ALMANACK (Editor: Michael Mayor, P.E.)

- Published ten times a year, January through June, a Summer issue covering (July, August) and September through December.
  December Inputs Deadline: Friday, 11-15-2016

IEEE SECTION NIGHT

- Meetings are conducted eight times per year on the 3rd Tuesday of the Month, January through May and September through November.

ADMINISTRATIVE COMMITTEE

- ADCOM meetings are conducted on the 2nd Tuesday of the month: January through June and September through December. Members are welcome to attend the meeting only. Reserve a seat by calling the office the Friday before the meeting (Phone: 484-270-5136)

November – The ADCOM meeting was moved to Thursday, Nov. 10, 5:00 pm – 6:00 pm. It will be followed by Student Appreciation Night with dinner and a Speaker.

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PHILADELPHIA SECTION of the IEEE
Counties of Membership: Pennsylvania: Bucks, Chester, Delaware, Montgomery and Philadelphia.
New Jersey: Burlington, Camden and Gloucester
IEEE SECTION NIGHT
Philadelphia Section
Meeting
Tuesday, Nov. 15, 2016

Sponsored by the local Chapters of the Aerospace and Electronic Systems (AESS), Signal Processing (SP) and Engineering in Medicine and Biology (EMB) Societies.

Note: In the event of bad weather please call the Sheraton after 1:00 PM the day of the meeting: 215-387-8000. Ask the front desk if the meeting has been canceled.

Tuesday, November 15, 2016.
Dinner at 6:00 PM,
First Speaker at 7:00 PM.
Sheraton University City,
3549 Chestnut St,
Philadelphia, PA 19104,
(215) 387-8000

Meal Cost: $25.00 (students $15.00).
The meal cost is higher but it is subsidized by the IEEE Philadelphia Section.
You can attend the talks only (with no dinner) for free, however, we ask that you register.

Registration Link
Parking is paid by the IEEE Philadelphia Section, make sure you have your parking ticket stamped at the meeting.

First Talk
Global Navigation Satellite Systems – Signaling Tradeoffs
Michael A. Mayor, MSE, P.E.
Systems-Science PLLC
President and CTO

Abstract: This talk addresses Satellite based Navigation and timing Global Navigation Satellite Systems (GNSS), whereby a constellation of satellites transmits radio frequency signals from which a passive receiver, on the surface of the earth or on the air, can determine time and position. This is called “Geolocation”.

Starting with a historical introduction on the development of Satellite Navigation Systems we present some basic concepts of orbital mechanics and an overview of the currently deployed (or planned deployment) of GNS Systems, explaining why different orbits and constellations were chosen.

Subsequently I will address basic concepts of space based geolocation signaling systems and what is required to provide accurate geolocation based on cooperative transmitter / receiver systems. A reference is made to non-cooperative systems, whereby signals of unknown origin and characteristics are geolocated.

Furthermore, I will present the engineering design and tradeoffs of signaling systems used in satellite navigation systems, addressing factors which improve and/or degrade accuracy.

Finally, I will describe GPS receivers and their hardware implementation with modern micro components semiconductors.
Biography: Mr. Mayor is currently an engineering consultant providing Telecommunications Systems Engineering Services in the area of Secure wire-line and wireless Communications Networks. His consulting services extend to Digital Signal Processing Algorithm development, RF propagation analysis and applying Model Based Systems Engineering Design. Formerly, he was Vice President, Advanced Technology Research, at ITT Defense Electronics. In this capacity, he conducted Research and Directed the Development of a wide range of secure communications systems and their components, including Radio Frequency Transceivers, Software Defined and Cognitive Radio Systems, Digital Receivers, Digital Signal Processing algorithms and Precision Emitter Geolocation Systems. He authored six patents in the areas of Spread Spectrum Communications and Digital Instrumentation.

Mr. Mayor is a Licensed Professional Engineer and holds an MSE from the Moore School of EE, University of Pennsylvania. He is a member of the National Society of Professional Engineers (NSPE), and a Senior Member of the Institute of Electrical and Electronic Engineers (IEEE).

Second Talk
Ultrasound-Triggered Oxygen Delivery. The Wave of the Future
Dr. Margaret A. Wheatley
Drexel University
School of Biomedical Engineering Science and Health Systems

Abstract Tumors grow rapidly, and as the mass of cells grows, it sends out signals to neighboring capillary blood vessels to sprout and grow into the tumor mass to deliver nutrients and facilitate gas exchange (oxygen for cellular respiration, carbon dioxide as a waste product of respiration). But metabolic rate in cancer cells is very high, and the leaky nature of the new vessels coupled with a lack of lymphatic drainage cause a high pressure to build up, restricting transport of these molecules. As a result, many areas in the tumor lack oxygen, that is they become hypoxic. Cancer cells are nothing if not very sneaky and they change their metabolism to compensate for this, and cells in these hypoxic areas become resistant to chemo- and radiation therapy. We are working on developing injectable, stabilized micro bubbles to deliver oxygen to these hypoxic areas, to restore sensitivity to drug and radiation therapy.
Biography: Dr. Maggie Wheatley received her BS in Chemistry from Oxford University, UK, and an MS in Biochemistry from the same institution. She saw the engineering light and pursued her PhD in Chemical Engineering at the University of Toronto, Canada, and then went on to do a post doc. with Dr. Langer at MIT, Boston, investigating controlled drug delivery. Subsequently, after a three-year taste of industry at Glaxo Smith Kline research facility at King of Prussia, she joined the Department of Chemical Engineering as the first female faculty in 1987. In 1998 she joined The School of Biomedical Engineering Science and Health Systems at Drexel as an inaugural faculty member. Dr. Wheatley’s main research area is development of novel polymeric platforms to act as contrast agents for diagnostic ultrasound, with a strong interest in drug delivery and drug targeting in cancer. Recent collaborations have included targeting liver cancer with colleagues at University of Pennsylvania and pancreatic cancer with colleagues at Thomas Jefferson University Hospital. She also has projects in developing polymer constructs for spinal cord repair.

IEEE Philadelphia Section Election

Please note that the IEEE Philadelphia Section Annual Election will start on November 1st. Election process shall be by secret ballot via paper ballots and online via Vtools. To see the election timeline and slate of candidates follow the links:

IEEE Philadelphia Section – Election Timeline
IEEE Philadelphia Section – Candidates Bios and Position Statements

MESSAGE FROM THE EDITOR

Michael A. Mayor, MSE, P.E.

As the year 2016 approaches its end I want to call your attention to both the National Elections and the Philadelphia Section Elections. Please exercise your right and vote.

Also, with Veterans Day approaching we salute all Veterans who have served our country and wish them the best in all future endeavors. Finally, we wish all member a Happy Thanksgiving Day.
IEEE Annual Election Results
Unofficial results of the 2016 IEEE Annual Election

Annual Election Results

Proposed IEEE Constitutional Amendment
- For 23,840
- Against 23,863

IEEE President-Elect, 2017
- James A. Jefferies 23,865
- Wanda K. Reder 23,327

IEEE Division I Delegate-Elect/Director-Elect, 2017

Division I
- Renuka P. Jindal 2,020
- Rakesh Kumar 1,753

Division II
- Vijay K. Bhargava 2,300
- Alexander D. Gelman 1,597
- Ashutosh Dutta 1,089

Division V
- John W. Walz 3,573
- Sorel Reisman 2,749

Division VI
- Bruno Meyer 3,686
- Nirmal K.C. Nair 2,308

Division IX
- Alejandro “Alex” Acero 2,769
- James M. Irvine 2,692

IEEE Region Delegate-Elect/Director-Elect, 2017-2018

Region 2
- Wolfram Bettermann 2,098
- Murty S. Polavarapu 1,635

Region 4
- David Alan Koehler 1,692
- Hamid Vakilzadian 989

Region 6
- Keith A. Moore 3,249
- Ram Sivaraman 2,547

Region 8
- Magdalena Salazar-Palma 5,752
- Tariq S. Durrani 3,750
- Elya B. Joffe 1,371

Region 10
- Akonori Nishihara 6,567
- Stefan G. Mozar 3,242

IEEE Standards Association Board of Governors Member-at-Large, 2017-2018
- Mark Epstein 867
- W.C. “Chuck” Adams, Jr. 851
- Robert S. Fish 814

IEEE Technical Activities Vice President-Elect, 2017
- Susan “Kathy” Land 17,275
- Sergio Benedetto 13,725

IEEE-USA President-Elect, 2017
- Sandra L. “Candy” Robinson 10,383
- Edward G. Perkins 6,614
- Charles P. Rubenstein 6,444

IEEE-USA Member-at-Large, 2017-2018
- Peter S. Winokur 14,428
- Wole Akpose 8,729
IEEE Rowan University Students host a SumoBot Competition

Rowan IEEE student members organized and hosted a sumo robot competition at Rowan University on September 30th. Sumo bots are fully autonomous robots designed to push an opposing sumo robot out of the ring or dohyo. Students use artificial intelligence (AI) to win in their battles with other teams. The robots in this competition were constructed with pre-defined kits. This ensured competitive advantage was created by software.

To find out more, please visit the ProfBots website:
http://sumo.rowanieee.org/

See the action on YouTube:

YouTube Link

The next match is Nov. 18th!
Come see the robots battle live during the next competition
IEEE WIE FORUM USA EAST
INSPIRING AND EMPOWERING WOMEN AS LEADERS
DECEMBER 1 - 3, 2016 | BOSTON, MA

Career Fair - December 2nd, 4-7pm
Registration is now open!
sites.ieee.org/wie-forum-usa-east
The 7th IEEE Integrated STEM Education Conference (ISEC ’17) 
Friend Center at Princeton University 
Princeton, NJ, March 11, 2017

ewe.ieee.org/conf/stem 

We welcome submissions for the 7th IEEE Integrated STEM Education Conference (ISEC ’17), which will be held Saturday, March 11, 2017 at Friend Center, Princeton University, Princeton, NJ. ISEC is known for presenting cutting-edge research in and experiences with integrated approaches to the study of science, math, and technology through experiences and activities based in engineering and other design disciplines. While all papers on methods of and experience with integrating education (or interdisciplinary education) in science, technology, engineering, and mathematics (STEM) studies are welcome, we are very interested in papers on STEaM initiatives that include assessment and evaluation of program outcomes via internal or external means. Other suggested categories include:

• Integration of Engineering (Design) into Traditional K-12 Curriculum
• Integrated Studies across the Curriculum: STEM * Humanities * Social Science
• Instructional Support for STE(a)M Concepts and Practices
• Integrated v. Disciplinary-focused Approaches
• Novel Implementations of Pre-College Initiatives and Outreach Programs
• Diversity-Aware Methods and Practices in STEM Education
• Implications of Integrated Education to Policies and Organizational Change
• Fundamental and Applied Educational Research in Integrated / Interdisciplinary Education

Important dates: 
Submissions open: October 16, 2016
Submissions closed: 11:59 pm EST
December 18, 2016
Acceptances sent: January 15, 2017
Final revisions due: February 5, 2017
Early registration deadline: February 28, 2017
Submission instructions will be posted on the conference's web site by September 30, 2016; the author template is available there now. Your work must not have been published or submitted for publication elsewhere. Your submission(s) will be one (or more) of the following:

- a work in progress (WIP) paper of 2 – 3 pages, a full paper of 4 – 8 pages, or an abstract for a poster by K-12 students. There is no preliminary abstract phase for WIP or full papers.

All accepted submissions will be scheduled for presentation at the conference and included in the local conference proceedings. All presented papers that follow the formatting instructions in the template will be submitted for archival in IEEE Xplore.

You will receive the following for the conference fee: admission to ISEC and its affiliated conference, the Trenton Computer Festival; conference proceedings; and breakfast and lunch. K-12 teachers can apply for CEU credits. The advance registration fee schedule is:

- $140 IEEE member Attendee/Author
- $160 non IEEE member Attendee/Author
- $60 K-12 Teacher/Parent and Undergraduate Author
- $50 Undergraduate Attendee
- $40 K-12 Teacher/Parent Non-Author/Attendee and K-12 Student Author/Attendee

Information on the Trenton Computer Festival, which will be held on Saturday, March 18, 2017, is available at tcfnj.org, and on the Information Technology Professionals Conference, to be held Friday and Saturday, March 17 - 18, 2017 is at:

princetonacm.acm.org/tcfpro/

You are also encouraged to submit abstracts to these conferences; see the web sites for date and submission information. ISEC 2017 is sponsored by the IEEE Princeton/Central Jersey Section with technical co-sponsorship by IEEE Region 1 and the IEEE Education Society.

Please visit us at:

ewh.ieee.org/conf/stem,

follow us on Twitter @IEEE_ISEC, and like us on Facebook.

Contact us at ieee.isec@gmail.com for more information.

We look forward to your participation in ISEC 2017.
Dear Potential Volunteer:
For 11 years iPraxis has been bringing STEM education to more than 850 middle school students in 6 Philadelphia public and charter schools. Hundreds of iPraxis volunteers have helped students build confidence around STEM, learn about career opportunities and open their minds to discovery. We need your help in order to keep reaching new students and getting them excited about STEM.

**Become a volunteer**

**Be a mentor and help a student create a science fair project**
- Volunteer each week for 1 or more hour-long sessions.
- Help students think through and create science fair projects from beginning to end.
- Not a teacher? We will be there to guide you through!

**Be a science fair judge**
- Judge a science fair held at the school

**Be a presenter on a STEM topic**
- Excite students with your expert knowledge on a STEM topic.

**Be a workshop leader**
- Give students a chance for some hands-on STEM learning

We are currently recruiting mentors for Cook Wissahickon Elementary School. The sessions begin September 29th and continue each Thursday through December 15, 2016.
Science Fair judges get to be a part of judging the students’ projects at the school science fair on December 17th.

The following are the available time slots for each session:
8:45 am - 9:30 am
9:35 am - 10:15 am
11:05 am - 11:45 am
11:50 am - 12:30 pm
1:20 pm - 2:00 pm
2:05 pm - 2:45 pm

Presenters and workshop leaders have the chance to engage students in STEM learning throughout the year.

Whether you have one hour or more time you can devote, we welcome you to pass on your knowledge of science, technology, engineering and math to a young person. Students form bonds with you and really look forward to seeing you in science class. Imagine what a difference you can make!

Join us as a volunteer! Call Lori Ward at 215-966-6253 or email us at lori@ipraxis.org and check out our website at www.ipraxis.org.

Sincerely,

Jeremiah White, Jr.
President

Lori Ward
Program Director
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Our mailing address is:
iPraxis
3624 Market Street, 5 East
Philadelphia, PA 19104

Add us to your address book

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You can update your preferences or unsubscribe from this list
Future City

The school year is off to a great start for the Future City Competition. To date, 40 schools have signed up and have started designing their cities of the future.

Our greatest need at this stage of the competition is for mentors. Each school is assigned a mentor to work with the students and share their real-world experiences to help them develop their future city. Just 1 or 2 hours a week can make a big difference in how students approach their project and how they start to address it. The following is the current list of schools that need mentors:

- G.A. Stetson Middle School West Chester, PA
- Great Valley Middle School Malvern, PA
- Holy Family Regional Catholic School Levittown, PA
- Independence Charter School Philadelphia, PA
- JR Fugett Middle School West Chester, PA
- Sacred Heart Havertown, PA
- Southern Middle School Sinking Springs, PA
- St Albert the Great Huntington Valley, PA
- St Mary Schwenksville, PA
- Texas Avenue School Atlantic City, NJ

Please contact Karen R. McManuels, P.E. (volunteer2015@futurecityphilly.org) if you are interested in working with any of the schools listed above. If you’d like to be a mentor but don’t see a school in your area, send an e-mail and as schools are still registering for the competition.

Other volunteer opportunities as also available. Please visit the website at www.futurecityphilly.org and “Click here to sign up as a Volunteer” on the top left of the page. There you can register to be a mentor, judge, or general volunteer.

Judges and general volunteers are needed for the day of the competition, which is scheduled for January 21, 2017. It will be held again at Archbishop Carroll High School.
Philadelphia Milestones Tour

By Peter Silverberg

You have visitors and they want to see the Philadelphia area. The tourist areas are in lots of guides, but you want to show them where electrical engineers made their marks. There are four IEEE Milestones in the city that should be on the “must see” list. (Best on weekdays, as buildings are sometimes closed weekends.) Here they are:

Electronic Numerical Integrator and Computer.
The plaque can be viewed in the Moore School of Electrical Engineering, at the University of Pennsylvania, (Note: The Moore School of EE is now part of the School of Engineering and Applied Science (SEAS).)

Birthplace of the Bar Code.
Drexel University, Bossone Research Enterprise Center.
Drexel University, 3141 Chestnut Street, (31st and Market Streets)

First Technical Meeting of the American Institute of Electrical Engineers.
The Franklin Institute, 222 North 20th St., Philadelphia, PA 19103
Questions Call or email us at 215-448-1200 or guestservices@fi.edu

Book “Experiments and Observations on Electricity” by Benjamin Franklin, 1751.
American Philosophical Society Library,
Executive Offices & Museum Gallery,
104 South Fifth Street, Philadelphia, PA 19106-3387, 215-440-3400
An Introduction to Free-Field Measurements of Wireless Devices in Reverberation Chambers

We have been given a recent opportunity to present another EMC Society Philly Chapter meeting in November. We hope you can make it! / Eileen

To Register e-mail, Eileen@Item.Media

DETAILS:
- **Date:** THURSDAY, NOVEMBER 17, 2016
- **Location:** RETLIF LABORATORIES, 3131 Detwiler Rd, Harleysville, PA 19438
- **Phone:** (215) 256-4133
- **Networking Time and Refreshments:** 6:00-6:30pm
- **Meeting / Presentations:** 6:30pm – 8:00pm
- A light dinner will be provided at no charge

**Abstract:** When the antenna is integrated into the body of a wireless device, as it is for cell phones and many other portable devices, performance testing is typically done under free-field conditions. In this overview presentation, we will discuss free-field characterization of some key wireless-device parameters by use of reverberation chambers. We will discuss recent research and some of the issues related to the use of these chambers for testing devices that transmit modulated signals.

**SPEAKER:** Dr. Kate A. Remley

Kate A. Remley (S'92-M'99-SM'06-F'13) was born in Ann Arbor, MI. She received the Ph.D. degree in Electrical and Computer Engineering from Oregon State University, Corvallis, in 1999. From 1983 to 1992, she was a Broadcast Engineer in Eugene, OR, serving as Chief Engineer of an AM/FM broadcast station from 1989-1991. In 1999, she joined the RF Technology Division of the National Institute of Standards and Technology (NIST), Boulder, CO, as an Electronics Engineer. She is currently the leader of the Metrology for Wireless Systems Group at NIST, where her research activities include development of calibrated measurements for microwave and millimeter-wave wireless systems, characterizing the link between nonlinear circuits and system performance, and developing standardized test methods for RF equipment used by the public-safety community.

Dr. Remley was the recipient of the Department of Commerce Bronze and Silver Medals, an ARFTG Best Paper Award, and is a member of the Oregon State University Academy of Distinguished Engineers. She was the Chair of the MTT-11 Technical Committee on Microwave Measurements from 2008 - 2010 and the Editor-in-Chief of IEEE Microwave Magazine from 2009 - 2011, and is the Chair of the MTT Fellow Nominating Committee.

**Reply to reserve a spot now!**

Best regards,
Eileen Ambler
Admin Manager
Eileen@Item.Media
610.382.5889
We Salute all Veterans on this Veterans Day

World War I – known at the time as “The Great War” - officially ended when the Treaty of Versailles was signed on June 28, 1919, in the Palace of Versailles outside the town of Versailles, France. However, fighting ceased seven months earlier when an armistice, or temporary cessation of hostilities, between the Allied nations and Germany went into effect on the eleventh hour of the eleventh day of the eleventh month. For that reason, November 11, 1918, is generally regarded as the end of “the war to end all wars.”

In November 1919, President Wilson proclaimed November 11 as the first commemoration of Armistice Day with the following words: "To us in America, the reflections of Armistice Day will be filled with solemn pride in the heroism of those who died in the country’s service and with gratitude for the victory, both because of the thing from which it has freed us and because of the opportunity it has given America to show her sympathy with peace and justice in the councils of the nations…"

The original concept for the celebration was for a day observed with parades and public meetings and a brief suspension of business beginning at 11:00 a.m.

The United States Congress officially recognized the end of World War I when it passed a concurrent resolution on June 4, 1926, with these words:

**Whereas** the 11th of November 1918, marked the cessation of the most destructive, sanguinary, and far reaching war in human annals and the resumption by the people of the United States of peaceful relations with other nations, which we hope may never again be severed, and

**Whereas** it is fitting that the recurring anniversary of this date should be commemorated with thanksgiving and prayer and exercises designed to perpetuate peace through good will and mutual understanding between nations; and

**Whereas** the legislatures of twenty-seven of our States have already declared November 11 to be a legal holiday: Therefore be it Resolved by the Senate (the House of Representatives concurring), that the President of the United States is requested to issue a proclamation calling upon the officials to display the flag of the United States on all Government buildings on November 11 and inviting the people of the United States to observe the day in schools and churches, or other suitable places, with appropriate ceremonies of friendly relations with all other peoples.

An Act (52 Stat. 351; 5 U. S. Code, Sec. 87a) approved May 13, 1938, made the 11th of November in each year a legal holiday—a day to be dedicated to the cause of world peace and to be thereafter celebrated and known as "Armistice Day." Armistice Day was primarily a day set aside to honor veterans of World War I, but in 1954, after World War II had required the greatest mobilization of soldiers, sailors, Marines and airmen in the Nation’s history; after American forces had fought aggression in Korea, the 83rd Congress, at the urging of the veterans service organizations, amended the Act of 1938 by striking out the word "Armistice" and inserting in its place the word "Veterans." With the approval of this legislation (Public Law 380) on June 1, 1954,
November 11th became a day to honor American veterans of all wars.

Later that same year, on October 8th, President Dwight D. Eisenhower issued the first "Veterans Day Proclamation" which stated: "In order to insure proper and widespread observance of this anniversary, all veterans, all veterans' organizations, and the entire citizenry will wish to join hands in the common purpose. Toward this end, I am designating the Administrator of Veterans' Affairs as Chairman of a Veterans Day National Committee, which shall include such other persons as the Chairman may select, and which will coordinate at the national level necessary planning for the observance. I am also requesting the heads of all departments and agencies of the Executive branch of the Government to assist the National Committee in every way possible."

On that same day, President Eisenhower sent a letter to the Honorable Harvey V. Higley, Administrator of Veterans' Affairs (VA) designating him as Chairman of the Veterans Day National Committee.

In 1958, the White House advised VA's General Counsel that the 1954 designation of the VA Administrator as Chairman of the Veterans Day National Committee applied to all subsequent VA Administrators. Since March 1989 when VA was elevated to a cabinet level department, the Secretary of Veterans Affairs has served as the committee's chairman.

The Uniform Holiday Bill (Public Law 90-363 (82 Stat. 250)) was signed on June 28, 1968, and was intended to ensure three-day weekends for Federal employees by celebrating four national holidays on Mondays: Washington's Birthday, Memorial Day, Veterans Day, and Columbus Day. It was thought that these extended weekends would encourage travel, recreational and cultural activities and stimulate greater industrial and commercial production. Many states did not agree with this decision and continued to celebrate the holidays on their original dates.

The first Veterans Day under the new law was observed with much confusion on October 25, 1971. It was quite apparent that the commemoration of this day was a matter of historic and patriotic significance to a great number of our citizens, and so on September 20th, 1975, President Gerald R. Ford signed Public Law 94-97 (89 Stat. 479), which returned the annual observance of Veterans Day to its original date of November 11, beginning in 1978. This action supported the desires of the overwhelming majority of state legislatures, all major veterans service organizations and the American people.

Veterans Day continues to be observed on November 11, regardless of what day of the week on which it falls. The restoration of the observance of Veterans Day to November 11 not only preserves the historical significance of the date, but helps focus attention on the important purpose of Veterans Day: A celebration to honor America's veterans for their patriotism, love of country, and willingness to serve and sacrifice for the common good.
HISTORY OF THANKSGIVING DAY

In 1621, the Plymouth colonists and Wampanoag Indians shared an autumn harvest feast that is acknowledged today as one of the first Thanksgiving celebrations in the colonies. For more than two centuries, days of thanksgiving were celebrated by individual colonies and states. It wasn’t until 1863, in the midst of the Civil War, that President Abraham Lincoln proclaimed a national Thanksgiving Day to be held each November.

In September 1620, a small ship called the Mayflower left Plymouth, England, carrying 102 passengers—an assortment of religious separatists seeking a new home where they could freely practice their faith and other individuals lured by the promise of prosperity and land ownership in the New World. After a treacherous and uncomfortable crossing that lasted 66 days, they dropped anchor near the tip of Cape Cod, far north of their intended destination at the mouth of the Hudson River. One month later, the Mayflower crossed Massachusetts Bay, where the Pilgrims, as they are now commonly known, began the work of establishing a village at Plymouth.

Throughout that first brutal winter, most of the colonists remained on board the ship, where they suffered from exposure, scurvy and outbreaks of contagious disease. Only half of the Mayflower’s original passengers and crew lived to see their first New England spring. In March, the remaining settlers moved ashore, where they received an astonishing visit from an Abenaki Indian who greeted them in English. Several days later, he returned with another Native American, Squanto, a member of the Pawtuxet tribe who had been kidnapped by an English sea captain and sold into slavery before escaping to London and returning to his homeland on an exploratory expedition. Squanto taught the Pilgrims, weakened by malnutrition and illness, how to cultivate corn, extract sap from maple trees, catch fish in the rivers and avoid poisonous plants. He also helped the settlers forge an alliance with the Wampanoag, a local tribe, which would endure for more than 50 years and tragically remains one of the sole examples of harmony between European colonists and Native Americans.

In November 1621, after the Pilgrims’ first corn harvest proved successful, Governor William Bradford organized a celebratory feast and invited a group of the fledgling colony’s Native American allies, including the Wampanoag chief Massasoit. Now remembered as America’s “first Thanksgiving”—although the Pilgrims themselves may not have used the term at the time—the festival lasted for three days. While no record exists of the historic banquet’s exact menu, the Pilgrim chronicler Edward Winslow wrote in his journal that Governor Bradford sent four men on a “fowling” mission in preparation for the event, and that the Wampanoag guests arrived bearing five deer. Historians have suggested that many of the dishes were likely prepared using traditional Native American spices and cooking methods. Because the Pilgrims had no oven and the Mayflower’s sugar supply had dwindled by the fall of 1621, the meal did not feature pies, cakes or other desserts, which have become a hallmark of contemporary celebrations. Check out the Thanksgiving by the Numbers infographic for more facts about...
how the first Thanksgiving compares to modern holiday traditions.

Pilgrims held their second Thanksgiving celebration in 1623 to mark the end of a long drought that had threatened the year’s harvest and prompted Governor Bradford to call for a religious fast. Days of fasting and thanksgiving on an annual or occasional basis became common practice in other New England settlements as well. During the **American Revolution**, the Continental Congress designated one or more days of thanksgiving a year, and in 1789 **George Washington** issued the first Thanksgiving proclamation by the national government of the United States; in it, he called upon Americans to express their gratitude for the happy conclusion to the country’s war of independence and the successful ratification of the U.S. Constitution. His successors **John Adams** and **James Madison** also designated days of thanks during their presidencies. In 1817, **New York** became the first of several states to officially adopt an annual Thanksgiving holiday; each celebrated it on a different day, however, and the American South remained largely unfamiliar with the tradition. In 1827, the noted magazine editor and prolific writer **Sarah Josepha Hale**—author, among countless other things, of the nursery rhyme “Mary Had a Little Lamb”—launched a campaign to establish Thanksgiving as a national holiday. For 36 years, she published numerous editorials and sent scores of letters to governors, senators, presidents and other politicians. **Abraham Lincoln** finally heeded her request in 1863, at the height of the Civil War, in a proclamation entreat ing all Americans to ask God to “commend to his tender care all those who have become widows, orphans, mourners or sufferers in the lamentable civil strife” and to “heal the wounds of the nation.” He scheduled Thanksgiving for the final Thursday in November, and it was celebrated on that day every year until 1939, when **Franklin D. Roosevelt** moved the holiday up a week in an attempt to spur retail sales during the Great Depression. Roosevelt’s plan, known derisively as Franksgiving, was met with passionate opposition, and in 1941 the president reluctantly signed a bill making Thanksgiving the fourth Thursday in November.

In many American households, the Thanksgiving celebration has lost much of its original religious significance; instead, it now centers on cooking and sharing a bountiful meal with family and friends. Turkey, a Thanksgiving staple so ubiquitous it has become all but synonymous with the holiday, may or may not have been on offer when the Pilgrims hosted the inaugural feast in 1621. Today, however, nearly 90 percent of Americans eat the bird—whether roasted, baked or deep-fried—on Thanksgiving, according to the National Turkey Federation. Other traditional foods include stuffing, mashed potatoes, cranberry sauce and pumpkin pie. Volunteering is a common Thanksgiving Day activity, and communities often hold food drives and host free dinners for the less fortunate.

Parades have also become an integral part of the holiday in cities and towns across the United States. Presented by Macy’s department store since 1924, New York City’s Thanksgiving Day parade is the largest and most famous, attracting some 2 to 3 million spectators along its 2.5-mile route and drawing an enormous television audience. It typically features marching bands, performers, elaborate floats conveying various celebrities and giant balloons shaped like cartoon characters.
PHILADELPHIA SECTION NOTES

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ADMINISTRATIVE COMMITTEE (ADCOM)
ADCOM meets the second Tuesday of the month (Tuesday, May 10) at the Sheraton University City. Members are welcome to attend. Reserve a seat by calling the office by the Friday before the meeting.

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IEEE SPMB16 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. We expect approximately 125 researchers to attend. We specifically encourage graduate students to attend and present their thesis or dissertation research. Awards for best student paper and presentation will be given. This is an excellent opportunity to network with leading professionals in your field and to form new collaborations.

Signal processing plays a vital role in applications ranging from medical electronics to data mining of electronic medical records. The enormous amounts of data that can be acquired from devices are enabling a new generation of technology based on big data. This symposium is intended to bring together a wide range of professionals interested in applications of signal processing medicine and biology. 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.

The symposium will consist of two plenary talks, two oral sessions and two poster sessions. Exhibits and demonstrations are encouraged as well. Interested parties should contact the conference organizers at: help@ieeespmb.org for further details.

Symposium Topics:

Traditional signal processing topics include:
- Signal analysis (e.g., EEG, ECG, EMG)
- Medical imaging (e.g., MRI, fMRI)
- Machine learning, data mining and classification
- Big data resources and applications
- Signal processing methods in bioinformatics
- Linear, nonlinear, and adaptive filtering and prediction
- Time-frequency and non-stationary signal analysis

Applications of particular interest this year include:
- Wearable healthcare devices
- Data mining and analytics in healthcare
- Security and reliability in wireless medical technologies
- Biomedical Nano sensors and wireless technologies
- Biomedical instrumentation and electrical stimulation
- Emerging medical devices, technologies and applications

If you have questions about the relevance of a planned submission, feel free to contact the technical committee at help@ieeespmb.org for guidance.

Paper/Abstract Submission:

Presenters may choose to submit to one of two peer-reviewed tracks:

1. Paper: An original four to six-page paper for oral presentation.
2. Poster: A one-page abstract that will be presented as a poster.

All papers and abstracts are indexed in IEEE Xplore (search for “IEEE SPMB”).

Papers/abstracts can be submitted via email to: submit@ieeespmb.org. Papers must be prepared using the standard IEEE conference paper template (see IEEE Templates for more information.)

Important Dates:

- Submission: Sept. 1, 2016
- Early Registration: Nov. 1, 2016

Organizing Committee:

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CALL FOR PAPERS

March 13-15, 2017
Glassboro, New Jersey, USA

Sensors Applications Symposium provides a unique opportunity for researchers and developers to share progress in sensor technologies, methods, applications, standardization, and commercialization. General and Special Sessions offer forums where participants can exchange ideas and gain information on the sensor state of the art. A mix of plenary, poster, demonstration, plug-fests, a sensor development workshop, and other networking activities ensure that your work will be seen.

Full paper submissions are encouraged - a full review process will be followed to ensure the high quality of those papers finally accepted and presented at the conference.

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Important Dates

Special Session Proposal Deadline: Sept 15, 2016
Acceptance/Rejection/Revision Notification: Dec 20, 2016
Final Paper Submission Deadline: Jan 20, 2017
Final Decision Notification: Feb 1, 2017

TOPICS

Sensor Applications
- Assisted Living for the Aging Population
- Biomedical Sensors for Medical, Biomedical
- Commercial Development
- Energy and the Smart Grid
- Energy Harvesting for Sensors
- Industrial Applications: Manufacturing, Process Monitoring
- Internet of Things
- Sensors for Aerospace: PicoSats, CubeSats
- Non-Destructive Evaluation and Remote Sensing
- Robotics and Automation
- Smart Agriculture
- Smart Buildings
- Smart Cities and Communities
- Transportation

Sensor Technologies and Methods
- MEMS and Nano-Sensors
- Novel Sensing Technologies
- Flexible and Wearable Sensors
- Memristive Sensors
- Big Data
- Visualization
- Sensor Data Fusion
- Sensor Networks

Sensor Standards
- ISO/IEC/IEEE Standards (P21451-1, P21451-1-4, P21451-4, P21451-2, and others)

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http://sensorapps.org
ASSISTANT PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING (ECE) – TENURE TRACK POSITIONS

With dramatic increase in undergraduate and graduate enrollment, a new PhD program, and a new building coming online in December 2016, the Electrical and Computer Engineering Department (www.rowan.edu/ece) at Rowan University is growing. To support this robust growth, we seek energetic and innovative teacher-scholars, committed to excellence in both teaching and research to join our dedicated family of faculty members. Over the next few years, we are planning to add several faculty members to our department, with particular emphasis in computer architecture, embedded systems, control systems, energy and power systems, analog & digital design, high performance & distributed computing, cybersecurity, machine learning & data sciences.

Candidates must have a PhD degree in Electrical or Computer Engineering (or a closely related area), have excellent communication skills and strong commitment to excellence in teaching, research and student mentoring. Current Ph.D. students who have already established a significant body of work are also encouraged to apply, if they have completed all coursework and proposal exam (all but dissertation defense), and are within one year of graduation. While we are primarily focusing on applicants for the Assistant Professor positions, applicants with exceptional credentials in areas of critical needs may be considered for higher ranks.

Successful candidate will

- teach core ECE courses at the undergraduate and graduate level,
- develop (and teach) new courses and innovative curriculum components for our program,
- seek and obtain external research funding and enhance department’s research infrastructure,
- conduct high quality research and publish research work in highly regarded conferences and journals,
- mentor and advise undergraduate and graduate students, as well as student groups and clubs, and
- supervise student research and entrepreneurial efforts in the Rowan’s hallmark Engineering Clinic sequence.

Rowan University in general, the College of Engineering and ECE Department in particular, are experiencing tremendous growth. At the institutional level, Rowan is now designated by the State of New Jersey as a Comprehensive Research University, Rowan’s new Cooper Medical School has recently opened its doors, and the highly-regarded School of Osteopathic Medicine is now integrated into Rowan as the University’s second medical school. At the college and departmental level, we are experiencing significant increase of interest and enrollment in our programs for which we are currently constructing our second state-of-the-art building. Furthermore, with the new “Comprehensive Research University” status, we are enhancing our research infrastructure and capabilities (with our new High Performance Computing System, and the Rowan Virtual Reality Center), further developing our South Jersey Technology Park for expanded industry collaboration and entrepreneurship activities, provide more funding for graduate research assistants, all supporting our long standing Master’s program as well as our newly established innovative PhD program.

These developments have now set the framework for initiating new multidisciplinary research areas and for complementing existing R&D in smart sensors, embedded systems, smart grid, signal/speech processing, computational intelligence, bioinformatics, imaging & virtual reality, communications and cybersecurity, nanotechnology and sustainable design, and bio-engineering/technology.

Located in suburban New Jersey, in the greater Philadelphia metro area, Rowan is a comprehensive public institution with over 16,000 undergraduate and graduate students enrolled in fourteen schools and colleges, including the new Cooper Medical School and the School of Osteopathic Medicine. The College of Engineering, created with a $100M gift by Henry and Betty Rowan in 1992, enrolls almost 1400 students in six departments. U.S. News & World Report consistently ranks the College among the nation’s best for undergraduate engineering. The College recently received an additional $15 million endowment from the Rowan family, and has been renamed as Henry M. Rowan College of Engineering. Additional information is available at www.rowan.edu/colleges/engineering.

Review of applications will begin immediately and continue until the positions are filled, with applications received by December 1, 2016 given full and priority consideration, for a start date of September 2017.

For full consideration, applications should include the below listed items, assembled in the following order in a single PDF file: 1) a cover letter summarizing qualifications and the applicant’s interest in the position, 2) current detailed CV, 3) statement of teaching interests (including the list of courses the applicant feels most passionate — not just most qualified — to teach, as well as teaching philosophy), 4) a statement of research interests (including applicant’s future research goals, and plans for obtaining external funding for achieving those goals), and 5) names and contact information for three to five references. Please name the file as <LastName>_Application.pdf. Optionally, additional relevant documentation (such as student evaluations, copies of up to two key publications) may be submitted in an Appendix as a separate file, named <LastName>_Appendix.pdf.
Applications are only accepted online at this link: [Assistant Professor in Electrical & Computer Engineering](#)

Questions can be directed to polikar@rowan.edu, Dr. Robi Polikar, Department Head, Electrical & Computer Engineering. Additional departmental information can be found at [http://www.rowan.edu/ece](http://www.rowan.edu/ece)

Rowan University values diversity and is committed to equal opportunity in employment. All positions are contingent upon budget appropriations.
Electronics manufacturing: Avoiding the seven deadly sins of Surface Mount Manufacturing

When: Thursday, November 10, 2016, 3:00 PM  
Where: Crowne Plaza Bucks County, 4700 Street Rd. Trevose, PA 19053  
(215) 364-2000 Crowne Plaza Bucks County

Phil Zarrow, a popular speaker and workshop instructor, will be conducting “The Deadly Sins of SMT” workshop which identifies the "deadly sins" of SMT assembly, both for Pb-free and "leaded" processes. This is essentially an excellent course in the business of SMT by a nationally recognized expert.

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(215) 364-2000 Crowne Plaza Bucks County

Registration  
SMTA Members, $10: Non-Members: $15:  
Student SMTA Members: Free  
NEW MEMBERS: If you sign up and pay for a new membership at the door, your attendance is FREE!

To register for this event, please email Karen Frericks (karenchapters@smta.org) or visit:  
http://www.smta.org/chapters/rsvp.cfm?BEE_ID=4051

Cost Includes: Snacks, beverages and lots of great networking!

Just some of the topics of General Process "Sins"

- Utilization of Process Feedback Data  
- DFM-Design for Manufacturability and Assembly  
- In-Process Inspection and AOI  
- Stencil Printing Stencil Design  
- Reflow Soldering  
- Wave soldering  
- QFN, BGA,CSP and Flip-Chip: special considerations  
- Reflow Soldering  
- Wave soldering
The meeting agenda is as follows:

- 3:00 - 3:15 pm: Meet & Greet - Snacks and beverages served
- 3:15 pm: Welcome by Michael Prestoy, Acting President of Philadelphia Chapter
- 3:20 pm: Welcome by SMTA HQ, Tanya Martin
- 3:30-4:30 pm: Presentation "The Deadly Sins of SMT," Phil Zarrow, ITM Consulting
- 4:45 pm: Q&A and Wrap Up