

PHILADELPHIA SECTION of the IEEE

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

Almanack



Vol. 60, No. 3 www.ieeephiladelphia.org

March 2015

SECTION MEETING

Mar. 17, 2015

Dinner: 6 pm

Speaker: 7 pm

Sheraton University City

Philadelphia

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

Parking cost paid by section

**U.S. Patent Reform – Do We Need It
And How Far Should We Go?**

Lawrence E. Ashery, Esq.

Electrical Safety in the Workplace

NFPA 70E 2015 versus NFPA 70E 2012

Joseph F. Maida, PE

**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.**

March 2015



The Awards Banquet will be at the
Union League in Philadelphia March 28.
See pages 6 , 7 and 8

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3 CONET	4	5	6	7 ISEC
8	9	10 Adcom	11	12	13	14
15	16	17 IEEE Night St. Patrick's Day	18	19	20	21 Trenton Computer Festival
22	23	24 EnergySMART Conference	25 PES & IAS EnergySMART Conference	26 Employment Network Electrical Safety and Design Seminar	27	28 Awards Banquet
29 Palm Sunday	30	31				



Chair's Message

By Philip Gonski, P.E.

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I'd like to cordially invite our members to attend the annual Awards Banquet, held on March 28 at the Union League. The theme this year is "Fostering Innovation," with a keynote by Alan Mathason of NextFab Studios.

Our Region has a growing tech and startup industry, which is fostered by both NextFab and the IEEE. We will be honoring the leading innovative firms, engineers, and researchers in our Section. The last two years have been sold out occasions, and I would strongly encourage you to attend or consider sponsoring.

As a Section, we will be celebrating the achievements of 2014. We held a record number of meetings, with over 80. The Section sponsored three conferences, introduced our successful Arduino outreach program to inner city kids, introduced our PDH/CEU program, held a job fair, and gave out three scholarships to very impressive students.

In addition, our student branches were especially outstanding, with the Sumo Robot competition, and the Drexel Dragon Hacks, which attracted students from as far away as Europe.

I hope to see you there.

Phil

New Senior Members

The last A&A Review Panel meeting was held on 7 February in New Orleans, LA. Our next Senior Member Review Panel Meeting will be held on 7 March 2015 in Charleston, SC.

This Section advanced two and we congratulate:

Hashem Ashrafiun

Chamith Rajapakse, also in Engineering in Medicine and Biology Society

IEEE NIGHT

Philadelphia Section Meeting

Joint with: Magnetics (M) and Reliability (R)

Date: Tuesday, March 17, 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 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 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.

U.S. Patent Reform – Do We Need It And How Far Should We Go?

Lawrence E. Ashery, Esq. Caesar, Rivise, Bernstein, Cohen and Pokotilow

While the U.S. patent system is essential for the advancement of technology, abuses of the system over the past few years have generated significant publicity. In particular, many companies have received demands to pay patent license fees for patents of questionable validity, and have often responded by paying the fees as an alternative to expensive litigation. This problem has become so widespread that Congress is currently considering a bill for patent reform in order to curb abusive litigation practices. But, how do you stop questionable litigation without adversely affecting companies with legitimate patent concerns? This is a complex question. During this seminar, we will explore the current issues and how they are being addressed. For anyone working with (or creating) intellectual property, it is important to understand patent reform and how it will affect patent stakeholders.

Larry Ashery is a partner with Caesar, Rivise, Bernstein, Cohen and Pokotilow, an intellectual property law firm that has been serving the Delaware Valley for almost 90 years. Before becoming an attorney, Larry was a systems engineer with RCA – Camden. As a patent attorney, Larry has procured over 4,000 patents in numerous technical areas including telecommunications, computer hardware, computer software, e-commerce, industrial systems, semiconductor fabrication, and mechanical devices. Larry has lectured extensively on intellectual property issues throughout the United States and Asia.



Electrical Safety in the Workplace NFPA 70E 2015 versus NFPA 70E 2012

Joseph F. Maida, P.E.

NFPA 70E 2015 takes a new approach to using PPE for electrical arc hazards as compared to NFPA 70E 2012. Arc flash labels created based on NFPA 70E 2015 will no longer include the Arc Flash Hazard Category or the Prohibited Shock Protection Boundary, which as of the 2015 edition are no longer defined in NFPA 70E.

NFPA 70E 2015 also states the following:

“Labels applied prior to September 30, 2011 are acceptable if they contain the available incident energy or required level of PPE”

NFPA 70E 2015 does not address why NFPA 70E -2012 compliant labels are not acceptable or if they could be acceptable.

Applying the changes in NFPA 70E 2015 without retraining personnel can lead to confusion.

This course is intended to discuss the changes and to show that labels that were properly developed after September 30, 2011 can be used until personnel have been trained in the new approaches to selecting and using PPE for arc flash hazards.

Joseph F. Maida, PE, P.Eng., LEED^{AP}



President

Education: BSEE, Drexel University – 1971

MSEE, Drexel University – 1976

PE Licesse: PA, NJ, DE, NY, GA, FL, TX, MA, ID, IA, NC, WV, AR, MD, TN, ALBERTA

LEED Accredited Professional – June 2009 to Present

Appointments: Pennsylvania Uniform Construction Code Review and Advisory Council 2009 to 2011



Employment: Maida Engineering, Inc. 1978 to Present

Joseph Maida provides engineering and design services for large and small projects in various markets and over a number of disciplines. Since starting Maida Engineering, Inc. in 1978 he has completed many engineering and design projects for commercial, industrial, governmental design projects and many design/build projects for industrial power and control systems and numerous studies for large power system studies and arc flash analyses.

Large or small, simple or complex, Joseph Maida approaches every project with the same attention to detail and strives to develop or oversee the development of the most feasible designs that meet building codes, that provide a high degree of safety and that will function reliably while meeting the client’s budgets ad schedules.

Joseph Maida manages a company that provides harmonious working environments while utilizing the technical and managerial talents of its employees and subconsultants, thus enabling them to provide the highest quality of engineering and design to its industrial, commercial, government and automation and control clients.

Joseph Maida has provided project management and overseen or performed engineering services for the following recently completed projects: The replacement of the motors, drives, lubrication systems and controls for two helicopter blade, 4050 HP dynamic balancing towers; the replacement of an existing wind tunnel's AC wound rotor and DC motors with a 18,000 HP synchronous motor and a 22,000 HP, 36 pulse VFD; the engineering and design for a 6 MW, 13.2 KV Mission Critical Electrical Power Generation and Distribution Systems for the Philadelphia Veterans Medical Center, the conceptual design and code analyses for the replacement of the motor, drives and controls for the Tram systems within the Saint Louis Arch, the installation of 5 MW Standby Power Distribution System and Priority Load Management Control System for a Pharmaceutical R&D campus; a new cement plant's 34.5 KV and 4,160 Volt, 20 MVA power distribution system; a hazardous area analysis for areas containing fossil fuel dust; numerous power system studies including load flow, voltage drop, short circuit, equipment evaluation, TCC Coordination, motor starting, harmonics, and arc flash analyses; the remodeling of numerous commercial kitchens; the power distribution and control of new outdoor and indoor lighting; a new Command Center; the study for upgrading a large data center's standby and interruptible power supplies; and the installations of new services, feeders and branch circuits for pharmaceutical, fiberglass and cement plants and commercial buildings, HVAC/mechanical equipment and renovations to building and processes.

Joseph Maida has overseen and prepared bid and construction documents that have been used by its clients for design/build projects and by Maida Engineering to perform design/build projects utilizing the services of both in-house and outside engineers, fabricators and contractors. Some of these design/build projects have included: a new fiberglass manufacturing plant and warehouse, the engineering, fabrication, installation and PLC programming for a large textile manufacturing line with 56 DC drives and motors; the engineering, fabrication, installation and PLC programming for the electrical and control portions of a new cement terminal; the engineering, fabrication, installation and PLC programming of PLC based, HVAC control systems for a 100,000 square foot Class 1 Clean Room (total project, concept to startup was completed in 5 months).

Joseph Maida has extensive experience in the interpretation and application of building and fire codes. He has performed many electrical hazardous areas classification studies within chemical, pharmaceutical and cement plants and within oil refineries. He has contributed to the writing of a section of NFPA 70, National Electrical Code.

Societies: NSPE member, PSPE – Philadelphia Chapter member, Practicing Engineering Institute, IEEE Member and NFPA member

AWARDS BANQUET MARCH 28

The Philadelphia Section of the IEEE Cordially Invites You to the Annual Awards Banquet and Gala. Theme is Fostering Innovation. Join us as we recognize those who have been honored by the Institute and the Section for their contributions

Date: 28-March-2015

Time: 05:30PM to 10:00PM

Where: The Union League of Philadelphia

140 South Broad Street, Philadelphia, Pennsylvania 19102

Email meeting contact: sec.philadelphia@ieee.org

Registration form on next page.

Featured Speaker: Alan Mathason of NextFab - High-Tech Workshop & Prototyping Center
Topic: NextFab ~ And what they are doing to make various digital design and fabrication technologies (especially electronics) available to the public and start-ups in every phase of their ideation.

Alan Mathason is the Chief Operations Officer at NextFab in Philadelphia, PA. NextFab's mission is to revive manufacturing through Access, Awareness, Competence, and Commerce in digital design and modern manufacturing. Alan strives to create a scalable and sustainable environment at NextFab where members and staff can collaborate and grow ideas from thoughts to products. Alan has a B.S. in Electrical Engineering from the University of Miami and M.E. in Systems Engineering from the University of Virginia. Prior to NextFab, Alan was with GE Intelligent Platforms, where he held roles ranging from Electronic Hardware Designer to Intellectual Property Manager to being part of Senior Engineering Management. Alan holds several patents in Industrial I/O technologies.

Agenda: Hosted Reception with cash bar: 5:30 PM and then Dinner: 6:30 PM

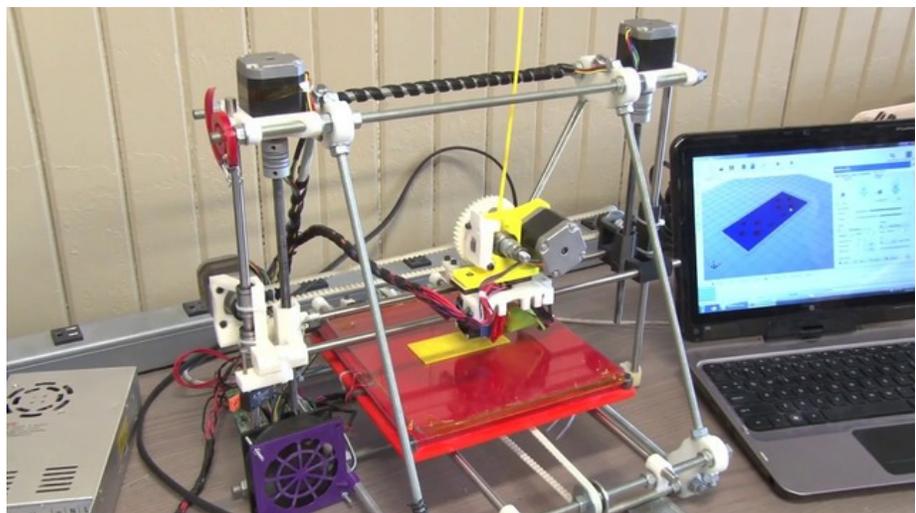
Cost: \$85 pp by Feb. 25th | \$90.00 pp: Feb. 26 - Mar. 14th | \$100.00 pp after Mar. 14th.

Registration Deadline: March 23, 2015

(Cancellation must be made in writing and received by March 23, 2015 to in order to receive a refund or not be liable for payment)

Dress: Business Attire

One
of
many
projects
at
NextFab



**The Philadelphia Section of the IEEE
Cordially Invites You to the Annual
Awards Banquet and Gala
At
The Union League of Philadelphia
Broad and Sansom Streets, Philadelphia, PA 19102**

**Saturday, March 28, 2015
Hosted Reception 5:30 PM / Dinner 6:30 PM**

\$850 Table of 10// \$85 pp by 2/25/15
\$90 pp by 3/14/15 // \$100 pp after 3/14/15
Dress is Business Attire

Final Registration deadline: March 23, 2015. Please note: Cancellation must be made in writing by March 23, 2015 to receive a refund or not be liable for payment.)

Registration: #_____Persons at \$_____per person// #_____Table(s) at \$850

Enclosed is a check in the amount of \$_____ Payable to "IEEE-Phila," or charge \$_____ to my
_____ Visa _____ Master Card _____ Amex _____ Discover Exp Date _____ CSV #_____

Credit card # _____

Name on Card _____

Billing Address, City, State, Zip _____

Billing Telephone # _____

List attendee names(s) with designation and company: (You may email the list of attendees to sec.philadelphia@ieee.org)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Contact name _____

Company _____

Tel _____ Email _____

Fax/ E-mail to IEEE-Philadelphia, 267.244.9218, sec.philadelphia@ieee.org
Section office, 11 Bala Avenue, Bala Cynwyd PA 19004

TEN REASONS FOR ATTENDING

THE IEEE Philadelphia Section 2015 Awards Banquet & Gala

1. This is one of the best ways to celebrate your engineering profession and to increase your contact and friendship with your peers in the Delaware Valley.
2. The Philadelphia Section is one of the largest and most influential sections in the IEEE. Become a part of its activities.
3. For management, this is an ideal way to reward your engineers and managers and increase your social contact with them and their families in a most pleasant atmosphere.
4. The Union League is one of the most prestigious locations for professional banquets in the Philadelphia area.
5. You will be present and participate when we recognize and reward our outstanding members (your peers) in a short ceremony.
6. The Philadelphia Section partly subsidizes the banquet.
7. You will hear an interesting and provocative keynote address.
8. Organization and corporate sponsorship will be recognized at the Banquet, in the Award Brochure, and in the Philadelphia Section Newsletter (the Almanack), which goes to 4,000 professionals and decision makers.
9. The evening will conclude with a gala that you can enjoy with your friends at your leisure.
10. All in all, this quite an opportunity. Don't miss it.

Be sure to reserve early! Call the IEEE Office at 484.270.5136. The reservation form is on the preceding page. Sponsorship forms are on the web site. The opportunity to sponsor closed March 1. It is now easy to use vtools to register.

IEEE Philadelphia Employment Network Group

Date: Thursday, March 26, 2015 Time: 7:00 PM - 9:00 PM

Topic and Speaker: Employment Network Meeting at Unisys

Location: Unisys Corporation, 2476 Swedesford Rd Malvern, PA 19355

Cost: No Charge, snacks and refreshments will be served

Please join this IEEE Employment Network meeting at Unisys Corporation. During this meeting we will have discussions with Unisys Engineering Senior Management, job search and Unisys opportunities with hiring managers, open roundtable discussions, product demos and professional networking.

Use vTools to register for this event: <https://meetings.vtools.ieee.org/m/32709>

Direct your questions to George Szekely George.szekely@gmail.com

Philadelphia IEEE Consultants Network (CONET)

Our next meeting will be held Tuesday evening, March 3, 2015 at the Sheraton University City. **Michael A. Mayor**, MSE, PE, will discuss **Systems Engineering Trades for Digital Receiver Design in Geolocation**. There will be time for networking before the program. Also on the program is “CONSULTING TALES FROM THE STREET,” There will be a short presentation on experiences that some of our members have had in their consulting career. It will be an informative and enjoyable evening. If you are a technical consultant, or if you aspire to become one, you may wish to attend this meeting. Your early reservation will assist our meeting planning. Thank you.

Date: Tuesday evening, March 3, 2015

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.

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

For information on becoming a member, go to <http://www.philaconet.com>

Systems Engineering Trades for Digital Receiver Design in Geolocation

Presented by **Michael A. Mayor**, MSE, PE

Abstract: Locating a Radio Frequency Transmitter has been known since Heinrich Hertz started experimenting with radio waves in the late 19th Century. The advent of Radar in WWII allowed for the location of objects, which are not emitting (but reflecting) radiation. Radio Location Systems (RLS) have gone through an exponential evolution in capabilities and complexity. The correct functioning of an RLS depends on many subsystems and components, which must be assembled according to strict engineering rules. Furthermore, like in all engineering systems, any given system or subsystem cannot be “all things to all people.” To this extent, significant Systems Engineering tradeoffs must be conducted at the component, subsystem, and system level. After a brief historical overview of location systems, this talk will focus on the design of a key RLS subsystem, which is a Digital Receiver. Specifically, I will present a tradeoff between sensitivity and dynamic range and the impact of the Analog to Digital Converter (ADC) effective Noise Figure on the receiver performance with respect to Emitter Geolocation Accuracy.

Michael A. Mayor is currently an Independent Consultant providing Systems Engineering services from Proposal Preparation through System Design and Development. His areas of expertise are in the area of Secure Wireless Communication, Low Interference (Low Signature) Communications Systems and Emitter Geolocation. His consulting services include Radio Frequency (RF) propagation modeling and analysis, Software Defined Radio, Digital Receiver Design, Digital Signal Processing algorithms and the selection and application of Digital Instrumentation to System Test and Measurements. Formerly, he was Vice President/Chief Scientist for Advanced Technology Research in the ITT Corporation, Defense Electronics Group. He conducted Research and Development programs for secure Defense Communications and Intelligence Systems, including Digital Receiver Design, Digital Signal Processing Algorithms for Conventional, Non-Linear and Non-Stationary Systems, Emitter Geolocation and

Encryption methods and algorithms. Mr. Mayor authored six patents in the areas of Spread Spectrum Signaling and Digital Instrumentation. He received the ITT Engineered for Life Award for substantial technical contributions in the areas of Tactical Communications and Emitter Location Systems. Mr. Mayor is a Licensed Professional Engineer and holds an MSE from the Moore School of Electrical Engineering, University of Pennsylvania.

Admission

CONET Members

A: With Dinner \$30
B: Meeting-Only Free

IEEE Student Members

A: With Dinner \$40
B: Meeting-Only Free

All Others

A: With Dinner \$40
B: Meeting-Only \$15

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, February 25, 2015. The credit card deadline is Friday, February 27, 2015.

B: Meeting-Only: Reservations preferred. Walk-ins are accepted if space is 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

Open Policy: 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

Questions can be directed to Mike Mayor at (484) 524-3264 or by e-mail to mike.mayor@systems-science.com

Our mailing address is:

Philadelphia IEEE Consultants Network (CONET)

c/o R. Peruzzi Consulting, Inc.

719 Fourth Avenue

Bethlehem, PA 18018



Membership Application/Renewal for IEEE Philadelphia Consultants Network (CoNet) 2015

www.PhilaCoNet.com

You are invited to renew or to become a new CoNet member. Our **mission** is to improve our technical consulting businesses by sharing and expanding our technical knowledge and our business capabilities. Our **Web site**, www.PhilaCoNet.com is a complete and permanent record of our activities since 2010.

Membership is open to the public. We are an affinity group of the IEEE Philadelphia and Lehigh Valley Sections. Membership in IEEE is encouraged but not required. Paying the Annual Fee for Service is the only membership requirement – which may be a tax-deductible business expense for consultants.

Membership Benefits:

Listing in the Directory of Philadelphia Consultants at www.PhilaCoNet.com

Free admission and parking for all CoNet meetings

Discounted dinners at meetings

Timely email **notifications of consulting opportunities** and announcements

Best of all, **effective cross-references** with other CoNet members

CoNet 2014 Activities Summary:

Meeting topics and speakers were selected to appeal to a variety of technical professionals. There was an even balance of technical and consulting-business orientation. Our live, face-to-face meetings in 2014 featured presentations titled:

December 2, 2014, *Public Roles for Technical Experts*

October 7, 2014, *One Man's Saga to Consulting in RF Communications*

August 5, 2014, *Business Structures and Legal Entities for Consultants*

May 6, 2014, *QoS - Quality of Service in Communication Networks*

April 9, 2014, *The International Executive Service Corps*

Joint meeting with the Chemical Consultants Network

March 4, 2014, *RF in Science and Industry*

Our programs include short talks by CoNet members including:

- **“Show and Tell”**, where a member makes a three-minute self-introduction to explain his area of practice as if to potential clients, and receives constructive criticism from the audience
- **“Consulting Tales from the Street”**, where a member relates an on-engagement technical or business problem faced and overcome, or not. Open discussion will follow.



Membership Application/Renewal for IEEE Philadelphia Consultants Network (CoNet) 2015

www.PhilaCoNet.com

Include check or money order for \$80.00 payable to CoNet for your 2015 Annual Fee for Service	Deliver this form or Equivalent to: Peter Z. Ingerman CoNet Treasurer 40 Needlepoint Lane Willingboro, NJ 08046-1997
------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------

Member Name: _____

Postal Address: _____

E-mail for CoNet correspondence: _____

Phone for CoNet correspondence: _____

New Member

Renewing Member, revising profile

Renewing Member, no profile change

You will receive instructions for creating or changing your profile in the Directory of Philadelphia Consultants. If you have questions, you may contact:

Mike Mayor at 484-524-3264

mike.mayor@systems-science.com

Most CoNet members are electrical, electronics, or computer experts who are, or who aspire to be, independent consultants. CoNet is one of many consultant networks, which are affiliated with the IEEE – in our case jointly through the IEEE Philadelphia and Lehigh Valley Sections

The College of New Jersey Hosts
The 40th Anniversary of
THE ORIGINAL PERSONAL COMPUTER SHOW

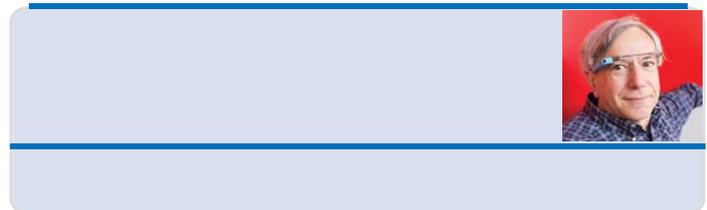
Trenton Computer Festival™



Dhameshwaja - graphicriver.net

**Admission: \$10.00 (advance)
\$12.00 at Gate
Free Parking
www.tcf-nj.org**

Technology Journalist
and Award-winning
Writer,
Wearable Tech Insider,
speaks on



INDOOR FLEA MARKET & VENDOR FAIR

50+ Talks, Workshops, Tutorials,
Demos and Special Events!

Object-Oriented Programming University:
One Day of Short Courses

Microsoft Presentations and Special
Workshop on "Safe Computing"

Quadcopter and 3D Printer Demos

Tour the Sarnoff Museum of Tech.



**MULTIMEDIA, SECURITY,
WEARABLE TECHNOLOGY,
PHOTOGRAPHY, HOME CONTROL,
HISTORIC COMPUTERS and WIFI**

**Ham Cram Session & Exam:
Get an Amateur Radio License in
one day at TCF! Cram begins at 9 am**

Arduino Developer/User Tutorial/Workshop

**Hands-on Workshop on Introduction
to Programming in the Cloud**

IEEE/ACM IT PROFESSIONAL CONFERENCE

Friday March 20, 2015, 8:30 am — 5:00pm**

Continuing as part of TCF's Saturday Talks.

For Conference Info and Fees See

<http://princetonacm.acm.org/tcfpro/>

**For additional TCF'15 info,
directions and advance tickets:
www.tcf-nj.org**

DOOR PRIZES

IEEE Integrated STEM Education Conference (ISEC)**

Saturday, March 7 – 8:00 am — 5:00 pm

at Friend Center, Princeton University, NJ

Creating a Culture of Achievement

Info: <http://ewh.ieee.org/conf/stem/>

**The IT Pro (Friday) and ISEC Conferences require separate registrations.

	ED-115	ED-211	ED-209	ED-208	ED-207	ED-206	ED-113	ED-212	ED-109	ED-107	ED-105	ED-103	ED & RWH
Saturday	Microsoft	IT-PC	Computer Business	Applications	Games & Technology	Education & STEM	Technology & Hardware	History of Computing	App Dev./History	Arduino Workshop	OOP University	Amateur Radio	Exhibits
10:15am to 11:10am	Bitcoin - Currency for the Future or the Past? <i>D. Libes</i>	Software Development Apprenticeships <i>K. Thomas & C. Jaros</i>		Workshop Introduction to Programming in the Cloud	GPS Secrets Updated <i>C. Lewart</i>	Getting Started: PCs/Tablets, Internet & Digital Photography <i>H. Hiriz</i>	Satellite Reception Made Easy <i>M. Filippi</i>	Eighty Years of Computer Hobbyists <i>E. Koblenz</i>	Workshop on Developing Apps for Android	Introduction to Arduino <i>(Presentation)</i>	Introduction to OOP Design Principles <i>M. Redlich</i>	Ham Cram 101 Ham Radio License Exam Preparation Course	Special Exhibits and Demos 3D Printer & Design Demos by IEEE-PCJS from 11:00am to 1:00pm in RWH-2nd floor Quadcopter Demo Digital Photo Exhibit Historic Computers from MARCH Clubs Tour the Sarnoff Museum of Historic Technology (9am-3pm in RWH)
11:20am to 12:15pm	Workshop on Keeping Your Computer Bug Free & Tips on Windows 8.1 <i>R. Kessler</i>	HIPAA Legal Rules <i>T. Alshugran</i>	Stock Market Timing Using Neural Networks <i>D. Fishbein</i>	<i>P. DePasquale * in FH-403 * (Computer Lab)</i>	TCF@50 <i>A. Katz</i>	Updated Guide to Best Web Sites & Search Engines <i>E. Kaplan</i>	How to Build a Scalar Network Analyzer <i>G. Heron</i>	ENIAC and the First TCF Keynote Speech <i>E. Koblenz</i>	<i>B. Burd</i>	Hands-On with Arduino	Getting Started with C++ <i>M. Redlich</i>	Ham Cram Session begins at 9:00am and goes to 12:30pm	
12:25pm to 1:20pm		New Breed of Spreadsheet Computing <i>E. Alda</i>	Internet Job\$\$\$ <i>D. Hsu</i>	Get Started in Home Automation <i>N. Cherry</i>	Ralph Baer - Inventor of the Home Video Game <i>S. Marshall</i>	Workshop on Creating Real-Time Streaming Live Video <i>O. & M. Rivera</i>	Two Raspberry Pi Tutorials and Demos <i>J. Jesson</i>	Workshop Fixing Broken Vintage Computers	Introduction to the Vintage Computing Hobby <i>J. Brace</i>	<i>(Limited Space; Bring Your Laptop!)</i>	Advanced C++ <i>M. Redlich</i>	Practice Exam given at 1:30pm	
1:30pm to 2:25pm	Microsoft Office in 2015 <i>D. Soll</i>	Future of Mobile Cloud Computing <i>Z. Nossire</i>	Invention, Patents and Manufacturing <i>M. Streitman</i>	Social Media Opportunities <i>D. Hsu</i>	Evolution of Console Computer Games <i>R. Amidon</i>		Google Gadgets <i>B. Burd</i>	<i>C. Cohen</i>	Abacus to the iPhone <i>E. Koblenz</i>	Arduino on the Network	Getting Started with Java <i>M. Redlich</i>	Walk-in Real Exam given at 3:40pm	
2:35pm to 3:30pm	Featured Keynote Speaker: Dan Rosenbaum, Technology Journalist, Wearable Tech Insider, will talk on "Approaching Singularity" in Room ED-115												
3:40pm to 4:35pm	Introduction to Windows 10 <i>D. Soll</i>	User Interface for the Physically Impaired <i>J. Coppola et al</i>	What is Your Data Strategy <i>S. Krishnajeet</i>	Robotics - An Introduction <i>S. Kim</i>	Games, Intelligence, Consciousness & the Turing Test <i>S. Marshall</i>	Naming Structures for Improved Digital Organization <i>J. LeMasney</i>	Computer Anamorphic Art <i>W. Silverman</i>	Restoring Vintage Electronics <i>J. Allen</i>	MTS Altair 8800 <i>C. Cohen</i>	Before Computer Drafting <i>P. Bergsman</i>	Advanced Java <i>M. Redlich</i>	Conducted by the David Sarnoff Radio Club www.n2re.org	

2015 Trenton Computer Festival – Saturday, 21 March 2015

Keynote Speaker (2:35pm): This year's Keynote Speaker, **Dan Rosenbaum**, will address the incredible opportunities awaiting us as we *approach the Singularity* predicted by futurist Ray Kurzweil.



Featured Technical Speaker, TCNJ's Peter DePasquale (10:15am): Get an introduction to the terminology of cloud computing, and hands-on experience in leveraging cloud computing for personal and corporate needs. Attendees need a working knowledge of Unix, SSH and Java.



Featured Technical Speaker, Barry Burd (10:15am): Learn how to start creating Android apps.
(1:30pm): See a demo of Google's gadgets including Google Glass, and try the devices for yourself!



Object-Oriented Programming University: Offers a one-day introduction to object-oriented programming by Mike Redlich, President of ACGNJ.
Tour the Sarnoff Museum Collection of Historic Video and Electronic Technology: in Roscoe West Hall at TCNJ. Open from 9am to 3pm.

2:35pm - Featured Keynote Speaker:
Dan Rosenbaum,
Technology Journalist
for Wearable Tech Insider,
in Room ED-115

TCF'15
Saturday Evening Banquet
Dan Rosenbaum,
Wearable Tech Insider,
will present short remarks.
6:00pm
Admission: \$25
Tickets available on the TCF website
www.tcf-nj.org (by March 14th).
Pick up tickets on Sat. at VIP/Speakers desk.
Door Prizes!

Friday - ITPC 2015
10th IEEE/ACM Information Technology
Professional Conference at TCF
8:30am to 5:00pm in the Brower Student Center
Friday, March 20, 2015
(Conference registration required.)
Info/Fees: <http://princetonacm.acm.org/tcfpro>

www.tcf-nj.org

Section notes

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Adcom meets second Tuesday of the month (Mar. 10) at the Sheraton University City. Members are welcome to attend. Reserve a seat by calling the office by the Friday before.

Almanack Staff

Publisher: Phil Gonski, P.E.

Editor: Peter Silverberg

Asst. Editor: Janet English-Cartwright, Ph.D.; jenglish@fi.edu

News and notices contact psilverberg3@comcast.net or 856.461.6615 or fax 509.461.6617

Deadline for the April issue is March 10, 2015

New & improved web site: 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

Rates:

Full Page: 7.5x10: \$100

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1/2 Page: 5 x 5: \$50

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

Email blasts: \$50 Second same month \$25.

Main Office: 11 Bala Avenue, Bala Cynwyd PA 19004, 484.270.5136 sec.philadelphia@ieee.org

Member health news.

I (Peter) got an email from Elaine Cohen. Feb. 18. "Ernest suffered a small stroke last week. After a few days at Bryn Mawr Hospital, he is now in rehab at Delaware County Hospital. His right side is weak and speech not so good, but his sense of humor, intelligence, memory, etc., are just fine. He is working hard so that he can come home soon."

The Section wishes him a speedy recuperation.

**Call for Participation
5th IEEE Integrated STEM Education
Conference (ISEC '15)
Friend Center at Princeton University
Princeton, NJ**

Save the date! Saturday, March 7, 2015

Advance registration is open for the 5th IEEE Integrated STEM Education Conference through 11:59 pm EST on Saturday, February 28. After that, regular registration fees are in effect. The advance fee schedule, good through 11:59 pm EST Saturday, February 28, 2015, is \$130 (IEEE members - authors and attendees) / \$150 (non-IEEE members - authors and attendees), and \$30 for K-12 teachers (CEUs awarded) and K-16 students. The regular fee schedule is \$150 (IEEE members - authors and attendees) / \$200 (non-IEEE members - authors and attendees), and \$50 for K-12 teachers (CEUs awarded) and K-16 students.

We are pleased to partner with the Westin Princeton at Forrestal Village, which is a short drive from the Friend Center, for conference housing this year. The conference room rate, good for Friday, March 6 and Saturday, March 7, 2015, is \$109/night. This rate is offered through Sunday, March 1. Shuttle service to/from the hotel and Friend Center will be provided.

Christine M. Cunningham, PhD, founder and director of Engineering is Elementary, Vice President of Research, Boston Museum of Science, and a Fellow of ASEE will be our main keynote speaker. We will also have a special presentation by Saurabh Sinha, PhD, VP of the IEEE EAB

and Executive Dean of the Faculty of Engineering and the Built Environment at the University of Johannesburg, and Douglas Gorham, EdD, the managing director of IEEE Educational Activities Board. We're featuring a Town Hall/Unconference "all hands" session where YOU drive the content as well; the topic is Trends in STEM Integration. There will also be interactive exhibits for you to enjoy.

Additional information on registration, housing, a preliminary program grid, and other conference logistics is available at <http://ewh.ieee.org/conf/stem>.

ISEC 2015 is sponsored by the IEEE Princeton / Central Jersey Section with technical sponsorship by IEEE Region 1 and IEEE Education Society.

Please follow us on Twitter (@ISEC15), like us on Facebook (search for ISEC), email us at isec.march7.2015@gmail.com, and visit us at our conference web site. We look forward to seeing you at ISEC 2015!

March also brings TCF@40 - the Trenton Computer Festival, the original personal computer show, is celebrating its 40th anniversary! Information on TCF, which will be held on Saturday, March 21, 2015, is available at <http://tcf-nj.org>. Information on the Information Technology Professional Conference, which will be held Friday and Saturday, March 20-21, 2015, is available at <http://princetonacm.acm.org/tcfpro>.

Electrical Safety and Design Seminar

APPROVED for 3 PDH hours in PA, NY, NJ, and all other states that have requirements.

Co-sponsored by Keystone Engineering Group (www.kegi.net) and Royal Electric (www.royalelectric.com)

This event will focus on the misconceptions pertaining to electrical design in classified areas. While commonly misunderstood, electrical equipment must be present in explosive, corrosive, or toxic environments. Properly rating and designing distribution systems to operate in these areas require astute interpretation of NEC and NFPA codes for the area.

The talk will also focus on electrical safety on the whole, including properly designing electrical distribution equipment and implementing a facility safety plan

Date: 26-March-2015

Time: 09:00AM to 01:00PM (4.00 hours)

Where: Electrical Association, 527 Plymouth Road, Suite 408
Plymouth Meeting, Pennsylvania, 19462

Event Organizer: Philip M Gonski, PE (Section Chair) 630.363.0790

Registration is by vTools at <https://meetings.vtools.ieee.org/m/32269>

Agenda: 9AM - 10:30AM: Bob Potter, Jr. - Hazardous Area Classifications

10:30AM - 12PM: James J Panetti, PE - Designing Electrical Systems in Wastewater
Facilities for Safety and Reliability

12-1PM: Lunch

Synopsis:

Bob Potter of Eaton/Crouse Hinds

Topic: Hazardous Area Basics

The presentation will answer all the lingering questions designers, owners, and consultants have about electrical equipment located in hazardous areas. Topics discussed during the seminar include the following:

I. Classification information of hazardous areas

A. Class I, II, III

B. Division 1 and 2

C. Groups A, B, C, D, and E, F, G

D. Temperature Ratings (T-Ratings)

II. Prevention of external ignition and explosion

A. Sources of ignition

B. Evaluation of hazardous areas

C. Product construction and flame paths

D. Prevention techniques

III. Equipment for hazardous location

A. Enclosures (including NEC exceptions allowing non-hazardous units)

B. Lighting Fixtures

C. Plugs & Receptacles

D. Fittings

IV. Wiring methods and materials

A. Conduit

B. Sealing fittings (proper selection and installation location)

C. Cable sealing

James J Panetti, PE of Keystone Engineering Group

Topic: Designing Electrical Systems in Wastewater Facilities for Safety and

Reliability

Workers at sewerage treatment plants and pumping stations face many hazards, including the potential for electrical shock and explosions. These facilities are also located at the bottom end of a drainage system carrying hazardous materials. The systems need to operate continuously or recovery quickly from power outages, electrical faults and mechanical failures.

This talk will discuss electrical design challenges commonly faced by wastewater facilities designers, including identifying hazardous areas and what to do about it, the need for

short circuit and coordination studies to improve reliability, and why arc flash hazard studies and electrical safety programs are important.



Meeting of the Philadelphia Joint Chapter



IEEE Power & Energy and Industry Applications Societies

Topic: Arc Flash Mitigation and NEC 2014 Section 240.87

Speaker: Daniel Blascovich, P.E, Power Systems Engineer,
Schneider Electric Company

Date and Time: Wednesday, March 25, 2015
Lunch @ 11:45 a.m.; Presentation: 12:10 – 1:30 p.m.

Cost: No Charge; Lunch Courtesy of Square D by Schneider Electric

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

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

Reservations: Register by visiting: 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 Stas Muzykowski at smuzykowski@burns-group.com or 215-979-7700, ext 7790, by 5:00 p.m., Wednesday, March 24th, 2015 (**Specify if you want lunch**)

Abstract: This presentation will be an overview Section 240.87 of the 2014 National Electric Code. This section requires arc flash mitigation of circuit breakers with frame sizes 1200A and larger. The presentation will discuss arc flash mitigation in general and different strategies for addressing Section 240.87.

The Speaker: Dan’s career as an engineer spans 25 years beginning in manufacturing and facilities, followed by a brief stint as a consultant, and lastly as a power systems engineer performing engineering studies. Dan began his electrical engineering career with Armstrong World Industries designing and commissioning power and control projects. He furthered his industrial power knowledge working on power projects at the Port of Portland in Portland, OR. Cadbury Schweppes brought Dan back to the East Coast where he continued doing electrical engineering projects in high speed manufacturing. Dan began his engineering studies career at Cadbury Schweppes and carried this on to a consultant before coming to Schneider Electric/Square D 7 years ago. At Schneider Electric, Dan has been a Power Systems Engineer including being an Engineer Responsible in Charge for Engineering Studies in the Northeast. He is presently at Schneider Electric as a Business Development Engineer for engineering studies. Dan has a BSEE degree, is an active member of IEEE, is a Power Quality SME providing

internal and external power quality training at Schneider Electric as well as performing Power Quality studies.

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

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Creation

By Ernest Cohen, Ph.D.

The cosmic clouds streaming thin.

(Slowly, oh so slow)

Stars and planets formed therein.

Rain pours down and waters flow

across the bare rock. Long ago

sunshine on the earth did fall,

energy and matter, God created all.

A fish breathed air; a bird was born.

(Slowly, oh so slow)

One form evolved another form

from the cells that once did grow

in the oceans long ago,

before man walked, life had to crawl.

Praise God, the Creator of all.

The double thread of life unwinds

(Slowly, oh so slow)

One cell seeks another, finds.

Life that was created low

in the oceans, long ago,

has arisen and grown tall

before God, the Creator of all.

Nature, red in tooth and claw.

(Slowly, oh so slow)

We seek from You a better law.

Please Lord, unto us do show,

How to work with You and sow

the seed from which a new world grow.

Bring peace unto this planet small,

We pray, God, Creator of all.

(Awarded 2nd Place Poetry by the Rutgers Jewish Review, April 1978)

2015 EnergySMART Conference March 24-26, 2015 Pennsylvania Convention Center Philadelphia, PA

IEEE members get 50% discount.

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3. Connect and collaborate

Network with industry professionals facing your same challenges, and developing best practices to meet those challenges

Conference [registration](#) is live! Feel free to visit the conference's [website](#) for further information including our comprehensive [agenda](#) and line-up of [guest-speakers](#).