

Technologist

Includes information for the Syracuse Sections of the IEEE

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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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he Syracuse Section of the
Institute of Electrical and Electronics Engineers
www.ewh.ieee.org/r1/syracuse



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The Institute Online

1. High-Tech Methods to Cut Medical Costs As medicine and medical research go increasingly high tech, patients, physicians, and insurance companies all see the cost of health care skyrocketing. But through engineering, high tech can also be used to lower costs.
2. Time Running Out to Renew Your Membership To ensure the continuation of your member benefits in 2007, you must renew your IEEE membership by 31 December. If you haven't yet done so and don't want to lose benefits that include IEEE Spectrum, discounts on IEEE conferences and products, use of the IEEE e-mail alias, and access to myIEEE and IEEE.tv, you can renew online.
3. Steve Perlman: Getting Real With Animation Steve Perlman was just a teenager when he realized his true calling in life: creating artificial worlds with technology. It's a goal that has led this IEEE member to invent something that's changing the face of digital reality as we know it--literally.
4. Talk Time for Portables People No matter how many portable information and communications devices an IEEE member might carry, there's still a need to meet face-to-face. For those who design, make, and use portable devices and their related infrastructures, that time will come in March at the Portable 2007 Conference in Orlando, Fla.
5. Searching Made Easier Users of IEEE Xplore--the online digital library--may have noticed that finding articles on esoteric subjects is relatively easy. But if the topic is more general, and a user doesn't know exactly what to look for, searching can be difficult. To aid with these more complex searches, IEEE Xplore has a number of features to make the effort both easier and more precise.
6. Webinar Focuses on Challenges in Battery Standards and Safety The recent recall of millions of laptop batteries has prompted the IEEE to revise its guidelines for the design, manufacture, and testing of lithium-ion batteries and battery packs. On 18 January 2007, hear industry experts explain how this may affect future product designs at the Tech Insider Webinar: "Challenges in Battery Standards and Safety." The IEEE Tech Insider Series is sponsored by Cadence Design Systems and National Instruments.
7. The Institute Wants to Know: How Do Techies Work? Do you spend half your day in meetings, use e-mail as your main form of communication, or turn first to your co-workers to get help with a problem? The Institute's editors want to know if you agree with these results from an IEEE survey commissioned to find out how today's technology professionals work, for possible use in an upcoming article.
8. IEEE Medical Plan Suffers Benefit Cuts In November, CIGNA, the health insurer, mailed certified letters to all participants in the IEEE's group comprehensive health care insurance plan (available only to U.S. members), informing them that effective 1 January 2007, it will cut benefits and raise rates once again. The IEEE is working to find new health-insurance options for members and their families.
9. Middle East's First Computer Named History Milestone Built in 1954 in Rehovot, Israel, the Weizmann Automatic Computer (WEIZAC) became the Middle East's first computer and put Israel in the global technology loop. That's why WEIZAC was recognized with an IEEE Milestone in Electrical Engineering and Computing on 5 December, at the place where it was built.
10. Serious Conference Offers Chip Thrills The 54th International Solid-State Circuits Conference, to be held 11 to 15 February 2007 in San Francisco, is one of the most important conferences for presenting cutting-edge integrated circuit design.
11. Nominations Due Soon for IEEE Tomiyasu Award The deadline to nominate a colleague for the IEEE Kiyu Tomiyasu Award is 31 January 2007. The award is given to individuals or teams of up to three people for outstanding contributions made in early or mid career that laid the groundwork for innovative applications in the IEEE's fields of interests.

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**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>>**

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:

Date	Time	Location	Topic
January 23	6 to 8 p.m	Whitney Applied Technology Center at Onondaga Community College	Controlling voltage on electric transmission systems
February 2	12:00 PM	C&S Engineers	Section Executive Committee Meeting
March 2	12:00 PM	C&S Engineers	Section Executive Committee Meeting
April 6	12:00 PM	C&S Engineers	Section Executive Committee Meeting
May 4	12:00 PM	C&S Engineers	Section Executive Committee Meeting

SEEDS FOR SCIENCE

This program is designed to award local secondary school students who are working on their science project for the [Greater Syracuse Scholastic Science Fair](#) or the [Science Olympiad](#). Awarded money can only be used for purchasing components necessary for the project. We expect to give a number of awards (up to \$100 per project).

IEEE Syracuse section is taking this initiative to promote science and mathematics education among secondary school students.

All students from local schools participating in the Science Fair or Science Olympiad are eligible.

Interested students should send the name of the faculty sponsor; a brief description of the project, along with an explanation stating how you will use the requested money. A committee will select the winners. The decision of the committee is final.

Winners will receive a certificate and the award money. In addition, their names will be published in the *Technologist*, a monthly newsletter of the Institute of Electrical and Electronics Engineers, Syracuse Section, the Technology Alliance of Central New York (TACNY), and the Central Chapter of the NY State Society of Professional Engineers.

Application submission deadline: March 15, 2007.

Applications received after this date may be considered depending on the availability of funds.

All correspondence should be sent to:

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 Educational Activities, IEEE Syracuse Section.
 Syracuse University, EECS Dept., Link Hall
 Syracuse, NY 13244
 Tel: (315) 443 – 4440, Fax: (315) 443 - 4441
 e-mail: pkghosh@ieee.org

**CENTRAL CHAPTER
NY STATE SOCIETY OF PROFESSIONAL ENGINEERS**

NEWSLETTER

JANUARY 2007

President's Message - Mike Hayes, PE

I hope everyone had a happy holiday season and that your favorite football teams won their bowl games!

Our CNY Engineering Expo was a success. Approximately 250 people attended and received 7 PDHs. The 2007 Expo will be held Monday, November 12, 2007 at the Holiday Inn in Liverpool. Please let me know if you've heard a good technical speaker. We will consider inviting him or her to speak at the Expo. There were several requests for more environmental topics, so we will try to accommodate that. In general, we try to get speakers for topics requested by the attendees based on the responses to the surveys we handed out at the Expo.

I want to publicly thank Alicia Faber, our Human Resources Manager at C&S. She did a wonderful "behind-the-scenes" job doing all the administrative work needed to support the Expo, advertising by sending emails to prior attendees and local firms, taking reservations and payments, doing the "PDH paperwork", and keeping things running smoothly the day of the event.

Due to limited resources and time, a "mini-expo" is not scheduled for this spring. However, we plan to hold a number of PDH lunches throughout this year.

Yours truly will be giving a presentation about standby generator systems for our first "PDH lunch" of the year. The details are shown below. We're working on the schedule for the rest of the year. Our February, March, and April meetings will be joint with AIA and ACEC.

The February meeting will be held sometime during Engineers' Week. It will be a dinner meeting aimed at engineers and their spouse or significant other since we are trying to put more emphasis on Engineers' Week locally. I am trying to find, unsuccessfully so far, a topic and speaker that will be of interest to non-engineers, but also be technical enough to qualify for a PDH. I would welcome any suggestions in that regard.

Our local MATHCOUNTS competition will be held at Carnegie Library at Syracuse University starting at 9 AM on Saturday, February 10, 2007. The part that's most fun usually starts around noon. It's like a TV quiz show. Feel free to come and observe.

Calendar

Date/Time	Topic	Speaker	Location	Cost	Contact
Jan 22, 2007—11:30AM	Standby Power Systems – 1.5	Mike Hayes, PE	C&S Engineers	\$10	Mike Hayes, 455-2000, or mhayes@csc

Date/Time	Topic	Speaker	Location	Cost	Info/Contact
Feb 07	TBD	TBD	TBD	TBD	Joint with AIA & ACEC. Meeting. Location TBD. Dinner & Engineers' Week meeting.
Mar 07 & Apr 04	TBD	TBD	TBD	TBD	Joint with AIA & ACEC. Meeting @ Wyndham (tentative). "PDH" lunch.
May 07 ~ Oct 07	TBD	TBD	TBD	TBD	"PDH" luncheons"
November 1-3, 2007	TBD	TBD	TBD	TBD	NYSSPE Fall Convention
November 12, 2007	Various	Various	Holiday Inn, Liver-	TBD	Mike Hayes, 455-2000, or mhayes@cscos.com

NSPE Meeting Announcement

Topic, Speaker: Standby Power Systems , Mike Hayes, PE

Location: C&S Engineers, 499 Col Eileen Collins Blvd (Hancock Airport Access Rd)
Syracuse, NY 13212

Date, Time, Cost: Monday, January 22, 2007, Lunch & Presentation – 11:30 AM, \$10

Power Systems - Presentation Outline

Overview, definitions, & examples of types of standby power systems – 10 minutes

Emergency standby power systems – 30 minutes

Legally required standby power systems – 15 minutes

Optional standby power systems – 5 minutes

Summary –5 minutes

Quiz & discussion – 15 minutes (**not** graded! J)

Instructor Bio: Mike Hayes, PE

Over 30 years of experience designing normal and standby power systems

Designed new normal and standby power systems throughout the northeast while working in the private sector and around the world during his Air Force career

Responsible for standby power system operations and maintenance and design reviews at 22 Air Force communications sites in Germany and Belgium

There will be 1.5 PDH offered for this presentation.

WEBSITE

To keep current right up to the event, go to our website at <http://www.cnype.org> .

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Website of the Month

www.smete.org/smete/



STEM Teacher and Student Resources

The STEM Digital Library offers a wealth of teaching and learning materials in science, math, engineering and technology topics. Teachers can download lesson plans, and students can access resources to help them prepare for tests.



President's Message

Happy New Year! I recently had the pleasure of participating in the Community Conversation on Science, Technology, Engineering, and Mathematics (STEM) Education and Careers. Hosted by the SUNY College of Environmental Science and Forestry, in cooperation with the March 2007 Journey to Jobs Workforce Summit, I was joined by about 175 community leaders, educators, technologists, and others. We began the day with several community leaders offering their perspectives on what are the near- and long-term challenges associated with STEM workforce development in the current and emerging global marketplace. The participants then brainstormed action plans for meeting these challenges. The forum was a call to action, and most of the participants appeared to agree that we need to do a number of things to get more people interested in STEM careers.

TACNY fully supports the goals of the SUNY-ESF STEM conference. Several months ago, Larry Leatherman, president of the Milton J. Rubenstein Museum of Science and Technology, and I wrote a joint letter to The Post-Standard in

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support of various initiatives to help meet the state's needs for qualified STEM teachers and students. As an organization representing the many technologists and engineers in Central New York, TACNY needs all its members to stand together and rally around the cause. As local practitioners, we need to be more visible to the community, especially to prospective STEM students.

If you and your business don't already support local schools with mentoring programs, internships or any of a number of additional ways of helping to influence the career paths of those capable of a successful career as an engineer or technologist, you should consider doing so immediately. We will need all the help we can get to train the next generation, and for the United States to maintain its global technological leadership. Look to the *Technologist* for upcoming events in support of the conference goals, like an upcoming panel session at Syracuse University to discuss the "real world" of engineering, and for offering advice to current engineering students. TACNY needs YOU! If you wish to help, please send me a note at hollander@tacny.org.

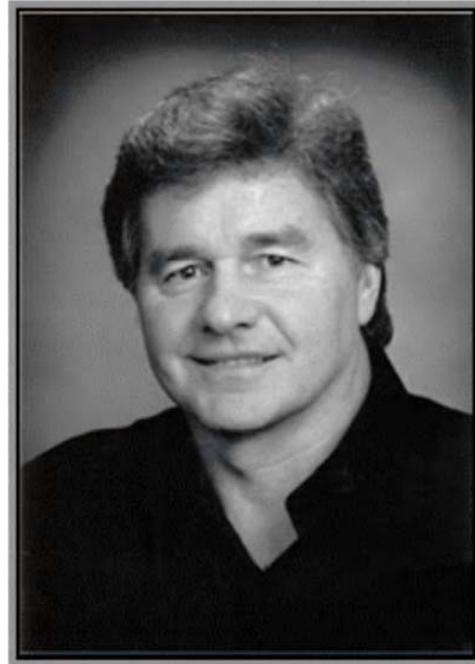
Hollander

Save the date!

TACNY's **Celebration of Technology** banquet is slated for **Monday, May 14**, at the Holiday Inn and Conference Center in Liverpool. Featured speaker will be **Story Musgrave**, a retired six-time astronaut who advocates for continued space exploration.

Companies, consider setting up a display at the social hour before the banquet. And everyone, keep in mind people and projects that would make good nominations for TACNY's six awards: Technologist of the year, young technologist of the year, technology project of the year, technology company of the year, engineer of the year and college technology educator of the year.

Stay tuned next month for more information, including cost of banquet tickets, nomination forms and more.

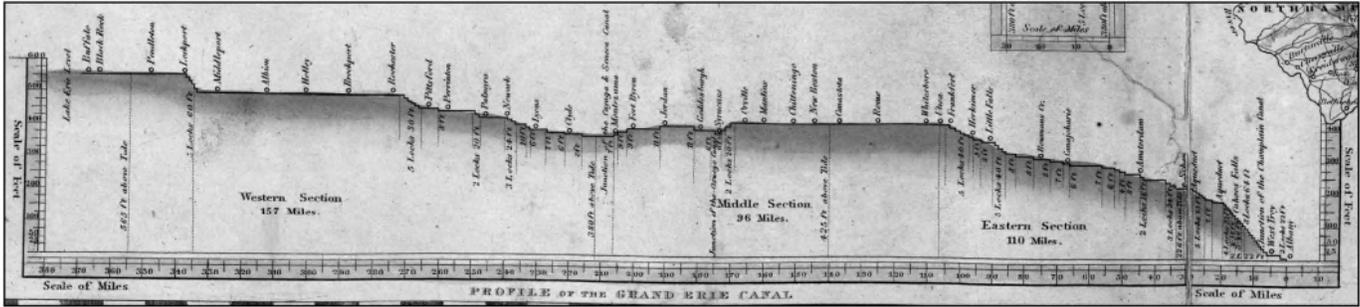


Find out how to tap your technical skills to become a writer

Engineer-turned-mystery novelist Stan Wilczek Jr. (*above*) is the featured speaker at a joint event hosted by TACNY and the **Society for Professional Communication** 6 to 8 p.m. Wednesday, Feb. 21, at the Whitney Applied Technology Center at Onondaga Community College.

Wilczek, a retired nuclear engineer, will discuss how his engineering background creating, designing and communicating his ideas provided the perfect training for becoming a writer. He will share his experiences and provide tips on how to develop good communication skills, as well as provide encouragement to other budding novelists. For more information on Wilczek and his works, link to www.stanwilczekjr.com/.

The talk, part of TACNY's Sweet lecture series, is free and open to the public. Pizza and soda will be served at 6 p.m., with the talk to follow at 6:30 p.m. and a question-and-answer session at 7:30 p.m. Due to limited space, attendees are asked to register by sending an e-mail to programs@tacny.org with information on how many people will be coming.



Happy Birthday, Junior Café Scientifique!

Junior Café Scientifique, a TACNY-sponsored speaker series for students in middle and high school, celebrated its first birthday last month with a look back at New York state history and the construction project that launched an industry: the Erie Canal.

Speaker Sam Clemence, a professor of civil and environmental engineering at Syracuse University, called construction of the 363-mile Erie Canal the moon landing of its time for two reasons: It was an enormous undertaking that few thought could be accomplished, and it led to significant inventions that revolutionized construction methods of the time.

“One of the first things I did when I moved here was to go out and visit the Erie Canal,” Clemence said in his Georgian drawl. “The Erie Canal is a wonderful engineering marvel.”

The challenges faced in building the Erie Canal were numerous. First, it took two years for the survey party to bushwhack their way through the forests to pick the canal’s route. When they were done in 1811, the War of 1812 interrupted.

Once work began on July 4, 1817, it progressed slowly at first. During the first two years, only 15 miles were built. Clemence said, noting that at that pace the canal would have taken 24 years to build.

But “ingenious Yankees” intervened, developing a winch that could be used to pull down trees much faster than they could be chopped down, he said. “With that, workers could do 40 stumps a day,” Clemence said. Canvass White invented waterproof hydraulic cement to keep water from leaking out of the locks. Another key invention was the horse-drawn



Sam Clemence answers questions from last month’s Junior Café Scientifique audience about the Erie Canal.

scraper. “Three men and a team of oxen could build one mile of canal per season,” he said. “There were hundreds of these teams at work all along the canal.”

The biggest challenge the canal builders

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faced, Clemence said, was bridging the Niagara escarpment, an 80-foot wall of hard dolomitic limestone that blocked the path to Lake Erie. Engineers built a series of five locks at Lockport to raise the canal level 60 feet, an astounding feat for the 1800s.

Opened on July 4, 1817, the Erie Canal forever transformed New York state, creating flourishing cities at Albany, Rome, Syracuse, Rochester and Buffalo, and opening up a route to the west through the only passage through the Appalachian Mountains north of Alabama, the Mohawk River.

About Junior Café

Junior Café Scientifique is a monthly interactive discussion series aimed at Central New York middle and high school students. Founded and funded by the **Technology Alliance of Central New York**, the series features experts discussing science and technology topics the third Saturday of every month at the **Milton J. Rubenstein Museum of Science and Technology**, in Syracuse.

Here are the dates and topics of the next several Junior Café events:

Jan. 20: Totally Hip: The Science of Joint Replacement; speaker, Julie M. Hasenwinkel, a professor at Syracuse University

Feb. 17: Viruses and the Diseases They Cause; speaker, Marvin Druger, a professor of biology and science education at Syracuse University

March 17: Computer Science: The Science of MP3 Players, Computer Games, Space Exploration and more; speaker, Jae Oh, a professor at Syracuse University

April 21: Predicting Catastrophic Rainfall in Syracuse; speaker, Theodore A. Endreny, a professor at the State University College of Environmental Science and Forestry

May 19: Preparing to be an Explorer: Exploring Careers in Science; speaker, Tiffany A. Koszalka, a professor at Syracuse University



The original locks at Lockport have been replaced with one large lock, but the old ones remain as a spillway.

Learn about electricity transmission systems

TACNY and the **Syracuse Section of IEEE** are hosting a talk on controlling voltage on electric transmission systems from 6 to 8 p.m. **Tuesday, Jan. 23**, in the Whitney Applied Technology Center at Onondaga Community College. Speaker Michael Schiavone, manager of the control center for National Grid Transmission USA, will discuss the importance of maintaining a stable transmission system and the critical need for the community to understand how this is accomplished.

The talk, which is part of TACNY's Sweet lecture series, is free and open to the public. Pizza and soda will be served at 6 p.m., with the talk to follow at 6:30 p.m. and a question-and-answer session at 7:30 p.m. New York Professional Engineers attending can earn one professional development hour.

Due to limited space, attendees are asked to register by sending an e-mail to programs@tacny.org with information on how many people will be coming by Jan. 19.

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Distributed to over 750 professionals!

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**TIME SENSITIVE MATERIAL
POSTMASTER, PLEASE RUSH**



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