value) and will be able to keep the kit after both tournaments are complete (Maximum two free kits per Student Branch). In addition, with generous donations from several vendors we currently plan to distribute prizes with a combined value of more than \$1000.

The Branch scheduled two workshops a month starting July 12. The Zumo Robot Kit Tournament takes place Sept. 26. The Scratch Robot Tournament takes place November 22. As of publication date, Weidener and Rowan have teams.

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## **Obituary: Kent A. Ringo and Caroline Ringo**

*Copied from Courier Post*

**Kent Alvin Ringo**, age 95, formerly of Cherry Hill, NJ, died April 6, 2014. Born in 1918, Kent was raised on a fruit farm in St. Joseph, MI. He received training in radar while stationed in England during WW2, and then took advantage of the GI Bill to earn degrees in electronics engineering at Purdue and Northwestern. He began his career at Goodyear in Akron and Phoenix, and eventually moved to NJ to work on government contracts through RCA. He met his beloved wife, Caroline, while they were students at Purdue. After more than 60 years of marriage, they still held hands and shared a deep love and respect for each other. A passion for learning and travel led Kent and Caroline around the world together. They loved nature and outdoor activities, were influential in founding Delaware Valley Orienteering Association (the first orienteering club in the US), and spent many happy Sunday afternoons traipsing through the woods among friends. Kent, eternally driven to be helpful and productive, volunteered with a multitude of organizations including 4-H, Institute of Electrical and Electronics Engineers, Camden County Soil Conservation District, South Jersey Resource Conservation and Development Council, and the Unitarian Church of Cherry Hill. Caroline called him the “Energizer bunny” - he just kept going and going. Kent and Caroline moved to New Bern, NC in 2011 to be closer to family, and he spent the final weeks of his life in Battle Creek, MI.

- See more at:

<http://www.legacy.com/obituaries/courierpostonline/obituary.aspx?pid=170657032#sthash.qZopXe9J.dpuf>

**Caroline Fayelle Ringo** (nee Davis), age 86, of New Bern, North Carolina, died Sunday, January 19. Born in Cambridge City, Indiana, she met her beloved husband, Kent Ringo while they were both students at Purdue University. Caroline had a lifelong love of learning; she taught school prior to marrying and earned her Masters Degree in Library Science while in her fifties. Caroline’s passion for travel led the couple around the world. Kent and Caroline were influential in founding the very first Orienteering club in the United States, Delaware Valley Orienteering Association. She was one of the founders as well as Secretary to DVOA for 25 years. Because of their love of the outdoors, they were instrumental in leading the club to one of the biggest in the country.

They quickly made friends each place they lived, including Akron, Ohio, Phoenix, Arizona, Cherry Hill, New Jersey and New Bern, North Carolina. Caroline was a long-time 4-H leader, enhancing the lives of so many young people through her contribution of time, energy and love. Having grown up, an only child on a farm, with a love of reading, Caroline spent her childhood lying in the corn crib while reading her precious books that described far away places. What was a childhood fantasy became a reality and she enjoyed world travel. She completed her bucket list with a trip to the Galapagos Islands, where she enjoyed seeing the giant tortoises that have no knowledge (or fear) of people. Caroline loved her life and her husband and quietly died at home, following a 22-year battle with cancer.

Wife of Kent Alvin Ringo, she is survived by two daughters, Lori Rupe of Battle Creek, Michigan and Kelsey (Barry) Sims of North Carolina. Caroline is also survived by her four loving grandchildren, Skylar Crom of North Carolina, Kent Addison Cole, of Hawaii, Kristen Rupe of Michigan and Brighton T. Sims of North Carolina. Caroline is also survived by three great grandchildren. Caroline was one of the most intelligent, caring and altruistic people that one could hope to know. Her tolerance for diversity should be celebrated and shared. She was an inspiration to all of us.

The family will hold a memorial service at a later date. Memorial contributions may

be made to United Hospice of Coastal Carolina at 1310 Helen Ave., New Bern, NC 28560-3418; United States Orienteering Federation-Endowment Fund at P.O. Box 505, Riderwood, MD 21139 or Unitarian Universalist Church of Cherry Hill, New Jersey.

## **IEEE NJ Coast Section Conference on Security/Cyber Security and Privacy September 17, 2014 (Wednesday) at IEEE HQ, Piscataway, New Jersey, USA 08854**

The IEEE NJ Coast Section is conducting a conference on Information Security/cyber security and privacy areas. The conference will be located in Piscataway, NJ.

Dr. Gus de los Reyes, AT&T Chief Security Officer, R&D., will deliver the keynote speech for the conference in morning. Mr. Caleb Barlow, IBM Director Applications, Data and Mobile Security will give keynote speech for the conference in afternoon.

The target audience will be IEEE members/non-members across North Jersey, South Jersey, New York and Princeton areas. The total number of targeted audience is around 10,000 IEEE members; however, the expected attendees are limited to 130 due to auditorium capacity. At this conference, many vendors will participate to present their products and services. Many major companies in the security domain have accepted to participate.

**VENDORS:** At this conference, vendor tables with presentation of their products and services will be have a nominal charge of \$500 per table and \$500 for product presentation. Vendors are encouraged to bring their samples of products and give trinkets/ gifts to attract participants to their table. We will be advertising about your vendor demo and presentation on our IEEE New Jersey Coast Section website <http://sites.ieee.org/njcoast/>.

***Please register as VENDOR ASAP to confirm a table and speaking slot.***

***[https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/26019](https://meetings.vtools.ieee.org/meeting_view/list_meeting/26019)***

### **ATTENDEES:**

Registration fee: IEEE members \$75

Others: \$125

Full-time students \$50

**Sign in through vtools meeting 25959 to confirm your attendance.**

More information can be found at New Jersey Coast website <http://sites.ieee.org/njcoast/>

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## **Student Scholarships**

On June 26, the Selection Committee: (Larry Alexander Executive in Residence/Research Professor College of Computing and Informatics Drexel University; Daniel J. Graham Senior Vice President InTEST Corporation; Patricia C. Woody Department Head Machinery Research and Engineering NSWCCD-SSSES) announced the awarding of *2014-2015 IEEE STUDENT-BRANCH LEADSHIP SCHOLARSHIPS* valued at \$5,000 each to three students.

They are:

Christen Marie Corrado, Rowan University

Jeffrey Thomas Eker Jr., Rowan University

Savannah Marie Lee, Drexel University

Adcom confirmed these awards a few days later. We also thank the Selection Committee.

## **2014 Benjamin Franklin Symposium on Microwave and Antenna Sub-Systems for Radar, Telecommunications, and Biomedical Applications** [BenMAS2014]

### **MEETING DETAILS**

Date: Saturday, September 27, 2014

Location: Sheraton University City Hotel, 36th and Chestnut Streets, Philadelphia, PA

**Registration Is Now Open!** Do it through the symposium web site at [www.Benmas2014.org](http://www.Benmas2014.org).

Sponsored by: IEEE Philadelphia Section, MTT-S, ATPS

In addition to invited and contributed oral presentations, BenMAS 2014 includes an interactive session, a student poster competition, and an exhibition. Exhibits are limited to table top spaces. As space is very limited at the Sheraton University City Hotel, the organizers will continue to aim at a closer, more intimate integration of the exhibition with the Coffee and Refreshment Events, and table top displays will be co-located with the interactive session and student poster competition events in the spacious Fairmount Room. This room is within close proximity to the main meeting rooms and to the conference registration desk. The exhibition opens and operates from 8:00 AM - 6:00 PM. Rental fees are \$750 for a table top. Sponsorship at the \$1500 level and above will be offered a free table top display.

#### **Invited Plenary Speakers:**

Prof. Dr.-Ing. habil Ulrich L. Rohde, BTU Cottbus, Germany:

**Front-End modern communication system” or “Software defined radio: Recent & Emerging Trends**

Dr. Fred Sterzer, MMTC, USA:

**Applications of Amplified Microwave Thermal Noise to Medical Diagnosis**

Dr. Joseph Usoff, Lincoln Laboratory, USA:

**Haystack Ultra-wideband Satellite Imaging Radar Antenna**

Please visit the symposium web site for more details.

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## **IEEE Signal Processing in Medicine and Biology Symposium**

### **CALL FOR PAPERS**

Please visit the symposium web site at <http://www.ieeespmb.org/2014> for more details. The submission deadline for papers is September 1, 2014.

**Date of Symposium:** Saturday, December 13, 2014

**Location:** Howard Gittis Student Center, Temple University, 1755 N. 13th Street, Philadelphia, PA

Signal processing plays a vital role in applications ranging from simple measurement equipment to sophisticated devices such as prosthetics. IEEE SPMB14 is a regional symposium intended to provide a highly interactive forum where bioengineering and signal processing researchers can collaborate on emerging trends in signal processing. The symposium will consist of two plenary talks, two oral sessions and two poster sessions. Exhibits and demonstrations are encouraged as well. The symposium is sponsored by IEEE USA, IEEE Region 2, IEEE Region 2 Philadelphia Section, Temple University, the Neural Engineering Data Consortium and NYU Polytechnic School of Engineering.

## **Chapter Certification of the SPS Philadelphia Chapter**

(Letter sent to Michael Mayor June 18)

Dear Dr. Mayor:

On behalf of the IEEE Signal Processing Society's Chapters Review Committee, I am writing to notify you of the results of the Chapter Certification process.

Congratulations, it is my great pleasure to inform you that the IEEE Signal Processing Society's Philadelphia Chapter has been awarded Certification! This Certification will be valid for four years, so the Chapter will be certified from 1 January 2015 through 31 December 2018.

Comments from the Regional Director-at-Large representing your Region are as follows:

We congratulate with you for the certification of your chapter. The certification committee found that your chapter has a satisfactory activity from several perspectives. As a suggestion for further improvement, we encourage you to be more active in technical and educational activities. More plans should also be made for membership development including strategies to attract new members. We will be happy to support your initiatives to the best possible extent. We conclude by mentioning our plan to publish on-line some best practices to help all chapters improving the quality and level of their activity, by providing examples of successful stories borrowed from chapters all over the world.

Now that your Chapter has been certified, you will receive the following benefits in 2015:

- A certificate of merit plaque for the 2014 Chapter Chair.
- An appreciation certificate for each 2014 Chapter Officer.
- The Chapter Chair (or his representative) can apply for a travel support grant up to \$500 per Chapter to attend the next Chapter Chairs meeting at ICASSP 2015.

Chapters which are granted Certification will receive the following for four years during which the Certification is valid:

- Visibility on the SPS webpage.
- More weight for IEEE SPS conferences offering a travel grant.
- Membership growth reward: Ability to request \$50 per new member (up to \$500) in additional funding for things such as networking events, poster awards, and food for seminars. The more new members they have the more likely it is that they can get the maximum amount. (This item is subject to budget approval.)

Congratulations again on this well-deserved honor!

Regards,

Chair, Chapters Review Committee, Kostas Plataniotis

Chair, Chapters Committee, Sven Loncaric

Regional Directors-at-Large:

Regions 1-6, Anthony Kuh

Regions 7 & 9, Douglas O'Shaughnessy

Region 8, Mauro Barni

Region 10, Mark Liao



## Welcome to ITC 2014



ITC in 2014 will be held October 21-23 at the Washington State Convention Center, Seattle, Washington.

The picture above, courtesy of the Seattle Convention and Visitors Bureau, shows the Seattle skyline with the famous Space Needle. Photograph by Howard Frisk.

International Test Conference, the cornerstone of TestWeek™ events, is the world's premier conference dedicated to the electronic test of devices, boards and systems-covering the complete cycle from design verification, test, diagnosis, failure analysis and back to process and design improvement. At ITC, test and design professionals can confront the challenges the industry faces, and learn how these challenges are being addressed by the combined efforts of academia, design tool and equipment suppliers, designers, and test engineers.

### More information:

ITC office  
phone: +1 (202) 973-8665  
fax: +1 (202) 331-0111  
email: [ITC@courtesyassoc.com](mailto:ITC@courtesyassoc.com)

### **ITC: A Short History**

*By Marvin Weilerstein*

This year marks the 45<sup>th</sup> International Test Conference. It will be held in Seattle, Washington, October 21-23. The Philadelphia Section and its members have played an important supporting role in The International Test Conference since its inception. Our Section is a co-sponsor of the conference, along with the Computer Society.

Many of our Philadelphia Section members have made important contributions to ITC

-Stu Levy (a Past Chair of our Section) was the first conference chair in 1970.

-Bob Merkert was a General Chair of ITC.

-Dan Graham served in many posts on ITC's Steering Committee including Financial Chair and General Chair.

-The late Gerry Gordon served as Philadelphia Section's representative to the Steering Committee from the Conference's inception until 2002. He was also a General Chair of the Conference.

-Marvin Weilerstein is currently the Philadelphia Section rep to the Steering Committee.

**The Beginning:** In 1970, engineers facing the test challenges posed by the then-novel semiconductor memory device organized a symposium on IC testing. That meeting—at the Rickshaw Inn in Cherry Hill, NJ—drew a crowd of 147 people. That symposium is now a week-long conference attended by thousands of engineers from around the world.

In its forty-five year history, International Test Conference has become the world's leading electronics test conference. No other industry has changed as much—or changed the world as much—in those thirty years as semiconductor technology. ITC has kept pace, always seeking to develop new and innovative ways to fulfill its primary objective: the exchange of technical information.

**ITC Brings the Test Industry Together:** Over the years, the conference has evolved into the “annual meeting” of the test industry. Technical sessions, complemented by tutorials and exhibits of test equipment and related services, have provided an opportunity for participants to see and discuss the latest available products and systems. Today, ITC is the largest single exposition of semiconductor test products, systems and services in the world.

Now, more than ever, as semiconductor technology and testing issues become more complex, challenging and global, ITC is playing an increasingly important role as the industry's meeting place, its principal forum for exchange and its harbinger of change. As “Cherry Hill” lingers on as a fondly familiar nickname, it is interesting to contemplate what ITC will be like in the future.

**Conference highlights and themes:**

Early conferences focused on semiconductor memory test. Microprocessor test followed. Then reliability, design for test, test facilities and techniques, and test languages emerged as hot topics in the mid '70s. Test of LSI and VLSI devices, and Board Test followed in the '80s. The 90s saw increased emphasis on speed and cost of test. Since 2000 the conference has addressed the challenges of very small (nanometer) and very fast devices, and the integration of test with design, manufacturing and field needs.

ITC is now the world's premier conference dedicated to technologies that ensure robust operation of electronic systems. ITC addresses outstanding design, validation and test challenges—ranging from immediate concerns blocking progress today to major obstacles in future technologies. ITC covers the complete cycle from design verification, design-for-test, design-for-manufacturing, post-silicon validation and debug, manufacturing test, diagnosis, failure analysis and yield improvement, system testing at the hardware-software interface, error detection and testing in the field (including adaptation to variations induced by manufacturing and operating conditions), hardware security and trust, then all the way back to process and system design improvements

## Life Member sponsored tour of Sarnoff Collection

By Robert Paglee

The IEEE Life Member group on July 9 sponsored a tour visit of the Sarnoff Collection, consisting of over 6000 historical items that are displayed in a special exhibit at The College of New Jersey (TCNJ) near Pennington. Many of them were originally exhibited at RCA's Sarnoff Labs in Princeton, and were relocated to TCNJ in 2009. Sixteen members of the tour group attended, as shown in the photograph below. Merrill Buckley is standing with his walker at the center.



Ms Emily Croll, Director of the TCNJ Art Gallery and Sarnoff Collection, welcomed the group, described some of the highlights, and introduced Dr. Benjamin Gross, Consulting Curator of the Sarnoff Collection. Dr. Gross then discussed how the collection features some of RCA's major contributions in the development of radio and television under the storied leadership of David Sarnoff.

The photograph below shows Dr. Gross, at the left, describing to members of the group how the world was changed by some of the inventions on display. He described how David Sarnoff's career began as a radiotelegraph operator for Marconi Wireless and how he provided communications between New York and several ships that were rescuing survivors of the Titanic disaster. Sarnoff used Morse code when operating the historical "key" mounted on the display board as seen to the right of Dr. Gross.



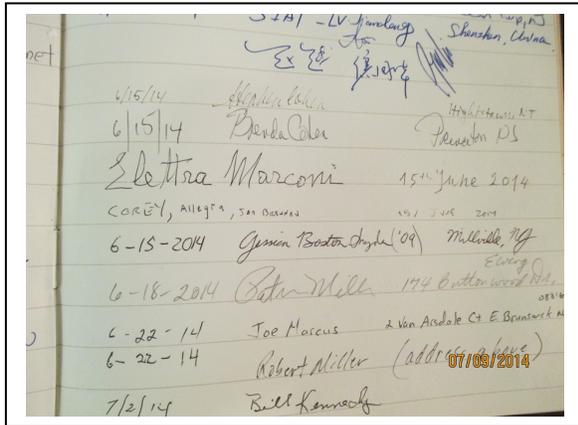
The group proceeded to tour the large exhibit area featuring numerous very early RCA historical radio and television products, vacuum tubes, iconoscopes, kine-scopes, core memories, an early electron microscope, and many other historical artifacts.

As described by Dr. Gross, David Sarnoff was called to duty in Washington during WWII and was instrumental in arranging for essential communications in preparation for and during the D-Day invasion of France. In recognition of his contribution, he was

commissioned and became known thereafter as General Sarnoff. The desk and chair from his office when CEO of RCA are shown in the photo below. The painting is of Robert Sarnoff, CEO of RCA after General Sarnoff's retirement. (I am in the photo for scale.)



The Sarnoff Collection attracts many visitors, and the photo below shows the entrance log and the signature of a visitor with a famous name who came about three weeks before our group. She is Elettra Marconi, the aged daughter of the late Guglielmo Marconi, generally credited with the invention of radio communications. Sarnoff and G. Marconi were close friends over many years.



The interesting tour began at 1:30 PM and was concluded shortly after 4 PM.



## Young Professionals Group Gathering

By Phil Gonski, P.E.

IEEE Philadelphia Young Professionals joined the ASCE & AIA Young Members for a Happy Hour Social at Yards Brewery in Philadelphia on June 3. The event drew well over 70 members and featured networking opportunities, private brewery tour and a Quizzo tournament. Feedback from the event was exceedingly positive, and hopefully the first of many joint events together. A photo is above on the right.

Special Thanks to our sponsors of the event: Keystone Engineering Group, Diversified Lighting Associations, and Bittenbender Construction, LP.

## EMC LIVE 2014

October 14 - 16, 2014

EMC LIVE is a brand new, online three-day event hosted by Interference Technology. Featuring practical information and topics, this event will include roundtables, webinars and videos on everything EMC-related, and there's no cost to attend.

Who Should Attend? All electronic, mechanical, and design engineers who are looking to improve their practical knowledge in the field of electromagnetic interference and compatibility. - See more at: <http://emclive2014.com/#sthash.fvi4v3wp.dpuf>

Why Attend? Expand your EMC knowledge from the comfort of your office chair. No layovers, no canceled flights, and no removal of shoes – and it is free to attend!

## CONET Meeting News

The IEEE Philadelphia Consultants Network (CONET, [www.PhilaCONET.com](http://www.PhilaCONET.com)) held a meeting on Tuesday, August 5. The next CONET meeting shall be on **Tuesday, October 7**.

The August 5 meeting featured a presentation by Ms. Michelle Christian, Regional Manager of The Company Corporation. The subject of Ms. Christian's presentation was the two business entities, Subchapter-S Corporation (S-Corp) and Limited Liability Company (LLC). Ms. Christian's presentation covered the formation processes, legal protections, and taxation benefits afforded by S-Corp and LLC. Meeting attendees had informative and animated discussion on the suitability and nuances of S-Corp and LLC concerning their own consulting practices and businesses.



**Next Meeting:** The next CONET meeting will be held on **Tuesday, October 7**. The October 7 meeting is expected to feature Mr. Jim Davey, P.E., a radio frequency (RF) communications consultant. Mr. Jim Davey shall narrate his personal journey of 35 years in the field of RF communications, including his transition from staff engineer to independent consultant. Mr. Davey shall discuss the reasons to make (or not to make) such a transition, touch on the hardships endured and preparations made to facilitate such a transition, and share the lessons he learnt from navigating the various turning points in his career as an RF communications professional.

### **One Man's Saga to Consulting in RF Communications** *Presented by Jim Davey, P.E.*

**Date:** Tuesday evening, 2014 October 7

**Place:** Sheraton University City, 36 & Chestnut Streets, Philadelphia PA 19104  
Fairmount/Franklin Suite – downstairs from main lobby

**Free Parking** for CONET Members: Sheraton indoor garage – entrance on 36th Street. Take your garage ticket, and have it stamped when you sign in to the meeting. For information on becoming a member, go to <http://www.philaconet.com>

**Networking/Social time:** Starts at 5:30 PM

**Dinner:** 6:15 PM (Be sure to allow for rush-hour traffic or inclement weather.)

**Program:** 7:00 to 9:00 PM

**Abstract:** How does one move from the corporate world to consulting? Would you really want to? What practical considerations must be addressed? What hardships endured? What preparations made? This presentation will cover some of the turning points and lessons learned in one person's personal journey of 35 years.

**Speaker's Background:** Mr Davey has worked in the RF communications field since 1979 in a variety of roles from staff engineer to consultant for companies such as Nortel Networks, Motorola, and Comcast. In that timeframe, he has concentrated on three primary technologies: land-mobile radio and point-to-point microwave (10 years), digital cellular infrastructure (15 years), and wireless data networks (10 years). His primary work is at the systems level where he is often asked to develop functional specifications, determine the

interaction between different RF networks, or design and conduct tests to find the root cause of system behavior. He also maintains an active hobby interest in communications science and has contributed many published articles and conference papers over the years. He has been a consultant to Comcast since 2007 and is currently assisting the XFINITY WiFi Program in new product design and strategies to navigate the ever-increasing technical challenges for wireless delivery of services.

<b><u>Admission</u></b>	IEEE Student Members	All Others
CONET Members	A: With Dinner \$40	A: With Dinner \$40
A: With Dinner \$30	B: Meeting-Only Free	B: Meeting-Only \$15
B: Meeting-Only Free		

**Reservations, and Payment**

**A: With Dinner:** Reservations and advance payment are required.

- 1) Reserve by sending an e-mail to CONETtreasury@gmail.com Include your full name and telephone number.
- 2) You will get an e-mail confirmation with instructions for paying by check or credit card.
- 3) Advance payment is required to reserve space for dinner.
- 4) Payment by check must be received no later than Wednesday, September 24, 2014. The credit card deadline is Friday, September 26, 2014.

**B: Meeting-Only:** Reservations preferred. Walk-ins (space available).

- 1) Reserve by sending an e-mail to CONETtreasury@gmail.com Include your full name and telephone number.
- 2) You will get an e-mail confirmation with instructions for paying by check or credit card.
- 3) Advance payment is not required for meeting-only admission.
- 4) Check or exact cash is accepted at sign-in. (No credit card payment at sign-in.)

The IEEE Philadelphia Consultants Network (CONET) is an Affinity Group of the IEEE. Most Members are electrical or computer engineers. The CONET mission is to share knowledge through technical and business networking. For details, and information on becoming a member, you may go to [www.PhilaConet.com](http://www.PhilaConet.com)

Open: You do not have to be an IEEE member or a CONET Member to attend this meeting. Meeting updates will be sent by e-mail: Be sure your current e-mail address is in our records. If in doubt, confirm your current e-mail address to [CONET.Phila@IEEE.org](mailto:CONET.Phila@IEEE.org)

Questions can be directed to Robert Peruzzi at (610) 462-3939 or by e-mail to [Peruzzi@RPeruzzi.com](mailto:Peruzzi@RPeruzzi.com)

Our mailing address is:  
 Philadelphia IEEE Consultants Network (CONET)  
 c/o R. Peruzzi Consulting, Inc.  
 719 Fourth Avenue  
 Bethlehem, PA 18018

Kindly visit **[www.PhilaCONET.com](http://www.PhilaCONET.com)** for information on membership, up-coming meetings, pass meeting presentations, and to learn more about the wide range of consulting services offered by CONET consultants from CONET's online Consultant Directory. Copyright (C) 2014 Philadelphia IEEE Consultants Network (CONET) All rights reserved.

## **Philadelphia EMC Society – Chapter Meeting TUESDAY, SEPTEMBER 9, 2014**

### **DETAILS:**

**Date:** Tuesday, September 9, 2014

**Location:** Retlif Testing Laboratories, 3131 Detwiler Rd, Harleysville PA 19438

**Phone:** 610-382-5889

**Networking Time and Refreshments:** 5:30 pm

**Meeting / Presentations:** 6:00 – 8:00 pm

**TOPIC: “EMC Troubleshooting, Measurements and Common Problems”** (60 min) - a mix of low-cost tools, troubleshooting techniques and common EMC problems I've seen recently.

**ABSTRACT:** Many companies lack the resources or skills to properly design products for compliance in advance of the required testing – often failing multiple tests – and wondering what to do next. By performing simple pre-compliance testing ahead of compliance testing, the risk of test failure is greatly reduced. As an EMC consultant, I often see the very same product design issues repeated over and over. I'll cover the most common issues I see, as well as a few that are unique. Some basic EMC theory will be included as a quick refresher. Then, we'll launch into some low cost troubleshooting and pre-compliance tests that may be performed right on the workbench.

**SPEAKER: Kenneth Wyatt, Sr. EMC Engineer,** Wyatt Technical Services, LLC, holds degrees in biology and electronic engineering and has worked as a product development engineer for 10 years at various aerospace firms on projects ranging from DC-DC power converters to RF and microwave systems for shipboard and space systems. For over 20 years, he has worked as an EMC engineer for Hewlett-Packard and Agilent Technologies in Colorado Springs. He has been an independent EMC consultant since 2008. A prolific author and presenter, he has written or presented topics including RF amplifier design, RF network analysis software, EMC design of products and use of harmonic comb generators. He has been published in magazines such as, *RF Design*, *EMC Design & Test*, *Electronic Design*, *Microwave Journal*, *HP Journal*, *Safety & EMC (China)*, *Interference Technology (ITEM)*, *InCompliance Magazine*, *Test & Measurement World* and several others. He currently writes *The EMC Blog* <<http://www.edn.com/electronics-blogs/4376432/The-EMC-Blog>> for *EDN* and blogs for *EE Times Test & Measurement Designline* <<http://www.eetimes.com/test-and-measurement-designline.asp>>.

Kenneth is a senior member of the IEEE and a long time member of the EMC Society where he served as their official photographer for ten years. He is also a member of the dB Society and is a licensed amateur radio operator.

His comprehensive yet practical EMC design, measurement and troubleshooting seminar has been presented across the U.S., Europe and Asia.

Watch your inbox for further details very soon.

**Reply to reserve a spot now.**

Eileen Ambler  
Administrative Manager  
ITEM Media  
1000 Germantown Pike, Suite F2

Plymouth Meeting PA 19462-2486  
484-688-0300 x210  
**610-382-5889 - direct**

*IEEE Philadelphia Chapter of Aerospace and Electronic Systems Society presents*

## **METAMATERIAL CLOAKING: PRINCIPLES AND APPLICATIONS**

**Dr. Nader Engheta**

H. Nedwill Ramsey Professor

University of Pennsylvania, Philadelphia, PA 19104

Email: [engheta@ee.upenn.edu](mailto:engheta@ee.upenn.edu); Web: <http://www.seas.upenn.edu/~engheta/>

**Date:** Thursday, September 25, 2014; **Time:** Dinner: 6 PM; **Presentation:** 7-8 PM

**Location:** Tolentine Hall (Room: TBD), Villanova University, 800 E. Lancaster Ave,  
Villanova, PA 19085

**Cost:** Lecture is free | Dinner: \$15

**Abstract:** The concept of metamaterials addresses how to engineer man-made structures exhibiting unusual and unconventional electromagnetic properties. In particular, metamaterial engineering provides us with ways to control and design scattering properties of objects. The notion of cloaking is centered on metamaterial design in order to reduce, as much as possible, the *total* scattering cross sections. In this talk, I will discuss various aspects of metamaterial cloaking, starting with the basics and fundamentals of wave interaction with metamaterials and engineered structures and formulation for modeling, and then will present a variety of topics, such as design criteria, dispersions, material loss, practical realization and optimization related to the cloaking and transparency of objects when combined with metamaterial-based cloaking. Physical intuitions behind all concepts will be presented and future directions will be forecasted.

**Biography:** Nader Engheta is the H. Nedwill Ramsey Professor at the University of Pennsylvania in Philadelphia, with affiliations in the Departments of Electrical and Systems Engineering, Bioengineering, Physics and Astronomy, and Materials Science and Engineering. He received his B.S. degree from the University of Tehran, and his M.S and Ph.D. degrees from Caltech. Selected as one of the *Scientific American Magazine 50 Leaders in Science and Technology* in 2006 for developing the concept of optical lumped nanocircuits, he is a Guggenheim Fellow, an IEEE Third Millennium Medalist, a Fellow of IEEE, American Physical Society, Optical Society of America, American Association for the Advancement of Science, and SPIE, and the recipient of numerous awards for his research including *2014 Balthasar van der Pol Gold Medal from the International Union of Radio Science*, *2013 Benjamin Franklin Key Award*, *2013 Inaugural SINA Award in Engineering*, *2012 IEEE Electromagnetics Award*, *2008 George H. Heilmeier Award for Excellence in Research*, the *Fulbright Naples Chair Award*, *NSF Presidential Young Investigator award*, the *UPS Foundation Distinguished Educator term Chair*, and several teaching awards including the *Christian F. and Mary R. Lindback Foundation Award*, *S. Reid Warren, Jr. Award* and *W. M. Keck Foundation Award*. His current research activities span a broad range of areas including nanophotonics, metamaterials, nano-scale optics, graphene optics, imaging and sensing inspired by eyes of animal species, optical nanoengineering, microwave and optical antennas, and engineering and physics of fields and waves. He has co-edited (with R. W. Ziolkowski) the book entitled "*Metamaterials: Physics and Engineering Explorations*" by Wiley-IEEE Press, 2006. He was the Chair of the Gordon Research Conference on Plasmonics in June 2012.



## Meeting of the Philadelphia Joint Chapter



### IEEE Power & Energy and Industry Applications Societies

#### **Topic: Electrical Separation of Redundant Protective Relaying Equipment**

**Speaker:** Zeal Shah, Relay Engineer, Relay and Power Systems, Conshohocken, PA

**Date and Time:** Wednesday, September 17<sup>th</sup>, 2014  
Lunch @ 11:45 AM; Presentation: Noon – 1:00 PM

**Cost:** No Charge for Presentation  
\$13 for buffet lunch (\$10 for Full-Time Students)

**Location:** Burns Engineering, Inc.  
1835 Market St., Suite 300, Philadelphia, PA 19103

**Public Transportation:** SEPTA (Rail to 30<sup>th</sup> Street or Suburban Station and/or Trolley to 19<sup>th</sup> & Market Street)

**Reservations:** Register by visiting: [www.ieeephiladelphia.org](http://www.ieeephiladelphia.org) and click on "Section Meetings and Events" to register on v-Tools. If you have problems or cannot register online, e-mail or call Jonathan Schimpf at [jschimpf@burns-group.com](mailto:jschimpf@burns-group.com) or 215-979-7700, ext 7709, by 5:00 p.m., Tuesday, September 16<sup>th</sup>, 2014 (Specify if you want lunch – We pay in advance)

**Abstract:** Electrical Substations, Switchyards and Generating Stations are equipped with redundant protection and control schemes. As reliability and blackout concerns become more pronounced, the need to reinforce human factors engineering in the design and application of protection and control schemes is an ongoing consideration.

Since 2007, NERC (North American Electric Reliability Corporation) has been issuing reliability standards that are subject to enforcement action. In response to an incident near San Jose, California, NERC mandated the expedited development of a new Critical Infrastructure Protection Standard that addressed substation vulnerability to sabotage.

This presentation describes one approach that is recommended for Electric Utilities to use to assure physical separation of redundant protection and control schemes for Bulk Electric System facilities. The presentation discusses concepts that may be considered on an expedited basis if an incident involving protection and control schemes were to occur.

**The Speaker:** Zeal Shah, Relay Engineer, Relay & Power Systems, Conshohocken, PA holds a MSEE from Drexel University. Ms. Shah develops protection and control systems for 230 KV, 138 KV, 69 KV and 13.2 KV substation and switchyard applications for utility and industrial use throughout the Mid-Atlantic Region.

\*\*\*\*\* A Certificate of Attendance will be available upon request \*\*\*\*\*

Chapter Chair: Mike Reynolds, Burns Engineering - [mreynolds@burns-group.com](mailto:mreynolds@burns-group.com) (215-979-7700, ext 7717)  
Vice Chair: Affan Abdullah, Sargent & Lundy, LLC - [Affan.A.Abdullah@sargentlundy.com](mailto:Affan.A.Abdullah@sargentlundy.com) (302-622-7228)  
Secretary: Jonathan Schimpf, Burns Engineering - [jschimpf@burns-group.com](mailto:jschimpf@burns-group.com) (215-979-7700, ext 7709)  
Treasurer: Tim McBride, Eaton Corporation - [TimothyMcBride@eaton.com](mailto:TimothyMcBride@eaton.com) (610-497-6137)  
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Professional and Educational Activities: Rich Delp, Schiller and Hersh Associates - [rdelp@schillerhersh.com](mailto:rdelp@schillerhersh.com) (215-886-8947)  
Programs and Public Relations: Bob Swayne, Burns Engineering - [rswayne@burns-group.com](mailto:rswayne@burns-group.com) (215-979-7700, ext.7781)  
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Check out our website: <https://sites.google.com/site/ieeepesiasphiladelphiachapter/>  
IEEE Philadelphia Section website: [www.ieeephiladelphia.org](http://www.ieeephiladelphia.org)

**IEEE NJ Coast Section  
Conference on Information Security/Cyber Security and Privacy  
November 12, 2014 (Wednesday)  
IEEE OC, Piscataway, New Jersey 08854, USA**

Since the turn of the century, information security, cyber security, and privacy have become more critical in our business, government, travel, healthcare, and every-day lives. With society's exploding dependence on online, digital, and wireless technologies, effective government-compliant security solutions have become increasingly important in everyday life. Whether you are a security expert or a novice, practical solutions are crucial in your industry as well as personal life. Join us at this upcoming conference to hear more about these important topics from business, academia, and research. Take some time with us to catch up on the latest trends, review the issues, and take away practical ideas to enhance security of your world.

**Keynotes, Invited Speakers, Students, and Industry Representatives**

The day will begin with a social breakfast. The morning keynote, 'Wanted: A Revolution in Security Research' will be delivered by Dr. Gus de los Reyes, AT&T Chief Security Officer, R&D, and the afternoon keynote, 'Mobile Management and Security' will be delivered by Mr. Caleb Barlow, IBM Director, applications, data and mobile security. Both talks promise to be up to the minute, exciting, informative, and thought provoking.

Visit the many industry representatives participating in the event to learn about the latest commercial solutions. Lively discussions with the keynote speakers, invited speakers, peers, and student poster judging will continue over breakfast, lunch and afternoon snack breaks – which are included in the modest attendance fee. Concluding remarks, prizes and awards will end the day.

**Who Should Attend?**

This conference is geared to IEEE members, non-members, students, and guests who would like to review the state of the art in security, cyber security, and privacy and become aware of issues and directions of research, academic, and practical solutions.

**What Will You Learn at This Conference?**

If you have considered learning more about security, this is an ideal event to attend. Awareness of security, cyber security, and privacy improves your job, consulting, and life skills. You will get Professional Development Units PDU (Continuing Education Units (CEU)).

**Venue**

The venue for this conference, IEEE Operations Center (OC) in Piscataway New Jersey, is a premier location to attend an event. The IEEE OC is steeped in history; this location holds artifacts and multimedia installations recounting the achievements of IEEE engineers and marks the significant engineering innovations from various disciplines worldwide. Bring a friend, colleague or student.

Please register at

[https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/25959](https://meetings.vtools.ieee.org/meeting_view/list_meeting/25959)

For your information, IEEE Membership fees are: \$187/year (IEEE Student Membership fee: \$32/year)

<b>Attendee Registration</b>	<b>Before Sept 15</b>	<b>Before Oct 17</b>	<b>After Oct 17</b>
IEEE member	\$35.00	\$45.00	\$65
IEEE student member/Life Member	\$15	\$25	\$50
Non-Member	\$100	\$125	\$150
Non-Member student	\$25	\$35	\$50

<b>Industry Representatives Registration</b>	<b>Before Sept 15</b>	<b>Before Oct 17</b>	<b>After Oct 17</b>
Table & Product demonstration	\$500.00	\$600.00	\$700.00
Product Presentation	\$500.00	\$600.00	\$700.00

**For More Information** please visit the IEEE New Jersey Coast Section website <http://sites.ieee.org/njcoast/>

The agenda is at the meeting web site.