

The *Pulse* of Long Island



IEEE LI Section's 50th Year!

October 1, 2003 - Vol. 53 No. 8

The monthly newsletter of the Long Island Section of the Institute of Electrical and Electronics Engineers, Inc.

Chairman's Message (Back-to-School Special)

By Dave Mesecher
d.mesecher@ieee.org



After helping my six-year-old son, Mitch, get ready to start his first day of the first grade today, I was driving to my job as an engineer at Northrop Grumman, and I was thinking about the fact that Mitch will soon be getting some of his initial exposure to math and science instruction, just as I did and just as my father - also named Mitch, also an engineer - did early in life. What will be interesting to see in the years ahead is whether Mitch, or even his one-year-old brother, Keith, will pursue careers in technology as we did - a difficult but rewarding career that fewer Americans are willing to choose when there are easier options, as Dr. Donald Scarl, Professor Emeritus of Physics at Polytechnic University, pointed out in the June issue of this column. (Go to www.ieee.li/pulse.htm to view the June issue.)

In previous issues of this column, I lamented the decline in the US of what is referred to as "technical literacy," and expressed concern that this decline, coupled with the steady movement offshore of the technology-development industry, has already led, and will continue to lead to challenges to our position as the world's technology and economic leader, and, if left unchecked, could bring about a much scarier challenge - to the military superiority we derive from our technically advanced weapons and defense systems. If the US is to hold on to its technological superiority, it must not only take steps to create and revive research-and-development opportunities that will encourage careers in engineering and science and attract the best and brightest worldwide, but it must also maintain an educational system that gives new entrants like Mitch - and someday Keith - every opportunity to experience and enjoy learning about math and science. I am happy to report that efforts are underway by the IEEE, both nationally and locally, to support and encourage technical literacy amongst our youth.

To begin, the IEEE Educational Activities Board (EAB) has established a web site called PEERS, which stands for *Pre-College Educator/Engineer Resource Site*. If you are an engineer, pre-college teacher, administrator, or anyone else interested in helping make technology come alive for students, you will want to explore the resources within this site. IEEE has developed PEERS to encourage collaboration and sharing between engineers and educators, and to provide resources to facilitate joint efforts to encourage students in the study of science, math, and technology. This site shows engineers how to approach working with primary and secondary school teachers and students, and be an effective resource for educators in local school systems and nationally. It shows educators how engineers can be valuable resources in the classroom, how to contact engineers and form partnerships, and how to find lesson plans and projects on technical subjects. To visit this site, go to www.ieee.org/organizations/eab/precollege/peers/. In conjunction with this, a Pre-college Representative will be established in each IEEE Section who will be responsible for establishing

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The PULSE is now available on-line!

To get the on-line PULSE and get up-to-date information about the Section, visit our web site at: **www.IEEE.LI**

You can also register for IEEE LI Section events online at this web site!

Official Ballot - 2004

Check the box next to name or enter the nominated candidate below:

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**If you are interested in the position of Secretary or Treasurer, please contact Christian DiFranco at c.difranco@ieee.org.*

***In order to validate the nomination, the envelope must have the member's name and his/her membership number. Please send completed ballots to from now until November 1st, 2003 to:*

John Peterson
50 Dennis Street
Garden City Park, NY 11040-5043

(Continued from page 1)

teacher-engineer partnerships, creating a local PEERS website, and registering engineers as mentors available to aid teachers in technology education. The Pre-college Rep for the Long Island Section is currently yours truly, but if you would like to help out please let me know. Moreover, EAB has established both a pre-college educator award, and an engineer-teacher Partnership award.

Right here on Long Island, your section has created a new award entitled *The Athanasios Papoulis Award for Excellence in Engineering and Technology Education*. Named after the world-renowned professor of electrical engineering at Polytechnic University's Long Island campus, it underscores our commitment to promoting quality technical education on Long Island. The award recognizes Long Island educators in engineering, science, or mathematics who, like Professor Papoulis did, have demonstrated innovative teaching techniques, and at the same time shown passion and enthusiasm for engineering and science, so as to motivate and inspire students. A candidate for this award must place priority on the interests of the students, and on the quality of the education they receive, and must be a member of and should promote student involvement in the IEEE. (Go to <http://www.ieee.li/awards/awards.htm> for more information regarding this award.)

The Long Island Section has also partnered with several local organizations that are concerned with improving the quality of technical education on Long Island. These include the Long Island Museum of Science and Technology, The Center for Science Teaching and Learning, and the Long Island Science and Engineering Fair. Through these partnerships we are sponsoring junior-high and high school science competitions and achievement awards.

(Continued on page 4)

Long Island Section Officers

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2nd Vice Chair . . . Daniel Rogers
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For Nov. 2003: 10-5-03
For Dec. 2003: 11-5-03

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IEEE Long Island Section Calendar

(No membership requirements, no registration, no fees at meeting unless otherwise noted.)

Please visit our website at www.IEEE.LI and click on the calendar for online registration (as available) and for listing updates

October 1, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For See Announcement on page 4.

October 14, 2003 - "Overview - Lightning Protection of Aircraft and Avionics", Mr. Rob Majkner – Sr. Engineer, Electromagnetic Technologies, Sikorsky Aircraft, Stratford CT. RSVP is required by no later than October, 9, subject to space limitations. Please do this via the IEEE Long Island EMC Chapter Web Site <http://www.ieee.li/emc.htm> For those without internet access, a message may be left at (631)265-2282. . (further details may be found on the EMC web page (<http://www.ieee.li/emc.htm>).

October 16, 2003 – "From Goddard to Apollo", Mr. Burton Dicht, Director of the ASME Southern Field Office in Dallas, TX. A dinner-lecture, co-sponsored by the IEEE AES, ASME and AIAA LI societies, will be held at the 56th Fighter Group Restaurant, Farmingdale, NY. Registration is at 6 PM, dinner is at 6:30 PM and the lecture begins at 8 PM. The lecture is open to the public, but seating is limited. Advanced payment registration is required- see the announcement on page 7 for details. For additional info, contact Rich Pierro at rspierro@optonline.net or 516-628-3156.

2003 October 22 - "What's All This Planar EM Simulation Stuff, Anyhow?" Mr Murthy Upmaka – Agilent Technologies. This seminar is free and all are invited. Appetizers/snacks/beverages will be served at 6:00 PM. Lecture will start at 6:30 PM. Lecture is sponsored by the Long Island Chapter of the IEEE Microwave Theory & Techniques Society. Registration is required, and is available online only. Please visit the IEEE Long Island Website, www.IEEE.LI , click on the MTT page, click on the registration link, and fill out the form. (See full page announcement in this issue).

October 27, 2003 - Long Island Section Executive Committee (ExCom) meeting at 6:00 PM, Telephonics Corp. on Route 110 in Farmingdale- This meeting is OPEN and FREE TO ALL IEEE members - Please contact Dave Mesecher for reserving a space in the meeting (d.mesecher@ieee.org)

November 5, 2003 - LI Consultant's Network at 7:00 PM at Briarcliffe College. For See Announcement on page 4.

November 12, 2003 - "Present & Future Filter Design Philosophy: Paradigm Shift in Progress", Dr. Richard V. Snyder – RS Microwave, Telephonics Corporation located at 815 Broad Hollow Road in Farmingdale, Registration is required, and is available online only. Please visit the calendar page of the IEEE Long Island Website <http://www.ieee.li/calendar.htm>, click on the registration link, and fill out the form. . (See full page announcement in this issue)

November 3, 10, and 17, 2003 - Section 1 - "Leadership Skills for Engineers in the Workplace", Charles P. Rubenstein, Ph.D. , from 6:30 to 9 PM, Locations are TBD, but will likely be in the western Suffolk / Eastern Nassau area. For further information contact Irwin Weitman at 631 266-2651 or at i.weitman@ieee.org . . (See full page announcement in this issue)

November 19, 2003 - "Solar power, its uses and benefits for clean energy", By Dr. Gaye Canough, Consultant to ETM Solar Works, at Telephonics Corp., 815 Broadhollow Road, Farmingdale, Please register in advance with Robert Bruce, 718/224-9498, r.n.bruce@ieee.org

November 20, 2003 – "Navigation: Land, Sea, Air and Space", Dr. Myron Kayton, Distinguished Lecturer of the AESS and IEEE Fellow. A lecture, sponsored by the IEEE AES Society, will be held at Telephonics Corporation, 815 Broadhollow Road (Route 110), Farmingdale, NY. Registration and refreshments at 6 PM and the lecture begins at 6:30 PM. The lecture is open to the public, but registration is required- see the announcement on page 8 for details. For additional info, contact Rich Pierro at rspierro@optonline.net or 516-628-3156.

November 21, 2003 - Section 2 - "Leadership Skills for Engineers in the Workplace", Charles P. Rubenstein, Ph.D. , All day, Locations are TBD, but will likely be in the western Suffolk / Eastern Nassau area. For further information contact Irwin Weitman at 631 266-2651 or at i.weitman@ieee.org .

EDA
Ad Here

MEETING NOTICE

On the **First Wednesday of each month** at 7 PM, the IEEE Consultants Network of Long Island will Meet.

The program will be held at Briarcliffe College,
1055 Stewart Avenue, Bethpage, NY.

Admission is free (no charge).

No pre-registration is required.

For last minute announcements and updates visit:

www.consult-li.com

Advertisement Business Opportunity

Considering starting your own business, but don't have access to affordable facilities/services? Our new Tech Center in Ronkonkoma LI can help by providing a professional facility to set up your business, and services ranging from engineering to full mfg.

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Presentation of the IEEE Long Island Section's 50th Year Anniversary banner at the Region 1 Board of Governors Meeting Schenectady, NY, August 2003



(Continued from page 2)

To assure that students have the reading and writing skills needed to learn about math and science, Charlie Richardson, who is the Long Island Section Educational Activities Chairman and a long-time Long Island educator, has established an organization known as The Literary Council (TLC), which promotes accountability in teaching and in teaching techniques by way of establishing methods for scientifically measuring the effectiveness of proposed approaches to teaching language skills. TLC has recently received a \$9000 grant via NYS Senator Marcellino to support Astor Program literacy work. Astor disseminates good practices that support standards-based learning and teaching, enhance the learning environments of the schools and create exciting libraries in which children learn, discuss, and read for pleasure. Congratulations Charlie!

So there is hope, with initiatives like these, that we can reverse the dangerous trend in technical literacy. It is up to each one of us, though, to do our part to make these efforts a success. I encourage you to become involved in local educational activities by offering your time and talent as a judge for one of the competitions I mentioned in this column, or by becoming a mentor or a partner with a teacher. Please let me know if you would like any more information regarding these activities. Our future engineers are depending on you!

Best regards,
Dave Mesecher

Thanks to my wife Margaret for helping me recover from the occasional writer's block that I experience as the ever-so-near deadline approaches for this column each month!

The Long Island Chapter of the IEEE Communications Society
and
The Long Island IEEE Professional Activities Committee for Engineers (PACE)
present a workshop on:

Leadership Skills for Engineers in the Workplace

conducted by
Charles P. Rubenstein, Ph.D.

Sponsored in part by IEEE Regional and Division/Society PACE Project Funds

Overview

The IEEE Long Island Section PACE committee is presenting a workshop on leadership skills for engineers. There will be two sections of the workshop. One will be given in three evening sessions (2½ hours per session); the other will be a single all-day session. Content is the same for both.



Who Should Attend

In an effort to support the technology-development industry on Long Island, this course is intended to help engineers and engineering managers achieve advancements for themselves, and successes for the companies they work for.

Key Benefits

This workshop will help participants recognize and develop interpersonal, group, team and individual leadership skills. The format is through interactive participation, also using exercises and case studies. The skills developed are appropriate for application in management or leadership positions in various types of organizations, including business, industry and volunteer activities.

Content

The course will address such issues as: What are the attributes of a leader? What does a leader do? What motivates people? What motivates volunteers? What is the relationship between management and leadership? Holistic communications and active listening. Keys to leadership problem identification and solution techniques. Identification of personal interactive skills (Jungian types). Identifying conflict styles and managing conflict. Brainstorming for building teams and consensus. Coaching and persuasion. Basic presentation skills.

Seminar Coordinator

Irwin Weitman is currently the Chairman of the LI Chapter of IEEE PACE, as well as the Chairman of the IEEE LI Consultants Network.

Instructor

Charles Rubenstein is a tenured professor of engineering and information science at the Pratt Institute graduate School of Information and Library Science. He has an earned doctorate in Bioengineering from the Polytechnic Institute of New York and a master's degree in Library and Information Science from Pratt Institute.

Dr. Rubenstein is a senior member of the IEEE. He has been a member of the IEEE-USA PACE Committees since 1999, currently serving as Vice-Chair, and a member of the Engineering Management Society Board of Governors since 1988, currently serving his fourth term as Vice President, Member Relations. Dr. Rubenstein has been an Engineering Management Society Distinguished Visitor since 1997.

Location and Times

Section 1: Nov 3, 10, and 17 from 6:30 to 9 PM.

(A light dinner will be served each evening.)

Section 2: November 21 from 8 AM to 4 PM.

(Lunch will be served.)

Locations are TBD, but will likely be in the western Suffolk / Eastern Nassau area.

For further information contact Irwin Weitman at 631 266-2651 or at i.weitman@ieee.org.

Registration Fees

	Non-Member	Member	Student or Life member	Out-of-work member
By Oct 24:	\$350	\$250	\$200	\$100
After Oct 24:	\$400	\$300	\$250	\$125

Registration Form

Leadership Skills Workshop, Nov, 2003

Make checks payable to "IEEE Long Island Section". Submit check and registration form to Irwin Weitman, 196 Cedrus Avenue, East Northport, NY 11731

Mr./Mrs./Ms. _____

Specify **Section 1** (three evening sessions Nov 3, 10, 17)

OR

Section 2 (one all-day session Nov 21): _____

Home Address: _____

City and Zip: _____

Phone: _____ E-mail: _____

Member #: _____ Grade: _____

Amount enclosed: \$ _____

Retlif Ad
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page!!



The Long Island Section of the IEEE Aerospace & Electronic Systems Society
in conjunction with
The Long Island Sections of the ASME and the AIAA
Present:

“From Goddard to Apollo”

**A Dinner Lecture by Mr. Burton Dicht,
Director of the ASME Southern Field Office, Dallas, TX**

Registration & hors d'oeuvres at 6 PM. Dinner at 6:30 PM. Lecture at 8 PM.

With the recent loss of the Shuttle Columbia and its crew, Americans have turned their attention toward NASA and the human space flight program. For more than forty years, American and International astronauts have rocketed their way into space and beyond. During the more than 140 U.S. space flights, NASA has experienced great triumph, failure and devastating tragedy.

This presentation will focus on perhaps NASA's greatest triumph, the landing of Americans on the moon. It has been more than thirty years since Neil Armstrong and Buzz Aldrin landed their Lunar Module "Eagle" on the lunar surface culminating one of the greatest explorations in human history. Project Apollo was the largest peacetime engineering project ever undertaken by the United States. At its peak it involved more than 20,000 companies and 400,000 people.

It was a remarkable technological achievement that was born out of the Cold War. Mr. Dicht's presentation will trace the history of America's race to the moon, from its simple origins of a 15- minute sub-orbital flight to the triumph of six successful moon landings. Starting with Robert Goddard and his early experiments with rocketry, thru War World II, and finally to Sputnik and Project Mercury, Mr. Dicht will discuss how America harnessed its technological resources to meet President Kennedy's challenge. Mr. Dicht will also touch on the recent tragedy and what the future might hold for NASA and America's space program.

Currently, Mr. Dicht is the Director of the ASME Southern Field Office in Dallas and is responsible for serving the volunteer leadership in Regions X and XI. His engineering experience is in the aerospace area, having served as a lead engineer for Northrop Grumman and Rockwell Space Transportation Systems Division. He has worked on such projects as the F-5E Tiger II, the F20A Tigershark, the F-18E/F Super Hornet, the YF-23A Advanced Tactical Fighter and the Space Shuttle. Mr. Dicht has had a lifelong interest in the space program and has a Master's Degree in history where he specialized in presidential history, including Kennedy's decision to go to the moon.

Advanced payment registration is required. The lecture is open to the public, but seating is limited. To register, complete the form below and submit it with your check by October 2nd. For questions, please contact Rich Pierro by e-mail at rspierro@optonline.net or by telephone at 516-628-3156.

----- **Detach and please submit with check** -----

Name _____ Phone _____ e-mail _____

Payment amount \$ _____ (Cost: \$30 IEEE, ASME, AIAA members; \$20 student members)

Make check payable to "IEEE Long Island Section" and submit to:

IEEE AES Society, c/o Richard Pierro; 7 Willow Ridge Road; Bayville, NY, 11709.

Payment must be received no later than October 2nd. Members must show membership ID at the lecture.

The Long Island Chapter of the IEEE Aerospace & Electronic Systems Society

Presents:

“NAVIGATION: LAND, SEA, AIR and SPACE”



**A Lecture by Dr. Myron Kayton,
Distinguished Lecturer of the AESS and IEEE Fellow**

**Time: Registration and Refreshments at 6 PM.
Lecture at 6:30 – 8 PM.**

Location: Telephonics Corporation

Lecture Content:

The lecture will consist of a navigation overview; the characteristics of navigation systems for aircraft, automobiles, ships and spacecraft; coordinate frames; absolute navigation versus dead reckoning; time measurement; GPS and Differential GPS; testing; animal navigation; and the future of navigation.

Speaker Biography:

Dr. Kayton has 48 years of experience designing avionic, navigation, communication, and computer-automation systems. He is a Consulting Engineer for Kayton Engineering Company, where he worked on several automotive electronic systems, process systems, upper-stage spacecraft, a satellite interceptor, commercial communication systems, numerous aircraft avionic systems, and a dozen land navigators.

Dr. Kayton served as Chief Engineer for Spacelab Avionics at TRW, was the Head of System Engineering for Space Shuttle Avionics at TRW, and was Deputy Manager for Lunar Module Guidance and Control at NASA's Johnson Space Center. At Litton's Guidance and Control Division, he designed and analyzed some of the earliest multi-sensor navigation systems.

Dr. Kayton is a registered electrical and mechanical engineer. He is the author of the standard reference text "AVIONICS NAVIGATION SYSTEMS", (first and second editions) and of "NAVIGATION: LAND, SEA, AIR AND SPACE". Dr. Kayton received the Ph.D. in Instrumentation from M.I.T. in 1960, the M.S. from Harvard University with a concentration in electrical engineering, and the B.S. in mechanical engineering from The Cooper Union.

Seminar Coordinator:

Rich Pierro, Aerospace & Electronic Systems Society Chairman of the IEEE Long Island Section.

Registration:

The lecture is free and open to the public, but registration is required. If you wish to attend, please register via the internet on the AESS web page of www.ieee.li. You may contact the coordinator, Rich Pierro, by e-mail at rspierro@optonline.net or by telephone at 516-628-3156. A confirmation e-mail will be sent by November 6th. The seminar is wholly the responsibility of the IEEE Long Island Section and the speaker.

Professional Activities Report for October, 2003

By: Irwin Weitman, P.E. , PACE Chairman

August 6, 2003 - Ninth District Congressman Adam Smith (D-WA) announced today that the General Accounting Office (GAO) has approved his request to conduct a study on issues relating to offshore outsourcing of information technology jobs and the future of the U.S. job market.

"I'm extremely pleased that the GAO agrees that this is a critically important issue that should be thoroughly examined," Smith said. "I'm very eager to see the study's findings and use them to improve public policy."

Smith's request to the GAO, submitted on July 17 of this year, is part of a larger effort he is undertaking to examine the U.S. job market and future growth and trends in industrial sectors. His request asks GAO to:

- (1) research the trends in this area, to include customer service technical employees, aerospace engineering employees, among other industries, as well as those at the various levels of government;
- (2) identify the major benefits and risks, including strategies for addressing the risks;
- (3) determine the federal government's policies, including the impact, if any, of the Buy American Act, for non-weapons systems related to this issue;
- (4) explain the treatment of IT outsourcing in U.S. trade policy; and
- (5) Provide policy recommendations for ensuring – and enhancing – U.S. competitiveness in the global marketplace.

Over the next several months, Smith will work closely with the GAO as it defines the scope and issues of the study before beginning the research and analysis.

"We anticipate receiving some results early next spring," Smith said. "I believe a thorough analysis of these outsourcing and job growth trends will help us better understand what's really happening in terms of offshore outsourcing of information technology jobs. Most importantly, however, the analysis will help us develop policies that will ensure the United States continues to be competitive and always have high-skilled, high-wage jobs."

IEEE-USA's CALL FOR ELECTRICAL RELIABILITY LEGISLATION UNDERSCORED BY LARGEST U.S. POWER OUTAGE

The latest major power blackout, affecting 50 million people in the northeastern United States and parts of the Midwest and Canada, underscores the urgent need for Congress to enact stronger electricity reliability standards for utilities.

Read on at <http://www.ieeeusa.org/releases/2003/081503pr.html>.

IEEE has issued a media alert with contacts to obtain expert sources around the country who are able to answer questions about the recent blackout and/or the operation of the electric transmission and distribution system. Also available are various published IEEE resources on the electric power system, its operation, reliability and related regulatory/policy issues.

Media in the Washington DC area looking for experts and/or comments on the legislative and regulatory implications of the blackout can contact IEEE-USA for assistance. Contacts: Chris McManes or Pender McCarter at 202-785-0017.

IEEE-USA Press Release: IEEE-USA's Call for Reliability Legislation Underscored by Largest U.S. Power Outage (15 August 2003)

Here is a new URL for the IEEE consultants' Network of Long Island. www.licn.org

You may contact me with questions or comments at i.weitman@ieee.org
or (631)266-2651.

30 YEARS AGO

Rod Lowman, Historian

The annual dinner meeting with John Beukers speaking on *Improved Weather Data Collection for Forecasting* was advertised for engineers and wives. How things have changed; now it would need to be for engineers and spouses! With a topic of such general appeal the general public was also invited.

Even 30 years ago Weather data was obtained on a global basis and interchanged freely between countries, made possible by the World Meteorological Organization. There was probably no other discipline that enjoyed such a high standard of international cooperation in the exchange and dissemination of surface and upper air meteorological data. There were 700 upper air stations and 8,000 surface observation stations around the globe operating each day supplying data to a global communications network. These stations measured pressure, temperature, humidity, wind speed and direction, rainfall, and sunlight duration at prescribed time each day. Acquisition, processing, transmitting this vast quantity of data, then summarizing it and re-transmitting it to the forecast stations provided a real challenge to the technology of the times.

To collect the upper air information weather balloons were used with the information transmitted to the ground. To report the right location and be able to track the balloon for good reception, many of the ground stations came to depend on equipment from a little company on L. I., Beukers Laboratory which John had started 10 years before.

It was a most interesting evening; all this weather information plus a prime ribs dinner for \$ 7.00. What a deal!

John Beukers, president of Beukers Laboratory, was born in England, went to London University where he majored in Electronics and Telecommunications Engineering. He developed a good background in navigation systems and direction finding from his work at I. T. & T. in London and later in the U. S. and at Servo Corporation on Long Island. John had developed a good reputation in the navigation and location technology that became of great value in the company's development of radiosonde tracking equipment. For his development of this tracking system, John was later awarded a Region I award. After a long and successful career, John has now retired.

The field of weather forecasting has changed so much in the last 30 years that it would be marvelous to have another such meeting to update us all on this area.



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