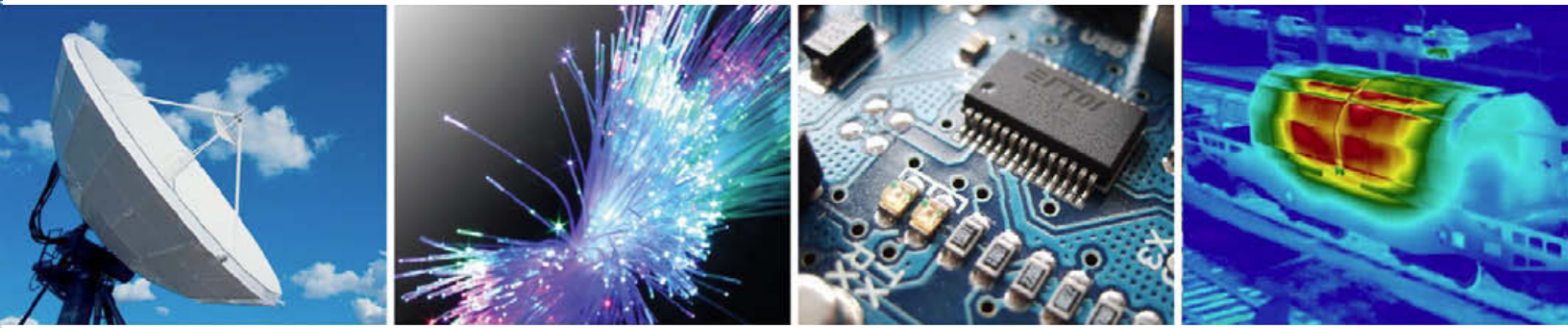




THE PULSE

NOVEMBER 2015

OF LONG ISLAND



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Hello, everyone. Well, we are all another month older. One consolation is that the Mets are going for it all at the 2015 World Series.

At any rate, the 12th International Conference & Expo on Emerging Technologies for a Smarter World (CEWIT2015) was held at the Melville Marriot Long Island, Melville, NY this past Monday and Tuesday, October 19 and 20, and was a great success. Don't know the statistics but they had to bring an additional 18 chairs into the room where the Health Technologies and Medical Devices session was held, on Monday. And lunch was terrific as usual. A couple of events in the near future I wish to mention.

The next major event on the agenda is the **International Energy & Sustainability Conference 2015**, at Farmingdale State College this upcoming Friday, November 13, 2015. While this link should take you there: <http://ieeeli.delivr.com/2xdqs>; you also can just search the web for the information page. Hope to see you there. If I have missed anything, please let me know.

Changing gears, volunteers are crucial to the success of our Section. If you have the time, wish to work with us and are not already involved, please take a look at our section's website on IEEE.LI and browse to the societies' and committees' pages to see the volunteer positions available. I also encourage you to attend the monthly ExCom meetings; the next one is to be held on November 30th at Telephonics in Farmingdale.

The ExCom meetings operate as forums for you to voice your concerns about IEEE, about IEEE Long Island about the state of technology in the US and to make recommendations for action that we might take to improve any of those aforementioned. There is no better place to discover what is happening in the section and how you can get involved in one of the societies to affect change. Just send me an email before you attend so I can have your name added to the attendance list. If you wish to speak to ExCom on a particular topic, just let me know your topic in advance, I will add same to the agenda, and you will have an opportunity to present your topic to ExCom and receive the feedback from those that are present.

For that matter, we (ExCom) need your help to support maintaining and even growing IEEE Long Island membership. Our membership numbers somewhat down at present (around 1900, IEEE LI), much of which can be attributed to shifting engineering job availability on Long Island. In my opinion, while our LI IEEE membership is important in the short term (e.g., funding from IEEE headquarters is based on membership), membership numbers in the long term reflect (whether accurately or inaccurately), a desirability of IEEE membership and, therefore, operate as a barometer of our organization as a whole.

Finally, please take a look at John Schmidt's VTools/L31 Report in the ExCom minutes to get a feel for how many L31's have been submitted for your society for 2015. If your society is not listed, it means that there are no L31s submitted, regardless of whether your society held a meeting or not. If there is no L31, a meeting is not counted. Please have meetings and please submit L31s. Thank you again for the opportunity to serve, and please reach out to me if I can help you in any way.

John F. Vodopia
Chair, IEEE Long Island Section
chairman@IEEE.LI



THE PULSE

NOVEMBER 2015 OF LONG ISLAND

The Pulse of Long Island is produced by the **Long Island Section** of the **Institute of Electrical & Electronic Engineers**. It is published monthly except during July & August.

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The Pulse of Long Island is a newsletter for the members of the Long Island IEEE Section. You can let your voice heard by writing to the Editor. How to bring more value to our members? Interesting new technology, or a project? An issue of interest to members of the IEEE Long Island, Long Island engineers and computer professionals, or Long Island technical community at large? Write to the **Pulse**. Let your letter be read, and your voice heard.



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20th of a month for the next month edition.

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The IEEE LI Section website is regularly updated to reflect recent section activity and upcoming events. Each Society and Affinity Group has a dedicated page that describes their function and includes contact information. Visit our site at IEEE.LI

Consultant's Network of Long Island

The Consultant's Network of Long Island maintains a referral service of engineering, computer, managerial & technical professionals. For more information, please visit their website at: www.consult-li.com

Membership Development

For more information on membership with the Long Island Section of the IEEE, e-mail M. Nazrul Islam at: membership@IEEE.LI

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The Long Island Section of IEEE has 17 Chapters. Each Chapter is a technical subunit of the Long Island Section, associated with an IEEE Society. The Chapters, as well as the Section, are always welcoming volunteers. If you would like to help with any of the Long Island Chapter's steering groups, please do contact the relevant Chapter Chair, Vice Chair, or one of the Section officers.



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Chair: **Brian Quinn**
 Email: tmc@ieee.li

IEEE LONG ISLAND SECTION 2016 OFFICER NOMINATIONS

John Schmidt
Chair, 2016
Nominations Committee

**THE IEEE LONG ISLAND SECTION'S 2016 NOMINATIONS COMMITTEE
RETURNED THE FOLLOWING SLATE FOR THE 2016 SECTION OFFICERS:**



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M. Nazrul Islam



1st VICE CHAIR:
Marjaneh Issapour



2nd VICE CHAIR:
Lou D'Onofrio



SECRETARY:
Davor Dokonal



TREASURER:
Sandy Mazzola

Nominations may be made by petition.

Petition nominations must be in writing and bear the signature of at least ten (10) voting members of the IEEE Long Island Section; they are to be delivered to the Chair of the Long Island Section or to the Chair of the Section's Nominations Committee no later than **October 15th**.

The Election shall be held November 1st through the 14th. If no petition-nominated candidates are received, the election will be electronic only.

IEEE NEW MEMBER WELCOME

**THE LONG ISLAND SECTION WOULD LIKE TO WELCOME
THE FOLLOWING NEW MEMBERS FOR 2015!**

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Anshul Gandhi
Brandon Neil Cressi
Alexander Gitlitz

Ryan Topps
Bridget Hartill
June Chang
Arjun Rao

Michael Vetri
Brian Bylicki
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Peter Baier
Vivienne De Guzman
Steven O'Meara
Zachary F Neal
Christopher Siena
Sean Michael Breuer
Jasmin Singh
Lori Mae Jockers
Brandon Lam



NOVEMBER 2015

November 4, Wednesday

*Long Island Consultants
Network Meeting*

**Everyday Ethics
for Consultants**

By Lisa Renee Pomerantz

Briarcliffe College

The Great Room

Bethpage, LI

6:30 PM - Refreshments

7:00 PM - Meeting

November 4, Wednesday

EMC Society Meeting

**Not All Capacitors
Are Created Equal**

by Jon A. Rhan

BAE Systems

Greenlawn, LI

6:00 PM - Refreshments

6:30 PM - Meeting

November 5, Thursday

*Antenna and Proagation
Society Meeting*

**Addressing the
Challenges of
Electrically Large
Antenna Systems Design**

by Charlotte Blair

Telephonics

Farmingdale, LI

6:00 PM - Refreshments

6:30 PM - Meeting

November 11, Wednesday

MTT Society Meeting

**Submicron Device Level
Thermal Characterization for
Photonics & Power MMICs**

by Dustin Kendig

Narda - Miteq

Hauppauge, LI

6:00 PM - Refreshments

6:30 PM - Meeting

November 13, Friday

**International Energy
and Sustainability
Conference 2015**

SUNY Farmingdale

2350 Broad Hollow Rd,

Farmingdale, NY 11735

November 30, Monday

EXCOM Meeting

Telephonics

Farmingdale, LI

5:45 PM - Dinner

6:15 PM - Meeting

DECEMBER 2015

December 2, Wednesday

*Long Island Consultants
Network Meeting*

Briarcliffe College

The Great Room

Bethpage, LI

7:00 PM - 9:30 PM

December 14, Monday

EXCOM Meeting

Telephonics

Farmingdale, LI

5:45 PM - Dinner

6:15 PM - Meeting

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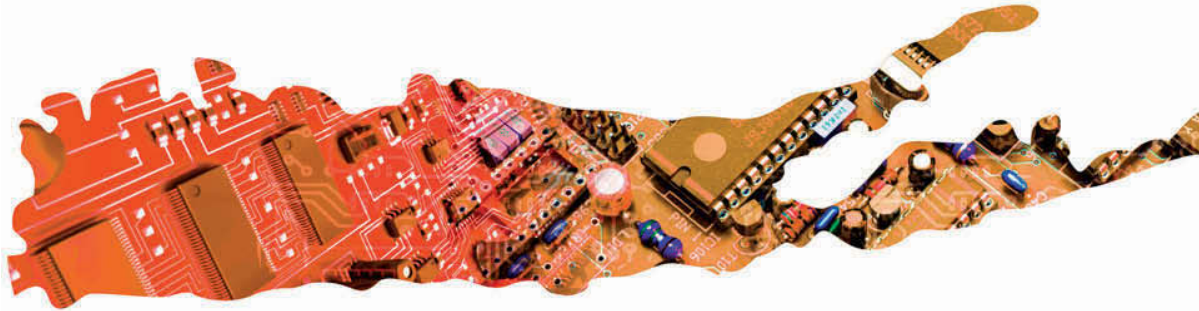
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Long Island's Electrical and Electronic History

By Jesse Taub, IEEE Long Island Section Historian

We looked at some classic AIEE papers related to power engineering in last month's *Pulse*. They had been reprinted in the 1984 Proceedings of the IEEE as part of its Centennial celebration. There were three other classic papers republished in the September 1984 Proceedings that we will look at this month. They can be accessed via [IEEE ExPlore](#).

The first one was "*Theory of Antennas of Arbitrary Size and Shape*" by S. A. Schelkunoff. It was originally published in the September 1941 Proceedings of the IRE. He demonstrated that an antenna fed by a uniform transmission line could be viewed as a lossy non-uniform transmission line. This led him to develop methods to calculate radiation resistance and stray reactance of antenna elements. He demonstrated his technique for various antenna types. What struck me is that this paper is still relevant and contains material that is central to a basic course on antenna theory. Schelkunoff's famous textbook expands on these concepts and remains an important reference in an antenna engineer's library.

The next paper "*Communication in the Presence of Noise*" by Claude Shannon, was originally published in the January 1949 Proceeding of the IRE. The paper, aided by the Nyquist sampling theorem developed the concept of bit rate and showed that noise can be looked at as negative bits. Shannon then presents formulas for the maximum information transmission rate when the signal is perturbed by various types of noise. These were revolutionary concepts and continue to be essential to understanding modern communication digital signal processing and computer system design. Here again, while written over 65 years ago, the material is a vital part of today's engineering curricula. Shannon almost single-handedly developed modern information theory.

The third paper was "*The ENIAC*" by J. G. Brainerd and T. K. Sharpless of the Moore School of Electrical Engineering of the University of Pennsylvania. It was the only general purpose digital computer in operation when the paper was published in the AIEE Transactions of February 1948. The ENIAC was completed in 1945 and was developed to solve differential equations related to ballistics. The authors pointed out that it had great potential for solving a host of other mathematical problems. It had 18,000 vacuum tubes and 500,000 solder joints. While painfully slow by current standards, the ENIAC was a major milestone along the path leading to today's computers.

All three papers were products of the 1940's. Prior to this most electronics engineering papers from the 1920's and 1930's described inventions and the mathematical content was minimal. During World War II, the MIT Radiation Laboratory employed many physicists that worked alongside engineers, and they put a greater emphasis on theory. I see this as a paradigm shift in how today's engineers are educated and approach their work.

BOB BRUCE

By Louis A. Luceri
and Victor Zourides

IN MEMORIAM

BOB BRUCE PASSED AWAY ON SEPTEMBER 24th, 2015 AT THE AGE OF 88 AFTER A LONG ILLNESS.

Bob was a member of the Long Island Section and a member of the Section's Executive Committee for many years. What was very special about Bob is that he never sought any executive position within the section, yet he was a stand-out. His activities were always designed to help an engineer and the engineering profession. His focus was Professional Activities. He was a prolific writer and used his pen and talent with words to "sound the bell" and expose flaws in the profession and injustices to engineers.

During the seventies, there was a push, notably by the Long Island Section, the North Jersey Section and the Santa Clara Section of California, to change the IEEE organization from a purely technical society to a professional society. It was Bob's idea to have petitions to change the IEEE constitution to allow for professional activities.

ROBERT BRUCE:
June 26, 1927 - September 24, 2015

A LONG-TIME MEMBER OF THE
IEEE LONG ISLAND SECTION.

Three petitions were presented, and all three failed. Despite that, the petitions were highly significant in that the IEEE was put on notice that change was in the air. It was finally a petition from California that IEEE members voted for overwhelmingly, that changed the character of the IEEE, leading to today's technical and professional organization.

Bob received his Bachelor's Degree in English from the City College of New York, & a Master's in Electrical Engineering from Stevens Institute of Technology. He loved to read the classics as well as today's modern writers. He enjoyed music, both popular and classic, and spent many an evening with his wife Dianne dancing the time away. He was both a teacher and a mentor. He was employed for many years at AIL and subsequently consulted in the design of power, analog and digital electronics. Bob never wavered on raising issues that are still with us today: H1b, salary compression, age discrimination, education... to name a few.

To Bob, "ethic" was more than just a word; it was ACTION and MORE!

We will miss him.

WWII ENIGMA CIPHER MACHINE EMULATOR PROGRAMMING CHALLENGE

Arthur J. Glazer
Life Senior Member, IEEE

1. A PROGRAMMING CHALLENGE

It all began with an article by Stephen Cass in *IEEE Spectrum Magazine* of December 2014 (Cass is Spectrum's "Resources" Editor). The article, "Build Your Own Enigma Cipher Machine," described a do-it-yourself electronics kit, which Cass purchased, assembled, operated, and described in the article.

The WWII German military used Enigma for encoding and decoding classified communications. As a piece of technology, it has a following of admirers on various levels. Why else would there be a kit available today that uses modern electronics to emulate an antique electromechanical system?

The article prompted me to question whether I would be capable of writing a software program to emulate an Enigma machine. An Internet search revealed that many other people have done it over the years. Most of them utilized impressive 3-D computer graphics that I could not hope to equal. For an example, try Googling on "D.Rijmenants". But why are 3-D graphics necessary just to handle crypto text? My goal was to find out whether my programming skills were adequate to develop and implement the algorithms needed to emulate the Enigma's elegant coding and decoding system. BASIC is the only programming language that I know, and I've been using it professionally for many years. A philosophy of mine has always been, "If you can state the problem in BASIC, then you probably understand the problem".

Though it took longer than I anticipated, I think I finally succeeded. My program, 32NIGMA.exe, was written and compiled in Microsoft Quick Basic Extended (QBX) running under Windows XP. The program emulates a 3-rotor ENIGMA model M-3 with 5 interchangeable rotors, 3 interchangeable reflectors, settable Ring and Rotor positions, and a plugboard with 10 patch cords. All I/O operations are via keyboard and monitor screen, just as the real Enigma machine used an input keyboard and output lamps.

I soon discovered that 32NIGMA.exe was not compatible with the 64-BIT bit Windows Vista operating system on my laptop. As a result, I had to re-compile the Basic source code using QB64, which is a freeware version of Basic. I called this 64NIGMA.exe to distinguish it from the earlier program. Unfortunately, 64NIGMA.exe requires nine (9) support (.dll) files installed in the same folder containing 64NIGMA.exe. In summary, I use 32NIGMA.exe for Windows XP and earlier, and 64NIGMA.exe for Windows Vista and later.

For anyone interested, I'd be happy to email either or both programs and support files upon request. If you're new to ENIGMA, you may want to visit Wikipedia first to get familiar with Enigma history, nomenclature and procedures.

2. HOW AN ENIGMA MACHINE WORKS

A. THE COMPONENTS

Enigma's input device is a letters-only QWERTY keyboard. Pressing any key applies a dc voltage to one of 26 keyboard output lines representing a letter of the alphabet. Only one line at a time is energized. Enigma's output device is a panel fitted with 26 indicator lamps labeled A thru Z. Only one lamp at a time is energized when a key is depressed.

Between the input and output are several layers of "scramblers" that accept input letters and pass substituted output letters to the next scrambler in sequence.

>> CONTINUED ON PAGE 11

WWII ENIGMA CIPHER MACHINE EMULATOR PROGRAMMING CHALLENGE

<< CONTINUED FROM PAGE 10

A. THE COMPONENTS *(continued)*

There are three types of scramblers. The first is the **PLUGBOARD**. This is similar to a telephone switchboard. On the Plugboard panel, there are 26 input jacks and 26 output jacks representing alphabet letters. Ten patch cords are available with which any 10 input jacks can be patched to any 10 output jacks. The patched connections remain fixed during message processing. In the real Enigma machine, unused jacks are automatically connected “straight through”; i.e., A-to-A, B-to-B, etc. In my software, it is necessary to specify input and outputs for all 10 patch cords, whether scrambled or straight-through.

The second type of scrambler is the **ROTOR WHEEL**. Rotor wheels are interchangeable modules. Each rotor has 26 input connections and 26 output connections representing the alphabet. Rotor function is similar to the brushes and armature bars of a dc motor; that is, electrical continuity is maintained so that the wheels can rotate continuously through 360 degrees and beyond. The rotatable core of the rotor contains wire jumpers between input and output terminals. The wiring connections are different for each rotor type and are documented in ROTOR WIRING CHARTS, samples of which are in Figure 2. Unlike the Plugboard, Rotors dynamically change Input/Output connections during message processing.

The third scrambler type is the **REFLECTOR**. Like Rotors, Reflectors are interchangeable modules. The reflector has 26 input connections and 26 output connections. The Reflector’s fixed internal wiring substitutes a different output for each input line. The Reflector accepts inputs from the last Rotor of the signal chain and delivers its output (in the reverse direction) to the same Rotor. Thus, the signal is said to be “reflected.” This will become clearer in the discussions to follow. The Reflector substitutions remain fixed during message processing.

B. SIGNAL FLOW BLOCK DIAGRAM

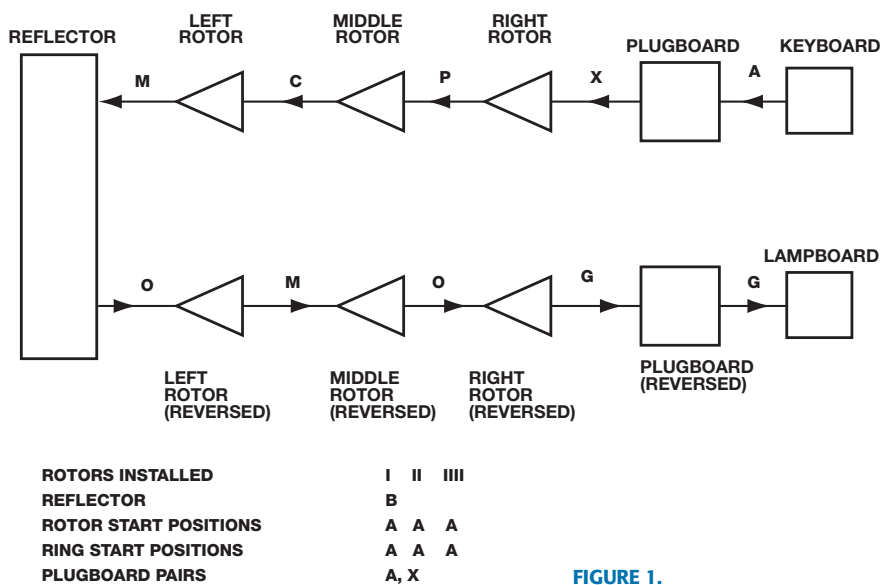


FIGURE 1.

By Enigma convention, signal flow proceeds from right to left starting from the Keyboard to the Plugboard, Right Rotor, Middle Rotor, Left Rotor, Reflector, and from there, backward through the Left, Middle and Right Rotors, Plugboard and Lampboard.

Figure 1. Illustrates the progression of substitutions when the letter “A” is entered into the keyboard, and the various Enigma settings are as indicated. The first substitution occurs in the plugboard, where X is substituted for A. X then becomes the input to the (Type III) Right Rotor.

>> CONTINUED ON PAGE 12

WWII ENIGMA CIPHER MACHINE EMULATOR PROGRAMMING CHALLENGE

<< CONTINUED FROM PAGE 11

B. SIGNAL FLOW BLOCK DIAGRAM *(continued)*

The Rotor Type III wiring chart (**Figure 2.**), indicates that, for an X input, an “S” output should be obtained. Instead, Figure 1 shows “P” as the output ... what’s wrong?

ROTOR TYPE III WIRING CHART

| INPUT | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rotor I | E | K | M | F | L | G | D | Q | V | Z | N | T | O | W | Y | H | X | U | S | P | A | I | B | R | C | J |
| Rotor II | A | J | D | K | S | I | R | U | X | B | L | H | W | T | M | C | Q | G | Z | N | P | Y | F | V | O | E |
| Rotor III | B | D | F | H | J | L | C | P | R | T | X | V | Z | N | Y | E | I | W | G | A | K | M | U | S | Q | O |

FIGURE 2.

The answer is that Enigma has added a complication to enhance security. And that complication is to rotate the Right (input) Rotor by one letter position for each input keystroke. To understand how this works will require a detailed look at rotor construction, which we will do in Appendix A. For now, we will simply apply an algorithm that solves the problem.

C. MY ROTOR-ADVANCE ALGORITHM

For simplicity, I will refer to letters as numbers and vice versa. That is A=1, B=2, C=3, etc.

Let ROTORIN represent the known CHARACTER applied to a rotor input line.

Let ROTOROUT represent the unknown character appearing at a rotor output line due to ROTORIN and complicated by keystroke advances.

Let CHARTIN represent the entry point into the applicable ROTOR WIRING CHART due to ROTORIN.

Let CHARTOUT represent the exit point of the ROTOR WIRING CHART due to CHARTIN.

Finally, let DELTA be the total number of positions (0 through 25) that the rotor has been advanced (or retarded) from the A position to its present position.

The algorithm is then:

$$\begin{aligned} \text{CHARTIN} &= (\text{ROTORIN} + \text{DELTA}) \\ \text{ROTOROUT} &= (\text{CHARTOUT} - \text{DELTA}) \end{aligned}$$

Let’s apply this algorithm to Figure 1. In this case, DELTA = 1 (1 keystroke advanced the RIGHT ROTOR by one letter, from A to B). Therefore, CHARTIN = (ROTORIN + DELTA) = (X + 1) = Y.

Referring to Figure 2, we see that, for a Type III Rotor and CHARTIN = Y, then CHARTOUT = Q. So that ROTOROUT = (CHARTOUT - DELTA) = (Q - 1) = P. Which agrees with Figure 1.

The algorithm is easily implemented in software, with lookup tables serving as ROTOR WIRING CHARTS.

>> CONTINUED ON PAGE 13

WWII ENIGMA CIPHER MACHINE EMULATOR PROGRAMMING CHALLENGE

<< CONTINUED FROM PAGE 12

D. THE REVERSE PATH

After undergoing reflection, the character is processed again by the Rotors and Plugboard, but in the reverse direction. This is done so that Enigma can decode messages as well as encode them. The subject is well covered in Internet sources. However, from a software standpoint this procedure requires the equivalent of a second set of Rotor Wiring Charts with inputs and outputs interchanged.

E. MORE COMPLICATIONS

Only the RIGHT ROTOR is advanced by keystrokes. However, the MIDDLE ROTOR advances once in every 26 advances of the RIGHT ROTOR. And the LEFT ROTOR advances on every 26 advances of the MIDDLE ROTOR. Each Rotor type determines the point at which the advances occur. The mechanics of these advances are too complex to discuss here but are thoroughly explained on Internet sources. However, keeping track of these “knock-on” events is straightforward in software.

In addition, there are two manual, mechanical inputs on each ROTOR: the so-called GRUNDSTELLUNG and RINGSTELLUNG settings. GRUNDSTELLUNG is applied using a front-panel-accessible thumbwheel while RINGSTELLUNG requires opening the Enigma box (not a software concern unless realistic graphics are employed). All of these complications can be summed in a single DELTA term in the algorithm.

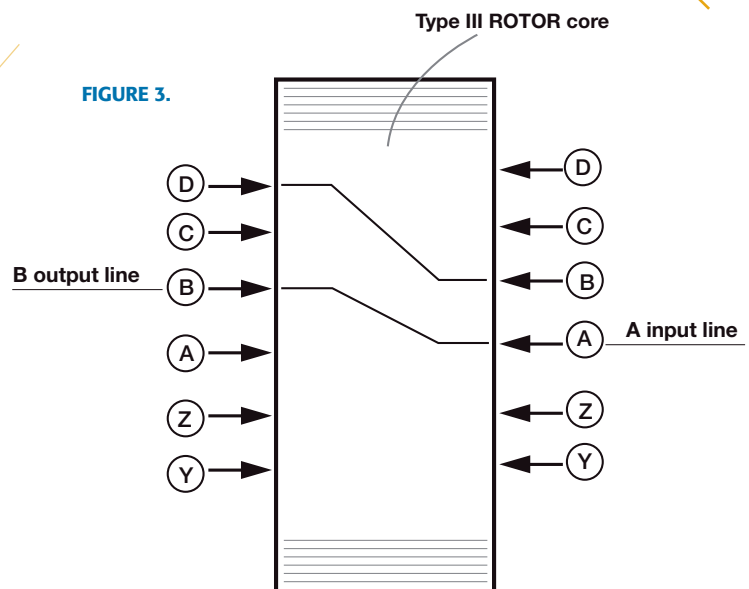
Finally, the actual Enigma machine suffers from an anomaly (probably unintended) known as “double-stepping.” That is, when the MIDDLE ROTOR advances to the vicinity of its own “knock-on” or “carry-forward” position, it will advance twice in a row when it receives a carry-forward command from the RIGHT ROTOR. Because Internet descriptions of this anomaly are difficult to understand, an easy way to implement double-stepping is to write a subroutine so that the program follows the behavior of trusted, online simulations such as that of Louise Dade.

APPENDIX A

THE MECHANICS BEHIND THE ALGORITHM

Figure 3. is a stylized edge-on view of a Type III Rotor in the A (default) position. The core contains the input-to-output jumpers that accomplish character substitution. Some of the twenty-six input and output contact “brushes” are indicated by arrowheads.

If the A key is pressed, voltages appear on the A input line, the A input brush, the core internal jumper wire from A to B, the B output brush and finally on the B output line. Thus, the substitution $A > B$ is accomplished. This is verified in the ROTOR WIRING CHART of Figure 2. (previous page).



>> CONTINUED ON PAGE 14

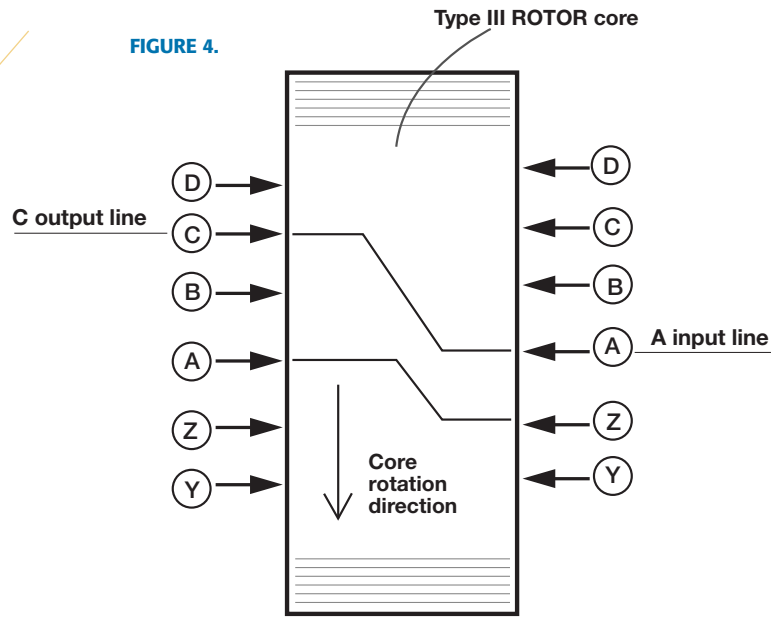
WWII ENIGMA CIPHER MACHINE EMULATOR PROGRAMMING CHALLENGE

<< CONTINUED FROM PAGE 13

APPENDIX A (continued)

THE MECHANICS BEHIND THE ALGORITHM

Now suppose that the rotor core has been advanced by a single position as shown in **Figure 4**. The brushes and I/O lines remain fixed, but the core internal jumpers all move downward in the figure. Now, pressing the A key applies the voltage to the A input line, the A input brush, the core internal jumper (which was from A to B but is now A to C), the C output brush and the C output line. Now go back to **Figure 3**. You can see that, without advancing the rotor, if we had pressed the B key (ROTORIN + DELTA) then an output would have appeared on the D OUTPUT line (CHARTOUT), so that ROTOROUT = (CHARTOUT - DELTA) = (D - 1) = C. q.e.d.



One very important corollary: It can be seen that motion between the brushes and the rotor core is relative: moving the rotor core downward is equivalent to moving all of the brushes upward. This is precisely the relationship between the Grundstellung thumbwheel and the Ringstellung (Rotor Ring) setting. For example, if you advance the thumbwheel by 5 positions, and also advance the Rotor Ring by 5 positions, the result would be equivalent to not advancing either one. However, there is an important difference between the two settings: Grundstellung affects the "distance" (measured in keystrokes) to the next knock-on, whereas Ringstellung does not. The emulation software, of course, needs to account for this.

Arthur J. Glazar
 Life Senior Member
 aglazar@ieee.org

IEEE Long Island Section Award Nominations

By Jesse Taub

Acknowledging the accomplishments of our peers is important to our profession. Each year, our Section gives several awards in various categories. You are encouraged to submit nominations for worthy candidates. You can find nomination forms on the [IEEE.LI website](#). Click on **Awards** and then click on **Nomination forms**. Section Award nominations must be sent to me no later than December 1, 2015. Received nominations will be reviewed by the Section's Awards Committee. The names of the Section Awards and their criteria are listed below:

ALEX GRUENWALD AWARD

This Award honors an IEEE member who has made significant contributions to our profession on Long Island, and to the IEEE at large. Alex Gruenwald was an IEEE pioneer in the area of professional activities. He was a very active member of the Long Island Section and went on to be a Region 1 Director.

ATHANASIOS PAPOULIS AWARD

This award is presented to educators in engineering, science, or mathematics, either living or teaching within the boundaries of the Long Island Section of the IEEE, who has demonstrated innovative teaching techniques. Athanasios Papoulis was a distinguished professor at Polytechnic University who was committed to promoting quality technical education on Long Island.

HAROLD WHEELER AWARD

This Award recognizes an IEEE member who has demonstrated outstanding technical and management abilities. Harold Wheeler was a world-famous engineer, who throughout his career at Hazeltine and Wheeler Labs, made many significant technical contributions. He was a founding member of the IEEE Long Island Section.

FRIEND OF THE IEEE LONG ISLAND SECTION AWARD

This award is given to a company or organization in recognition and appreciation of prominent and continued support of the IEEE Long Island Section and its members, in support of the Section's goals, activities and the Engineering Profession.

CHARLES HIRSCH AWARD

This Award recognizes an IEEE member who has made an outstanding technical contribution that has benefited Long Island. Charles Hirsch was a creative engineer at Hazeltine.

LIFETIME ACHIEVEMENT AWARD

This Award is given to a member who has demonstrated continual and distinguished leadership, outstanding career-long contributions and service benefiting the Engineering community and the IEEE LI Section. This award is the highest honor the IEEE Long Island Section bestows on an individual.

OUTSTANDING STUDENT CHAPTER AWARD

This award is given to an IEEE student chapter that is from one of the Long Island engineering schools. The award recognizes outstanding activities that encourage student interest in the IEEE.

OUTSTANDING VOLUNTEER AWARD

This award honors a Long Island Section member for substantial contributions to IEEE volunteer activities at the International, National, Region, Section, Chapter, or Society level.

OUTSTANDING YOUNG ENGINEER AWARD

This Award honors a Long Island IEEE member who has made significant technical contributions prior to his or her 35th birthday.

AWARD NOMINATIONS

Each nomination must be received by December 1, 2015, and will be reviewed by our Section's Awards Committee. Each nomination should describe the nominee's accomplishments that relate to the Award criterion and should suggest a suitable citation. Those selected will be honored at our annual Awards Ceremony in the Spring of 2016. Nomination information for Region 1 and Fellow Awards will be given in future issues of *The Pulse*.

PLEASE SEND ALL NOMINATIONS TO: Jesse Taub at jjtaub@aol.com. Call at **631-320-1564** if you have any questions.

IEEE computer society

Share Your Experience

PRESENTERS AND SPEAKERS NEEDED

**Working on an interesting project? Or have an interesting topic to talk about?
A startup ready to spread a word, or in need of beta testers with computer knowledge?**

Computer Society Chapter invites you to present your project or your experience. For one of the upcoming meetings we'd like to mash technical and social, and have several presenters presenting interesting computer-related topics in a shorter timeframe, fostering conversation. This is an opportunity to meet each other, learn about our work and possibly identify opportunities for collaboration.

Contact IEEE Computer Society Chapter at computer@ieee.li with your suggested topic.

RICHARD E. MERWIN STUDENT SCHOLARSHIP

IEEE Computer Society is offering \$40,000 in student scholarships from \$1,000 and up to recognize and reward active student volunteer leaders in student branches or chapters who show promise in their academic and professional efforts. This scholarship was created in honor of the late Richard E. Merwin, past president of the IEEE Computer Society, to recognize and reward student leadership.

The selected winners of this award will have the opportunity to serve as IEEE Computer Society Student Ambassadors for the particular IEEE region to which they belong. Duties as Student Ambassadors will include collecting and disseminating information to student branches or chapters in their region and serving as a liaison between the IEEE Computer Society Member and Geographic Activities Board (MGAB) and student members in their region. Over a dozen scholarships of \$1,000 and up are available, for one academic year (approximately 9 months).

THE MERWIN SCHOLARSHIP NOW HAS 2 APPLICATION DEADLINES:
30 April and 30 September of each year (*you may apply only once per year*).

CRITERIA?

Evaluation criteria include participation in student IEEE branch/chapter activities (30%), academic achievement (30%), extracurricular activities (10%), letter of recommendation from student branch/chapter advisor (20%), and quality of Student Ambassador vision statement (10%)

DEADLINE FOR APPLICATION SUBMISSIONS:

The current deadline for application submissions: 30 September 2015

WHO IS ELIGIBLE?

Graduate students, and those in the final two years of an undergraduate program in electrical or computer engineering, computer science, or a well-defined computer related field of engineering who are active members of a student branch or chapter are eligible.

IEEE Computer Society membership is required. (Note: Students applying for the award should have a minimum one year in which to complete their degree, or be considering or enrolled to immediately start further study upon completion.) Applicants are required to have a minimum grade point average of 2.5 / 4.0 (or exam marks of at least 60%), and be a full-time student as defined by his or her academic institution during the course of the award. Student winners of the Computer Society's Richard Merwin or UPE/CS award for the previous year (13 months) are not eligible.

TRANSCRIPTS

For your transcripts, your minimum GPA requirement is 2.5 / 4.0. If your GPA is based on percentages and NOT a 4.0 grading scale, you must include mark sheets to notate how your GPA is calculated.

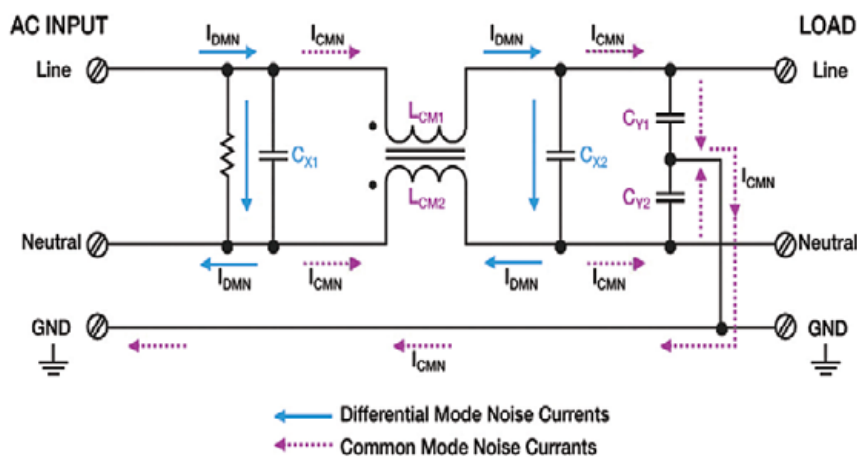
APPLICATION

Click the link below to download the application. Complete and email the final copy as a PDF or WORD file (Typo on application do NOT send ZIP file) to Eric Berkowitz: e.berkowitz@computer.org



The Long Island Chapter of IEEE EMC Society
is presenting a lecture titled:

NOT ALL CAPACITORS ARE CREATED EQUAL: CONSIDERATIONS IN CHOOSING THE PROPER CAPACITOR FOR EMI APPLICATIONS

**DATE:**

Wednesday,
November 4, 2015

PRESENTED BY:

Jon A. Rhan,
Field Application Engineer,
Kemet Electronics

LOCATION:

BAE Systems

450 Pulaski Road, Greenlawn, NY

TIME:

6:00 PM - Pizza and Beverages

6:30 PM - Presentation

WHO SHOULD ATTEND?

Individuals interested in learning about capacitor selection as it pertains to EMI filtering.

ABSTRACT:

Capacitors and EMI. In this presentation, we will discuss the different dielectrics available to the engineer and their pros and cons. We will then discuss EMI suppression using capacitors, filters, and some other technologies. What can we do with drawing power in series with the mains? How do the parts fail? What are the differences between the capacitors? Not all capacitors are created equal. There are many considerations in choosing the proper capacitor for EMI applications. You will learn about those considerations and see KEMET's online WEBSICE tool to help determine what capacitors to use in an EMI/EMC network on a DC power rail. What does that impedance look like?

REGISTRATION:

To register please visit the calendar page of the IEEE Long Island Website, WWW.IEEE.LI, click on the registration link, and fill out the form. Registrants must be US citizens.

SPEAKER BIO:

Jon A. Rhan is a field application engineer for KEMET Electronics providing technical assistance to design engineers on the east coast. His background is in automotive power electronics with a focus on power supplies and anti-lock brake systems. His power supply ICs were designed into most GM vehicles from 1990 through the early 2000's. Well versed in quality management system and ISO9000. He provided simulation support and taught simulation seminars for Mentor Graphics for many years. Jon graduated from Penn State University with a BSEE and also holds an MBA from Southern New Hampshire University. In his spare time, Jon enjoys genealogy and his family.

LOCATION:

This lecture will be held at BAE Systems located at 450 Pulaski Road, Greenlawn, NY. The facility is located just east of Park Ave (Suffolk County Rte 35) on Pulaski Road.

SEMINAR COORDINATORS:

Mr. Sandy Mazzola, BAE Systems Inc (Greenlawn).
Mr. Robert De Lisi, Underwriters Laboratories

The IEEE Consultants Network of Long Island (LICN) is presenting a lecture titled:

EVERYDAY ETHICS FOR CONSULTANTS

**DATE:**

Wednesday, November 4, 2015

PRESENTED BY:

Lisa Renee Pomerantz, Attorney at Law

LOCATION:

Briarcliffe College,
The Great Room,
1055 Stewart Ave. Bethpage, NY

TIME:

6:30 PM - Refreshments

7:00 PM - Presentation

COST

This seminar is free, and all are invited.

CEU Credits

0.1 CEU Credits. See Registration on-line.

WHO SHOULD ATTEND?

Consultants and any other professionals who are interested in the topic of and issues surrounding ethics.

ABSTRACT:

The Corruption Epidemic has many aspects including the settings, the causes, and common paradigms. This lecture will address those in connection with the basics of business ethics and assuring an ethical business environment. This will include a look at the circumstances of large companies, small companies, professionals and consultants, non-profits and government. There will be coverage of articulating standards and expectations of employees, vendors, and subcontractors, of setting an example, of screening employees and consultants, of identifying and managing risks and of surfacing and addressing issues as they arise.

REGISTRATION:

The presentation is open to the general public. Pre-registration is not required, there is no admission fee, and there is no fee for CEU credit.

FOR FURTHER INFORMATION CONTACT:

John Dunn at 516-378-0979

SPEAKER BIO:

Lisa Renee Pomerantz has more than thirty years of legal and dispute resolution experience. After graduating from Harvard University and Boston University Law School, Lisa clerked for a federal judge. Following a stint as a litigation attorney, she worked for fifteen years as a senior-level in-house counsel for a major corporation. Since 2003, Lisa has practiced law in Suffolk County. She works with entrepreneurs to structure and foster successful business relationships with employees, customers, vendors & collaborators, & to resolve disputes amicably and cost-effectively. She serves on the AAA's Roster of Neutrals as a Commercial Mediator and Arbitrator and on the ACR Board of Directors.

LOCATION:

This lecture will be held at Briarcliffe College, The Great Room, 1055 Stewart Avenue, Bethpage, New York. See www.licn.org/info/Directions2Briarcliffe.htm for a map and directions.

IEEE Continuing Education Programs are peer-reviewed by content experts. This peer review guarantees both quality of the technical content of learning materials, as well as adherence to IEEE's strict criteria for educational excellence. All programs that pass this strict process are entitled to award IEEE Continuing Education Units (CEUs), recognized as the standard of excellence for continuing education programs in IEEE's fields of interest.



IEEE
CONSULTANTS
NETWORK OF
LONG ISLAND



The Long Island Chapter of the IEEE Antennas & Propagation Society is having the following lecture:

ADDRESSING THE CHALLENGES OF ELECTRICALLY LARGE ANTENNA SYSTEMS DESIGN



DATE:

Thursday, November 5, 2015

PRESENTED BY:

Dr. Charlotte Blair,
Senior Application Engineer, ANSYS Inc.

LOCATION:

Telephonics Corporation
815 Broad Hollow Road, Farmingdale, NY 11735

TIME:

6:00 PM - Refreshments

6:30 PM - Presentation

COST

This seminar is free. Members and non-members are invited. Must be a US citizen to attend

ABSTRACT:

This presentation will address design considerations for RF Microwave Components, Sub-Systems and Antenna design for large multi feed antenna systems. This presentation will cover RF Microwave Component and Feed Systems, Co-Site interference, system mounting on platform considerations, high power/thermal design considerations as well as advanced simulation design techniques using ANSYS HFSS – a full-wave 3D FEM electromagnetic simulation tool and ANSYS Delcross Savant simulation tool.

REGISTRATION:

Registration is required, and is available online only. Please visit the Calendar Page of the IEEE Long Island Website www.ieee.li, click on the registration link, and fill out the form. All are invited, and the lecture is free.

SEMINAR COORDINATORS:

Bryan Tropper, Chair of the IEEE APS Society, LI Section

SPEAKER BIO:

Dr. Charlotte Blair received her BSEE from Rutgers University – College of Engineering and her MSEE and Ph.D. from New Jersey Institute of Technology. Currently, Dr. Blair is a Senior Applications Engineer for ANSYS, Inc supporting the high-frequency Electronic Business Unit products which includes the gold standard full 3D electromagnetics simulation tool HFSS for Eastern USA.

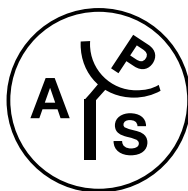
Her involvement in IEEE includes being part of MTT-S Membership Geographic Activities (MGA) Board, 2015 Vice Chair of Connecticut Section, and the MTT-S Women in Microwaves (WiM) Chair in 2011 and 2012. She also chairs the local MTT-S/APS Section in Connecticut.

LOCATION:

This lecture will be held at Telephonics Corporation located at 815 Broad Hollow Road in Farmingdale. Food & refreshments will be served starting at 6:00 PM, and the presentation will begin at 6:30pm. **Photo ID is required to enter the facility and you must be a US citizen to attend.**

DIRECTIONS:

Southern State Parkway, Exit 32 North (Broad Hollow Road, Route 110), Pass 56th Fighter Group, Telephonics is on the Right, #815 or IIE, Exit 49 South (Broad Hollow Road, Route 110), Pass Airport Plaza, Telephonics is on the Left, #815



The Long Island Chapter of the IEEE Microwave Theory & Techniques Society is presenting a lecture titled: **SUBMICRON DEVICE LEVEL THERMAL CHARACTERIZATION FOR PHOTONICS & POWER MMICs**

WHO SHOULD ATTEND?

Engineers with an interest in the design, test, and application of Microwave, Millimeter wave devices, Components & System Design.

ABSTRACT:

Infrared (IR) Thermography has been widely used as a tool for thermal mapping and characterization of devices and systems. This technique conveniently provides non-contact measurement, and the resulting 2-D thermal map provides a global view of the thermal characteristics of the target device. However, there are some major limitations with this technique in terms of spatial and temporal resolution, especially for photonic or high power MMIC device applications. The thermo-reflectance thermal imaging provides a solution that addresses these challenges. How the hotspots in MMIC gate structure can be measured instead of the more average heat distribution measurement with IR scanners. We will demonstrate this capability with examples and provide the scientific background for this imaging technique. The equipment is commercially available with visible light optics, a CCD image sensor, and with sophisticated, user-friendly software and the applicable signal control electronics. In contrast to typical InGaAs or InSb sensor array for IR Thermography, the visible CCD sensors are mass produced and can provide a greater number of pixels. Microsanj demonstrated how the Thermo-reflectance Imaging Analyzer can be used to detect static & dynamic hot spots on a sub-micron scale with a temperature resolution of 0.1 °C and a time resolution of 800 picoseconds. Key Highlights: Introduction to microscale and nano-scale thermal characterization techniques.

Basic principles of thermo-reflectance imaging:

- Determination of the thermo-reflectance coefficient and its material and wavelength sensitivity
- Thermal imaging results for high power silicon and GaN transistors, electro-static-discharge protection devices, solar cells, and light emitting diodes.
- Through-the-substrate infrared illumination for thermal analysis of devices in flip-chip packages
- Thermal characterization of micro-refrigerators employing superlattice thin films, which have been demonstrated to provide localized cooling of 680 W/cm²

SPEAKER BIO:

Received B.S. with honors in Electrical Engineering from UC Santa Cruz with research focused on device characterization using thermo-reflectance imaging where he studied microscopic defects in photovoltaic, heating in power transistor arrays & thermoelectric devices.



DATE: Wednesday, November 11, 2015

PRESENTED BY:

Dustin Kendig,
VP of Engineering,
Microsanj, LLC Santa Clara, California
E-mail: dustin@microsanj.com

LOCATION:

Briarcliffe College,
The Great Room, 1055 Stewart Ave. Bethpage, NY

TIME:

6:00 PM - Refreshments, 6:30 PM - Presentation

COST: This seminar is free, and all are invited

LOCATION:

This lecture will be held at L-3 Communications Narda - Miteq Microwave located at 435 Moreland Road in Hauppauge. Pizza and soda will be served starting at 6:00 PM, and the presentation will begin at 6:30 PM. (Please try to join us early and enjoy networking with your colleagues.) The lecture is scheduled to last 60-90 minutes. **The lecture is free, and all are invited, however, registration is required. A photo ID is needed to enter the facility.**

DIRECTIONS:

From LIE East: Take I-495 to exit 53. Stay on EXPRESS DR S. (Service Road) until you reach WICKS RD. Turn LEFT onto WICKS RD. WICKS RD becomes MORELAND RD. Cross over MOTOR PARKWAY and look for Narda on your right. Please use the main entrance parallel to Moreland Road. From LIE West: Take I-495 to exit 53. Exit at WICKS Road. Turn left at traffic light onto MOTOR PARKWAY. Take MOTOR PARKWAY to MORELAND RD. Make right turn onto MORELAND RD. and look for Narda on your right. Please use the main entrance parallel to Moreland Road.

REGISTRATION:

Registration is required, and is available online only. Please visit the calendar page of the IEEE Long Island Website www.IEEE.LI, click on the registration link, and fill out the form. Pizza and soda will be served at 6:00 PM, and the presentation will begin at 6:30 PM. Please join us early and enjoy networking with your colleagues. The lecture is scheduled to last 60-90 minutes.

LECTURE COORDINATORS:

Saikumar Padmanabhan, Chairman, (mtt@ieee.li)
Eric Darvin Vice Chairman, (mtt@ieee.li)
MTT Society, IEEE Long Island Section Region 1

IEEE NJ COAST SECTION

2nd CONFERENCE on
MOBILE SECURITY/
CYBER SECURITY
and PRIVACY

NOVEMBER 4, 2015
RARITAN CENTER, EDISON, NEW JERSEY



WHO SHOULD ATTEND

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

INDUSTRY SPONSORSHIP

Mobile security, cyber security, and privacy have become more critical in our business, government, travel, healthcare, and every-day lives. With society's exploding dependence on mobile devices and wireless technologies, effective security solutions have become increasingly important in everyday life. Participate in the upcoming high-impact, 1-day conference as Industry sponsor (Platinum or Gold or Silver) or Table or provide product demo or product presentation. Take some time with us to catch up on the latest trends, review the issues, collaborate with colleagues in industry and research, and take away practical ideas to enhance security of your world.

WHEN:

November 4, 2015

WHERE:

Raritan Center
The Edison Hotel & Conference Center,
3050 Woodbridge Ave., Edison, NJ 08837

TIME:

8:00 AM - 6:00 PM

REGISTRATION:

<https://meetings.vtools.ieee.org/m/35184>

Last year, during our first conference on security, we had distinguished keynote speakers, invited presenters and over 110 attendees with participation of over 20 vendors. This year, we have chosen a conference facility to accommodate a doubling of attendees and vendor participation. This facility is centrally located with easy access by tri-state attendees and others.

KEYNOTE SPEAKERS



DR. ED AMOROSO

Senior Vice President,
Chief Security Officer,
AT&T Services, Inc.

**From the Enterprise
Perimeter to a Virtual,
Distributed, Secure Cloud**



DONNA DODSON

Chief Cybersecurity Advisor,
National Institute of Standards
and Technology (NIST)

**Best Practices for Secure,
Privacy Preserving Mobile
Networks: A NIST Perspective**

SAVE THE DATE



IEEE WIE
SUMMIT
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2015

NOVEMBER 6 - 8 2015

PHILADELPHIA PA



CALL FOR PAPERS - SEE WEBSITE FOR MORE INFORMATION

SITES.IEEE.ORG/WIE-SUMMIT-USA-EAST

We are excited to announce the **1st IEEE Women In Engineering (WIE) Summit USA East (Nov 6-8, 2015 in Philadelphia, PA)**, which will focus on developing and improving leadership skills for individuals at all stages of their careers. Attendees will have the opportunity to hear inspirational and empowering talks presented by successful leaders from the IEEE-USA North-East region. Emerging technologies will also be demonstrated, engaging attendees to facilitate discussion & potential advancement of STEM outreach class ideas.

CALL FOR PARTICIPATION TOPICS FOR PAPERS AND PRESENTATIONS:

- Mentoring the next generation of female leaders
- Strategies for increasing equity in power and decision-making
- Women as leaders in education, industry, and government
- Development: communication skills in written and spoken word, effective dialog
- Cross-cultural aspects of leadership
- What it takes to be a great leader – qualities that all successful leaders share
- Shaping the future by female leaders
- Training vs. inherent skills: can leadership be learned?
- Work-Life balance: family systems traditions and changes
- Leadership development for women: overcoming stereotypes
- The design, implementation, and evaluation of leadership from a structural perspective
- Helping girls and young women become leaders – motivating to empower, empowering to motivate
- Exploring the attrition gap – why do women leave the engineering field and what can be done to prevent it

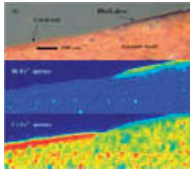


STEVENS INSTITUTE OF TECHNOLOGY & IEEE SYMPOSIUM ANCIENT HELLENIC ENGINEERING AND THE TRANSFORMATION OF EARTH THROUGH FIRE

SATURDAY, NOVEMBER 7, 2015

This symposium will be of interest to archaeologists, museum professionals, historians of technology, classicists, world historians, and anyone in the general public who has a love of ancient history.

More than 100,000 years before anatomically modern humans, our Homo erectus ancestors used fire for warmth, light, and protection from predators. 10,000 years ago, as our ancestors settled into agricultural villages, they fired clay for bricks and for pottery. Soon, humans experimented with fire-based transformations to smelt ores into metals. Remarkable technical achievements in pyrotechnology were essential to the unique and great civilization of the Ancient Hellenic world. This Symposium brings together four noted scholars who will explore the engineering behind the achievements of ancient Greek ceramics & metallurgy.



Prof. Marc Walton will speak about the technical sophistication behind the beautiful patterns on Athenian black-figure and red-figure pottery. Scanning transmission electron microscopy (STEM) produces detailed images of the microstructure of the ceramic surface and has revealed new evidence that sequential, multiple firings were used. Marc Walton currently directs the Northwestern University /Art Institute of Chicago Center for Scientific Studies in the Arts (NU-ACCESS) as its Senior Scientist. He also a Research Associate Professor in the department of Materials Science and Engineering at the McCormick School of Engineering and Applied Science at Northwestern University.



Prof. Eleni Hasaki will explore the form, structure, and function of the Greek ceramic kiln. The kiln's structural simplicity masks its operational complexity. She will explain how technical and ritual practices were essential for successful kiln loads and financial prosperity. Eleni Hasaki is an Associate Professor of Anthropology and Classics with the School of Anthropology and the co-director of the Laboratory for Traditional Technology at the University of Arizona. She is also the Director of the Ethnoarchaeological Project at the Potters' Quarters in Transition at Mokinine (Tunisia)



Prof. Vasiliki Kassianidou will present the basic engineering behind the ancient production of metals using copper as an example. Copper, the first metal to be used and extracted from its ores, remains important today played a central role in the history of- and gave its name to -Cyprus. Vasiliki Kassianidou is the director of the Archaeological Research Unit of the University of Cyprus where she has been teaching Environmental Archaeology and Archaeometry since 1994. She set up and coordinated the European Commission funded "New Archaeological Research Network for Integrating Approaches to Ancient Material Studies (NARNIA)"



Prof. Asaf Oron will explore the metallurgical technology of the Bronze trireme ram. Casting large bronze rams for triremes required great technical sophistication, particularly considering the forces that they had to sustain. Detailed technical analysis of the Athlit ram bronze casting suggests that it was manufactured by the lost wax technique, and not by the sand casting method previously proposed. Asaf Oron is a maritime archaeologist and an objects conservator. Asaf worked at the Sherman Fairchild Center for Objects Conservation at the Metropolitan Museum of Art on the renovation of the museum's Greek and Roman Galleries. He later headed the conservation facility of the Institute of Nautical Archaeology (INA) research center in Bodrum, Turkey.

Hosted by the Office of the Provost & the IEEE History Center With Support from The Alexander S. Onassis Public Benefit Foundation (USA)

LOCATION:

Stevens Institute of Technology
Babbio Hall, Room 104, Hoboken, NJ

DIRECTIONS:

<http://www.stevens.edu/sit/maps/public-transportation>
<http://www.stevens.edu/sit/maps/driving-directions>

RSVP:

Space is limited. Register online to reserve a spot.

SCHEDULE

Registration: 9:00-9:30
Two Talks: 9:30 – 12:00
Lunch: 12:00 – 12:45
Two Talks: 13:00 -15:00

REGISTRATION FEES (Includes Lunch)

Regular: \$25
Stevens Faculty & Staff: \$10,
Students: Free

<https://www.eventbrite.com/e/ancient-hellenic-engineering-and-the-transformation-of-earth-through-fire-tickets-18572727528>



IEEE Healthcare Innovation  Point-Of-Care Technologies Conference

NIH-IEEE 2015 STRATEGIC CONFERENCE ON HEALTHCARE INNOVATIONS AND POINT-OF-CARE TECHNOLOGIES FOR PRECISION MEDICINE

NOVEMBER 9-10, 2015 NIAID CONFERENCE CENTER, 5601 FISHERS LANE, BETHESDA, MD 20852

The NIH-IEEE Strategic Conference on Healthcare Innovations and Point-of-Care (POC) Technologies for Precision Medicine will focus on defining clinical translation needs and technology solutions. This 2 day conference will facilitate stakeholder – clinicians, healthcare providers, industry experts, innovators, government representatives, researchers and students – participation in key sessions. They include clinical needs for precision medicine, enabling technologies for POC, regulatory issues for POC devices, and sustainable global business models to support POC technologies in resource limited environments.

Federal funding opportunities and resources will be showcased, and presentations on recent healthcare innovations, point-of-care technologies, and industry exhibits will be featured. Stakeholders will have the opportunity to discuss barriers and challenges in the broad delivery of accurate and affordable healthcare. Breakout sessions will lead to strategic planning on future directions to enhance resources and collaborations for clinical POC technologies.

WHO SHOULD ATTEND: All stakeholders in healthcare innovations, delivery, maintenance, services and management are specifically encouraged to participate in the conference. Researchers, clinicians and students engaged in scientific and clinical research related to healthcare applications are invited to attend. Industries and businesses dealing with healthcare products, devices, pharma and payers, along with life-science related sponsoring agencies and foundations are welcome to participate.

Extended abstracts in the form of 1-page papers of all invited and accepted presentations will be included in the Conference Program Book. The deadline for submission of 1-page papers is September 1, 2015. Full papers on the presentations will be invited for publication in a special issue of the open access IEEE Journal of Translational Engineering in Health and Medicine in early 2016.

CALL FOR PAPERS:

IMPORTANT DATES:

- 1 Page Paper Submission Deadline: **September 1, 2015**
- Author Notification of Acceptance: **October 1, 2015**
- Early Conference Registration Opens: **September 1, 2015**

Conference Website:

<http://hipt.embs.org/2015/>

Download the Call for Papers (PDF):

[Click Here](#)

CONFERENCE THEMES TO WHICH PAPERS CAN BE SUBMITTED:

- Point-Of-Care (POC) Technologies Clinical Translational of Healthcare Innovations
- POC Technologies for Home-Based Applications
- POC Technologies for Slightly Trained Operators
- POC Technologies for Clinical and Healthcare Facilities
- POC Technologies for Intensive-Care Applications
- Personalized, Preventive and Precision Medicine
- Global Healthcare Challenges



National Institute of Biomedical Imaging and Bioengineering

Creating Biomedical Technologies to Improve Health

International Energy & Sustainability Conference 2015



at Farmingdale State College

Energy, Water and Food Nexus for a Sustainable Future

Our Renewable Energy and Sustainability Center at Farmingdale State College is pleased to invite you to our **Fourth International Energy and Sustainability Conference** on **Friday, November 13th** at 8:00AM in Roosevelt Hall. I am honored to extend this invitation to Solar Liberty to explore how we can integrate sustainable alternative energy sources and shape the future of our planet.

The Conference theme will focus on a sustainable future with an emphasis on Energy, Water, and Food Nexus. We welcome scholars and University representatives visiting with us to share in the latest research and achievements in renewability and sustainability. The conference proceedings will be published in the **IEEE Xplore**.

This conference will act as a bridge between original manufacturers and service providers with regard to all relevant technologies. Exhibitors will have an opportunity to display their products and services in an open forum and attendees are encouraged to view a wide range of exhibits. A network of professionals will be in attendance and the potential for job opportunities in the field will be prominent.

Academic scholars will be in attendance from the US, Europe and Asia to share their latest research and achievements in renewable energy and sustainability. Domestic and International University representatives will be exposed to the latest technologies to expand current curriculums with sustainable products.

We hope you can join us on **November 13th** and participate in Farmingdale State College's ongoing commitment to Renewable Energy and Sustainability. Please visit the link below for more information:
<http://www.farmingdale.edu/academics/centers-institutes/resc/conferences/iesc2015/index.shtml>

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State College**

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**FOR REGISTRATION INFORMATION
PLEASE VISIT OUR WEBSITE:**

<http://www.farmingdale.edu/academics/centersinstitutes/resc/conferences/iesc2015/iesc2015registration.shtml>



IEEE

INTERNATIONAL CONFERENCE ON
COMPUTING, COMMUNICATION & SECURITY



December 4-6, 2015

Le Meridien · Pointe Aux Piments · Pamplemousses, · Mauritius · Phone: (230) 204 3333 · Fax: (230) 204 3304

ICCCS is aimed to be an annual conference conceptualized to foster students, researchers, academicians and industry persons in the field of Computer Science and Engineering, Communication and Security. ICCCS 2015 will be organized at Le Meridien, Mauritius supported by Bipin Tripathi Kumaon Institute of Technology, Dwarahat and IEEE Mauritius on 4-6 Dec, 2015 to attract a large number of delegates from all over the country and abroad and will consist of very high quality technical sessions and tutorials.

The 2-day conference will include invited keynote & oral presentations. ICCCS 2015 will provide a forum for researchers and engineers to exchange innovations, research advancements in Innovative Computing, Communication & Security. ICCCS 2015 also provides the attendees the chances to identify the emerging research topics, as well as the future development directions in all field of Engineering. The primary goal of the conference is to promote research and developmental activities in advanced Computing, Communication & Security challenges.

MAIN CONFERENCE THEMES

- Data Communication and Computer Networks
- Big Data Analytics and Data Mining Information Security
- ICT & Education

CONFERENCE DETAILS

IEEE Conference Number: #37098

LINK: www.iccs.in

DATE: December 4-6, 2015

VENUE: Le Meridien, Pointe Aux Piments, Pamplemousses, Mauritius.

CALL FOR PAPERS

PAPER SUBMISSION FORMAT

Papers for both oral and poster presentations should conform to the IEEE format and specifications. All submissions must be in English only. Authors are invited to submit full paper (Maximum 8 pages, double-column A4) as PDF using the IEEE template. Papers will be published in the IEEE Xplore Digital Library. The IEEE paper template can be downloaded from the link given below.

www.ieee.org/conferences_events/conferences/publishing/templates.html

PAPER SUBMISSION DETAILS

All papers must be submitted electronically through Easy Chair at: <https://easychair.org/conferences/?conf=iccs2015>

At least one of the authors of each accepted paper must register and attend the conference, in order for the paper to appear in the conference proceedings.



IEEE



LONG ISLAND SECTION



BHI-2016 International Conference on Biomedical and Health Informatics
“Integrative informatics for precision and preventive medicine”



Las Vegas 25th-28th Feb 2016



BHI-2016 INTERNATIONAL CONFERENCE ON BIOMEDICAL AND HEALTH INFORMATICS

The IEEE International Conference on Biomedical and Health Informatics (BHI) is a special topic conference of IEEE Engineering in Medicine and Biology Society (IEEE-EMBS). The main theme of the BHI2016 is the “Integrative informatics for precision and preventive medicine.” Advancing health informatics has been identified as a grand challenge for engineering in the 21st century by the National Academy of Engineering. Maintaining and improving human health will require integrative & novel informatics solutions to better translate discovery into clinics, re-engineer care practices, and integrate big data of various health networks.

The BHI2016 will provide a unique forum to showcase enabling technologies of computing, devices, imaging, sensors, and systems that optimize the acquisition, transmission, processing, storage, retrieval, visualization, and analysis. It will share how integrative BHI informatics solutions can be used in novel applications to improve human health, and how the deployment of integrated bioinformatics, m-Health, e-Health, and tele-Health with Enterprise IT can enable precision and preventive medicine

BHI’2016 welcomes original submissions that have not been published or under review by researchers, clinicians, and industrial partners from the biomedical, life sciences, medical, and industrial communities. Examples of relevant topics include, but are not limited to the following few tracks:

- Sensor Informatics
- Biomedical Imaging Informatics
- Foundation of BHI and Bioinformatics for Precision Medicine
- Clinical Informatics
- Behavior and Health Informatics
- Big data analytics for health care
- Wearable, implantable devices, printable/ flexible bioelectronics and 3D printing
- Body sensor networks
- Context awareness, multi-sensor data fusion
- Data inference, mining, and trend analysis
- Quality of service, trust, security, and light-weight communication protocols
- Sensor-based mHealth App
- Medical image processing and visualization
- Content-based image retrieval
- Cognitive computing for healthcare delivery and disease management
- Teleradiology
- Data breach prevention and security
- E-commerce solutions for healthcare
- Telehealth and Telemedicine
- Health data acquisition, transmission, management and visualization
- Information technologies for healthcare delivery and management
- Healthcare communication networks
- Knowledge discovery & decision support
- Translational bioinformatics
- Outcomes research applications
- Public health management solutions
- Informatics for chronic disease management
- Formalism for healthcare modeling and informatics solutions
- Platforms/solutions for precision medicine
- Healthcare modeling and simulation
- Algorithms for Natural language processing & clinical pattern recognitions
- Health information systems and convergence of health

CALL FOR PAPERS

PAPER SUBMISSION DEADLINE

Oct. 26, 2015 (Monday)

NOTIFICATION OF ACCEPTANCE

Dec. 18, 2015 (Friday)

CAMERA-READY FINAL SUBMISSION

Jan. 8, 2016 (Friday)

<http://bhi.embs.org/2016>





PLAIN TALK

The IEEE Power & Energy Society's Practical Education Courses for Industry Professionals.



Electric Power Education for Industry Professionals!

- Are you a professional working in or with the Power Industry who would like to learn more about the Electric Power System?
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If you answered YES to any of these questions, register NOW for "Plain Talk about the Electric Power Industry." These courses will provide you with the practical knowledge you need to help you understand the electric power system and enable you to apply that knowledge to your job so you can work more effectively.

For Course Brochures and To Register:
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Contact LaToya Gourdine, Education Administrator, IEEE Power & Energy Society
at (732) 981-2876 or via email l.gourdine@ieee.org

SAVE THE DATE:

Charlotte, North Carolina: November 10-12, 2015



CALL FOR NOMINATIONS DISTINGUISHED LECTURERS PROGRAM

Deadline Extended Until November 11, 2015

The IEEE Engineering in Medicine and Biology Society (EMBS) invites nominations for EMBS Distinguished Lecturers.

The IEEE EMBS Distinguished Lecturers Program provides high quality speakers to the Biomedical Engineering Community, especially, EMBS Chapters, Student Branch Chapters, and Student Clubs.

Appointment as an EMBS Distinguished Lecturer is a major Society recognition.

The Distinguished Lecturers are selected by the Distinguished Lecturers Program Committee and announced in December after approval by the EMBS AdCom.

NOMINEES MUST MEET THE FOLLOWING CRITERIA:

- The DL nominee is preferentially an EMBS member.
- The DL nominee must be nominated by an EMBS member who does not have conflict with the selection process. No self nominations are allowed.
- The DL nominee must be a well-recognized expert in his/her field because of his/her research, teaching, service activities and an inspiring speaker.
- The pool of candidates should cover as well as possible at any time the technology footprint of the Society and its global reach, as well as appeal to its diversified constituents (professionals, academicians and students) and our medical partners.

DUTIES:

- The Distinguished Lecturers will start their two year term in January.
- Each Lecturer should submit up to three lecture topics in his/her field of expertise that will be posted in the Society Website.
- The Distinguished Lecture should be readily available to travel within his/her geographical area upon contact by the Chapters or appropriate organizations.
- Reasonable travel expenses will be paid by the Distinguished Lecture Program.

TO NOMINATE A CANDIDATE AS AN EMBS DISTINGUISHED LECTURER:

Download the Nomination Form from the EMBS website at: <http://www.embs.org/about-embs/awards-a-recognition/distinguished-lecturers-program>.

www.embs.org/about-embs/awards-a-recognition/distinguished-lecturers-program.

After completion and preparation of the supporting documentation, submit your form electronically by 11 November 2015.

IF YOU HAVE QUESTIONS:

Contact the Distinguished Lecturers Committee Chair, Dr. Atam Dhawan (dhawan@njit.edu) or EMBS Senior Society Administrator, Michael Markowycz (m.markowycz@ieee.org).



2015 Volunteer Leadership Training Program (VOLT)

iee-elearning.org/CLE/

The purpose of this communication is to announce the structure of the 2015 Volunteer Leadership Training Program (VOLT).

Last year, the Volunteer Leadership Training Program (VOLT) was successfully implemented with the participation of 32 volunteers from all the regions of the IEEE. The 6-month long program launched in April 2014 and targeted volunteers with a true desire to learn about the broader IEEE, who want to participate in IEEE committees, and consider taking leadership positions within their units.

During the first 3 months of the 2014 program, participants were exposed to an in-depth learning of the IEEE structure and organizational units outside of MGA. The last 3 months focused on acquiring practical leadership knowledge that participants can apply in their professional and personal environments.

The success and popularity of the VOLT program is evident by the continuous positive feedback received from its graduates, mentors, and many volunteers across the regions. In response to this positive feedback, the VOLT Ad Hoc Committee has decided to make the IEEE foundational content available to a larger audience.

FOR 2015 THE PROGRAM WILL CONSIST OF TWO TRACKS:

TRACK 1 will cover key organizational units of the IEEE and focus on the foundational knowledge of the organization. These pre-requisite courses will be available to all IEEE volunteers through the Center for Leadership Excellence (CLE) website starting July 10th 2015.

TRACK 2 will start on September 2015 and last three months. It will focus mainly on leadership related topics.

To access the **TRACK 1** courses go to <https://iee-elearning.org/CLE/> using the IEEE Account. Choose the category "Volunteer Leadership Training Pre-Requisite" to begin. Volunteers who complete the foundational Track 1 in the CLE by Aug 24th can apply for consideration for the VOLT Program starting in September 2015. Enrollment in the 2015 class will be determined by the VOLT Ad Hoc Committee based on predefined criteria. Details will be communicated shortly.

The success of the VOLT program in 2013 and 2014 was unprecedented. We want to ensure that a larger number of IEEE volunteers take advantage of this important training and learn more about the great organization they are part of. Section Chairs are encouraged to reach out to their volunteers as applicants to the September class will need your endorsement as part of the criteria.



CO-OP PROGRAM: Hofstra University School of Engineering and Applied Science (SEAS)

Beginning with the 2014-15 academic year, SEAS is proud to offer a co-operative educational experience, which offers qualified students the opportunity to work in companies utilizing the skills of engineers and computer scientists. The SEAS model envisions students being hired by a company after the Fall semester of their junior year and then working for an six to eight month period with suitable salary paid, and then returning to Hofstra SEAS to complete their degree requirements.

The co-op experience is a very attractive option for students and has the added benefit of cementing ties between SEAS and technology companies. For more information contact **Philip Coniglio**, Founding Director of the SEAS Co-Op Program, at **516-463-5548** or philip.m.coniglio@Hofstra.edu.

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