

# Technologist

Includes information for the Syracuse Sections of the IEEE and the NSPE

## SYRACUSE AREA TECHNICAL SOCIETIES COUNCIL

ACM - Association of Computing Machinery	Gerry T. Volger	Chair	433-1904
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AIChE - American Institute of Chemical Engineers	Suresh Santanam	Chair	655-8161 x 340
AIHA - American Industrial Hygiene Association	Tom McGiff	Pres.	607-255-5835
ASCE - American Society of Civil Engineers	Matt Millias P.E.	Pres.	451-9560
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ASQ - American Society for Quality	Andy Thyne	Chair	456-3267
ASSE - American Society of Safety Engineers	Jerry Clark	Chair	445-4536
CNYAIHA - CNY American Industrial Hygiene Association	Steve Valentine	Chair	455-0224
CNYSLS - CNY Society of Land Surveyors	Robert Green	Contact	428-4358
CNYTEA - CNY Technology Education Association	Michael D. Thurlow	Pres.	598-6030
FLSA - Finger Lakes Sanitarians Association	Lary Duchaney	Chair	445-1597
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ISMC - International Society for Measurement & Control	Steve Burrell	Pres.	445-5555
LCSEAA - LC Smith Engineering Alumni Association	Kelly Thompson	Contact	678-2171
NSPE - National Society of Professional Engineers	Michael R. Hayes, P.E.	Pres	455 2000
NYSAPLS - NYS Assoc. of Professional Land Surveyors	Robert S. Green	Chair	428-4358
NYSATE - NYS Association of Transportation Engineers	Mary Clements	Pres.	428-4627
SAE - Society of Automotive Engineers	Angie Errico	Chair	432-4363
SAS - Syracuse Astronomical Society	Stu Foster	Pres.	492-9118
SBE - Society of Broadcast Engineers	Vincent Lopez	Pres.	472-6800
SFPE - Society of Fire Protection Engineers	Dennis McCarty	Pres.	716-599-4238
SME - Society of Manufacturing Engineers	Sam Waite	Chair	432-0700
SWE - Society of Women Engineers	Susan Weaver	Pres.	432-0506

The Technology Alliance of CNY has been reporting on technical excellence since 1903.

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### The Syracuse Section of the Institute of Electrical and Electronics Engineers [www.ewh.ieee.org/r1/syracuse](http://www.ewh.ieee.org/r1/syracuse)



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# IEEE/LM MEETING NOTICE

Syracuse Section ✦ Syracuse, New York

*Institute of Electrical & Electronic Engineers, Syracuse Section  
IEEE – all Life & Section Members, Spouses & Guests*

**When:** Tuesday, September 20, 2005

**Topic:** The First (gas) Automobile in the USA, the DURYEYEA. Built for the Chicago Race, 1892

**Speaker:** Clayton R. Roberts --- his grandfather designed and built the Duryea race car (Clayton is an LM and former GE Electronics Lab Engineer)

**Summary:** The DURYEYEA was the first gas car in the USA and probably in the world --- the car is now in the Smithsonian. It was built for the 1892 Chicago race (in the horse and buggy age, people did not like the noisy gas cars as they scared the horses). In this first gasoline buggy race, the DURYEYEA won and the prize was \$2,000. Multiply this amount by about 40 to get today's equivalent.

The first engine in the first car was started by a blow torch, however, it was redesigned for the race. After overcoming many problems and winning the race, they then took the car to England and France for further racing and won in both countries. Auto racing is claimed to be the most popular spectator sport in the USA today so we have a current topic for you..

**DATE/TIME/PLACE:** Tuesday, September 20, 2005 at 10 AM till noon at the Greater Syracuse Business Center, 1201 East Fayette Street, Syracuse.

Our usual conversation (with coffee, tea & doughnuts) at 10 AM followed shortly by the speaker. Also, we will provide sandwiches at noon for all who would like to continue the LM program planning for 05/06

(Questions: call George Kirkpatrick 458-0082 or e-mail:georgekirk@ieee.org)

### BOOKMARK THIS!

Check out our Section Calendar at <http://www.ewh.ieee.org/r1/syracuse/cal.htm> for additions, updates and directions to meetings. This includes meetings that we have not been able to add to the Technologist due to scheduling. The Syracuse Section will add meetings for other organizations where IEEE members are invited and link to your web page. Don't have a web site for your organization? We will include the information on ours for related technical societies. Contact Don Herres at [d.herres@ieee.org](mailto:d.herres@ieee.org).

**Those members who need to CHANGE CONTACT INFO on file with the IEEE, including e-mail addresses, should do so at:**  
**<<http://www.ieee.org/membership/coa.xml>>**

**IEEE**

**CONTACT INFORMATION**

IEEE Operations Center  
<http://www.ieee.org>  
 445 Hoes Lane  
 Piscataway NJ 08855-0331  
 Switchboard: +1 732 981 0060

IEEE Regional Activities

**SYRACUSE SECTION Meeting Information**

Our Executive Committee Meetings are held on the first Friday of the month and are open to all members. Minutes are available online at <http://www.ewh.ieee.org/r1/syracuse/meet.htm>

**Check out the all new Syracuse Section website:**  
**<http://www.ewh.ieee.org/r1/syracuse/>**

## IEEE-USA COMMUNIQUE TO U.S. IEEE MEMBERS ON THE KATRINA DISASTER

2 September 2005

DEAR U.S. IEEE MEMBERS,

The United States is currently facing one of the greatest natural disasters in our history. We empathize with the pain and suffering of tens of thousands of Americans in the Gulf region including Louisiana, Mississippi, Alabama and Florida. And we worry about those IEEE members in the affected areas of Region 3 (Southeastern U.S.) and Region 5 (Southwestern U.S.). They are all very much in our hearts and minds.

Now, the focus is on delivering humanitarian aid to the affected areas, and the greatest needs are financial. On behalf of the IEEE's U.S. membership, I am pleased to announce that IEEE-USA will contribute \$5,000 to the American Red Cross to support Katrina relief efforts. IEEE President Cleon Anderson, Region 3 Director Bill Harrison, and Region 5 Director John Meredith join me in encouraging U.S. IEEE members, who want to make personal donations to relief or reconstruction organizations, to give to any of the organizations identified by the Federal Emergency Management Agency (FEMA), listed online at: [http://www.fema.gov/press/2005/resources\\_katrina.shtm#donate](http://www.fema.gov/press/2005/resources_katrina.shtm#donate).

Further, IEEE-USA will make available Professional Activities Committee (PACE) project funds to organized groups of U.S. IEEE members in Regions 3 and 5 requesting funds to support local volunteer recovery efforts, especially to help sustain local IEEE activities and volunteer networks in the weeks and months ahead. For information on how to obtain IEEE-USA PACE Project Funds, contact Scott Grayson at [s.grayson@ieee.org](mailto:s.grayson@ieee.org); or go to <http://www.ieeeusa.org/volunteers/pace/funding.asp>.

I know that many of our U.S. IEEE members are looking for opportunities to volunteer their time and skills. FEMA is currently advising that no one go to any of the affected areas unless directed by a voluntary agency. FEMA has an ongoing need for engineers, but only volunteers who have registered and completed agency training will be deployed on its disaster response teams.

The American Red Cross also has a continuing need for engineers who are trained in disaster response and who are ready for deployment. There may also be opportunities to volunteer in your community, as local personnel are dispatched to participate in the relief efforts -- and as evacuees begin to move from the affected areas to other communities. For more information, see: <http://www.redcross.org/donate/volunteer/>.

The IEEE and IEEE-USA also support Engineers Without Borders-USA (EWB-USA) in its worldwide recovery and rebuilding efforts. EWB-USA has chapters in the Gulf Region that will be involved in rebuilding. For more information, go to: <http://www.engineerswithoutborders.org/>.

For members in the affected areas -- or members who know those affected -- we encourage you to consult FEMA's Hurricane Katrina Resources Web page, which provides instructions for evacuees, how to apply for assistance and flood insurance, and information on returning home after a disaster. Please see [http://www.fema.gov/press/2005/resources\\_katrina.shtm](http://www.fema.gov/press/2005/resources_katrina.shtm).

In addition, on 6 September, IEEE-USA will join with representatives of the engineering, design and construction organizations, which comprise The Infrastructure Security Partnership (TISP), to share information on our respective efforts -- and to discuss possible coordinated responses to devastation caused by the hurricane. For updates on this and other IEEE-USA efforts to support Katrina relief and reconstruction, see <http://www.ieeeusa.org/about/katrina/>.

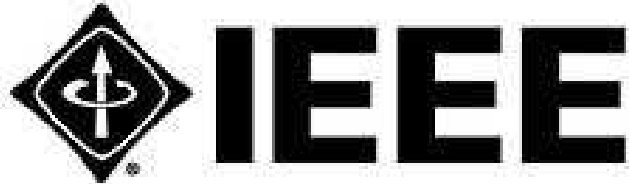
Finally, as many of our members and other engineering professionals are currently involved in the efforts to restore power, communications, water and sanitation to the affected areas, IEEE/IEEE-USA communications staff are responding to media queries on what engineers can do to alleviate pain and suffering. For an overview of the role of power engineers in addressing emergencies, see the IEEE-USA TODAY'S ENGINEER feature story issued today at <http://www.todaysengineer.org>. For a November/December 2002 article from the IEEE Industry Applications Society on "Utilizing Disaster Recovery Project Management to Improve Readiness and Response Time," go to [http://www.ieee.org/portal/cms\\_docs/xplorefiles/xplore4005.pdf](http://www.ieee.org/portal/cms_docs/xplorefiles/xplore4005.pdf).

In closing, this human tragedy reminds us all of the fragility of life and the importance of community in rising to challenges. I know that we will rise to the challenge here, too -- as Americans, as engineers and as IEEE members. I invite your suggestions and feedback by replying directly to this message.

MOST SINCERELY,

Gerard A. Alphonse  
President, IEEE-USA





## Institute of Electrical & Electronics Engineers Syracuse Section

### Tour of a Verizon Central Office Serving Residential Fiber Service

**Date:** Tuesday, September 27<sup>th</sup>, 2005.

**Topic:** Fiber to the Premise Central Office Tour

**Guide:** Bill Eccles Verizon Manager Network Operations

**Location:** Verizon  
3012 East Genesee Street, Syracuse, NY ( near Nottingham H.S. )  
Parking available in rear of building.

**Schedule:** 5:50 P.M. – Register  
6:00 P.M. – Tour  
7:00 P.M. – Conclusion

**Cost:** No charge.

**Reservations:** Craig Cobb

**Phone:** (315) 446-0625 – home  
(315) 448-2025 – office

**Email:** [c.cobb@ieee.org](mailto:c.cobb@ieee.org)

Reservations are requested by Friday, September 23, 2005.

**IEEE membership not required to attend this tour.**

SEMINAR

# The Life of James Clerk Maxwell

presented by

**Dr. James C. Rautio**  
**Distinguished IEEE/MTT Lecturer**

**When: Thursday, September 29, 2005****Time: 5:30 - 7:30pm****Where: Earth Sciences (Geology) Department at Syracuse University****Room: Heroy Auditorium**

James Clerk Maxwell stands shoulder to shoulder with Newton and Einstein, yet even those of us who have spent decades working with Maxwell's equations are almost totally unfamiliar with his life and times. This presentation, from the viewpoint of a microwave engineer, draws on many sources in providing an understanding of James Maxwell himself. What was Maxwell like as an infant? What was the tragedy at eight years old that profoundly influenced his life? What unique means of transportation did young Maxwell use to escape a cruel tutor? What memorable event occurred on his first day of school? When did he publish his first papers, and what were they about? What did Maxwell have to do with the rings of Saturn? Why did he lose his job as a professor? Why did he have a hard time getting another job? What was his wife like? What is Maxwell's legacy to us? The answers to these questions provide insight into Maxwell the person and add an extra dimension to those four simple equations we have studied ever since.

## Biography of James C. Rautio

James C. Rautio received a BSEE from Cornell in 1978, a MS Systems Engineering from University of Pennsylvania in 1982, and a Ph. D. in electrical engineering from Syracuse University in 1986. From 1978 to 1986, he worked for General Electric, first at the Valley Forge Space Division, then at the Syracuse Electronics Laboratory. At this time he developed microwave design and measurement software, and designed microwave circuits on Alumina and on GaAs. From 1986 to 1988, he was a visiting professor at Syracuse University and at Cornell. In 1988 he went full time with Sonnet Software, a company he had founded in 1983. In 1995, Sonnet was listed on the Inc. 500 list of the fastest growing privately held US companies, the first microwave software company ever to be so listed. Today, Sonnet is the leading vendor of 3-D planar high frequency electromagnetic analysis software. Dr. Rautio was elected a fellow of the IEEE in 2000 and received the IEEE MTT Microwave Application Award in 2001 and is an adjunct professor at Syracuse University.

**Information: Pizza and sodas will be served at 5:30pm. No registration (or reservation) needed. For free VIP parking you must send an email to Brenda (with the name of the driver) by Sept. 27. Any questions? Contact Brenda by email: [bflow-ers@svr.edu](mailto:bflow-ers@svr.edu)**

Sponsored by EECS Dept. of Syracuse University and IEEE Syracuse Section.



**Institute of Electrical & Electronics Engineers  
Industrial Applications/Power Engineering Societies - Syracuse Chapter**

**Date:** Tuesday, September 27, 2005

**Topic:** Harmonics Mitigation & Variable Frequency Drive Basics

**Speaker:** Roger Grey, DRV, Inc.

**Location:** Holiday Inn  
441 Electronics Pkwy  
(Corner of 7<sup>th</sup> North St. & Electronics Pkwy)  
(second floor – go through hotel entrance)

**Schedule:** 5:30 PM – Networking  
6:00 PM – Dinner  
7:00 PM – Presentation

**Cost:** \$15

**Reservations:** Mike Hayes  
**Phone:** (315) 455-2000  
**Email:** [mhayes@cscos.com](mailto:mhayes@cscos.com)

**Please make reservations not later than the close of business on Friday, 9/23/05.**

Mr. Grey will provide an overview of how variable frequency drives work, why they are used, how they generate harmonics, various harmonics mitigation techniques, and their effectiveness.

**This presentation has been approved for one PDH (professional development hour) for New York Professional Engineers.**

**Everyone is welcome to attend this meeting.**



## Syracuse Section

### PICNIC

Date: **Saturday, September 24, 2005**

Topic: **Social Outing**

Location: **Clark Reservation, Small Shelter**  
6105 East Seneca Turnpike (NY Route 173)  
Jamesville, NY

Schedule: **Noon to approximately 4 PM**

Cost: **IEEE members and guests - \$5**  
**Children of IEEE members 12 and under – FREE**  
**Nonmembers - \$15**  
**Pay “at door”**

**Parking - \$6 per car, Empire Passport Accepted**

Reservations: **Mike Hayes**  
Phone: (315) 455-2000  
Email: [mhayes@cscos.com](mailto:mhayes@cscos.com)

**Food will be provided.** We will have the usual picnic fare: hamburgers, hot dogs, chips, soda, etc. Clark Reservation State Park is a geologic wonder of the last ice age and a botanist's paradise. The park's natural features include rugged cliffs and rocky outcrops, woodland and meadow, a wetland and a glacial plunge basin lake in which the surface waters and bottom waters do not mix. Fishermen can catch pickerel, bullheads and sunfish; while birdwatchers may observe cedar waxwings, kingfishers and woodpeckers. Guided nature walks leave from the Nature Center building, which also offers numerous exhibits. Hikers may choose from five trails, including the cliff trail, which has a ledge overlook 175 feet above the water. There are also ball fields, volleyball, and horseshoes available. There is no Syracuse University football game on 9/24/05.

**Everyone is welcome to attend.** Meet other IEEE members, enjoy the recreational opportunities, and have a picnic for less than the cost of a lunch at a fast food restaurant.

**Please make reservations by 2 PM on Friday, 9/23/05.**

# CENTRAL CHAPTER NY STATE SOCIETY OF PROFESSIONAL ENGINEERS

## NEWSLETTER

## SEPTEMBER 2005

### WEBSITE

There are a number of events, schedules and dates in this newsletter. Unfortunately the slowness of the printed word keeps it at least 3 weeks behind your receipt. To keep current right up to the event, go to our website at <http://www.cnype.org>. The site is as up to date as we can make it. **Check it today for current EXPO schedule and registration forms!**

## President's Message - Mike Hayes, PE

Even though it won't offer a PDH, we have a very interesting program to kick off the fall season. Like most engineers, I've never worked for a contractor or supplier, but I'm told that things are crazy in the last hour before bid opening. Here's your chance to learn what happens: "Behind The Scenes". See the information below about our joint meeting with Construction Specifications Institute (CSI). After two false starts, this meeting **really will** happen on September 26, 2005.

We are again having our annual presentation at Syracuse University about licensure in New York. Ms. Jane Blair, PE from the NYS Education Dept. will be the speaker. I invite firms to send their engineers who are not yet licensed to this meeting. It's informative, and it's free. See the details below.

Starting October we will present a lunchtime series of seminars offering PDHs. We will start with Paul Bowers, PE, former President of the New York State Society of Professional Engineers speaking about design-build on Thursday Oct. 20. The presentation has been approved for a PDH. There will be more information about this meeting in next month's newsletter and the website.

The 2005 Central New York Engineering Expo will be held on Monday, November 14, at the Holiday Inn in Liverpool. We'll keep an updated schedule on our web site. Six PDHs will be offered again this year. In addition, online registration and the option to pay by credit card will be available this year.

Looking for a PDH in September? See the IEEE section of the TACNY newsletter. There is an interesting (well, at least to electrical engineers!) presentation about harmonics and variable frequency drives scheduled. It is approved for one PDH. There are also opportunities around the state at <http://www.cnype.org>.

Finally, as noted in the June newsletter, the Celebration of Technology Banquet will probably move from March to May in 2006. We are planning to offer a multi-track Expo with 4 PDHs available. To reduce the volunteer workload, some of the speakers from the November 05 Expo will be invited to speak again. This will give you a chance to attend presentations that you were unable to attend in November.





## **JOINT NSPE – CSI MEETING NOTICE**

**Topics: Last Hour Before Bid Opening – A Panel Discussion**

**Date: Monday, 9/26/05.**  
**Time: 5:30 PM – Social Hour**  
**6:15 PM – Dinner**  
**Presentation after dinner**

**Location: Craftsman Inn, 7300 East Genesee St., Fayetteville, NY**

**Cost: \$20**

**RSVP: Mike Hayes, PE, 315-455-2000, [mhayes@cscos.com](mailto:mhayes@cscos.com)**

What happens in the last frenetic hour before opening? How do contractors put bids together? Is it true that the winner is really the one that made the biggest mistake? Come to this meeting to find out about this and more. The panel will discuss what goes right, what can go wrong, and how the process can be improved. There will also be some interesting “war stories”.

## **So You Want To Be an Engineer: The Ins and Outs of Getting Licensed In NYS**

**A Panel Discussion Sponsored By:**

**CNY State Society of Professional Engineers, NYS Department of Education,  
SU College of Engineering & Computer Science and IEEE Student Chapter**

**Date: Wednesday, September, 21**

**Time: 6pm**

**Location: Room 369, Link Hall, Syracuse University.**

Parking will be available at no charge in the SU VIP lot (q4) on College Place adjacent to the Science and Technology Building.

Jane W. Blair, P.E. Executive Secretary of the Engineering and Land Surveyor's Licensing Board, NYS Education Department will be our panelist for a discussion of issues relative to the licensing of engineers. Topics will include: Why be licensed?, the application process, the exams (including recent changes).

Contact Kathy Pollard, 443-5192, [kfpollar@syr.edu](mailto:kfpollar@syr.edu), to arrange for parking, John Przepiora, P.E. for program details.

**There is no charge for attendance at this session.**

## Calendar

<b>Date/Time</b>	<b>Topic</b>	<b>Speaker</b>	<b>Location</b>	<b>Cost</b>	<b>Contact</b>
<b>9/21/05</b> 6:00 PM	Engineering Licensure	Jane Blair, PE	Syracuse University, Link Hall,	Free	Kathy Pollard, 443-5192, kfpollar@syr.edu, to arrange for parking
<b>9/26/05</b> 5:30 PM	Last Hour Before Bid Opening	Panel Discussion	Craftsman Inn, Fayetteville	\$20 Includes dinner	RSVP by 9/23/05 to Mike Hayes 315-455-2000 mhayes@cscos.com
<b>10/20/05</b>	Design-Build	Paul Bowers, PE	Wyndham Hotel	\$20	RSVP by 10/18/05 to Mike Hayes 315-455-2000 mhayes@cscos.com
<b>11/14/05</b>	CNY Engineering Expo 2005	Various	Holiday Inn, Liverpool	\$80	Mike Hayes 315-455-2000
<b>1/17/06</b>	TBD	TBD	TBD	TBD	Second in series of "PDH" luncheons. Date is tentative.

## SCHOLARSHIPS

Each year the Central New York Chapter of the New York State Society of Professional Engineers (CNYSSPE) awards scholarships to worthy High School Seniors who will be going to college in an engineering or technical discipline. These young people are judged by an impartial algorithm based on their academic background, scholastic achievements and SAT scores. We are actively soliciting donations from local firms and individuals to support the scholarship fund. Public attribution and appreciation will be publicly expressed in all news releases, The Technologist newsletter and at the annual "Celebration of Technology" dinner. For additional information please contact Carl Fahrenkrug, [carl-f@microwavefilter.com](mailto:carl-f@microwavefilter.com), 438 4722

Thank you in advance for your generosity. Together we can encourage more Central New York young people to choose engineering as a career. Your donation check should be made out to the CNYSSPE Scholarship Fund and sent to:

CNYSSPE c/o Microwave Filter Company, Inc.  
6743 Kinne Street  
East Syracuse, New York 13057  
ATTN: Nancy Young

## **JOINT NSPE – ACEG - DBIA MEETING NOTICE**

Topics: **Design-Build in New York**  
Speaker: **Paul Bowers, P**  
Date: **Thursday, 10/20/05**  
Time: **11:30 AM – Networking**  
**Noon – Buffet Lunch**  
**Presentation after lunch**  
Location: **Wyndham Hotel**  
**6302 Carrier Pkwy**  
**East Syracuse, NY**  
**(near Carrier Circle)**  
Cost: **\$20**  
RSVP: **Mike Hayes, PE**  
**315-455-2000**  
**[mhayes@cscos.com](mailto:mhayes@cscos.com)**

Mr. Bowers was the 2004-05 President of the New York State Society of Professional Engineers. He will discuss design-build issues in New York State.

**This presentation has been approved for one professional development hour (PDH) for New York Professional Engineers.**

### **THANK YOU**

We continue to seek donations for your Chapter's Scholarship Fund. The fund is supported by contributions from firms and individuals who take an active interest in the future of our profession. Current contributors include:

- • Associated Builders & Contractors
- • Blasland, Bouck and Lee
- • C&S Engineers Inc.
- • Clough Harbour
- • Klepper Hahn & Hyatt, PC
- • Microwave Filter
- • Ram-Tech
- • Stearns & Wheeler
- • Syracuse Research Corporation.
- • Syracuse Thermal Products
- • Watkins Environmental Sciences, P.E., P.C.

### **BOARD OF DIRECTORS MEETINGS**

NSPE members are most cordially invited to attend all board meetings. Meetings are tentatively scheduled for noon on the first Thursday of each month. Those wishing to attend should contact Mike Hayes: (315) 455-2000 ext. 4384; [mhayes@cscos.com](mailto:mhayes@cscos.com) to confirm time and date.

**President's Message**

**Officers 2005-2006**

<b>President</b>	Howie Hollander	456-6287
<b>First Vice President</b>	Mary Reidy	428-5326
<b>Second Vice President</b>	Michael R. Hayes P.E.	455-2000
<b>Secretary</b>	Michael Masingale	445-4108
<b>Treasurer</b>	Susan Weaver	457-5200
<b>Past President</b>	Albert A. Brandenburg	234-3725
<b>Technologist Editor</b>	William Busher	434-1242
<b>Web Page Editor</b>	Marjory Baruch	637-0033
<b>Teacher Awards Chair</b>	Dr. Vernon A. Tryon	343-9692

**Email Contact Information**

Emails addressed per the following list will automatically be forwarded to the appropriate officer or committee person:

- [president@tacny.org](mailto:president@tacny.org)
- [programs@tacny.org](mailto:programs@tacny.org)
- [technicalsocieties@tacny.org](mailto:technicalsocieties@tacny.org)
- [secretary@tacny.org](mailto:secretary@tacny.org)
- [treasurer@tacny.org](mailto:treasurer@tacny.org)
- [pastpresident@tacny.org](mailto:pastpresident@tacny.org)
- [membership@tacny.org](mailto:membership@tacny.org)
- [technologist@tacny.org](mailto:technologist@tacny.org)
- [webmaster@tacny.org](mailto:webmaster@tacny.org)
- [teacherawards@tacny.org](mailto:teacherawards@tacny.org)

**Website #1 of the Month**



<http://www.albanynanotech.org/>

As TACNY's new president, allow me a few moments to introduce myself to you. I'm a program manager at Orlando headquartered Lockheed Martin Enterprise Information Systems, which is different than the Lockheed Martin (Maritime Sensors and Systems) most of you know in Syracuse. In my current role, I run our corporate entry-level leadership development program for information technology professionals. My background is in software engineering, enjoying 30 years as a developer, program manager, process manager, service delivery manager, and resource manager before assuming my current role almost three years ago. Prior to joining LMC in 1982 (and moving to Central New York), I held similar positions with GTE Sylvania and Boeing. I have a BE in electrical engineering from New York University, and an MS in engineering management from Northeastern University.

Prior to my new role at TACNY, I was a Board member for 9 years, and former Program VP, Technologist editor, tacny.org webmaster, membership chair, and anything else TACNY asked me to do! I'm also a Board member of the Milton J. Rubenstein Museum of Science and Technology (MOST) and Leadership Greater Syracuse. Linda and I are the proud parents of two grown children: Aileen, a financial analyst for IBM; and Jonathan, a TACNY student member recently graduated from the University of Illinois, and getting ready to head off to Cambridge (UK) to pursue an MPhil in semiconductor physics before returning to Cambridge (MA) to study for his PhD in materials science at MIT.

TACNY's new officers and Board members assume the leadership role at an exciting time in our 102-year history. We are slowly nearing the sale of property that was donated to TACNY by Simon B. Storer in 1946. The expected influx of money will allow TACNY to head off in directions the organization never imagined possible. Our Strategic Direction committee, under the direction of Marc Viggiano, is working on several exciting scenarios for making a greater impact on the technology scene in CNY. Expect to read more on their activities in future months. If we are to achieve our mission to "promote excellence in technology in Central New York," expect to also read of requests for your ideas and time. TACNY belongs to ALL of us.

It is my plan to write a few words in every issue of the Technologist. If you have any topics you would like me to address, please drop me a note. My email address is [hollander@tacny.org](mailto:hollander@tacny.org).

## A Phantom Menace?

- *The elimination of lead in electronics is based on bad science and political correctness and will potentially cost billions: an op-ed piece by Bill Busher*

We all enjoy the benefits of modern technology. Computers, global positioning devices, cell phones, satellite radio and even intelligent refrigerators have become commonplace. All of these devices are made up of components such as resistors, transistors, and integrated circuits such as microprocessors. The "glue" that holds them together on the circuit board is solder. An alloy of tin/lead was found to have the optimum mechanical and thermal properties to act as a conductive, permanent bond. It is plentiful, cheap to produce and reliable.

In June 2000, the European Union passed a Restriction of certain Hazardous Substances directive. In part, it bans the use of lead in electronics by July 1, 2006. On the surface this seems a good idea. One only has to conjure up images of little tykes chewing on chips of lead-based paint to understand the motives behind such an effort. Who would argue that exposure should be limited?

Electronic circuit board manufacturers and associated industries are being moved (a better description may be dragged) in a direction that makes little sense. The positive effects on the environment will be negligible to non-existent, while costs for redesign, revalidation, fabrication, assembly, and rework skyrocket, all in the name of political correctness and bad science.

Consider the following:

- Yearly lead usage in electronics in the U.S. accounts for 0.5% of the total, while ammunition accounts for 5% (ten times as much) and car batteries top the list at over 80% of lead used!
- The amounts that lead leeches into groundwater from electronic waste is negligible.
- The military, wary that the incidence of circuits shorting from the growth of "tin whiskers" is resisting the use of lead-free solders. (Tin whiskers are hair-like crystal structures that grow from tin-coated surfaces and whose growth is mitigated by lead in solder)
- The temperature at which the replacement solders melt is approximately 37 degrees Celsius higher than for leaded solders. Multiply this by the thousands of soldering machines worldwide, and you can have an appreciation for the surge in energy usage, use of other resources, and resultant pollution.

A 1997 study by the National Center for Manufacturing Sciences estimated the cost of no-lead solder to the U.S. electronics industry to be in the tens of billions of dollars.

This and other associated costs will no doubt be passed on in some measure. Unfortunately, the consumer may make matters worse. When purchasing, for example, a new DVD player, (if prices and features are similar) which one do you think most people would buy? Would it be the one with the "green" sticker proclaiming, "does not contain lead?" The only way to get lead poisoning is through ingestion. (Remember to mull over that fact the next time you are taking sips of wine from your expensive leaded crystal.) No case has ever been documented of lead poisoning resulting from electronics soldering.

But, since the ban doesn't take effect until mid-2006, this won't have any effect on us for a while, right? Wrong: some cell phones and other products (SONY Playstations for example) are being produced this way right now. Companies don't want to be left behind their competition, or worse, be looked at as anti-environmental.

If you are wondering why this is taking place, you are not alone. One of the main organizations involved in the printed circuit industry (IPC) has stated "The IPC recognizes that there are no data indicating environmental or health hazards posed by lead in printed wiring board manufacturing and electronics assembly."

If the premise was that the ban was an ill-conceived overreaction to a non-problem, then why is the industry encouraged to keep diverting energy and money into lead elimination when end of life recycling improvements would be much more beneficial?

There are exemptions in the ban but they too make no sense. The vast majority of the lead used in a computer is found in the tube envelope inside the monitor – as much as 2.5 pounds. Ironically, the monitor is exempted from the ban, due to the lack of a viable alternative.

Banning lead in solder is unscientific political correctness at its worst. Preying on the fears of an environmentally jittery but well-meaning public, it will cost the electronics industry and consumers dearly, while reducing the overall reliability of product. Lead-free solder simply does not work as well as the leaded version. Scientific data documenting the harmful effects of lead content in electronics has not been clearly established.

All of this begs the question: why replace a perfectly good material that has virtually no effect on the environment, that is cheap, plentiful, a proven performer, and that is being recycled in large quantities now, with problem alloys that require much more energy to process?

I don't know either.

*Bill Busher is a Quality Systems Engineer working for INFICON in East Syracuse, NY, a manufacturer of high-tech process monitoring and control instrumentation. He is a two-*

time Chair of the Syracuse Section of the American Society for Quality, Past President of the Technology Alliance of Central New York, and incoming President of CNY Skeptics. Member comments and other responses are encouraged, as well as submissions for future editions.

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### September Sweet Lecture

Plans for the September Sweet Lecture are being finalized at press time. Please check [www.tacny.org](http://www.tacny.org) for details.

### Website #2 of the Month

#### [How to Write Effective Email](#)

This concise guide is kept up-to-date and is highly useful, and includes an excellent [bibliography](#).

## THE ESSENTIAL NEW YORK INITIATIVE

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**Second 40 Below Summit set for Oct. 7**

The steering committee for 40 Below has set a date this fall for another gathering of the region's young professionals.

The second 40 Below Summit will take place Oct. 7 at the OnCenter in Syracuse. The 2005 summit will be a full-day event featuring several panel discussions on professional and civic development, a nationally-recognized keynote speaker, and a report on the activities of the five task forces at work on the report from last year's summit. There will be an after party and networking event at the Landmark Theatre.

The 40 Below steering committee is also planning several activities and events around the Central Upstate New York region the following day, Saturday, Oct. 8 to showcase the region's many cultural and recreational opportunities.

The conference will build on the momentum of the 2004 summit when more than 630 young people attended, making the event one of the largest gatherings of its kind in the nation.

More details on the summit will be releasing in the coming weeks. For more information or to register, visit [www.40belowsummit.com](http://www.40belowsummit.com)

Contact: Rob Simpson, (315) 422-8284

## Organizational Spotlight

**The Syracuse Astronomical Society**  
www.syracuse-astro.org Amateur Astronomy in Central New York



The Syracuse Astronomical Society serves the amateur astronomy community in Central New York.

The web page has recently been redesigned and is a great resource for anyone interested in astronomy. The next meeting of the SAS will be on Friday, September 16<sup>th</sup>, at Darling Hill Observatory in Tully. The next public observing will be on Friday, September 2<sup>nd</sup>.

The President of the SAS is Rick Kellog. He can be reached at 468-0057 or via email at [rkellog1@twcny.rr.com](mailto:rkellog1@twcny.rr.com).



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## Website #3 of the Month



<http://www.hq.nasa.gov/office/pao/History/alsj/frame.html>

Contains word-for-word transcripts, with annotations, and excellent image libraries, of the lunar portions of every Apollo mission, as well as an overview of the dramatic [Apollo 13](#). A list of other NASA information on Apollo is [here](#), including a compilation of resources on the [Apollo 1 fire](#). Unique is the [Apollo 15 Flight Journal](#), with many details of the launch through arrival in lunar orbit.

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<b>Technologist Contact Information</b>			
Editor (also IEEE)	Brian O'Hern	697-2352	b.ohern@ieee.org
President IEEE	Mary Reidy	428-5326	Mary.Reidy@us.ngrid.com
President TACNY	Al Brandenburg	453-4545	abranden@twcny.rr.com
President NSPE	Michael R. Hayes, P.E.	455-2000	mhayes@cscos.com
President ASCE	Matt Millias, P.E.	451-9560	Matt.Millias@Parsons.com
Editor TACNY	Bill Busher	434-1242	Bill.Busher@Inficon.com
Editor NSPE	Dick Simberg	245-4661	NBDICK@hotmail.com
Editor ASCE	Todd M. Musterait, P.E.	655-3900	tmusterait@esc-ny.com

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