

# THE Indicator

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## Dr. Paris Svoronos 2015 Chair New York Section



*See Chair's Message on page 5.*

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## THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles  
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I share a December birthday with a group of distinguished scientists. I was a Christmas Day baby, as was Isaac Newton (no comparison intended, by the way.) An American Nobel Laureate was also a December child. Willard Libby was born on December 17, 1908, in Colorado. His education began in a small town school there, but while he was still in elementary school his family moved to Sebastopol in California. After high school he entered the University of California, Berkeley in 1927 where he first enrolled in mining engineering, but then moved to chemistry earning his bachelor's and doctorate degrees working in the fairly new area of radioactivity. His mentors were Gilbert Lewis and Wendell Latimer. Libby built an improved Geiger counter as a graduate student and he made more and more sensitive instruments during his career. He joined the Berkeley faculty in 1933 moving through the ranks from instructor to Associate Professor. In 1941 Libby was holding a Guggenheim fellowship at Princeton, on leave from Berkeley, and as soon as World War II came to the U.S. he moved to the so-called Metallurgical Laboratory at the University of Chicago to join the team on the Manhattan Project. He stayed in Chicago until 1945 working with Urey, who was at Columbia University in New York, on the gas diffusion process for separating uranium isotopes.

In late 1945 Libby joined the Chicago faculty as the youngest Full Professor in the Department. He showed how tritium was produced by cosmic radiation in the upper atmosphere and developed a method of dating water samples by determining their tritium content. This led to the dating of water from various sources – and even to the dating of wines! In the late 1930s Kamen and Rubin had discovered the radioactive isotope carbon-14 and estimated its half life as over 1000 years. In 1946, with a much better estimate of the half life (about 5730 years) Libby had the “wild” idea that he could make estimates of the age of carbon-containing materials by determining the activity of the residual carbon-14. As the Chair of the Nobel Prize Committee put it in 1960: “The idea you had 13 years ago of trying to determine the age of biological materials by measuring their C-14 activity was a brilliant impulse. Thanks to your great experimental skill, acquired during many years devoted to the study of weakly radioactive substances, you have succeeded in developing a method that is indispensable [sic] for research work in many fields and in many institutes throughout the world. Archaeologists, geologists, geophysicists, and other scientists are greatly indebted to you for the valuable support you have given them in their work.”

Libby became a member of the U.S. Atomic Energy Commission in 1954, and was controversial for his opinions minimizing the effects of radioactive fallout. He served on the Commission for 5 years and then left Chicago for UCLA in 1959 becoming Professor of Chemistry. His Nobel Prize came in 1960. Libby allied himself with Edward Teller and others opposing Linus Pauling's position on banning nuclear tests in the atmosphere – but Pauling eventually prevailed and the Nuclear Test Ban Treaty was enacted. Pauling received the Nobel Peace Prize for his efforts. Libby became Director of the Institute for Geophysics and Planetary Physics at UCLA. He retired in 1976 and died at age 71. His pioneering work on carbon dating has revolutionized studies in areas ranging from archaeology, to art – and even to religion.

[ I am a co-author with Cathy Cobb and Monty Fetterolf of a new book “The Chemistry of Alchemy: From Dragon's Blood to Donkey Dung; How Chemistry was Forged” published by Prometheus Books in July 2014; it is available both as a hardback and an ebook.]

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## December Calendar

### NEW YORK SECTION

**Thursday, December 4, 2014**

Long Island Subsection

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**Thursday, December 4, 2014**

Chemical Marketing & Economics Group

Diamond Jubilee

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**Tuesday, December 9, 2014**

Biochemical Topical Group

See page 14.

**Tuesday, December 9, 2014**

Westchester Chemical Society

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**Friday, December 12, 2014**

High School Teachers Topical Group

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### NORTH JERSEY SECTION

**Wednesday, December 3, 2014**

NMR Topical Group

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**Friday, December 5, 2014**

Symposium of Award for "Creativity in Molecular Design and Synthesis"

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**Saturday, December 6, 2014**

North Jersey Executive Meeting

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**Monday, December 8, 2014**

Careers in Transition Group

See page 20.

***The Indicator* is posted to the web on the 15th of the previous month at [www.TheIndicator.org](http://www.TheIndicator.org)**

**Deadline for items to be included in the January 2015 issue of *The Indicator* is  
November 20, 2014**

## Final Hard Copy Issue of *The Indicator*

Colleagues,

The New York and North Jersey Boards of Directors have decided to cease mailing hard copies of *The Indicator* for financial reasons. This is the last mailed hard copy. Our full-color edition of *The Indicator* will still appear monthly at [www.TheIndicator.org](http://www.TheIndicator.org) and it can be downloaded and/or printed. *The Indicator* can be viewed on PC and Macintosh computers, laptops, tablets and smartphones. Our sections apologize for any inconvenience this change will have. For those without computers or the needed expertise, we have found that local libraries usually have computers and technical people who can help. Please feel free to access either section office with any comments or concerns.

Signed, Les McQuire and Neil Jespersen

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## 2015 ACS New York Section Chair's Message

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Dear all:

I would like to express my feelings of deep appreciation for the trust the American Chemical Society-New York Section membership demonstrated by bestowing the honor of the 2015 chairmanship upon me. I am humbled by the support of my colleagues and pledge my unconditional service to the cause and purpose of this great organization. I have served both the section as well as the Long Island subsection in several capacities over the years. I am convinced of the contributions of the many selfless volunteers who allow us to claim proudly that we are one of the largest and high-energy sections of the ACS. As a result we have been exceptionally successful in reaping the fruits of the many accomplishments through a nationwide recognition.

The major events scheduled so far in 2015 include

- The Annual Sectionwide Conference on January 17, 2015 at the St. Joseph's College in Brooklyn NY. Professor Wayne Jones of Binghamton University will serve as the keynote speaker. During that meeting details of future plans for the new year and beyond will be discussed.
- The William H. Nichols Symposium and Awards Banquet will be held on April 17, 2015 at the Crowne Plaza Hotel, White Plains, NY. This year's awardee is Professor Gábor A. Somorjai of the University of California, Berkeley. Dr. Somorjai is one of the world leading researchers in the field of surface chemistry and catalysis. The 2015 Chair-Elect, Allison Hyslop, has organized the event in an outstanding manner.
- Chemistry Olympiad, organized by Stephen Goldberg, March 2015.
- The Annual Earth Day Walk Across the Brooklyn Bridge event in April 2015
- The 63rd Undergraduate Research Symposium, May 9, 2015, at Queensborough Community College.

2016 will be the 125th year anniversary of the ACS-New York Section, a milestone that will be celebrated appropriately by holding the 44th Middle Atlantic Regional Meeting at the College of Mount St. Vincent in the Bronx (June 9-12). This conference was last sponsored by our section in 2008 at Queensborough Community College in Bayside Queens with utmost success. The 2016 board is comprised of Pamela Kerrigan, our current New York Section chair, and Daniel Amarante (both of College of Mount St. Vincent, General co-Chairs), Sujun Wei and Paris Svoronos (both of Queensborough, Program co-Chairs), Frank Romano (Agilent, Treasurer) and Marlon Moreno (Queensborough, Secretary). Although we have already secured more than 20 colleagues who volunteered to chair individual sessions we are still in search of an Exhibits Coordinator and, hopefully, a third Program co-chair. Aside from the standard sessions, new proposals will include, for the first time, Biotechnology, Forensics, Bioinformatics, On-line Teaching, Writing Intensive Course Teaching and Microwave Chemistry. This will be an ideal situation for post-doctoral fellows, graduate and undergraduate students to present their findings. A monkey survey has been distributed to all section members in mid-October asking for organizing contributors.

One of the main tasks that the New York section should undertake is to extend its hand further to our future members and the scientists of the 21st century- our students. The section has already involved the undergraduates in activities such as the Annual Undergraduate Research Symposium, Chemistry Week, Earth Day among others as well as Chemagination and Project Seed at the high school level. Whereas technology has made gigantic strides, chemistry still does not seem to appeal to undergraduate students as we would like to. It is through networking, research opportunities and nominations to various scholarships that the junior and seniors classes will increase their numbers. MARM can serve this purpose in a uniquely persuasive way.

Our means of communication are our website, beautifully maintained by Brian Gibney, at <http://newyorkacs.org/> as well as *The Indicator* site at <http://www.theindicator.org/index.html>.

I will be more than happy to communicate with any of you by either calling me or emailing me with your concerns, ideas and suggestions. It is through our continuous exchange of ideas that we can build a better future for our section for the years to come.

Best,

Paris Svoronos, PhD

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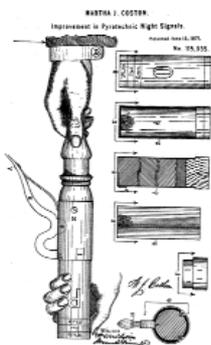
## CHEMISTRY LIGHTS UP THE BEACH

### Martha Coston and the Signal Flare, Part 2.

By Kevin Olsen, Montclair State University • <olsenk@mail.montclair.edu>

December 15 marks the anniversary of the grounding of the *Sindia* off Ocean City, New Jersey in 1901. The *Sindia* was a four-masted sailing ship with a 329-foot steel hull. She was launched in 1887 at Belfast, Ireland and was purchased by the Anglo-American Oil Company. What happened to the *Sindia* is an excellent example of how the Lifesaving Service worked and what the surfmen could accomplish.

Before exploring how the Lifesaving Service used the Coston Signals, what happened to Martha's children, and the family business, let's look at the anatomy of a Coston Flare.



**Martha Coston's 1871 patent drawing showing the friction ignition system. Note the three flare colors.**

(Image from Google Patents)

The Navy was slower to adapt this device but at least a few were used during the war.

Using friction to generate the heat needed to ignite the flare was described in an 1871 patent granted to Martha Coston. The newly designed flare that contained an "igniting composition" which enclosed a quickmatch. Quickmatch is a pyrotechnic term for a fast-burning fuse consisting of a string permeated with black powder and a stiffening agent such as dextrose. Twisting the cap off the flare created friction that ignited an unspecified mixture of two compounds. The first was on the body of the flare and was in contact with the quickmatch and the second was on the inside of the cap. When the two came in contact by twisting the cap, the heat from the friction caused an ignition, which ignited the quickmatch and that in turn set off the "igniting composition" that fired the pyrotechnic material. While this seems like a complex process, it seems likely that the quickmatch probably did burn hot enough to ignite the pyrotechnic material. The same patent also described a wooden handle with both steel springs and a spike that held the flare securely during ignition.

As with Martha Coston's other patents the exact chemical composition of these materials was kept a secret. The patent only claimed the use of a friction ignition / quickmatch system on a flare. The two materials that were ignited by the friction were probably a type of Armstrong's Mixture. This class of materials are mixtures of potassium chlorate, antimony (III) sulfide, and red phosphorous. Earlier versions used arsenic (II) sulfide.

The Costons also produced a flare handle with a brass plunger and spring that ignited the flare by means of a percussion cap. This was more reliable and easier to use than a match. This became the preferred ignition system used by the Lifesaving Service.

The original 1859 patent granted to Martha was for Pyrotechnic Night Signals and specifically covered "method of signaling Any Numeral or Combination of Numerals by the Display of Different Pyrotechnic Fires." The patent described how the signals were protected from water by using a piece of tape to seal the junction between the removable cap and the flare's body. The flare was then waterproofed with a coat of "varnish." To light the flare, the tape was peeled away, the cap removed, and a match applied to the pyrotechnic material. The 1859 patent did not explain the composition of the pyrotechnic materials or the type of waterproofing varnish. The signals would also have contained a fuel that would help to sustain the combustion of the pyrotechnic material. The composition of the fuel was important because it could control the rate of burning.

One obvious improvement to the flares would be to create an ignition system that did not require using a match. During the Civil War the Army introduced a signal pistol that ignited the Coston Flare with a percussion cap. The flare was held in the pistol and not launched into the air. The device seems to have been primarily intended to protect the user's hands and to make ignition more

The other weakness of the original Coston Flare was that they were hand-held. Many Navy ships of the period were still wood, or at least had wooden decks. These decks were also filled with flammable and explosive materials so having a device to launch the flare away from the ship was a "very" good idea. Martha's son Henry (1844-1896) was working on this problem but left the company to serve in the Marine Corps during the Civil War. This delay was at least partially responsible for an opportunity for the first serious competitor to the Coston Flare to be introduced in July of 1877. New flares were introduced by Lieutenant Commander Edward W. Very of the Navy Ordinance Bureau. Where Coston signals had 13 combinations of colors, the Very Signals had only two. But they could be launched by a flare pistol to an altitude of 250 feet. They were also reported to be more stable in warm weather, less expensive, and more compact than Coston's flares. Henry Coston was granted a patent for a comparable signal-launching gun in November of 1877 and Very's signals no longer represented a serious competitive threat to the Costons.

In 2009 a set of Coston Flares was donated to the Lakeshore Museum Center in Muskegon, Michigan. The flares were manufactured in 1932 and came from the Great Lakes freighter *Henry Cort*. In 1934 the ship was employed carrying pig iron between various ports on Lake Michigan when she was caught by a storm and ran aground in Muskegon. The *Henry Cort* ran aground on a breakwater and once the storm died down, the crew lowered themselves down to the breakwater and calmly, if somewhat carefully, walked ashore. The *Henry Cort* could not be salvaged and the ship gradually broke apart. Pieces of the ship are still visible today.

When they were donated to the museum the flares were all still usable and they could not be put on public display. A three-person team consisting of Executive Director John McGarry, Registrar Sharon McCullar, and Collections Manager Dani LaFleur, volunteered to open the flares and dispose of the pyrotechnic materials. The flares consisted of heavy cardboard tubes with a waxy paper covering. When they were slit open, the team first discovered a layer of sawdust. They thought that the sawdust might have been impregnated with pyrotechnic material and thus formed the fuel. However the sawdust burned without any particular intensity or brightness. Above the sawdust was a cake of hard-packed particles that did burn with a bright red color. A second layer of pyrotechnic material lay between the strike point and the hard-packed pyrotechnic layer. This was probably the "igniting composition" intended to transfer the spark from the strike-point to the pyrotechnic material.

Once the materials inside the flares were disposed of, they were sealed back up and put on public display.

The observation about the sawdust is curious. It was reported to have been packed as a separate layer. Both sawdust and sulfur were used as slow-burning fuels for red-colored flares containing strontium nitrate but there is no mention of keeping it isolated from the strontium nitrate. (Strontium nitrate is discussed in part one of this article appearing in the November issue of *The Indicator*) As might be expected, this nitrate is a strong oxidizing agent and while it may decompose explosively, it is not a fuel. According to the Department of Transportation's guides to hazardous materials it will "accelerate burning." Strontium nitrate can react explosively with hydrocarbons and may ignite combustible materials such as wood, paper, and clothing. The sawdust layer was may not have been the fuel, serving instead as insulation or perhaps for shock absorbance. This question will have to wait as the museum staff did not subject the materials inside to chemical analysis prior to destruction.

During the Civil War the Coston Signals were manufactured by G.A. Lilliendahl who operated a fireworks manufacturing company in New York City. Lilliendahl was also one of Martha's collaborators in the development of the flare. His expertise was invaluable and he deserves much of the credit for having the flares ready by the start of the Civil War.

In the years following the Civil War Martha and her surviving sons, William Franklin Coston (?-1901) and Henry H. Coston took over the production of the Coston Signals and estab-

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## CHEMISTRY LIGHTS UP THE BEACH

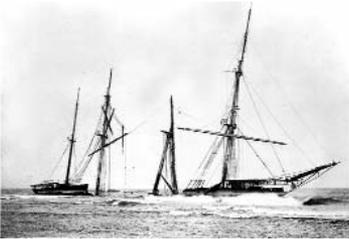
(continued from page 7)

lished a small factory on Cary Avenue in the New Brighton section of Staten Island. This neighborhood is near the ferry terminal on the northern part of the island. The signals produced there were used not only in the United States Navy, Lifesaving Service, Customs, Army, and Weather Bureau, but by the navies of France, Spain, Denmark, Italy, The Netherlands, Brazil, and thousands of merchant ships.

By the 1884 the *Brooklyn Eagle* reported that 337 vessels were saved by the Lifesaving Service. These were counted as the ships piloted out of dangerous waters, re-floated with the assistance of lifesaving crews, or salvaged by tugboats. The number of rescues included 497 instances where boats were used and only 16 with the breeches bouy. Surfmen patrolling the beaches became more adept at spotting ships that were in danger of running aground. They ignited Coston Signals 125 times in 1883 to prevent shipwrecks by warning ships away from shallow water.

The *Sindia* however, was not so lucky.

The *Sindia* had delivered a cargo of kerosene to Shanghai and then Kobe, Japan. She made a 10,000 mile retrun voyage to New York across the Pacific and around Cape Horn. The cargo on the return voyage consisted of silks, satins, Japanese goods, camphor oil, and manganese that was taken as ballast. The *Sindia* was only a day or so away from New York when she encountered a winter storm off Cape May.



**The wreckage of the *Sindia* off Ocean City, New Jersey.**

The *Sindia* was hit by a howling winter gale and high seas that continued for four days. The ship was driven off course by 50-mile per hour winds and visibility was reduced by heavy rain. The storm ripped the ship's sails and rigging and drove her hull parallel to the sandy beach off Ocean City. Waves crashed over the deck and washed away anything that was not fastened down. As the storm raged on, the powerful surf and shifting sand caused the steel hull to burrow deeper and deeper into the sand. The *Sindia*'s crew signaled for help with flares and the men of the Life Saving Station responded. The entire 33-man crew

was safely removed by the surfboat.

A salvage tug soon arrived but was unable to pull the *Sindia* off the beach and within two days of running aground, a modern steel ship capable of making a 10,000 mile voyage around Cape Horn was a total loss. Her hull had over twenty feet of water in it and observers predicted that it would soon be broken in two. The cargo was also a total loss but some of it was later salvaged from the wreck of the hull.

Pieces of the *Sindia* littered the beach at Ocean City for many years and countless tourists posed for vacation pictures on them. The last remains of the ship were buried under about twenty feet of sand by a beach replenishment project and she is now about 100 feet inland of the surf line.

The manganese that was part of her cargo has fueled decades of speculation that the *Sindia* was actually carrying art and antiques looted from China and smuggled out of Shanghai. The price of manganese was actually quite low at the time and it would have made little economic sense to carry it all the way from Japan. This ignores the fact that the *Sindia* would have needed something dense and heavy for ballast and it is entirely possible that the shipping company's agents were unable to purchase anything else. A number of treasure salvage companies have been formed over the years with the intention of digging down to the *Sindia* but the necessary permits have been impossible to obtain. (Readers interested in forming a treasure salvage company are cautioned that in the majority of instances, the legal fees associated with such salvage operations often cost more than the treasure is worth.)

During this time period, the operations of the Coston Signal Company remained very much within the family. Martha's granddaughters and daughter-in-law Anna L. Coston all worked in the company's laboratories and were reported to have played a critical role in meeting the military's demand for flares during the Spanish – American War of 1898-1901. The company was still owned by Martha and her daughter-in-law Anna L. Coston (William's wife) was the president.

Immediately after the Spanish – American War, the company experienced a highly visible series of setbacks and embarrassments.

In June of 1901 Anna was visiting the factory. She wanted some barrels for packing households goods. William was reported to have been “not in the best of humor.” When he did not remove his hat in his wife's presence, she knocked it off his head and as often as he put it back on, she knocked it off again. It might have been a comical incident but it turned ugly when Anna and William began hitting each other. Coston's son then knocked his father down. The entire exchange was witnessed by two of the employees, Irene and Catherine Baxter.

The incident exposed long-simmering marital discord between William and Anna. Not surprisingly, they would up in court where William accused Anna of acting in a “disorderly manner” and “interfering with his business.” Before dismissing the case the presiding judge urged Anna to “live peaceably with her husband and not bother him at his place of business.” He also told William that if he could not get along happily with his wife, then he should seek a separation. By the middle of July, Anna was seeking a legal separation.

In August of 1901 there was an explosion and fire in the New Brighton factory. William Coston was working in the “mixing room” preparing a batch of chemicals when the explosion occurred. He was reported to have been working on a mixture of Cape Aloe and red arsenic.

Cape Aloe is the common name of the *Aloe ferox*, a succulent plant native to South Africa and distributed throughout the tropics. It contains between 15 and 40% anthrone 10-C-glucosides including aloin and aloinside. This plant had a number of medicinal uses including as a laxative and to induce labor by stimulating uterine contractions. William was most likely considering it as a potential fuel. Red arsenic (arsenic(II) sulfide) occurs in nature as the mineral Realgar. It had been in commercial production since at least the 1820s when chemists discovered it could be manufactured from a mixture of arsenical pyrites with iron pyrites. It was widely used as a rodenticide and in leather tanning. Its color ranged from orange to yellow. In pyrotechnics it gives a bright white flame. It is not a particularly reactive material but combining it with potassium perchlorate can create an unstable mixture.

Some news reports state that there was a large amount of alcohol used in the laboratory and this contributed to the fire. As the papers in the room caught fire, William tried to save his laboratory notebook but this delay allowed the fire to spread to his clothing and trapped him in the exploding laboratory. He suffered burns on the face and scalp. He also suffered a head injury from a falling beam.

There were no other injured workers but the factory was destroyed.

William's death a few days later has been attributed to a meningitis infection resulting from his head injury. His death shocked the business community because he was the only per-



An 1878 article in *Harper's Weekly* described the operations at a Lifesaving Service station on the Jersey Shore. A wintertime dance in the station was interrupted by news that a ship had run aground. Visitors to the station were common and such dances were frequent.

(Cornell University  
Making of America Collection)

(continued on page 10)

## CHEMISTRY LIGHTS UP THE BEACH

(continued from page 9)

son who reportedly knew the chemical compositions for the Coston Signals.

William's daughter Mabel Coston, quickly announced that she knew the formulas and would continue manufacturing the signals. Mabel was less than twenty years old at the time. She told reporters that she was not frightened by working in the laboratory but her new responsibilities would change her life because up to that time, she was "in the habit of playing the society young lady."

The management of the company fell to the widows of Henry and William as Mabel took over the day-to-day supervision. This arrangement appears to have only continued for a few years because shortly after Martha's death in 1904, Anna filed for bankruptcy. She had received only \$810 from Martha's estate and her debts were reported to be at least ten times that amount.



A preserved surfboat is on display at the Ocean City, Maryland, Lifesaving Station Museum. The boat sits on its special wagon with extra wide wheels for use on the sand. Note the hand grips on the bottom of the hull that were used if the boat capsized. The exhibit materials in the museum show the dramatic rescues that the service performed.

(Ocean City Lifesaving Service Museum)

After William's death and the fire that destroyed the company's buildings, it was quickly reorganized by as the Coston Night Signals Company with the stock being held by the surviving family members. Mabel Coston was appointed secretary and treasurer, Anna assumed the presidency, and Jay W. Becherer who had been business and office manager under William was retained in his position. Henry Coston's widow was also reported to be active in the firm's management but no details were provided in the press reports. The headquarters of the company was at 7 Water Street in Manhattan. An old house in the Bull's Head section of Staten Island became the new production facility and by October the company was once again manufacturing signals for the government. A visitor to the facility described how a young woman surrounded by wooden trays of "chemical powders" packed them into small pasteboard cylinders and used a hand-turned press to compact the mixture. The primer, fuse, and percussion cap were then added. This sounds like a dangerous operation and it probably was. The building was made of wood and there was no mention in contemporary press reports of either ventilation or dust control.

The company did eventually move to a permanent production facility and continued in operation until the 1980s.

As a woman who built an internationally known business, Martha Coston became something of a legend and was held out as an example of the "inventive genius of women." Within a decade of her death some people were already giving her sole credit for the invention of the Coston Flare. Laila Ann Coston wrote to the *New York Times* in 1915 to correct this misconception. It is only fitting we give her the last word:

"I am always delighted to have the opportunity of giving to one of my sex the fruits of her own genius but in this instance the credit must go, not to Martha, but to Benjamin Franklin Coston, her husband." Laila went on to write that "it in no way may detract from the ability of Martha Coston, for it was she who took up the work...and made commercially profitable the ideas which had originated in his fertile brain."

Kevin Olsen  
Montclair State University

## NEW YORK SECTION – 2015 SECTION-WIDE CONFERENCE

Please register at: <http://www.newyorkacs.org/meetings/sectionwide/sectionwide2015.php>

**Date:** Saturday, January 17, 2015

**Times:** 9:30AM – 1:00PM

**Place:** St. Joseph's College, Tuohy Hall, 245 Clinton Avenue, Brooklyn, NY

Campus Map [http://www.sjcnny.edu/files/images/BK\\_Map.jpg](http://www.sjcnny.edu/files/images/BK_Map.jpg)

Directions <http://sjcnny.edu/directions>

**Cost:** FREE TO ALL

### PROGRAM

9:30 AM **Arrival and Refreshments**

10:00 AM **Greetings from the New York ACS 2015 Chair**

Dr. Paris Svoronos

10:10 AM **Award Presentations**

Service Plaque and Pin to the 2014 New York Section Chair

Dr. Pamela K. Kerrigan

New York Section Outstanding Service Award for 2014

Dr. Jill K. Rehmann

Nichols Foundation H.S. Chemistry Teacher Award for 2014

Mr. Matthew Christiansen  
Islip High School, Islip, NY

10:30 AM **Presentation of Candidates for the 2015 Elections**

Dr. Alison G. Hyslop  
2015 Chair-elect  
ACS New York Section

10:45 AM **Keynote Speaker**

Dr. Wayne E. Jones, Jr.  
Professor, Inorganic And Materials Chemistry  
Binghamton University

### **Title: Capturing the Power of the Sun Using Molecular Wires and Devices: From Photovoltaics to Photocatalysis for Environmental Remediation**

The development of ever smaller electronic and photonic devices has recently focused on the preparation of molecular scale devices for a variety of applications. We have been exploring molecular devices as a means of harvesting the sun's energy to drive useful processes. Examples include creating of new photovoltaic energy systems. Combinations of organic and inorganic structures can create new, low cost, photovoltaics which could be critical for our society. We can also explore the preparation of these materials using high volume roll to roll processing. Nanoparticles and nanofibrous semiconductors such as TiO<sub>2</sub> can also be prepared which drive chemical processes. The new photocatalytic materials can be applied to solve other types of environmental problems such as degradation of toxic materials from industrial waste streams or even chemical warfare agents. The synthesis, design, and molecular characterization of recent materials will be discussed.

11:45 AM **Coffee Break** — There will be poster presentations by the New York Section Project SEED Students.

12:00 PM **ACS, New York Section Committee Planning Sessions for 2015**

**Educational Activities:** (Chemagination, Chemists Celebrate Earth Day, Continuing Education, High School Olympiad, National Chemistry Week, Nichols Foundation Teacher Award, Project SEED, Student Membership)

*Chair:* Dr. Alison G. Hyslop

**Member Affairs:** (ACS Fellows, Awards, Employment and Professional Relations, History of the New York Section, *The Indicator*, Membership, Outstanding Service Award)

*Chair:* Dr. Ralph Stephani

**Program Review:** (Subsection and Topical Discussion Group Chairs)

*Chair:* Dr. Anne T. O'Brien

**Public Affairs:** (Academe and Industrial Relations, Environmental Chemistry, Fund Raising, Government Affairs, Information Technology, Public Relations, Speakers Bureau)

*Chair:* Dr. Robert P. Nolan

**MARM 2016 Planning:** (Co-Chairs: Dr. Pamela Kerrigan and Dr. Daniel Amarante). Volunteers Welcome.

12:45 PM **Reports from the Chairs of the Committee Planning Sessions**

1:00 PM **Conclusion of the Meeting.** Join with colleagues for lunch at a local restaurant.

To inquire about the Section-wide Conference, please call the New York Section Office at (516) 883-7510 or e-mail Marilyn Jespersen, Office Administrator, at: [njesper1@optonline.net](mailto:njesper1@optonline.net)

## New York Meetings

[www.newyorkacs.org](http://www.newyorkacs.org)

### NEW YORK SECTION BOARD MEETING DATES FOR 2015

The dates for the Board Meetings of the ACS New York Section for 2015 have been selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any (or all) meetings ought to inform the New York Section office by emailing Mrs. Marilyn Jespersen at [njesper1@optionline.net](mailto:njesper1@optionline.net) or by calling the Section office at (516) 883-7510.

All 2015 Board Meetings will be held on the following dates at St. John's University, 8000 Utopia Parkway, Jamaica, NY. Dr. Paris Svoronos will chair all meetings. Refreshments will be available starting at 6:00 PM while the actual meeting will start at exactly 6:30 PM. Please check Marilyn Jespersen for the exact building and room number. You may also be added in the mailing list if you so desire.

Friday, February 13, 2015

Friday, April 24, 2015

Friday, June 5, 2015

Friday September 18, 2015

Friday November 20, 2015

In addition please mark your calendar with the dates of the following major events:

Saturday, January 17, 2015, Annual Section-wide Conference. St. Joseph's College, Brooklyn, NY

Friday, April 17, 2015, William H. Nichols Medal Award Symposium and Dinner,

Crowne Plaza Hotel, White Plains, NY

More information will be posted in future monthly issues of *The Indicator* and on the New York website at <http://www.NewYorkACS.org>.



### LONG ISLAND SUBSECTION

#### The Poison Center: Current Topics

*Speaker:* Ms. Maria Mercurio-Zappala, RPh, MS, DABAT, FAACCT  
Associate Director  
New York City Poison Control Center  
Assistant Professor of  
Emergency Medicine  
NYU School of Medicine

The Poison Center is an emergency telephone hotline that is available to both the public and health care providers 24 hours a day, 7 days a week. The Poison Center is in a unique position to identify potential public health risks, new drugs of abuse trends, and potential bioterrorism activity. In this presentation, the speaker will discuss various topics from holiday toxins to "what's new" in the news such as the opioid epidemic.

**Date:** Thursday, December 4, 2014

**Times:** Social 5:30 PM (Buffet Dinner)  
Long Island Subsection Elections  
6:00 PM

Seminar 6:15 PM

**Place:** Nassau Community College  
CCB Building  
2nd Floor Room 252

**Directions:** <https://www.ncc.edu/campuservices/parkingandsafety/mapanddirections.shtml>



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## CHEMICAL MARKETING & ECONOMICS GROUP CELEBRATES DIAMOND JUBILEE



### The 3rd Annual Leadership Awards Celebrating the 60th Anniversary of CM&E

*Keynote Speaker:* Marc Teerlink  
Chief Business Officer  
IBM Watson Group

His talk will discuss how the revolution in artificial intelligence will touch every aspect of society including chemistry, industry and investments, among others.

The 2014 honorees are:

- For Lifetime Achievement: Andrew Liveris, President, Chief Executive Officer and Chairman of the Board, The Dow Chemical Company (left)
- For Extraordinary Innovation: Dr. Thomas Connelly, Executive Vice President and Chief Innovation Officer, E. I. du Pont de Nemours and Co (center)
- For Distinction in Private Equity: Tom Kichler, Managing Director, One Equity Partners, the private investment arm of JP Morgan Chase (right)



The CM&E Leadership Awards honor leaders with distinction in harnessing the transformative power of chemistry to advance humanity. Prior honorees include Jon M. Huntsman (Huntsman Corp.), Peter McCausland (Airgas), Marcelo Odebrecht (Braskem), Juan Pablo del Valle Perochena (Mexichem), Peter and David DeLeeuw (Huntsman-Lion Capital) and Dr. John Televantos (Arsenal Capital).

The Leadership Awards is the only award event that has received the distinguished American Chemical Society ChemLuminary Award for Global Engagement. Two hundred registrants are expected including top industry executives, strategists, investors, inventors, academics, students, media and diplomats from the United Nations.

Funds raised at the CM&E Leadership Awards event will help bolster ACS scholarships, K-12 Chemistry Festivals, Leadership Development and support other STEM education programs.

Sponsoring the event by buying tables is an outstanding way to salute the honorees and support STEM education. Join the ranks of sponsors such as Huntsman, Mexichem, McKinsey, KPMG, DuPont, Dow Chemical, Arsenal Capital, Huntsman-Lion Capital, Grace Matthews, Braskem, Dow Corning, Sonneborn, Peroxychem, Cardolite and others. Please contact us at [contact@cmeacs.org](mailto:contact@cmeacs.org) if you have any questions or visit our website [www.cmeacs.org](http://www.cmeacs.org)

**Date:** Thursday, December 4, 2014

**Time:** 11:30 AM to 2:30 PM

**Place:** New York Yale Club

## BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NY ACADEMY OF SCIENCES BIOCHEMICAL PHARMACOLOGY DISCUSSION GROUP

### Diabetic Kidney Disease: Drug Discovery and Clinical Development Challenges

*Organizers:* Magdalena Alonso-Galicia, PhD

Ken Jones, PhD  
Allergan

Scott MacDonnell, PhD  
Boehringer-Ingelheim

Sonya Dougal, PhD  
The New York Academy of Sciences

*Speakers:* Matthew D. Breyer, MD  
Eli Lilly

Frank C. Brosius, MD  
University of Michigan  
Medical School

Benjamin D. Humphreys, MD, PhD  
Harvard Institutes of Medicine

Matthias Meier, MD  
F. Hoffmann-LaRoche Ltd

Shahnaz Shahinfar MD, FASN  
S. Shahinfar Consulting, Inc.  
and The Children's Hospital  
of Philadelphia

Katalin Susztak, MD, PhD  
University of Pennsylvania

Aliza Thompson, MD  
US Food & Drug Administration

Identifying and prosecuting drug targets is challenging due to a poor understanding of pathogenesis and few biomarkers. This symposium identifies targets for preventive or therapeutic interventions and discusses challenges in clinical development. This symposium includes a dedicated Professional Development Workshop for Early Career Investigators titled, Editor's Guide to Writing and Publishing Your Paper.

**Date:** Tuesday, December 9, 2014

**Time:** 8:00 AM – 5:00 PM (reception and poster session to follow)

**Place:** New York Academy of Sciences  
7 World Trade Center  
250 Greenwich Street – 40th Floor  
New York, NY

**Cost:** This event is has reduced-rate reg-

istration for ACS and NYAS members, at \$30 or \$15 (for students and post-docs). Please select the appropriate non-member Registration Category and use the Priority Code ACS. Non-members may attend for a fee of \$85 (corporate), \$65 (non-profit or academic) or \$45 (students and post-docs).

For more information and to register for the event, go to:

[www.nyas.org/DiabeticKidneyDisease](http://www.nyas.org/DiabeticKidneyDisease).

To become a Member of the Academy, visit [www.nyas.org/benefits](http://www.nyas.org/benefits).



## WESTCHESTER CHEMICAL SOCIETY

### Special Seminar – “What’s Beyond the Lithium-Ion Battery”

*Speaker:* Lin-Feng Li, PhD  
Bettergy Corp.  
Peekskill, NY

Since its introduction in 1990, the lithium ion battery has gained tremendous market share in the rechargeable battery market place due to its superior energy density. The battery has found widespread applications in portable electronics, mobile communication devices as well as Hybridized Electric Vehicles (HEVs), Plug-in Hybridized Electric Vehicles (PHEVs) and Electric Vehicles (EVs). The specific energy of the lithium ion battery has nonetheless reached the plateau – room for improvement is now limited. Nonetheless, there is a constant driving force to develop the higher energy density (Wh/kg), low cost battery that can greatly extend the range of electric vehicles. Researchers are now focusing more and more on the chemistry beyond the lithium ion battery. In this presentation, the state-of-the-art R&D work in the field will be reviewed and discussed.

Lin-Feng Li has had extensive and successful experience in managing multiple million dollar DoD (US Navy, Army and DARPA), DOE, NASA, NSF and NYSERDA SBIR (Small Business Innovation Research) and non-SBIR programs as the principle investigator. Some of these projects have been successfully commercialized in batteries and battery-related products. Dr. Li has gotten BS and MS degrees in chemistry and in applied physics from Tsinghua University,

Beijing, China and his PhD in chemistry from Case Western Reserve University, Cleveland, Ohio. He has been a research associate at The National Key Laboratory of Coordination Chemistry in Nanjing, China. After completing his PhD, Dr. Li rose from a position as a research staff member to Vice-President and Chief Technology Officer of eVionyx, Inc. (a subsidiary of Reveo, Inc.). He has been Vice-President of Product Development for Zinc Matrix Power Inc. (now Zpower) in Camarillo, CA and is founder, President and CTO of Bettergy Corp. He has more than fifteen patents, either granted or pending, and more than thirty publications and presentations.

**Date:** Tuesday, December 9, 2014

Times: Refreshments 5:30 PM

Lecture 6:00 PM

Place: Westchester Community College

Gateway Building, Room 110

75 Grasslands Road

Valhalla, NY

Cost: Free and Open to the Public

Further Information: Paul Dillon

[PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com)

(914) 393-6940



## HIGH SCHOOL TEACHERS TOPICAL GROUP

### The Lost Elements – The Periodic Table's Shadow Side

*Speaker:* Mary Virginia Orna  
Department of Chemistry  
College of New Rochelle

This talk will highlight a book that has collected in one place all of the spurious or false discoveries of the chemical elements as a kind of shadow side to Mary Elvira Weeks' The Discovery of the Elements. Such a book,

with all of the false starts, retractions, stubborn positions, inadvertent errors, often intimately bound up with the discovery of the true elements, has never been published before. Therefore, this book is unique in the history of science, and tells these stories from the viewpoint of both chemists and physicists in their hunt for the elements. Not only that, it narrates the wide panorama of political events, nationalistic trends, personal failings, scientific incompetency and hardened attitudes that influenced the science and the scientists of the periods covered. The book highlights the fact that science does not proceed in straight lines and there are often dead ends in scientific research with identifiable causes for these errors. Each story of a false element is richly documented, for the most part with primary sources, so that this becomes a "font of error," if you will, that contains many lessons for current research and for students of the history of science. Obviously, the talk has to be highly selective and will only scratch the surface of this rich gold mine of information.

**Date:** Friday, December 12, 2014

Times: Social and Dinner — 5:45 PM

Meeting — 7:15 PM

Place: Social and Dinner — TBD

Meeting — New York University

Silver Center Room 207

32 Waverly Place (South-east

corner Washington Sq. East)

New York, NY

Security at NYU requires that you show a picture ID to enter the building. In case of unexpected severe weather, call John Roeder, (212) 497-6500, between 9:00 AM and 2:00 PM to verify that meeting is still on; (516) 385-4698 for other info.

Note: On street parking is free after 6:00 PM.



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## EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

### To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/experience background required to [hessytaft@hotmail.com](mailto:hessytaft@hotmail.com).

Candidates from our roster who meet the requirements you describe will be asked to contact you.



## NEW YORK NANOSCIENCE DISCUSSION GROUP

### 2014-2015 Sessions

*Speakers to be announced*

*Hosted by:* New York University  
Department of Chemistry

The NYNDG is an ACS Topical Group that meets in the New York University Department of Chemistry. Sessions feature three 30-minute presentations on nanoscience, one each with strong orientation in biology, chemistry, and physics/applied mathematics. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Mark your Calendars!

**Dates:** Tuesday, February 3, 2015  
Tuesday, April 7, 2015

**Times:** Refreshments at 7:00 PM  
Science at 7:30 p.m.

**Place:** NYU Silver Center  
Room 1003 (10th floor)  
31 Washington Place  
(between Washington Square  
East and Greene Street)  
New York, NY

For more information, contact: James Canary ([james.canary@nyu.edu](mailto:james.canary@nyu.edu))

Topical Group History: <http://www.nyu.edu/projects/nanoscience>

## NOMINATING COMMITTEE MEETS IN DECEMBER

The Nominating Committee of the New York Section will meet in December to select candidates for the 2015 elections.

Positions available are:

Chair-elect for 2016  
Treasurer for 2016 - 2017  
Directors-at-Large for 2016  
Councilors and Alternate Councilors for 2016 - 2018

If a member of the New York Section wishes to run for office or to suggest a member for consideration by the Nominating Committee, please write to the American Chemical Society, New York Section, Inc., St. John's University, Department of Chemistry, 8000 Utopia Parkway, Jamaica, NY 11439 or send an e-mail to the New York Section office at [njesper1@optonline.net](mailto:njesper1@optonline.net) by **November 15**. Thank you.



## NEW YORK SECTION OF ACS AND ST. JOSEPH'S COLLEGE

### 20th Annual High School Poster Session

*Sponsored by:* The New York Section of the American Chemical Society and St. Joseph's College

The annual poster session provides an opportunity for talented high school students from the metropolitan area to compete and be recognized for their research accomplishments.

The program includes:

- Judging of posters by scientists working in industry and academia
- Guest speaker: Carlo Yuvienco, PhD, Physical Sciences Department, St. Joseph's College
- Certificates to all participants
- Prizes to the four winning presenters.

### Protein-based Drug Delivery Agents

*Speaker:*  
Carlo Yuvienco, PhD  
Physical Sciences  
Department  
St. Joseph's College



With the advancement of technologies to probe and manipulate biophysical matter, the scientific community continues to ever better engineer biological

systems with the complexity and elegance in design that is necessary to address biomedical challenges. The growing maturity of the field of protein engineering is a testament to this proclamation.

Dr. Carlo Yuvienco holds a PhD in Biomedical Engineering from New York University and a BE in Chemical Engineering from the Cooper Union for the Advancement of Science and Art. His research focus is currently the application of engineered protein constructs for drug delivery applications.

**Date: Saturday, February 7, 2015**

**Times: 9:00 AM - 1:00 PM**

**Place: St. Joseph's College**  
245 Clinton Avenue  
Brooklyn, NY

For more information or to register, visit: <http://www.sjcnycny.edu/brooklyn/academics/undergraduate/majors/chemistry/2015-poster-session> or contact Rhomesia Ramkellowan at [rramkellowan@sjcnycny.edu](mailto:rramkellowan@sjcnycny.edu) or [sjhighschoolpostersession@gmail.com](mailto:sjhighschoolpostersession@gmail.com). (Include "HS Poster Session" in the subject line).



## WESTCHESTER CHEMICAL SOCIETY

On October 8, 2014 Dr. Qing Song, Industry Assistant Professor in the Department of Chemical and Biomolecular Engineering of the Polytechnic School of Engineering of New York University presented a fascinating talk dealing with biochemical investigations on single cells. Her talk was based mostly

on post-doctoral work conducted with Professor J. Christopher Love at MIT. Because of heterogeneity amongst cells, investigations of whole populations, which depend on the overlap of multiple distributions, may be misleading. Dr. Song described an alternative approach that uses arrays of subnanoliter wells coated with recombinant peptide loaded MHC class II monomers to isolate and stimulate individual CD4+ T cells in an antigen-specific manner. In these experiments, activation was monitored using microengraving to capture two cytokines (IFN $\gamma$  and IL-17) released from single cells. This enabled direct enumerations of antigen-specific CD4+ T cells *ex vivo* from clinical samples. Importantly, it can be applied to identify, quantify and characterize cancer stem cells. Dr. Song also described the use of multispectral imaging to achieve concurrent multiple protein detection (up to ten proteins simultaneously) from single cells. Quantitative measurements of noise, noise strength and correlation coefficients of the observed Gaussian distributions revealed the extent of cell-cell heterogeneity. Dr. Song's talk, given at the Westchester Community College in Valhalla, N.Y., was followed by a lively question and answer, and discussion, session, with particular interest in cancer stem cells and the possibility of using these techniques to identify potential markers of metastatic potential and virulence. Several attendees, including the speaker, then enjoyed a dinner together at a nearby restaurant. The photo below is of Dr. Song, the WCS board of directors who attended the meeting, and one other attendee (AB).



**Joan Laredo-Liddell, Jean Delfiner, Qing Song, Paul Dillon, Peter Corfield and Allan Bednowitz.**

*(Photo courtesy of Paul Dillon)*

## North Jersey Meetings

<http://www.njacs.org>

### NORTH JERSEY EXECUTIVE COMMITTEE MEETING

The December Executive meeting will be a "Planning Meeting" for 2015.

**Date:** Saturday, December 6, 2014

Times: 9:00 AM Planning Meeting  
12:30 PM New Member Event

Place: Robert Wood Johnson Medical School, West Auditorium  
675 Hoes Lane West  
Piscataway, NJ

Reservations: Please make your reservation at our website, [www.njacs.org](http://www.njacs.org) prior to **Monday, December 1, 2014.**



### NORTH JERSEY NMR TOPICAL GROUP

#### Improving Identification of Compounds in Metabolomic Studies Through Correlation Statistics

*Speaker:* Pablo Hoijemberg, PhD  
Princeton University

In an untargeted metabolomic study the search for biomarker molecules serves to answer many questions, for which there is a need to find out the identity of these compounds of interest. Several dozen metabolites are normally detected by NMR analysis of a biofluid in measurable quantities. These spectra can have about a few hundred peaks, including overlapping peaks, variable multiplicities and different peak widths. The identification of compounds is normally done with the aid of commercial software packages containing their own databases, by literature search, and/or by searches in public databases by lists of chemical shifts. 2D NMR spectra also aid, by means of finding correlations to  $^{13}\text{C}$  atoms, to other  $^1\text{H}$  atoms, or by evaluating multiplets in a *J*-Resolved experiment. Given the amount of data collected for the multivariate data analysis, "statistical correlations" are attainable and are of utmost help to submit a "better" query on a database. The most popularized version so far was published almost a decade ago and named STOCSY, standing for

Statistical TOtal Correlation Spectroscopy (Cloarec, O. et al., *Anal. Chem.*, **2005**, 77(5), 1282-1289, from Imperial College, UK). It is the statistical analysis of several experiments, not an NMR experiment per se, and it is based on the colinearity of the variations of the intensities of the peaks pertaining to the same compound over the spectra set, due to the changes in composition among the samples. Being "born" as a tool analyzing homo-spectroscopies (correlations of  $^1\text{H}$  to  $^1\text{H}$ ), it had adaptations and variations that led to correlation analysis for biomarker identification on experiments of different nuclei, diffusion-edited and cross-platform (with mass spectrometry for example), as well as for finding pathway connectivities. It can be applied to 1D and 2D data, as well as to "small size" data matrices like in a "spectrum-to-spreadsheet" procedure (which I like to name Stick-STOCSY). Improvements for information recovery can be obtained by further statistical analysis on the (information redundant) STOCSY data matrix.  $^{13}\text{C}$  and 1D projections from  $^1\text{H}$  2D *J*-Resolved spectra proved also to be good experiments to use STOCSY on, as the tool suffers from overlapped peaks that abound in some regions of the standard  $^1\text{H}$  spectrum of biofluids. Examples of its application on biological samples and synthetic mixtures will be shown (as it is not exclusive to biological samples).

**Date:** Wednesday, December 3, 2014

Times: Dinner 6:00 PM

Seminar 7:00 PM

Place: CABM at Rutgers University  
Room 010  
679 Hoes Lane West  
Piscataway, NJ

Cost: Dinner cost: \$15 employed;  
\$5 students, postdoc, retired,  
unemployed  
No charge for seminar only.

Register online at

<http://www.njacs.org/nmr.html>

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**NORTH JERSEY SECTION****Symposium of Award for "Creativity in Molecular Design and Synthesis"**

*Award Recipient:* David MacMillan  
Princeton

*Speakers:* Stephen Buchwald  
MIT

Paul Reider  
Princeton, ex-Merck

Gary A. Molander  
U. Penn

Robert Knowles  
Princeton

and

Award Recipient  
David MacMillan  
Princeton

**Date:** Friday, December 5, 2014

**Time:** Creative Symposium 12:00 Noon

**Place:** West Lecture Hall  
Robert Wood Johnson  
Medical School  
675 Hoes Lane West  
Piscataway, NJ

**Cost:** Dinner \$20.00;  
Students \$10.00

To register, see the website at  
[www.njacs.org](http://www.njacs.org).

North Jersey Section American Chemical Society

## Award for Creativity in Molecular Design and Synthesis Symposium

**Friday, December 5**

12:30-PM

Robert Wood Johnson Medical School  
(West Auditorium)  
Piscataway, NJ



Dr. Paul Reider  
Princeton University



Professor Stephen Buchwald  
MIT



Professor Rob Knowles  
Princeton University



**Professor David MacMillan**  
**Princeton University**  
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## CAREERS IN TRANSITION MEETINGS

### Job Hunting??

Resume & LinkedIn writing and key word search rules are changing. To be found, come and utilize our latest insights. Our ACS trained Career Consultants offer assistance at Students2Science to help members with their job search on the second Monday of each month. Topics at this free workshop are:

- Techniques to enhance resume effectiveness
- Interview practice along with responding to difficult questions
- Networking to find hidden jobs
- Planning a more effective job search

**Date: Monday, December 8, 2014**

New from now on is a second CIT meeting in East Windsor on the third Monday. Contact Bill for details.

Times: Meeting 5:30 - 9:00 PM  
Pizza snack and soda 6:30 PM

Place: Students 2 Science, Inc.  
66 Deforest Avenue  
East Hanover, NJ

Cost: \$5.00 for pizza and soda

Reservations: at [www.njacs.org/careers.html](http://www.njacs.org/careers.html)

A job board and networking assistance is offered at most topical group meetings. Appointments with Bill can be arranged for personal assistance at (908) 875-9069 or [billsuits@earthlink.net](mailto:billsuits@earthlink.net).

See [www.njacs.org](http://www.njacs.org) under the Career tab for Jobs hidden from sight and relevant blogs.



## NJACS PARTNERS WITH STUDENTS2SCIENCE

Members are encouraged to volunteer at their East Hanover facility and explore their website at [www.students2science.org](http://www.students2science.org) to learn more about this innovative program.

S2S continues to expand their exciting laboratory experience the disadvantaged children. Many of our members continue to volunteer as mentors. At their 2 million dollar analytical lab, every 40 kids are assisted by 16 professional volunteer mentors. The experiments performed really make chemistry and science come alive using state of the art analytical equipment working with students starting in 6th grade up to HS seniors. Each day is optimized for grade

level and curriculum.

Now the program has further expanded with internet video and experiments performed in the classroom for 4 & 5th grades. Internet allows views of the lab in operation and relates to simpler experiments setups done in the classroom with their teacher and a partnering chemist.

North Jersey members who volunteered benefited in many ways. Those in transition expanded their network and received job finding assistance. Retired chemists met up with old friends and made many new friends. Those with jobs used the volunteer hours as part of the company outreach programs and team training. All feel great about making a difference in the lives of the youth who may have never met a scientist or considered a career in the sciences.

Please consider volunteering and discovering more about this innovative program. If you want to learn more, you can speak with Don Truss at (908) 334-8435.



## NORTH JERSEY ELECTION RESULTS

The North Jersey ACS Section is pleased to announce the winners in its 2015 election. The results are as follows:

### Chair-Elect

Luciano Mueller

### Councilors

Alan Cooper  
Jacqueline Erickson  
Amy Bilaji

### Alternate Councilors

Ronald Doll  
Donald Truss  
Jonathan Ho

Learn more about  
the American  
Chemical Society at  
[www.acs.org](http://www.acs.org)

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## Others

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### ASSOCIATION OF CONSULTING CHEMISTS & CHEMICAL ENGINEERS

ACCCE, ([www.chemconsult.org](http://www.chemconsult.org)) will host a dinner and technical presentation.

#### Microalgae Production and Conversion into Renewable Fuel

*Speaker:* Dr. James Manganaro

We will discuss some aspects of the current energy picture and of biofuels. Particular focus will be on the process and economics for converting algae into a liquid fuel. Economics shows the need for the production of co-products (e.g., omega-3 oils and animal feed) along with fuel. Base case calculations are for demonstration scale production of 1000 barrels per day of hydro treated algal oil. This scale requires about 6000 acres of algal ponds. An integrated 1000 bbl/day plant with co-products could be an economical means of initially developing this technology.

#### Biography

Jim Manganaro spent 30 years in FMC's process research and development group working primarily on industrial chemicals such products as hydrogen peroxide, persulfates, soda ash, elemental phosphorous, phosphates and barium and strontium compounds. He consults primarily in process and product development, mathematical simulation and microreactor technology. For the past 5 years he has worked with Prof. Niyi Lawal of the Dept. of Chemical Engineering at Stevens Institute of Technology in the area of biofuels. His background includes assistant professor at Manhattan College, and research in General Electric's fuel cell program. He holds a PhD from RPI, and SM and SB from MIT and a PE in NJ.

**Date:** Wednesday, December 10, 2014  
**Originally scheduled for Dec. 11**

**Times:** Council meeting 5:00 PM  
Dinner and speaker 6:00 PM

**Place:** Top Hat Tavern  
Grand Summit Hotel  
Springfield Ave. near Morris Ave.  
Summit, NJ

**Cost:** Fixed price dinner or menu choices at \$35. Please try and reserve your attendance.

Please contact Dr. John Bonacci at ACC&CE: [accce@chemconsult.org](mailto:accce@chemconsult.org), phone or fax: (908) 464-3182, cell (908) 230-8488, or regular mail: P.O. Box 902, Murray Hill, NJ 07974-0902. Please register by **December 8**.

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## National

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### ACS LEADERSHIP INSTITUTE

#### Training You Need to be a Successful Leader

Dear Local Section and Division Officer:

The 2015 ACS Leadership Institute, which will include local section and division officer training, is planned for **January 23-25, 2015** in Dallas, Texas. The Institute will be held at the Dallas InterContinental Hotel beginning Friday at 1:30 PM and concluding at 11:00 AM on Sunday. A special optional networking lunch will be available for early arrivals at 12:00 Noon on Friday; and on Sunday following the conclusion of the Institute, an optional Strategy Café (including lunch) will be held at approximately 1:00 PM.

The goal of the Leadership Institute is to provide the training you need to be a successful leader. This jam-packed weekend includes track time so you can understand the essential elements of being an effective leader, along with an opportunity to interact and exchange ideas with other local section and division officers and ACS governance.

On Saturday, participants will also have the opportunity to take ACS Leadership Development System courses that will help to develop core leadership skills important in ACS leadership roles, as well as in the workplace. To preview the courses that will be offered, visit the ACS Leadership Development System website.

The January 2015 Leadership Institute is intended for 2016 local section and division chairs. If the chair-elect is unavailable, consider sending another officer from your group to join us at this acclaimed training event. **Registration will open on November 1, 2014** and an announcement will be sent with instructions and costs. For additional information, please contact Cheryl Brown at [c.brown@acs.org](mailto:c.brown@acs.org).

We hope to see your local section or division represented.

## Call for Nominations

### 2015 LEO HENDRIK BAEKELAND AWARD

The North Jersey Section of the American Chemical Society is soliciting nominations for the 2015 Leo Hendrik Baekeland Award. The Award consists of a gold medal and a \$5,000 honorarium. The Section presents the Award biannually to commemorate the technical and industrial achievements of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example.

The Award is given in recognition of accomplishments in pure or applied chemistry to an American chemist as characterized by the initiative, creativeness, leadership, and perseverance of the individual (indicated by published or unpublished evidence) and who will be under the age of 40 as of January 1, 2015.

Nominations for the Award should include a letter describing the nominee's achievements, a brief biography, and a list of the nominee's more important publications. Successful nomination packets include two to three recommendation letters supporting the candidate.

Re-nominations are encouraged, provided the age requirement is still met.

Please submit materials by **December 31, 2014**, to:

Dr. Les McQuire  
ACS North Jersey Section Awards Chair  
17 Crown Drive, Warren NJ 07059



### WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARD 2015

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2015". Scientists who live or work in Westchester or the Bronx qualify. Please send a cover letter stating why your nominee should receive the award along with the nominee's resume by **January 16, 2015** to:

Dr. Paul Dillon at [PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com) or  
67 Matthes Road  
Briarcliff Manor, NY 10510

or to:

Dr. Peter Corfield at  
[pwrc@earthlink.com](mailto:pwrc@earthlink.com)



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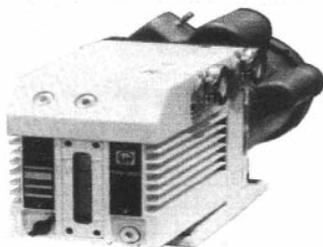
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## Call for Volunteers

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### MARM 2016

The New York Section will be hosting MARM 2016, June 9-12, 2016 at the College of Mount Saint Vincent, Riverdale, NY 10471. The section will be celebrating its 125th Anniversary during its event. The theme has yet to be determined. The General Chairs for this meeting are Dr. Pamela Kerrigan and Dr. Daniel Amarante from the College of Mount Saint Vincent's Division of Natural Sciences. To volunteer in planning and/or for further information, please contact them at the following emails:

[Pamela.kerrigan@mountsaintvincent.edu](mailto:Pamela.kerrigan@mountsaintvincent.edu)  
or  
[Daniel.amarante@mountsaintvincent.edu](mailto:Daniel.amarante@mountsaintvincent.edu)

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## Press Releases

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### DOW HELPS DELIVER BREAK-THROUGH HYGIENE SOLUTION

#### Lather Up:

MIDLAND, Mich. — Washing hands with soap is a proven way to prevent the spread of life-threatening diseases, especially among children. In fact, nearly 2 million children under the age of 5 die each year from infectious diseases. In recognition of Global Handwashing Day, Dow is shining a light on its technology leadership through a research and development collaboration with Lifebuoy™ soap from Unilever that is expected to deliver a positive impact on health and hygiene around the world.

Lifebuoy™, the world's #1 germ protection soap, uses DOW POLYOX™ Water-Soluble Polymers in its unique formulation, creating a soap that lasts longer, provides better value and yet still feels great on the skin.

"A simple bar of soap features many complex chemistries," said A.N. Sreeram, corporate vice president of Research and Development at Dow. "By collaborating directly with the Lifebuoy R&D team, we realized that the challenges they faced could be addressed with controlled release technology to design a bar of soap formulated to stay intact while releasing ingredients slowly and at the right time.

"Using Dow's vast knowledge and expertise,

we were able to apply our proven POLYOX technology in a new application to meet not only our customer's, but also their users' needs. It all comes back to good science."

Due to its broad global impact on health and hygiene, Dow has named the technology as a "Breakthrough to World Challenges."

For more information, visit  
[www.cleanhands.dow.com](http://www.cleanhands.dow.com).



### OSHA LAUNCHES DIALOGUE ON HAZARDOUS CHEMICAL EXPOSURES

WASHINGTON — The U.S. Department of Labor's Occupational Safety and Health Administration today announced it is launching a national dialogue with stakeholders on ways to prevent work-related illness caused by exposure to hazardous substances. The first stage of this dialogue is a request for information on the management of hazardous chemical exposures in the workplace and strategies for updating permissible exposure limits.

OSHA's PELs, which are regulatory limits on the amount or concentration of a substance in the air, are intended to protect workers against the adverse health effects of exposure to hazardous substances. Ninety-five percent of OSHA's current PELs, which cover fewer than 500 chemicals, have not been updated since their adoption in 1971. The agency's current PELs cover only a small fraction of the tens of thousands of chemicals used in commerce, many of which are suspected of being harmful. Substantial resources are required to issue new exposure limits or update existing workplace exposure limits, as courts have required complex analyses for each proposed PEL.

OSHA is seeking public comment regarding current practices and future methods for updating PELs, as well as new strategies for better protecting workers from hazardous chemical exposures. Specifically, the agency requests suggestions on:

- possible streamlined approaches for risk assessment and feasibility analyses and
- alternative approaches for managing chemical exposures, including control banding, task-based approaches and informed substitution.

For more information, visit  
<http://www.osha.gov>.

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Happy Hanukkah  
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