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Almanack

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May 2015

SECTION MEETING

May 19, 2015

Dinner: 6 pm

Speakers: 7:00 P.M. & 8:00 P.M.

Sheraton University City

Philadelphia

Meal Cost: \$25.00 (students \$15.00)

Parking cost paid by section

**Topic: Magnetic Resonance Imaging:
Compatibility with Medical Devices**

Joseph C. McGowan, Ph.D. PE,

McGowan Associates

**Topic: Light and Behavior in Humans
And Lemurs**

Dr. Eugenia Victoria Ellis and Greg Yeutter

Drexel University

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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.

May 2105

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IEEE NIGHT

Philadelphia Section Meeting

Joint with Engineering in Medicine and Biology (EMB) Technology Management Package and Society of Social Implications of Technology (EM/SIT)

Date: Tuesday, May 19, 2015

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 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 or use vtools in the website

Indoor parking is at the 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.

Magnetic Resonance Imaging: Compatibility with Medical Devices

Joseph C. McGowan, Ph.D. PE

Magnetic resonance imaging (MRI) is arguably the most powerful and least invasive medical imaging technology in the marketplace. MRI is used to diagnose many disorders or pathologies that accompany aging. There are also familiar applications to traumatic injury. MRI, by comparison to x-ray based technologies, offers exquisite soft tissue contrast. In many older patients, the issue of compatibility of implanted devices with MRI arises, increasingly as these devices become more ubiquitous. Implantation of an MRI-Unsafe device is a choice fewer surgeons are willing to make, in light of a strong likelihood that MRI may be needed in the future. This could necessitate a choice between an inferior diagnostic technique or explantation. Related concerns may accompany the use of an accessory, non-implanted, devices. In this talk, a brief introduction to MRI will be provided, and a review of current testing methodology and expectations will follow, with an illustration of the consequences of failure to account for MRI safety concerns.

Joseph C. McGowan received the Bachelor of Science in Mathematics from the United States Naval Academy, a Master of Science in Engineering from the University of Pennsylvania, and a Doctorate in Bioengineering from the University of Pennsylvania. He has been a Research Assistant Professor at the University of Pennsylvania School of Medicine, Associate Professor of Electrical Engineering at the United States Naval Academy, and currently is appointed as Visiting Research Professor in the School of Bioengineering at Drexel University. He has published over 100 scholarly works and has been funded by the National Institutes of Health. He served as an officer in the United States Navy and commanded detachments within the Office of Naval Research, retiring with the rank of Captain (O6) after having been



awarded the Meritorious Service Medal on three occasions, among other decorations. Currently, Dr. McGowan is President of McGowan Associates, Inc., a firm offering MRI testing services to the Medical Device industry. McGowan Associates is also frequently retained to provide expert witness services in matters involving traumatic injury.

Light and Behavior in Humans and Lemurs

Dr. Eugenia Victoria Ellis, Ph.D & Greg Yutter

Lighting systems that mimic the daily pattern of light and dark can be used to support biological clocks in humans and animals. The dLUX Light Lab at Drexel University is embarking on two studies to understand better the role of light in mitigating behavioral outcomes. At the St. Columbia Safe Haven, chronically homeless men with serious mental illness are exposed to rhythmic lighting in an effort to improve sleep and reduce symptoms of their conditions. At the San Diego Zoo, diurnal lemurs live in an indoor environment that mimics the daily lighting conditions of their native Madagascar. This talk will cover the background, preliminary research, and expected outcomes of these experiments.

Dr. Eugenia Victoria Ellis, AIA directs the dLUX light lab at the Institute for Energy and the Environment at Drexel University. She holds a B.A from the University of Illinois-Chicago, a M.S. from the University of Pennsylvania and a Ph.D. in Environmental Design and Planning from Virginia Tech. A practicing architect who designs energy-conscious buildings “shaped by the sun” such as the Florida Solar Energy Center, Dr. Ellis has over 30 years’ experience designing civic and municipal projects, laboratories for high-tech industry, and healthcare/skilled nursing facilities. Her research is on the visual and non-visual effects of light on design, including natural light and health, spatial visualization and three-dimensional imagining, and visual perception and altered states of perception, such as blindness and dementia.



At intersections of nature, the built environment and behavior, she investigates (eco)logical building systems, architectural theory and wellbeing with the goal of creating frameworks for the design of sustainable buildings at the nexus of health, energy and technology. This research is interdisciplinary and includes collaborators in fields such as engineering, information science, biomedical engineering, and the health professions.

Greg Yeutter is an MSc candidate in electrical engineering at Drexel University. A student researcher at the dLUX Light Lab, his research focuses on the links between light and health. Combining interests in artificial intelligence, biosensing, chronobiology, light sources, usability, and visual perception, Greg's research, and development efforts are pushing toward lit environments that adapt to occupant's needs. He is also the co-founder of dlux, a company building next-generation biologically-aware lighting controls.



THE CHAIR'S MESSAGE



For those that was unable to join us for our annual awards banquet, please join us next year! The event was certainly one of the most well attended in recent memory, with close to 200 attendees, a reception hall complete with many sponsors and exhibitors, and a fantastic speech by Alan Mathason of Next Fab Studios. I want to thank both our Section Office, as well as all of our sponsors and exhibitors, for making this success possible.

Great events like this I believe are proof that our Section remains strong and relevant in the local area as both a technical and professional resource.

I hope that we can continue this momentum into 2015, with an increased offering of social events, technical talks, outreach programs, and conferences.

With every organization, please feel free to message me with any possible suggestions or improvements for the upcoming year. I look forward to continuing to plan a full slate of events that display the value and benefit of IEEE Philadelphia

Philip M Gonski, P.E
IEEE Philadelphia Section Chair

Professional and Citizen

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

As electrical engineers, we wear two hats; we make both professional decisions and personal decisions. As some of you know, I have always had one toe in technology and the other one in social science. Thinking that I would become a manager in my father's manufacturing business, (which never occurred) I took an MS degree in Industrial Psychology. In 1955, I became a computer programmer, then an aerospace systems engineer. General Electric put me through graduate school at the University of Pennsylvania, for a doctorate in electrical engineering. My thesis, Optimum Acceptance Rates for Public Service Systems, reprinted as General Electric Technical Information Series No. 69SD343, was done under the Human Factors professor at the engineering school. Social scientists tend to think in terms of the bell-shaped normal distribution. One of the most creative parts of my dissertation was to show that an "epidemic" model for the spread of technology (present users influence non-users to become new users) results in a bell-shaped curve, which would require a rather large sample size to distinguish from a normal distribution.

My next career step after being a systems engineer was a Management Scientist at the oil company, Atlantic Richfield. I applied some of the insights from the dissertation to the marketing of gasoline.

Technology is a very human thing. It is invented by humans, built by humans, and sold by humans to be used by humans. Recently receiving copies of the Spectrum and the Institute, I was pleased to see a lot of coverage of the human side of electrical engineering.

As citizens, we are probably respected by our neighbors as being knowledgeable about technology. We have driven a rare kind of car for over ten years: a manual shift Honda hybrid. Parked in front of our house, it is a symbol to the neighborhood to consider energy efficiency in personal transportation. Three of our other energy saving actions are not publicly visible: we have installed infrared heater lamps in the bathroom ceilings. For the few minutes a person is standing there, naked and often wet, this is more efficient than heating the whole room. To prevent these from being inadvertently left on, they are controlled by timer switches.

The other innovation might be copied by those of us who have stand-alone radiators to heat our homes. I reasoned: the radiators are the warmest things in the room, and the outside walls are the coldest. So I put sheets of foam insulating board, with aluminum foil facing behind the hot water radiators. To try out the idea, I did this first in the dining room, which contains the thermostat. Big mistake! The bedrooms were too cold. So if you install these insulating panels, be prepared to do it throughout the house.

By cutting the insulating board to fit behind the radiators, they are not visible unless they are pointed out. Our last energy efficiency fix is even less visible. Several years ago, we had replaced most of the incandescent bulbs by CFLs, the major exception being two closet lights. Then I thought about the bulb in the refrigerator. The standard factory installed light was a 60-watt miniature incandescent. What happens to the energy from this light? The heat has to be pumped out, using even more energy. So the refrigerator now has a 4-watt LED bulb, which provides plenty of light. Because of the high prices of LEDs a few years back this may not be the economic decision, but it still seems the right choice to me. So in your professional work, make energy efficient decisions, as well as in your personal life.



Meeting Announcement

Sponsored by the IEEE Philadelphia Section, the Engineering in Medicine and Biology Society Chapter, the Signal Processing Society Chapter and the Stanford Alumni Association

Prof. Paul Graham Fisher, MD

Professor of Neurology and Pediatrics, Stanford School of Medicine
will present

Why Do Our Children Develop Brain Tumors and Other Cancers

Date/Time: Wednesday, May 13, 2015; 6:00 PM – 8:00 PM

Place: PECO Headquarters Building, 2301 Market St., Philadelphia, PA

Tell the Security Desk that you are attending the meeting in the ground floor conference room, "Energy Hall B."

DINNER: We will have a selection of sandwiches, salads & beverages. Cost is \$10 per person, paid at the meeting

Professor Fisher of the Stanford School of Medicine will provide an overview on his research in pediatric neuro-oncology. Children's cells, particularly those in the brain, grow at a pace far more rapid than adults', leading to the growth of distinct, aggressive cancers in a small population. Professor Fisher will discuss the causes of these tumors and describe research on this topic.

Paul Graham Fisher is the Beirne Family Professor of Pediatric Neuro-Oncology, professor of neurology and pediatrics, and division chief of child neurology. He also directs the Center for Brain and Behavior. His research focuses on epidemiology, therapy, and late effects of childhood brain tumors. He has authored over 140 publications on brain tumors and other neurology topics. He is associate editor of The Journal of Pediatrics. Professor Fisher teaches the popular human biology class, "Cancer Epidemiology," now in its 12th year, examining why we get cancer and when we should worry about it. A popular speaker nationally, Professor Fisher is also the Bing Director of the Stanford Program in Human Biology. He teaches an undergraduate class on cancer epidemiology.

Meeting is free, however, to attend you must register:

https://meetings.vtools.ieee.org/meeting_view/list_meeting/34462

DIRECTIONS: 2301 Market is the PECO building with the dynamic "crown lights" directly across the Schuylkill River from the AMTRAK 30th Street Station. The building is a five-minute walk across the Market St. Bridge from the Station. It is also one block from the 22nd & Market SEPTA Subway-Surface Trolley Station. If you choose to drive there is metered street parking on Market, 22nd, and Arch Streets. There is a large parking lot behind (north of) the building, accessible from the intersection of 23rd & Arch.

Barney Adler, PhD; 215-519-4115

PECO

adler@ece.villanova.edu

Michael Mayor, PE; 484-524-3264

Co-Chair IEEE Signal Processing Chapter

michael.mayor.pe@ieee.org



**The Innovation Leadership Forum (ILF) of the
Greater Philadelphia Senior Executive Group (GPSEG)
Invites you to a Very Special Event on Intrapreneurship on May 13, 2015
Hosted by Comcast NBCUniversal**

WHEN

Wednesday, May 13, 2015. Networking at 6 pm. Keynote at 6:45 pm. Concludes at 8:30 pm.

WHERE

Comcast Center. 1701 JFK Blvd., 43rd Floor, Philadelphia, PA

REGISTER [HERE!](#) More information: www.innovationleadershipforum.us

PRICE: No fee due to the generosity of Comcast, who will be hosting.

AUDIENCE

Business executives, public and academic thought leaders, as well as students of innovation/design throughout the greater Philadelphia region. This will be attended by men and women from all sizes of companies and institutions, a broad range of industries, at all stages of growth, and covering both the profit, non-profit, public and academic sectors. They will be people who want to do more tomorrow than they can do today. And they're looking for ways that Philadelphia-based institutions accomplish this. 200+ attendees expected.

PURPOSE of EVENT

The focus of our event is ***“Exploring Corporate Entrepreneurship: How It Works”***

GPSEG and Comcast NBCUniversal want to bring together thought leaders in the corporate entrepreneurship (Intrapreneurship) space that have had to figure out how to grow their organizations over time – people who've had to sell their ideas within the corporate environment, get funding, and execute a successful program. This frequently leads to developing new markets, exploring 'white space ideas,' and creating some unanticipated positive outcomes. The 'surprises' that come out of this process frequently exceed initial expectations. This doesn't come without risk and failure but that is the nature of the 'journey.'

We want to learn how you created a successful intrapreneurial campaign, developed, sold, and successfully executed it, and explore the 'bumps' along the path to success.

FORMAT OF EVENT

6:00 pm – Networking & Appetizers/Drinks

6:40 pm – Welcome & Opening Remarks

6:45 pm – Keynote Presentation “Exploring Intrapreneurship” (Marc Siry, VP Strategic Development, Comcast NBCUniversal)

7:15 pm – Panel Discussion & Q&A (Marc Siry, Evjatar Cohen – Global Practice Leader, Pharmaceuticals, Apian Corporation, Dr. Janice Presser – CEO, Gabriel Institute, Joel Vardy – President, Vardy & Associates) Moderated by Don Ortner -- VP, ESPI

7:55 pm – Closing Remarks

8:00 pm – Networking

8:30 pm – Adjourn

WHO GPSEG IS?

The Greater Philadelphia Senior Executive Group (GPSEG) is an association of 1,400 business leaders from all walks of professional experience. Our members are executives serving all industries, representing all the disciplines it takes to run a business, and hailing from both profit and non-profit organizations. With the motto “Networking for Life” – and a dynamic schedule of educational meetings, networking events, and regional business forums – GPSEG provides a unique environment for members to build trusted business relationships, expand their knowledge, and advance their careers. Members share business insight, guidance, contacts, and encouragement, all with the goal of fostering constructive conversations and building relationships that help grow our knowledge, our businesses, our careers, and our community.

HOST & ADDITIONAL SPONSORS:



Beginner's Guide to Arduino
An On-Ramp to Electronics, Programming
Presented by Ken Paist, Paist Design Group

Parent-Child or Parent-Grandchild Hands on Two Half-Day Workshop sponsored by IEEE Philadelphia Combined Chapter of CSS, CAS, SMCS.

MEETING DETAILS:

Date: Saturdays, May 9, and May 16, 2015

Time: 1:00 P.M. - 5:00 P.M.

Location: DeVry University, Room 107, 1140 Virginia Drive, Fort Washington, PA 19034

Note: Parking is available on campus.

EARLY BIRD SPECIAL! -

Register by 05/01/15 to get the early bird price.

Cost: IEEE Member: \$50 | *Non Member: \$75 (Early Bird)

Cost: IEEE Member: \$65 | *Non Member: \$90 (Register after 05/01/15)

Intended Audience: Middle school and high school students with an adult sponsor. Adults without a student will be placed on a wait list.

Registration: To register online, use vTools.

This two-day IEEE Philadelphia Section Hands-On Workshop is intended to introduce middle school and high school students with an adult sponsor to basic electronics and programming using an Arduino compatible single chip microcontroller board.

The participants will have a hands-on opportunity to build circuits that are controlled by and that control the Arduino. Then programs will be written and executed on the Arduino platform with the circuits they build. We will also discuss the basic electronics and programming techniques used in each circuit. The Arduino platform kits may be taken home to try other projects and experiments.

Questions? Contact the IEEE Philadelphia Section office at sec.philadelphia@ieee.org or, call 484.270.5136

******IMPORTANT NOTICE******

I am looking for EE volunteers to help instructors teach kids 10-13 how to hook up a simple circuit (led's, switches, pots, light sensors) on a breadboard and drive this circuit with an Arduino microcomputer. Not previous knowledge of Arduino is necessary. This will be part of a summer camp held at Enon Tabernacle Baptist Church (2800 Cheltenham Ave, Philadelphia, PA 19150) on Mondays and Thursday afternoons 1PM-4PM during weeks of July 13, 20th, 27th, and Aug 3rd. We are looking for people to donate two afternoons.

This is a perfect way for the volunteer to learn Arduino. Volunteers would be given an Arduino. If you're interested, email me the Philadelphia Section office at sec.philadelphia@ieee.org. Or, call 484.270.5136.

Thanks,
Mark



CoNet – Meeting Announcement, Tuesday, May 26, 2015

Title: Agile Processes in Software Engineering

Presented by: Paul Burton, CSM, FBCS, CITP

Sponsored by: British Computer Society, USA Section, (information: <http://na.bcs.org/>)

Meeting and buffet dinner are free, however, we ask that you register with CoNet.

To register send an e-mail with your contact information to: Charless@ieee.org

Registration deadline is 12:00 Noon, Friday, May 22, 2015.

Meeting Date: Tuesday, May 26, 2015

Meeting Place: Sheraton University City, 36 & Chestnut Streets, Philadelphia PA 19104

Fairmount/Franklin Suite – downstairs from main lobby

Parking: Free at the Sheraton indoor garage – use the 36th street entrance.

Take your garage ticket, and have it stamped when you sign in to the meeting.

5:30 PM – 6:15 PM Networking/Social time

6:15 PM – 7:00 PM Dinner

7:00 PM – 7:15 PM Consulting Tales from the Street

7:15 PM – 8:30 PM Speaker

8:30 PM – 9:00 PM Q&A / Discussions

The IEEE Philadelphia Consultants Network (CoNet) is an Affinity Group of the IEEE. Most Members are electrical and computer engineers. The CoNet mission is to share knowledge through technical and business networking. Details:

<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

gene.bruschke@ieee.org

CONSULTING TALES FROM THE STREET: There will be a short presentation on experiences that some of our members have had in their consulting career.

MAIN SPEAKER: Paul Burton, CSM, FBCS, CITP

Main Speaker's Abstract: Agile processes are used by many leading organizations, but what does this mean? We'll explore the basic concepts and discuss the pros and cons of Agile development methods so that you know what to expect and the questions you should ask when hired to work with businesses using these processes.

Main Speaker's Background: Paul Burton is an experienced software development professional with over 25 years in hands-on and management roles. For the last five year he has been an Agile processes practitioner in the financial software field where he used the techniques to deliver on large and small development projects with a team based around the globe. He is the Technology Director for the Investment Management Unit at SEI Investments, a Certified Scrum Master, a fellow of the British Computer Society (BCS the Chartered Institute for IT), chairman of the USA Section Inc. (a 501(c)3 organization) of the BCS, a member



CoNet – Meeting Announcement, Tuesday, May 26, 2015

ADMISSION, RESERVATIONS, AND PAYMENT

Meeting and Dinner are free, courtesy of the sponsoring organization:
 British Computer Society, USA Section
 Information on BCS can be found at: <http://na.bcs.org/>

To attend the meeting we ask that you register with CoNet.
 To register send an e-mail with your contact information to Charless@ieee.org

Admission Fees			
CoNet Members*	IEEE Student Members	All Others	
A: With Dinner	Free	Free	Free
B: Meeting-Only	Free	Free	Free

Questions about this meeting can be directed to Mike Mayor 484-524-3264 or mike.mayor@systems-science.com

ADMISSION, RESERVATIONS AND PAYMENT

Meeting and Dinner are free, courtesy of the sponsoring organization:
British Computer Society, USA Section
Information on BCS can be found at: <http://na.bcs.org/>

To attend the meeting we ask that you register with CoNet.
To register send an e-mail with your contact information to Charless@ieee.org

Admission Fees			
	CoNet Members*	IEEE Student Members	All Others
A: With Dinner	Free	Free	Free
B: Meeting-Only	Free	Free	Free

Questions about this meeting can be directed to Mike Mayor 484-524-3264 or mike.mayor@systems-science.com

Section Notes

2015 Delaware Valley Science Fair

DVSF was held April 1 in Oaks PA. Judges for this event were John Ianuzzi, Robert Lawson, and Peter Silverberg. The Section is in charge of Special Awards that hew closest to the interests of the IEEE. The list follows.

First place – Plaque and \$300

Project T1403 Need a Tune Up?

Tyson Trauger and Jake Trauger Age 17

Grade 11

Lacey Township High School

Lanoka Harbor NJ

Teacher: John Kuzan

Second place – Certificate and \$200

Project B0711 Effective Electromagnetic Propulsion in Magnetic Levitation

Nicholas McDermott Age 17

Grade 11

Charter School of Wilmington

Wilmington DE

Teacher: David Stover

Third place – Certificate and \$100

Project B1208 Enhancing Thermal Dissipation of Processors Through Plasma Etching of MWCNTs

Atharv Gupte Age 17

Grade 11

Parkland High School

Allentown PA

Teacher: Christopher Gahman

Honorable Mention – Certificate and \$50

Project D0711 Recovering Heat Energy by Adding Thermoelectric Coolers to Solar Panels

Spencer Hoffman Age 14

Grade 9

Hoffman Home School

Wenonah NJ

Teacher: Beth Hoffman

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Adcom meets second Tuesday of the month (May 12.) 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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News and Notices contact psilverberg3@comcast.net or 856.461.6615 or fax 509.461.6617
Deadline for the June issue is May 19, 2015
New & improved website: www.ieeephiladelphia.org

ADVERTISE IN THE ALMANACK:

The Philadelphia Section of the IEEE encourages placement of technical, professional, promotional and commercial advertisements in the Almanack. The Almanack is published ten times a year and is read by more than 4,000 members with an average annual salary of over \$70,000 in over 150 key industries. For more information, contact Peter Silverberg at 856.461.6615 or psilverberg3@comcast.net

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1/8 Page: 2.5 x 2.5: \$12.50

Email blasts: We send emails every week. The first time we send an ad, it costs \$50. We will send the identical ad three more times for \$25 each time. If the copy changes, the \$50 applies. If four times are done, the fifth time is like a first time i.e. \$50. We might be bandwidth limited, so please keep them short.

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