IEEE

The Current Source

Newsletter of the Schenectady Section of the IEEE

Charles Concordia Leaves an Enduring Legacy to the IEEE Foundation

By: Karen Galuchie, IEEE Development Office

Charles Concordia was the engineers' engineer. Some will remember him as the engineer who was responsible for a multitude of technical advances and innovations in the field of power engineering. Others will remember the teacher, the man who took the time to help them break down a complex calculation until it was understood. Still others will remember him for his unwavering commitment to the profession.

It was probably a combination of these qualities and character traits that led Dr. Concordia to invest in the future of the profession by leaving a $100,000 unrestricted legacy gift to the IEEE Foundation. This legacy gift serves as an enduring testimonial to Dr. Concordia's generosity and commitment to the profession. To show its gratitude, the IEEE Foundation has added Dr. Concordia's name to the roster of the Goldsmith League, our legacy giving recognition group.

When notified about this gift, IEEE Foundation President Emerson Pugh said "The IEEE Foundation Board is honored that such a wonderful man and incredibly talented engineer has entrusted us with such a generous gift. This gift is an expression of Dr. Concordia's belief in the importance of our mission of furthering the scientific and educational purposes of the IEEE. We will strive to be worthy of his gift by funding philanthropic activities that will have a significant positive impact on the engineering profession now and well into the future."

To learn more about the IEEE Foundation, the philanthropic arm of the IEEE, visit www.ieee.org/foundation. For a confidential discussion on how you can create an enduring legacy and invest in the future of the IEEE Foundation, contact supportieee@ieee.org.

Dr. Wayne Nelson Receives Shewhart Medal

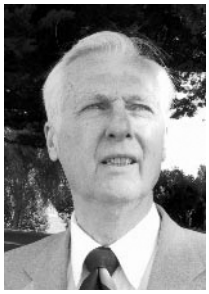
The American Society for Quality awarded Dr. Wayne Nelson of Schenectady, N.Y. the 2003 Shewhart Medal. The Medal honors his outstanding technical leadership, particularly for innovative developments and applications of theory and methods for analyzing quality, reliability, and accelerated test data, and for widely disseminating such developments through his books and many publications, talks, and courses.

The Shewhart Medal for outstanding technical leadership is named after Dr. Walter A. Shewhart, who pioneered statistical methods for controlling and improving the quality of manufactured products. These methods contributed significantly to the United States' war effort in World War II. Subsequently taken to Japan by Dr. W. Edwards Deming, these methods revolutionized Japan's industries. Today these methods are part of widely used Six Sigma training on how to improve the quality of products and services.

The American Society for Quality is the world's largest professional society dedicated to improving the quality of products and services. It serves its members and the public through a variety of educational activities, including conferences, training courses, journals, and books. Its Reliability Division sponsored Wayne Nelson for the Shewhart Medal.

Dr. Nelson is a graduate of the California Institute of Technology and the University of Illinois. Formerly with GE Research & Development, he now privately consults and gives courses for companies, professional societies, and universities. For his technical contributions, he was elected a Fellow of the American Society for Quality, the American Statistical Association, and the Institute of Electrical and Electronic Engineers. He recently spent four months in Argentina on a Fulbright Award, lecturing on analysis of product reliability data.

Dr. Nelson can be contacted at 518-346-5138 or WNconsult@aol.com. His address is 739 Huntingdon Dr., Schenectady, NY 12309.



Dr. Wayne Nelson.

2004 Section Officers

Executive Committee

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The Executive Committee also includes appointed Chairs of the following active Chapters within the Section.

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OPEN

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Ed Owen, Member
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Nominations and Call for Volunteers

Nominations for officers for the 2005 calendar year are as listed below. Please consider volunteering for one of the open positions. If interested, please contact me at rebecca.nold@ps.ge.com, 385-3883.

—Rebecca Nold

Executive Committee

Sam Salem—Section Chair
Ricardo Galarza—Vice Chair Treasurer
Shadrack Orero—Vice Chair Secretary
Rich Hogle—Vice Chair Membership

PES Chapter

Jose Daconti—Chair
Saber Azizi—Vice Chair Secretary
Mohamed Osama—Vice Chair Membership
Doug Brown—Vice Chair Programs

Microwave Theory and Techniques Chapter chair

OPEN

Industrial Applications Chapter

Ed Owen—Chair

Computer Society Chapter

Howard Halstead—Chair

Appointed Positions

Steinmetz Chair—Chandra Reis
Awards Chair—Kutty Nair
Membership Chair—Lou Tomaino
PACE Chair—Shadrack Orero
Student Activities Chair—Peter Sutherland
Webmaster/Gatekeeper—Howard Halstead
Section Historian—Chandra Reis
Section Liaison to Professional Engineering Society—Jose Daconti
Newsletter Editor—Sri Pillutla

Executive Committee member

The Committee usually meets monthly at lunch. Together they come up with the general membership lunch seminars you see advertised in the section. In the past the committee has also arranged evening courses using video courses available through IEEE. There is also the opportunity for involvement in Region 1 activities (Region 1 covers the Northeast). Executive Committee members tend to stay on the committee for four years and serve as chair during the fourth year. Each year we ask if you want to continue, so there is a chance to leave if needed.

Microwave Theory and Techniques chair

Must be an MTT Society member. *Ad hoc* member of the Executive Committee. Plan one or two seminars per year in the technical field and report back to Section on attendance.

The Current Source is published by the Schenectady Section of the IEEE. Issued twice a year. If you are interested in volunteering for *The Current Source* or wish to submit material for consideration, please contact Sri Pillutla, 783-2088 or srinivas.pillutla@ieee.org

Past, Present, Future:

Troy—Birthplace of the American Industrial Revolution?

Chandra Reis, our Section Historian, resumes her regular column "Past, Present, and Future" with an article profiling the Collar City's rich industrial heritage. If you have any people, communities, or ideas you would like to see profiled, please contact the author at creis@igc.com.

We all have heard of Troy's claim of being the Collar City, based on its long history of the manufacture of Arrow Collars. But claiming the title "Birthplace of the American Industrial Revolution" sometimes seems a little far-fetched to those of us only familiar with the Troy of today. After all, many cities and towns, particularly in the Northeast, lay claim to that title based on the presence of numerous cloth and clothing manufacturing sites, most of which are now long gone, abandoned, and forgotten. The Troy area certainly has its share of such crumbling brick buildings. Just take a drive along the Hudson through Cohoes or Mechanicville and you will see them, lining the banks. One such example is the Harmony Manufacturing Company in Cohoes, formed in 1836. By 1900, the complex of mills produced 1.6 million yards of cotton cloth per week. The mill workers were never able to organize, despite a strike in 1880 when 5000 weavers walked off the job.

However, it is the association with iron that had such an impact both on American industry (and on the early history of electrical engineering in this area). The first iron foundry in the city, the Troy Air Furnace, was built in 1818 by Alpheus Hanks, Truman Hanks, and Ephraim Gurley on the southeast corner of Fifth and Grand Division streets.

Some of the finest sounding bells were cast right here in Troy and across the river at West Troy (Watervliet) during the 19th and 20th centuries. This local industry that served the world comprised no more than four companies and was pretty much a family affair: the Mennely family (two different companies), Julius Hanks, and Jones and Company.

Troy's first bell caster, Julius Hanks, was the son of Benjamin Hanks, who built the first bell foundry in America. Julius moved his manufactory of scientific instruments from Watervliet (then Gibbonsville) to the corner of Fifth and Fulton in Troy in 1825. Besides church bells, Hanks began to make town clocks and surveyor's instruments. One of Hanks employees, William Gurley, a graduate of RPI (then called Rensselaer Institute), later established on the same site the manufacturing company of surveyors instruments that became famous for their engineering and quality.

The casting of stove plates for inventors and dealers was begun in 1821 by Starbucks & Gurley. Some of the most impressive stoves were manufactured by the Fuller & Warren Company, begun by the firm of L. Stratton & Son, in 1828, at the Rensselaer Furnace, 42 Fifth Street. Their most famous person was Philo Penfield Stewart, designer of the "P. P. Stewart Summer and Winter Cooking Stove." Stewart made many changes to the basic stove over the years. He started with the then-common small stove, enlarged the oven, and eventually added the improved reservoir and backcloset. In 1859 he obtained a patent for his "Large Oven and Air-Tight Cooking Stove." This perfected stove sold an impressive 9000 units in 30 years.

Henry Burden built his Overshot Water Wheel in 1851 to drive his automatic horseshoe and spike manufactory, allowing his company to make a horseshoe a second (more than 50 million horseshoes per year). Burden Iron Works became the leading manufacturer of horseshoes, as well as one of the largest iron companies in America.

In 1860, the Troy Local of the International Iron Molders Union was the largest in the country, with 400 members. Simon Mann, president of the Iron Molders Union #2 in Troy became the first vice president of the National Iron Molders Union. Trojan James Hooley was vice president of the union in 1888.

Troy's John F. Winslow and Alexander Holley (both RPI graduates) manufactured Bessemer steel for the first time in United States in South Troy in 1865, and revolutionized the iron industry. This was after Winslow's state-of-the-art Bessemer Iron Works rolled the protective plates for the *USS Monitor* in a record 30 days.

Just up the river was the Rensselaer Iron Works, owned by John A. Griswold,

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Chester Griswold, and Erastus Corning Jr. (that should be a familiar name to longtime Albany residents), who also owned the Albany Iron Works. The three companies consolidated in 1868. The new firm incorporated in 1875 as the Albany & Rensselaer Iron & Steel Company and occupied a mammoth complex. In 1885, the company was reorganized as the Troy Iron & Steel Company.

It is this association with iron that provided Henry with the means necessary to manufacture his first induction motor. It is also this prevalent supply of high-quality steel that is supposedly one of the main reasons why Thomas Edison located his General Electric plant so near to Troy. The presence of a trained workforce, used to the manufacturing practices of the day in both cloth and iron mills, was also a benefit.

It is not just Edison who took advantage of the presence of good steel and trained labor. Henry Ford started construction on his Green Island Plant in 1919. This manufacturing facility became the key plant of Ford's Engine and Foundry Division, and was in operation for over 65 years.

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References and further reading

- www.albany.edu/history/riverspark.html —History and Industry of New York State's Hudson-Mohawk Region
- www.angelfire.com/journal/millbuilder/album3.html —Burden overshot water wheel
- www.rootsweb.com/~nyrensse/troystove.htm —Troy's One Hundred Years 1789–1889: Stove Manufacturing
- www.themesh.com/his14.html —"Troy's History Rings Loudly!," by Don Rittner

IEEE RAB Awards and Recognition Program

…to help promote the IEEE's purpose of recognizing outstanding achievements in electrical, electronics, and computer engineering worldwide.

The Award and Recognition Program of the IEEE Regional Activities Board (RAB) is designed to help promote the IEEE's purpose of recognizing outstanding achievements in electrical, electronics, and computer engineering worldwide.

The Board offers four awards:

- RAB Achievement
- RAB Innovation
- RAB Leadership
- RAB Larry K. Wilson Trans-national

These prestigious awards are designed to recognize outstanding efforts by IEEE volunteers.

More information about these awards, other RAB awards, and the nomination forms can be found at the IEEE website.

Members are urged to review this information and nominate individuals deserving recognition. The deadline for nomination is Oct. 15.

The Friend of IEEE Regional Activities Award was recently created specifically to recognize support provided to IEEE and its members by firms or individuals. Nominations for this award may be submitted at any time during the year using the nomination form available at the Awards website.

IEEE Senior Member Program

Many IEEE members of the Schenectady Section are eligible to advance to the senior member grade. However, the upgrade is not automatic. Unless they are nominated for the upgrade or apply themselves for the upgrade, they will not get the recognition they deserve.

The requirements for upgrade to senior member grade and the application form are available at the IEEE website.

Members are urged to review the information and apply for upgrade to senior member grade or nominate other members for the upgrade.

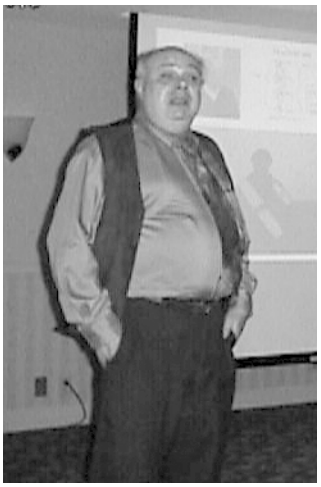
For assistance with award nominations or senior member upgrade, may contact Kutty Nair, kuttynair@ieee.org or by phone at his home 518-399-1774.

Membership Meetings 2004

A sampling of photographs from Section membership meetings held this year . . .

Over 70 members attended Dr. James Lyons' presentation entitled, "Utility Scale Wind Generation," held Jan. 16.

George Yarr, of Ener-G-Rotors Inc., demonstrating a prototype of his company's Trochoidal Gear Engine (TGE) at last month's Section membership meeting. Ener-G-Rotors develops technology that converts waste heat into electrical energy.



Prof. Mark Embrechts of the Dept. of Decision Sciences and Engineering Systems at RPI presented a lecture entitled, "Neural Networks: Challenging Industrial Applications," May 14.

On March 16, Michael Calimano, of the New York Independent System Operator (NYISO), gave a presentation describing the events that led to last year's Aug. 14 blackout .

Prof. Mark Embrechts, of the Dept. of Decision Sciences and Engineering Systems at RPI, presented a lecture entitled, "Neural Networks: Challenging Industrial Applications," on May 14.

Photo credits—S. Azizi, H. Halstead, and S. Pillutla.

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