



Chairperson's Message by Santo Mazzola, chairman@IEEE.LI

Spring is here and not a moment too soon. I am ready for it.

We recently held the IEEE Long Island Section Annual Awards Banquet. The event was a success as attendance was approximately 200 people. Congratulations again to the award winners. There is further information about the Awards Banquet inside this issue of the Pulse. If you know of anyone who is doing excellent work and would like to advocate/recommend them for an award next year please contact our Awards Chairman Jesse Taub. You can obtain the awards information by going to our website at www.IEEE.LI and clicking on the Awards Committee link to navigate to our Awards webpage.

The Long Island IEEE Section has two more major events in April and May that are very important and vital to the Section. I ask all of our members to support them and you will be glad that you did.

The IEEE Long Island Section is sponsoring **A Forum on Globalization – Where do outsourcing and off shoring fit**. Do they provide any long term benefits for the United States? How about developed and undeveloped countries? How about here, on Long Island? The Forum will be held on **Friday April 24th from 7:00 PM to 9:00 PM** in the Little Theater in Roosevelt Hall at Farmingdale State College, Broadhollow Road, Farmingdale NY. More information about the meeting is included in this newsletter. This is subject of great importance to all of us. Come and listen to our knowledgeable speakers discuss all aspects of the topic and bring your questions. There is no charge for this meeting.

The IEEE Long Island Section is presenting the fifth annual **2009 Long Island Systems, Applications and Technology (LISAT) Conference** on Friday May 1st, at Farmingdale State College. More information about the conference is included in this issue. There is also more information on our website under the LISAT banner link. Many interesting presentations on applications, systems, and technology are given. This will be the best LISAT ever. It will be a chance to network and experience a lot of educational presentations.

And lastly I have some very good news. Three of our members are working to start new Long Island Section endeavors that will present more offerings to Long Island Section IEEE members.

- Steve Rubin has agreed to become the organizer of the IEEE Long Island Section **Power and Energy Society**. Please wish Steve well in this task.
- Thomas Lansizero has agreed to become the organizer of the IEEE Long Island **Product Safety Engineering Society**. Please wish Tom well in this task.
- Christina Nickolas has agreed to become the organizer of the IEEE Long Island Section Affinity Group, **Women In Engineering (WIE)**. Please wish Christina well in this task.

I am excited by these efforts as they will result in more technical programs that the Long Island Section can present. Please keep following the Pulse for the future results of these efforts.

So now that it is Spring, we all need to go out and ride a bike, take a walk, get running, spring cleaning, pick up the yard, anything that gets us out and about. Enjoy the nice weather, you know the saying, "You don't know what you got until you lose it."

Regards,

Santo (Sandy) Mazzola, Chair IEEE Long Island Section
chairman@IEEE.LI

CALENDAR OF IEEE EVENTS

APRIL 2009

- 14 Computer Society Meeting**
Service-Oriented Computing by M. Brian Blake
Location: Telephonics, Farmingdale L.I.
Refreshments 6:00 PM, lecture 6:30 PM
- 24 Globalization Forum 2009**
The IEEE Long Island Section is holding a Forum to explore the impact of Globalization here on Long Island, **7-9 PM at the Little Theater in Roosevelt Hall at Farmingdale State College, SUNY, Farmingdale, NY.**
- 27 EXCOM Meeting** - Telephonics, Farmingdale L.I.
Dinner 5:45 PM, meeting 6:15 PM

MAY 2009

- 1 LISAT - Long Island Systems Applications and Technology Conference**, SUNY Farmingdale, LI
8:30 am – 5:00 PM
- 6 Long Island Consultants Network Meeting**
A Soft-Switched, Bi-Directional Power Converter.
Speaker Lee Sirio, P.E. and Electrical Engineering Design Manager at TDK-Lambda Americas, Inc.
Location: Briarcliffe College, Bethpage L.I.
7:00 PM, The Great Room
- 18 EXCOM Meeting** - Telephonics, Farmingdale L.I.
Dinner 5:45 PM, meeting 6:15 PM
- 20 MTT Society Meeting**
X-Parameters: A new Paradigm for Interoperable Measurement, Modeling, and Simulation
Speaker: Loren Betts
L-3 Hauppauge NY
Refreshments 6:00 PM, lecture 6:30 PM
- 28 Circuits and Systems Society Meeting**
An Analog Compendium
Speaker John Dunn
BAE Systems, Greenlawn LI
Refreshments 6:00 PM, lecture 6:30 PM

JUNE 2009

- 2 Long Island Tech Days: Technical Design Seminars and Technology Exhibits**
Location: Melville Marriott, Melville L.I.
8:00 am – 6:00 PM
- 3 Long Island Consultants Network Meeting**
Location: Briarcliffe College, Bethpage L.I.
7:00 PM, The Great Room
- 4 Instrumentation and Measurement Meeting**
Topic: TBD
Location: Telephonics, Farmingdale
- 27 EXCOM Meeting** - Telephonics, Farmingdale L.I.
Dinner 5:45 PM, meeting 6:15 PM

JULY 2009

- 7 Long Island Consultants Network Meeting**
Location: Briarcliffe College, Bethpage L.I.
7:00 PM, The Great Room

Contents:

Chairman's message	1
Events and meetings	2, 4, 5, 10, 17
Letter to the Editor	5
IEEE 125 yr Electronics History Series	6
Legal affairs message	7
Industry news	7, 8, 9
Global Engineering Forum	10, 18
2009 Annual Awards Ceremony	11, 12
Brain Teaser Challenge	13
Hofstra IEEE Student Branch	14
Key to YOUR Benefits	15
TI Tech Day Long Island	16
LISAT Information	3, 19

THE PULSE OF LONG ISLAND

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LET US HEAR FROM YOU

The PULSE encourages letters to the editor. Members of the IEEE Long Island Section are encouraged to write in about Pulse articles or about other topics of interest to Long Island engineers. While the IEEE Long Island Section greatly appreciates feedback, we cannot guarantee that all letters will be answered or published. Please direct comments to pulse@IEEE.LI, or to a section officer.

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Farmingdale
State College

**2009 IEEE Long Island Systems, Applications and Technology
Conference - LISAT2009*
Friday, 1 May 2009 – Farmingdale State College
CEU/PDH Credit Courses**

***Attaining the Next Edge in Reliability and Resiliency for
Critical Electrical Infrastructure****

(Seminar Length: 2 Hours with Q & A: 0.2 CEUs; 2 PDHs)

Speaker: Mr. Peter Curtis, *Founder*, Power Management Concepts, LLC

Abstract: Recent events including blackouts, natural disasters, and terrorist activity have heightened concerns about the reliability of electrical power for critical operations (backup systems for data centers) systems in buildings with seven-day, 24-hour environments. Mr. Curtis uniquely blends engineering, operations, and maintenance procedures for the critical electrical equipment such as standby generators, UPS systems, battery systems, automatic transfer switches, and fuel cells. Mr. Curtis discusses the risks associated with these systems, the possible solutions to mitigate downtime, the legal implications of downtime, as well as ways to properly communicate system and project needs to boardrooms and building administration to improve uptime, as every business' financial bottom line is contingent upon its degree of power reliability.

Electric Incident Cause and Origin*

(Seminar Length: 6 Hours with Q & A: 0.6 CEUs; 6 PDHs)

Speaker: Mr. George Ello, *Division Manager*, System Operations, National Grid Electric Services, LLC

Abstract: Statistics say that 11% of structure fires nationally are caused by building electric system failures. All of these buildings are supplied, in one fashion or another, by an electric utility system. This class explores electrical failures from a forensics perspective, taking into account the consequences of electric power system design, including the establishment of ground points and ground systems. Apparatus failure modes are discussed, as well as how known electrical laws define how electrical failures are caused and how they progress. At the conclusion of the class, the attendees will be able to describe many electrical fault modes and be better able to determine the origin and cause of an electrical incident or failure.

Coordinator for the classes: Theodore G. Pappas, P.E.

***Registration for the LISAT2009 Conference is \$150 for IEEE Members and Registered PE's. The registration fee for non-members who are not PE's is \$200. All those wishing to have their CEUs recorded will be charged an additional \$30.**



"The IEEE has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this approval, the IEEE has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice internationally. As a result of their Authorized Provider membership status, IEEE is authorized to offer IACET CEUS for its programs that qualify under the ANSI/IACET Standards."

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Letter to the Editor

To the Editor:

Several years ago the CRADLE of AVIATION MUSEUM in Garden City acquired a flight simulator from a private donor. As volunteer engineers and IEEE members, we have been maintaining, repairing and upgrading the simulator.

The simulator incorporates a 3-degree-of-freedom motion cockpit, with full instrumentation. One non-functional item of cockpit instrumentation that has resisted our efforts is the "radio stack", a serial RS-232 device, that simulates various radio based functions such as communications, beacons, transponders, and GPS.

We'd be pleased to hear from any LI Section members who might be able to assist in getting the radio stack numeric displays to light up. Additional details and photos about the radio stack are available from the undersigned.

Art Glazar aglazar@ieee.org

Mort Hans lmhans@ieee.org

The IEEE Consultants Network of Long Island (LICN) invites you to attend our May meeting.

Speaker: Lee Sirio, P.E. and Electrical Engineering Design Manager at TDK-Lambda Americas, Inc.

Title: **A Soft-Switched, Bi-Directional Power Converter.**

Visitors welcome. Free refreshments.

Qualifies for 0.2 CEU PE credit

What: May LICN Meeting

When: Wednesday May 6

6:45 PM refreshments available

7:00 PM LICN business meeting begins

7:30 PM Presentation begins

Where: Briarcliffe College (The Great Room)

1055 Stewart Ave

Bethpage, NY 11714

Directions to Briarcliffe are available online at

www.consult-li.com/info/Directions2Briarcliffe.htm

Fee: \$20 for Professional Engineers receiving CEUs (to be paid at the meeting) Free for everyone else.

Guests, please let us know you are coming so we can provide sufficient refreshments. Hope to see you there.

RSVP: Jerry Brown: jbrown@essexsys.com

Jerry Brown, LICN Chairman

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Long Island's Early Electronics History

by Jesse Taub

This is the fourth in the series of articles honoring the 125th Anniversary of the IEEE. Al Lopez, a Wheeler Laboratories staff member, chronicles the outstanding accomplishments. Harold Wheeler directed a first rate engineering staff that has left us a lasting imprint.

History of Wheeler Laboratories

by Alfred Lopez

In November 1945, after 21 years of Service to Hazeltine Corporation, Harold A. Wheeler decided to strike out on his own. He opened an office as a Consulting Radio Physicist in Great Neck, N.Y. Almost immediately clients appeared, typically seeking advice in areas where Wheeler's reputation was already established, such as small antennas and signal-limiting devices. The most important call came from the Bell Telephone Laboratories (BTL) in Whippany, N.J. With the encouragement of BTL, Wheeler decided it was time to incorporate and on January 2, 1947 Wheeler Laboratories, Inc. (WL) came into being.

Wheeler's initial thrust was a significant shift from the technology so well understood at Hazeltine. The new technology presumed implementation in hollow waveguide. Without exception, all earlier components had been designed in frequency bands where wire elements or coaxial lines served for electromagnetic transmission. The new work dealt with the microwave region, where rectangular waveguides were the norm and needed to be mastered. New equipment was required, new problems and opportunities could be expected.

In World War II, the need was recognized for tracking radar to provide automatic guidance for anti-aircraft batteries. The Army turned to BTL who in turn came to Wheeler Laboratories for some of the RF components of both the search and track radars. In the midst of this work, BTL invented monopulse radar. BTL then turned to WL to develop the hardware suitable for production.

The monopulse initiative coincided with the Army's plan to bolster air defense with anti-aircraft missiles. A program was started with the code name Nike; BTL was selected to lead it. To speed the task BTL employed, where possible, components of previous designs. Almost immediately WL was asked to engage in critical tests of Nike-Ajax, with the objective of identifying potential improvements. The results indicated that the monopulse package was satisfactory, but that a lens antenna was deficient.

Peter Hannan invented a totally new concept for the focusing element, namely, the twist-reflecting Cassegrain antenna. BTL authorized its development. The design was a stunning success, and its application in the Nike-Hercules radar helped make that system a world favorite. Beginning with that example, Cassegrain antennas in one form or another have come to dominate satellite systems and many other applications as well.

The Nike work continued for twenty years, yielding powerful systems such as Nike-Zeus and ultimately Project Safeguard. These later systems introduced many features new to the antenna art, including multimode feeds, fences to overcome multipath, huge Luneberg lenses for tracking of multiple targets, and waveguide simulation of mutual coupling among phased array elements.

Other major defense contractors came for assistance. Sperry came to WL to inquire as to whether WL could design for them a special antenna capable of both tracking a target and supplying illumination for a homing missile. The resulting project provided an antenna that became a critical element of the SPG-55A radar for Tartan missile guidance; it became an integral part of naval weaponry.

In addition, Raytheon, General Electric, Westinghouse, and Airborne Instruments Laboratories were also clients.

Communications Products, a company that specialized in manufacturing communication antennas for base stations came for assistance. Mr. Wheeler was able to devise for them a novel vertical array antenna which outperformed its competition at a fraction of the cost. The resulting Stationmasters dot towers and mountaintops all over the world; about a half million were made.

The ever-increasing demand for the design of highly directive antennas pointed to the need for specialized testing capabilities. As early as 1953, Mr. Wheeler began a search for a suitable location on Long Island. He found one in Smithtown; a 12-acre strip of land that lay across a valley between two hills.

In 1966 Hazeltine developed and manufactured the very first airborne interrogator system, the AN/APX-76. New antenna technology was employed; the "invisible dipole" antenna elements were mounted on the radar antenna so that the IFF antenna could be mechanically scanned with the radar antenna, achieve the required antenna pattern characteristics, and not interfere with (be invisible to) the performance of the radar. Since its introduction, the AN/APX-76 has become the most widely used airborne IFF interrogator.

After some difficult times, the Great Neck office was closed in 1969, and in 1970 the remaining WL engineers were transferred to Hazeltine and integrated into a group designated Wheeler Laboratory. Hazeltine continued to use the Smithtown antenna facility for testing antennas. Ultimately Smithtown was closed also, to be replaced at Greenlawn by a new state-of-the-art facility, including an indoor anechoic chamber. It was dedicated in 1993 as the "Harold A. Wheeler Communication and Antenna Systems Laboratory" (CASL).

The CASL is truly a fitting tribute, a living memorial to a brilliant engineer with a lifelong love affair with radio waves, an indefatigable explorer of their characteristics and capabilities, and a creative genius in their application. Harold Wheeler unflinchingly practiced the pursuit of technical excellence, and in so doing inspired all of his engineers to the same ideal. This high standard was recognized by Wheeler being given the IEEE Medal of Honor and our Section has named an award after him. He and seven of his engineers became IEEE Fellows.

Message from Legal Affairs Chairman

A very busy month in the realm of Patent Law. Not content with passing stimulus bills, and taxes on bonuses, Congress is also working on the Patent Reform Act of 2009. The Act is similar to its predecessor, the Patent Reform Act of 2007. Some of the provisions include:

First to file – instead of focusing on who "invented" the invention first (the current rule), the law would award the patent to the person who first filed the application in the Patent Office.

Damages – damages will be calculated by looking at the specific contribution of the invention over the prior art. This is probably the most contentious provision and the IEEE-USA Intellectual Property Law Committee has been asked to comment. I think it's a bad idea because all innovation in the electrical and computer science area is an improvement over existing technologies. Do you agree or am I completely off base?

Post Grant Review – existing procedures relating to re-examining patents would be broadened a bit and a new Post Grant Review proceeding would be added.

Prior art submission – submission of prior art by third parties would be allowed.

Venue – parties would be limited in the locations where they could file a patent infringement law suit.

Interim appeals – parties may appeal decisions regarding construction of patent claims.

I discussed many of these provisions in prior columns and spoke at LISAT 2008 about the Patent Reform Act of 2007. Those slides are available at http://www.ieee.li/pdf/viewgraphs/understanding_implications_patent_reform_act_2007.pdf. It looks like the provisions requiring a prior art search and inequitable conduct, which were present in the Act of 2007, have been removed.

Also in the news, the Patent appeals court ruled on whether the proposed Patent Office rules were within the authority provided to the Patent Office. These rules made headlines about a year ago – they limited the number of claims and applications that could be filed for an invention. At first blush, it looks like the Court has sided with the Patent Office and at least some of the proposed rules may go forward. This decision was unexpected as most patent practitioners were strongly opposed to the new rules

Finally, Congress has also started a pilot program to enhance the expertise of judges in Patent cases. As most judges see very few patent cases, this is probably the best proposal I have seen for improving the Patent system.

I will update you on all of these provisions as they evolve in the coming months.

Steven Rubin srubin@dilworthbarrese.com



Telephonics Trains Macau Controllers in New Training and Integration Facility

FARMINGDALE, NEW YORK, March 18, 2009 – Telephonics Corporation, a wholly owned subsidiary of the Griffon Corporation (NYSE:GFF); recently opened a new Training and Integration Center at its facility in Huntington, New York. The initial group to receive training at the facility was a group of Air Traffic Controllers from Macau, who received operator training for the Telephonics AeroTrac® system that Telephonics will install in Macau later this year. The controllers received initial operator training on the system, and were particularly impressed with the ability of the training center to simulate aircraft handoffs between Macau and the other air traffic control centers within the Pearl River Delta region.

"We are extremely pleased to be able to open our training and integration center in time to conduct the controller training for Macau. The training program we developed reflects our expertise in the ATM automation market as well as our past experience in the Pearl River Delta of southern China." said Donald Pastor, President of the Electronic Systems Division. "When we install our system in Macau later this year, the controllers we trained will be ready to step in and start operating AeroTrac immediately."

Telephonics has been active in the China aviation market since 1985 when it was awarded its first contract for an Air Traffic Control system at the Guangzhou International Airport. Additionally, in 1995, Telephonics began installation of its first AeroTrac ATM system in China. Since that time, Telephonics has installed over 15 additional AeroTrac systems throughout the country.



Telephonics to Establish Technical Support Services Business in Elizabeth City, NC

FARMINGDALE, NEW YORK, March 16, 2009 Telephonics Corporation, a wholly owned subsidiary of the Griffon Corporation (NYSE:GFF), announced today that they have entered into a long term agreement with the Elizabeth City, NC – Pasquotank County North Carolina Regional Airport Authority to establish the Telephonics Technical Support Services Business (TTSS). Plans are to construct a 22,000 square foot facility, including hangar, office space, and equipment repair facilities on the airport property. The proximity of this facility to the United States Coast Guard's Air Logistics Center will enhance the support to the US Coast Guard (USCG), while at the same time making a valuable contribution to the local community.

Headquartered in Farmingdale, N.Y., Telephonics provides integrated information, communication and sensor system solutions to military and commercial markets worldwide.

Mr. Joseph Battaglia, President of Telephonics Corporation said *"We are very excited about establishing a presence with Telephonics' Technical Support Services at the Elizabeth City Airport. Our co-location with the US Coast Guard Air Logistics Center will provide for the long term technical support needed to ensure mission readiness of many critical USCG assets."*

Telephonics Phraselation Feature of Telephonics NetCom-V™ Ready for Fielding

FARMINGDALE, NEW YORK, March 16, 2009 Telephonics Corporation, a wholly owned subsidiary of the Griffon Corporation (NYSE:GFF); announced today the newest feature of NetCom-V™, Vehicle Network Gateway System- Phraselation. The Phraselation feature uses speech recognition technology to translate English language phrases into foreign language audio for broadcasting on an externally mounted vehicle speaker. This key safety feature of NetCom-V allows the warfighter to remain unexposed and protected inside the vehicle while operating within potentially hostile environments.

Richard Hines, Telephonics Chief Engineer, noted *"We continue to work closely with the tactical vehicle communities to solicit their input on the advanced capabilities required to assist today's warfighter in effectively accomplishing their mission. The Phraselation feature is the most recent example of this input rapidly driving the development and introduction of a needed application while maintaining the industry's smallest footprint solution."*

Telephonics NetCom-V system has been contracted for multiple ground vehicle programs. This system provides the mounted warfighter with a highly integrated communications gateway that provides extensive capabilities with the lowest impact to size, weight and power. NetCom-V eliminates the "stovepipe systems" approach by reducing the number of independent systems carried on ground vehicles today and improves warfighter survivability, safety and situational awareness

Ryan, Mason & Lewis, LLP

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Job Position and Description: Nassau County intellectual property law firm seeks a patent agent or patent agent trainee, with an emphasis on preparing and prosecuting patent applications involving electrical engineering related technologies.

Looking for full time (8:30-5:30, M-F) or part time and salary is negotiable.

Requirements: Bachelors and/or Masters degree in electrical engineering, computer science or physics. Minimum of two years of post undergraduate engineering work experience. Excellent academic credentials and writing skills.

Mail, fax or email resume, cover letter and transcripts to:

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Northrop Grumman-Navy Team Exceeds Expectations During Mine-Clearing Weapon Test

BETHPAGE, N.Y. - March 11, 2009 - A laser-imaging, helicopter-borne gun system designed by Northrop Grumman Corporation (NYSE:NOC) for the U.S. Navy to destroy mines at sea exceeded expectations the first time it fired at underwater targets. The Rapid Airborne Mine Clearance System (RAMICS) is one of four airborne mine countermeasures systems in early production or development by the company.

During testing, the system hung from a 50-story tower that simulated RAMICS on an airborne helicopter. The system's mission was to locate and fire eight rounds at a submerged target. The statistical expectation was one hit only. Seven of eight shots hit the target within a tightly grouped pattern. "Shooting a submerged mine from altitude on a moving platform is an incredible algorithmic and hydrodynamic challenge. RAMICS' test performance was a major accomplishment that proves it can hit submerged mines from tactically significant distances, and do it all with better than expected accuracy," said Bob Klein, vice president of Maritime and Tactical Systems for Northrop Grumman. "We're getting closer to the goal of getting the sailor out of the minefield.

The RAMICS gun is a 30mm MK44 Bushmaster II cannon manufactured by ATK Armament Systems, Clearfield, Utah. It fires a supercavitating round. Unlike typical projectiles that markedly slow when they hit water, a supercavitating round has a unique configuration that allows it to maintain its velocity when it enters the water. Thus, it maintains its direction and kinetic energy to destroy a mine by impact

The test took place at the Lake Glendora test range within the Navy Surface Warfare Center in Crane, Ind. RAMICS is designed to get target data from another Northrop Grumman mine countermeasures product: the Airborne Laser Mine Detection System (ALMDS). That system is now in low-rate initial production. Northrop Grumman is also developing the Coastal Battlefield Reconnaissance and Analysis (COBRA) system for the Marine Corps and Airborne Surveillance, Target Acquisition & Minefield Detection System (ASTAMIDS) for the Army. "The goal with all our products is to find mines quickly, locate them accurately, and, at sea with RAMICS, destroy them without endangering divers so that our forces can have assured access to their targets and assured success in their missions," Klein said.

The RAMICS customer team is led by the Naval Sea Systems Command, PMS-495 (Littoral and Mine Warfare), and the Cypress, Calif.; CPI Aerostructures, Edgewood, N.Y. and Meggit Western Design, Irvine, Calif. Naval Surface Warfare Centers at Panama City, Fla., and Crane, Ind. The Northrop Grumman RAMICS industrial team includes Kaman Aerospace Electro-Optics Development Center, Tucson, Ariz.; DRS Sensors and Targeting Systems,

Product Safety Society – Call for Papers, Workshops, and Tutorials

The IEEE Product Safety Engineering Society seeks original, unpublished papers and tutorials on all aspects of product safety and compliance engineering including, but not limited to:

Product Specific: Consumer, medical, computer (IT), test and measurement, power supplies, telecommunication, industrial control, electric tools, home appliances, cellular and wireless, etc.

Hazard Specific: Electrical, mechanical, fire, thermal, chemical, optical, software, functional, reliability, risk assessment, etc.

EMC / RF: Electromagnetic emissions, electromagnetic immunity, regulatory, Introduction to EMC/RF for the safety engineer and compliance engineer.

Components: Grounding, insulation, opto-couplers, capacitors, transformers, current-limiters, fuses, power line filters, ferrite, environmental, electromagnetic emissions, electromagnetic immunity, regulatory, etc.

Certification: Product safety, electromagnetic emissions, electromagnetic immunity, environmental, processes, safety testing, regulatory, etc.

Standards Activities: Development, interpretations, status, interpretations, country requirements, Laboratory Accreditation, etc.

Research: Body physiological responses to various hazardous energy sources, unique safeguard schemes, electrically-caused fire, etc.

Environmental: RoHS, WEEE, EuP (Energy-using Products), Energy Star, Packaging Directives, REACH (Chemical), CeC, etc.

Liability: Product liability law in Canada, China, EU, Mexico, South America and the USA.

Demonstration Papers: Demonstrations of product safety testing techniques including mechanical, electrical, fire, etc.

Canadian Safety Issues: Environmentally related safety issues, including the effects of extreme heat, cold, wet, salt, etc.

Author's Schedule

Intent to present and topic (e-mail)	April 27, 2009
Draft e-paper	June 30, 2009
Notification of Acceptance	July 6, 2009
Complete e-paper	August 17, 2009

Prospective authors should submit e-papers using the on-line submission system.

Please go to the Author's Kit page of the PSES web for comprehensive submission instructions including paper templates:

www.ieee-pses.org/symposium.



 **IEEE LI Section Presents**



GLOBALIZATION FORUM 2009

**You are invited to attend a Forum on.....
The Impact of Globalization on Long Island**

What?

The Long Island Section is holding a Forum on **April 24th, 2009** to explore the impact of Globalization here on Long Island, relative to outsourcing and offshoring. Millions of jobs, once within the borders of the U.S. that have provided the basis of the U.S. economy have moved to locations outside the United States, where labor costs are low and profits are high. The gamut of industries that have taken advantage of this extend from manufacturing to accounting and financial services, computer services and telecommunications.

Where?

The Forum will take place on the campus of **Farmingdale State College, SUNY**, 2350 Broadhollow Rd., Farmingdale, NY, from **7:00PM to 9:00PM** in the **Little Theater** in Roosevelt Hall. The guest speakers who will take part in the Forum are:

Who?

Dr. Pearl M. Kamer, Chief Economist of Long Island;

Dr. Ron Hira, Assistant Professor of Public Policy at the Rochester Institute of Technology author of the book "Outsourcing America";

Mr. Russ Harrison, Senior Legislative Representative for Grassroots Affairs, IEEE-USA;

Mr. Gary Huth, Principle Economist /Labor Market Analyst for the NY State Department of Labor.

Mr. Peter Eckstein, Vice-President of Government Relations, IEEE-USA will act as host and moderator.

Why?

The Long Island Section is offering this Forum **free as a public service** to the engineering community, their families, and the people of Long Island. **We also value your input. Any questions that you would like to present to the members of the panel are welcomed. You can send your questions to: pulse@IEEE.LI**

Your feedback and reactions to the Forum is also very important to us. As part of your commitment, we would like you to contact our members of Congress, and tell them of your feelings and concerns.

Directions to the Little Theater:

Follow Rte 110 to the South Entrance of the Farmingdale College Campus (Melville Rd.)

Turn west on Melville Road, continue to the traffic light, and make the first **RIGHT** turn after the traffic light. Parking Lot #9 is on your immediate right, and has been reserved for parking for the Forum. Roosevelt Hall is a circular building that is adjacent to the parking lot. The entrance to the Little Theater is on the East side of the building.

Campus Map:

http://www.farmingdale.edu/lf_left/if_left_about_farmingdale.html, Click on "Location", click on "Campus Map".

2009 Annual Awards Ceremony



Long Island Section Awards and Region 1 Awards were presented; three new IEEE Fellow Awardees were honored by the Long Island Section. Suffolk County Executive, Steve Levy, was keynote speaker at the *IEEE Long Island Section 2009 Awards Ceremony*. March 26 - Hyatt Regency, Hauppauge. He praised engineers and the IEEE in particular for our part in Long Island's technological leadership. Alluding to the high-tech history of Long Island during post-WWII expansion, he indicated Long Island's leadership can continue with our fine institutions, Brookhaven National Laboratories, and our universities. Housing costs and taxes must be reasonable to replace the engineers and scientists who retire. Areas where electrical and electronics engineers can provide contributions include renewable energy, conservation of resources. He offered Suffolk County initiatives in solar energy, weatherproofing, and increased heating efficiency as examples.

(Left)- Long Island Section Award recipients with Long Island Section Chairman and Awards Committee Chairman



From left to right
Santo Mazzola , Chairman,
Dr. Monica F. Bugallo,
Dr. Sina Rabbany,
Mr. David Mesecher,
Mr. James Colotti,
Dr. Veljko Radeka,
Jesse Taub, Awards Committee
Chair

Certificates and plaques were presented to Long Island Section volunteers in recognition for their service. Visit www.ieee.li awards committee to view the program and more images of the event.

2009 IEEE Long Island Section Awards Banquet Sponsorship Honor Roll:

Brookhaven National Laboratory
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SPECIAL THANKS TO OUR AWARDS NOMINATION COMMITTEE, Jesse Taub, Chairman

Dr. Ralph James
Richard Mohr

Alfred Lopez
John Pierro

Rod Lowman
Dr. Martin Shooman

Velio Marsocci
Arlene Zhang

Long Island Section Awards

Harold Wheeler Award: Dr. Veljko Radeka - Brookhaven National Laboratory, *"For outstanding leadership and accomplishments in detector development which enabled discoveries in many areas of science and technology in a career of sustained productivity spanning over 50 years"*

Alex Gruenwald Award: Mr. James Colotti - Telephonics Corp., *"For development of the Long Island Section IEEE's outstanding website and for contributing to the growth of the Section's Microwave Theory and Techniques Society chapter"*

Charles Hirsch Award: Mr. David Mesecher - Northrop Grumman Corp., *"For innovative signal processing techniques applied to adaptive filtering, smart antennas and emitter location"*

Outstanding Young Engineer: Dr. Monica F. Bugallo - Stony Brook University, *"For development and application of computational methods for sequential signal processing"*

Athanasios Papoulis Award: Dr. Sina Rabbany - Hofstra University, *"For noteworthy contributions to biomedical engineering education and Hofstra's Medical School Curriculum"*

Region 1 Awards

Mr. Craig Aarseth, Telephonics Corporation For Technological Innovation (Industry or Government) *"For Radar and Landing System Architectural Design"*

Mr. Robert Barat, Telephonics Corporation For Managerial Excellence in an Engineering Organization *"For Leadership in Radar Systems and Software Engineering"*

Dr. Babak Beheshti, NY Institute of Technology For Technical Innovation (Industry or Government): *"For Technical Leadership in the Development of State-of-the-Art Reconfigurable Wireless Technologies"*

Mr. William DeAgro, Northrop Grumman Corporation. For Technical Innovation (Industry or Government). *"For Dedicated Efforts in Technological Innovation in the Submission of Patent Ideas with Most Recent Patent on Multipath Height Finding"*

Dr. Frederick M. Kruger, Kruger Assoc. For Enhancement of the relationship between IEEE and Industry *"For Contributions to the Profession through Exemplary Service as the LISAT Conference Exhibits Chair"*

Dr. Stefan A. Robila, Montclair State University For Enhancement of the relationship between IEEE and Industry. *"For Contributions to the Engineering Profession in Exemplary Service as the LISAT Conference Proceedings Chair"*

Mr. Daniel A. Rogers Telephonics Corporation For Enhancement of the relationship between IEEE and Industry *"For Contributions to the Profession Through Exemplary Service as the LISAT Conference Technical Program Committee Co-Chair"*

Mr. Craig Romano, BAE Systems For Technical Innovation (Industry or Government) *"For Technical Leadership in the Development of state-of-the-Art Low RCS Antennas"*

IEEE Fellow Awardees

Dr. Ilan Ben-Zvi - Brookhaven National Laboratory, *"For leadership in superconducting accelerators, high brightness electron sources and free electron lasers"*

Dr. Konstantin K. Likharev - Stony Brook University, *"For contributions to superconducting digital electronics and single-electron tunneling devices"*

Dr. Yuanyuan Yang - Stony Brook University, *"For contributions to superconducting digital electronics and single-electron tunneling devices"*

LISAT2009

Exhibitor thumbnails

Steve Taranovich will show Texas Instruments' Low Power Wireless Technology/Zigbee as well as Green Power Supply Techniques (In particular Digital Power Supply advantages) in keeping with Medical Electronics and Green Building Technologies Themes.



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Agilent is a premier measurement company and a technology leader in communications, electronics, life sciences and chemical analysis.

Brain Teaser Challenge – March 2009 - Butch Shadwell

These brain teasers get printed in newsletters around the world. In some of these places English is not the first language. I don't think anyone is doing an official translation. So I sometimes wonder if those readers having to translate it for themselves have a hard time making sense of my stories and humor. To be fair I have considered sending out the column alternately in Hindi, German, Chinese, etc., so as not to show favoritism to the native English speakers. Then I remembered that I am not really fluent in all of these languages and I don't even own an English-Chinese dictionary.

Anyway, let's get to the problem. I attended a conference on weather modeling the other day, a very interesting physics and math problem domain. These calculations are sometimes done in order to predict the path of hurricanes and tornadoes. So, after a 100 pound woman is airborne, how long does it take her to get from 0 to 30 MPH if she has a constant net horizontal accelerating force from the wind of 100 pounds(force). Obviously the wind is building during her entire flight. You can ignore wind drag and all other forces for this problem. I am using English units in order to add to the challenge, maybe metric next time.

Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-410-9751 (fax), 904-410-9750 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328.
(<http://www.shadtechserv.com>)

The names of correct respondents may be mentioned in the solution column.

Spotlight: Hofstra IEEE Student Branch

By: Michael Co, Student Activities Chair

In the February issue of the Pulse, we had an opportunity to learn more about the Stony Brook IEEE Student Branch and the activities they plan to keep the branch active. Their IEEE Student Lab has been very beneficial to students who need to finish or prepare for their lab experiments, use computers or just hang out with their fellow classmates or friends. Involvement has increased from new students especially freshmen ECE students.

Today, we will shift the spotlight to another local student branch: the Hofstra Student Branch. It personally surprising that there is a local branch at Hofstra since the university is known more for its law program. Despite that, a group of ECE students led by Dan Audette, the branch's president, took the initiative to maintain the student branch. However, just like any other student branches, they also face difficulties in getting more members to become involved with IEEE.

As the Student Activities Chair in Long Island, my role is to reach out to you in providing assistance so we could keep as many student branches as active as possible. If you have any ideas to share with us, please feel free to contact me at michael.co@ieee.org.

The Rebirth of IEEE at Hofstra University

By: Dan Audette, IEEE Student Branch President

Since 1971, Hofstra University has been offering ABET accredited engineering programs; and since 1996, the Department of Engineering has had an active IEEE student branch under the direct supervision of Dr. Sleiman Ghorayeb. Although Hofstra is the largest private university on Long Island, the Engineering Department consists of roughly two hundred undergraduates, of which forty students specialize in Electrical or Computer Engineering. Despite the fact that the size of the department inhibits club growth, it makes our community much more personal.

Throughout the previous years, the branch has been extremely active, competing in several Student Paper Contests and regularly attending local conferences. Student members have provided tutoring for basic Electrical Engineering courses and worked with the Engineering fraternity Theta Tau on various design projects. Unfortunately, since the previous officers graduated, the branch has suffered, and remained inactive for about a year. In the Fall 2008 semester, new student officers were instated to take over the branch activities, and with the help of Professor Ghorayeb, have been working to rekindle the same spirit that the branch previously had. Since then, student membership has greatly increased and many of us have attended a number of local conferences.



(From left) Paul Casano, Secretary, Dan Audette, President, and Andre Blackwood, Vice President at the IEEE 2009 Awards Banquet Dinner

As for future plans, Hofstra's IEEE branch hopes to make itself more visible and recognized throughout the Long Island Section. Not only will the branch be represented in as many local meetings and conferences as possible, but we would also like to get more involved in IEEE activities and bring the local community to Hofstra. Long Island's engineering professionals could give great insight and encouragement to Hofstra's engineering students, as well as recruit for their own companies. Increasing and enriching the community of electrical and computer engineers is the main goal of our branch.



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A monthly column by Nikolaos Golas, Membership Development Chairman

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IEEE
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Texas Instruments Tech Day Long Island June 2nd 2009 FREE Seminars for IEEE Members

Time	Session	Power	Signal Chain	Signal Chain 2	Embedded Processing
8:00 - 9:00AM	Registration				
9:00 - 10:00AM	1	NexFET, How To Design with Highly Efficient MOSFETs	Features and Benefits of Various Industrial Networks	Exploit the ADC to Your Advantage	Overview of OMAP and DaVinci
10:00 - 10:15AM	Break				
10:15 - 11:15AM	2	UCD9080 -- Highly Configurable 8-Channel Power-Supply Sequencer and Monitor	An Overview of TI's Next-Generation Clock Synthesizers, Jitter Cleaners and Synchronizers	Designing the Appropriate System Around High-Speed Data Converters	Introduction to Code Composer Studio™ v4.0
11:15 - 11:30AM	Break				
11:30 - 12:30PM	3	Lessons Learned from TI's Design Services Group	High-Speed Data Converters Advanced	Sensors and the Analog Interface	Evaluation and Development Using C2000 Low Cost Tools
12:30 - 1:30PM	Lunch				
1:30 - 2:30PM	4	Battery Charging System Design Considerations	Avoid Electrical Overstress on Your Op Amps	Compliance by Design by LS Research	MSP4305xx: Bigger, Faster, Lower Power- The Next Generation MSP430
2:30 - 3:00PM	Break				
3:00 - 4:00PM	5	Digital Control of Power Supplies Made Easy	Designing Mixed Signal Systems with Noise Reduction Techniques in Mind	Approaches to Multichannel, High-Resolution Data Acquisition	C2000 Digital Power Solutions: AC/DC and DC/DC

On June 2nd, 2009 join **Texas Instruments** at the Melville Marriott Long Island [1350 Old Walt Whitman Road Melville, NY, 631-423-1600] from 8:00 AM – 5:00 PM for a day packed with technical design sessions and technology exhibits.

The seminars are aimed at providing a learning forum where practical high-performance design solutions, tools, techniques, topologies and examples will be presented. The exhibits will demonstrate the latest TI technology and don't miss this opportunity to meet with a number of **Texas Instruments'** experts and gain valuable ideas for solving your technical challenges!

The TI Tech Day seminars have a \$99 registration fee but **Texas Instruments** is waiving the registration fee for **IEEE members**. The registration for Long Island will not be live to register until **April 21st 2009**. To register for FREE navigate to TI's Tech Day website at: www.ti.com/techdays2009 and the IEEE discount code is: **100DISC-IE**

For further information please contact Steve Taranovich, at: taranovich_steve@ti.com

Please note that you might need your IEEE Membership Card during the onsite registration!



IEEE

The IEEE Long Island Section Computer Society
presents a seminar titled:

Service-Oriented Computing



Tuesday, April 14, 2009

WHO SHOULD ATTEND? Persons who are interested in the web services and service-oriented architecture. The seminar is free and open to all.

WHAT ARE THE KEY BENEFITS? Learn about how future networked organizations will be integrated via their web-based systems

HOW TO REGISTER: If you wish to attend, please register via internet in the calendar page of www.ieee.li.

Speaker: M. Brian Blake, Georgetown University

Abstract: Emerging technologies facilitate an environment where web-based software or web services have well-defined, open interfaces and are discoverable across the Internet. Service-oriented computing is an emerging approach to software engineering that suggests that new specialized business processes can be created, on-demand, simply by integrating the services provided by others. One might suggest that this is a virtual playground for software engineering researchers who focus on web-based software. However, in the real world, software developers tend to create applications that do not conform to consistent developmental practices even if they do use universal interface representations (e.g. the eXtensible Markup Language). Our research utilizes semantic approaches, enhanced syntactical methods, and contextual information to automate the integration of software services that are developed randomly from a wide array of diverse sources. In a sense, we attempt to tame web services from the wild. This talk discusses our lines of research and subsequent contributions in the areas of service discovery, composition, and evaluation. The talk will introduce the emerging concept of service mashup.

Seminar Coordinator: Daniel Rogers, Computer Society Chair of the IEEE Long Island Section.

Speaker Bio: **M. Brian Blake** is currently an Associate Professor and Chair in the Department of Computer Science at Georgetown University. *Starting July 2009, Dr. Blake will be Full Professor of Computer Science and Associate Dean for Strategic Initiatives in the College of Engineering at the University of Notre Dame.* Dr. Blake conducts applied research in the development of automated approaches for the sharing of information and capabilities across organizational boundaries, sometimes referred to as enterprise integration. With respect to this area of interest, his investigations cover the spectrum of software engineering: design, specification, proof of correctness, implementation/experimentation, performance evaluation, and application. He has published over 85 journal articles and refereed conference papers in the areas of service-oriented computing, intelligent agents and workflow, enterprise systems integration, component-based software engineering, distributed data management, and software engineering education. Over the past 8 years, his research lab has been awarded over \$5.5 million in sponsored research from the National Science Foundation, DARPA, Federal Aviation Administration, the MITRE Corporation, Air Force Research Lab, SAIC, and the National Institute of Health. Dr. Blake received a Bachelor of Electrical Engineering from Georgia Institute of Technology and PhD in Information and Software Engineering from George Mason University. More information about Dr. Blake can be found at <http://www.cs.georgetown.edu/~blakeb/>

Location and Time: The seminar will be presented from 6:00 to 8:30 PM Tuesday, April 14 2009 located at Telephonics Corporation on Route 110 in Farmingdale, New York. Pizza will be provided. The seminar is free and open to all. If you wish to attend, please register via internet in the calendar page of www.ieee.li. You can contact the coordinator Daniel Rogers by email at drogers@ieee.org. A confirmation email will be sent by April 13. The seminar is wholly the responsibility of IEEE Long Island Section and the speaker.

Outsourcing & Offshoring Impact: Reversing the Flux of Technical Leadership & Engineering Jobs on LI

The IEEE Long Island Section is holding a Forum to explore the impact of Globalization here on Long Island, scheduled for **Friday, April 24, 2009, 7-9PM at the Little Theater in Roosevelt Hall at Farmingdale State College, SUNY, Farmingdale, NY.** The Forum shall solicit views about: 1) potential effects of offshoring on the U.S. economy, workforce, national security, and consumer privacy; 2) types of policies that have been proposed in response to offshoring; and 3) areas where further research could advance the debate on offshoring.

The following distinguished individuals have been invited to speak on the subject: Dr. Pearl M. Kamer, **Chief Economist of Long Island Association**; Dr. Ron Hira, **Assistant Professor of Public Policy at the Rochester Institute of Technology, author of the book “Outsourcing America”**; Mr. Russ Harrison, **Senior Legislative Representative for Grassroots Affairs, IEEE-USA**; and Mr. Gary Huth, **Principal Economist / Labor Market Analyst for the NY State Department of Labor.** Mr. Peter Eckstein, **Vice-President of Government Relations, IEEE-USA will host and moderate.**

Directions to the Little Theater:

Follow Rte 110 to the South Entrance of the Farmingdale College Campus (Melville Rd, Farmingdale NY) Turn west on Melville Road, continue to the traffic light, and make the first RIGHT turn after the traffic light. Parking Lot #9 is on your immediate right, and has been reserved for parking for the Forum. Roosevelt Hall is a circular building that is adjacent to the parking lot. The entrance to the Little Theater is on the East side of the building.

Globalization is used today to define the process of increasing the connectivity and interdependence of the world markets and businesses. It is the economic integration of the entire world through the removal of barriers of free trade and capital mobility, as well as through the diffusion of knowledge and information. Consider our position as an international power, one half century ago. We were the richest country in the world. Since then, we've sold our factories, we've sold our resources and transferred our technology and we now buy other countries' products because we cannot afford to manufacture and sell them ourselves. We are now economically "poor". In a recent article, Don Christiansen (donchristiansen@ieee.org), IEEE Fellow, editor and publisher of *IEEE Spectrum* (1971-1993) stated the following:

“U.S. corporations have accepted the outsourcing of information technology infrastructure as appropriate and necessary to remain competitive. Engineers are wondering whether the same attitude will prevail with respect to their own jobs. Some insist it already does. Boeing hired hundreds of engineers and scientists in Russia, in part because the Russian pay scale for aeronautical engineers was one-third that of U.S. engineers. Not long ago, a career counselor writing online at careerplanners.com suggested those hoping to safeguard their careers from offshoring might choose from a list that included bartender, dentist, security guard, plumber, and roofer. Stay away from the following, he advised: automotive engineer, computer systems analyst, hardware engineer, network engineer, reliability engineer, software developer, and reverse-engineering specialist. While politicians and pundits are giving more attention than ever to the topic of globalization, little is devoted to its effects on individual engineers, the engineering profession itself, and the role that engineers play in the technological leadership of the nation. There is also the fundamental issue of national defense, as technology traditionally exclusive to the U.S. is rapidly dispersed to and developed by potentially unfriendly countries. Since the consequences of ill-considered actions will be far-reaching, elected officials and others charged with making difficult decisions need to be sensitive and well-informed. And so must engineers.” [Excerpted and reprinted with permission from *IEEE-USA Today's Engineer Online*.

Moreover, in his Feb 24 speech to Congress, US President Obama proclaimed: *“I do not accept a future where the jobs and industries of tomorrow take root beyond our borders - and I know you don't either. It is time for America to lead again.”*

The problem associated with the outsourcing and offshoring of jobs and manufacturing is not just a local problem, it affects us all. Will the Forum be successful? How will we know if we succeed in reaching people? We want to find out how you, the people, react to the information presented, what your opinions are, and how much you are willing to stand up and help put an end to these practices that are draining the economic life of Long Island and this country.

Let's create a groundswell among the people of Long Island to continue our legacy as innovators of ideas and causes. Express your opinions; write to your congressional representatives and local newspapers. Please join us at the Forum! Invite your spouse, your neighbors and your coworkers! Bring your questions, concerns, and opinions. Better yet, send them to: pulse@IEEE.LI and have them included in the questions that will be asked of our panel.



IEEE LONG ISLAND SECTION
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LISAT2009

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- RFID for Personal Asset Tracking
- Enhancing User Experience at Museums Using Smart Phones with RFID
- Image Sensor Requirements for 2D Barcode Scanning
- Quo Vadis Face Recognition: Spectral Considerations
- Parallel Computation Methods for Enhanced MoM and MLFMM Performance
- Efficient Spectrum Sensing in Cognitive Radio Networks
- Data Detection for MIMO WCDMA-HSDPA Systems
- Natural ELF Electric Oscillations in Human Life
- Use of Marine Current Turbines to Reduce Hurricane Intensity in the Gulf of Mexico
- TDR-Inspection of Vast Tracts of Forests or Plants
- Health Monitoring Systems for

Technical Track B

- IEEE 802.11N WLAN Migration – Impact On System Capacity & Terminal Design
- Resource Scheduling Heuristics for Data Intensive Networks
- Improving Elevator Call Time Responsiveness via an Artificial Neural Network Control Mechanism
- Implications of Microsoft Vista File Systems for Computer Forensics Investigators
- Strong Security Solutions for Low-resource Devices – the Algebraic Eraser
- ML-STD-461: The Basic Military EMC Specification and Its Evolution Over The Years
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Member Type	Through April 1	After April 1
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Unemployed IEEE Members	\$ 35	\$ 35
IEEE Student & Life Members	\$ 50	\$ 75
Professional Engineers	\$125	\$150
Non-Members	\$175	\$200
CEU Credit Fee (0.8 CEUs)	\$ 25	\$ 30

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