

# THE Indicator

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**Dr. Philip H. Mark**  
**2013 New York Section Chair**

*(See chair's message, page 6)*

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## Obituary

### **SISTER MARIAN JOSE SMITH**

Sister Marian José Smith, 96, a Sister of Charity of Saint Elizabeth, died on October 2, 2012 in Morristown, New Jersey.

Sister Marian José was born in Hoboken, New Jersey. She entered the Sisters of Charity in 1945 and was a member for 67 years. She received a B.A. in chemistry from the College of Saint Elizabeth in 1936; an M.S. in physical chemistry in 1954 and a Ph.D. in biochemistry in 1960 from Fordham University.

Sister Marian José was a teacher at Immaculate Conception High School, Montclair, New Jersey from 1946 to 1948. She became an instructor of chemistry and coordinator of the chemistry department of the College of St. Elizabeth from 1948 to 1975 and was chairman of the chemistry department until 2003. She continued research in Chemistry at the college until 2012.

Sister Marian inspired generations of students at the College of St. Elizabeth to pursue careers in science. She mentored a very active Student Affiliate Group and was instrumental in an annual research conference where students present their research and are awarded prizes. In recognition of her work with students the North Jersey Section of the ACS established the Sister Marian José Smith award that is given biennially to a professor in the Section for inspiring students and launching them on successful careers in chemistry. Recently, the Section has also named the award for outstanding Student Affiliate participation in Chemistry Week after Sister Marian José Smith.

A member of the ACS for 57 years, Sister Marian served as a Councilor of the ACS for 26 years and an Alternate Councilor for three years. She chaired the North Jersey Section in 1982 and its Lackawanna Subsection in 1966. She was a member and chair of the Education Committee and the Continuing Education Committee for many years. Nationally, Sister Marian served on the Committee on Committees, the Committee on Membership Affairs, the Committee on Constitution and Bylaws and the Committee on Education.

In addition to the awards named for her, Sister Marian received the Distinguished Service Award of the North Jersey Section in 1988; the MARM Emmet Reid Award in 1970; an Outstanding Educator in America Award in 1960 and was a Fellow of the American Chemical Society and a member of Sigma Xi, Iota Sigma Pi and Kappa Gamma Pi.

She is survived by the Sisters of Charity; her sister Henrietta M. Turner of Long Valley, New Jersey; many nieces and nephews; and many grandnieces and nephews.

Her many friends and colleagues of the North Jersey ACS Section will miss her wisdom and her presence very much.



**Sister Marian José Smith (far right) with her students at last year's ChemExpo during National Chemistry Week. (See article about the Sister Marian José Smith Undergraduate Outreach Competition on pages 11-12.)**

*(Photo courtesy of Dr. Amber Charlebois)*

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**EDITORIAL DEADLINES**

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February	December 20, 2012
March	January 20, 2013
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Address advertising correspondence to Advertising Manager. Other correspondence to the Editor.

## December Calendar

### NEW YORK SECTION

**Wednesday, December 5, 2012**

Westchester Chemical Society  
See page 7.

**Thursday, December 6, 2012**

Chemical Marketing and Economics Group  
See page 8.

**Tuesday, December 11, 2012**

Biochemical Topical Group  
See page 9.

**Friday, December 14, 2012**

High School Teachers Topical Group  
See page 9.

### NORTH JERSEY SECTION

**Tuesday, December 4, 2012**

Association of Consulting Chemists &  
Chemical Engineers  
See page 11.

**Monday, December 12, 2012**

Careers in Transition Group  
See page 11.



**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 2013 issue of  
The Indicator is  
November 20, 2012.**

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## THIS MONTH IN CHEMICAL HISTORY

By Harold Goldwhite, California State University, Los Angeles • [hgoldwh@calstatela.edu](mailto:hgoldwh@calstatela.edu)

**Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Geronio Sections of the American Chemical Society**

As I mentioned in a previous column, in November 2011 the Southern California Section of the ACS celebrated its centenary, and I assembled from my library a book display showing aspects of the development of chemistry books from the 18th. to the 20th. century. In this column I will complete my discussion of the books I chose.

Samuel Parkes' "A Chemical Catechism" was published in 1806, and went to 12 editions, obviously a popular text. I bought my 2nd. Edition back in 1976 at Hay-on-Wye, an unusual town on the English-Welsh border that is full of bookstores; worth a visit. The Chemical Catechism is in the well established form of questions and answers – a form that certainly dates back to Plato's reports of Socrates dialogs. There are a few good illustrations, and some examples of chemical verse. Here is Parkes on plant respiration: "Thus while the vegetable tribes inhale the limpid water from the parent vale,  
To blend it with the carbon of the soil, And form bitumen, resin, wax, or oil;  
The free'd caloric bursts the expanding mass, And swells the nascent oxygen to gas;  
Which, from its inmost cells, each leaflet pours In viral currents through its myriad pores,  
To renovate the air, by tempests hurl'd From pole to pole, around a freshen'd world."

Totally different is my English translation, a 1911 version, of the 1908 book by Alfred Werner: "New Ideas on Inorganic Chemistry". Werner, a Swiss chemist, and Nobel Laureate is the father of coordination chemistry. Originally an organic chemist who worked on stereochemical questions with Hantsch he began thinking about inorganic chemistry when faced with the task of teaching a course. In trying to elucidate the intricacies of what was known about ammonia complexes of transition metal halides he reported later that he had a flash of insight one sleepless night. He saw that many existing problems could be solved by separating what we now term the metal ion's oxidation state (Werner's valence) with a new concept he termed coordination number. A particular oxidation state would then be associated with a particular coordination number. These ideas led to the solution of many problems, and Werner used conductivity studies to confirm his ideas, and also predicted stereoisomerism in coordination compounds.

My copy of Justus Liebig's "Familiar Letters on Chemistry" ("Chemische Briefe") is the English translation of 1859, published in London. The text is in the form of letters from a teacher to a student explaining chemical concepts applied to physiology and agricultural chemistry, two fields in which Liebig was pre-eminent. There were many editions and translations of this popular work and if you want to explore the text it is available, along with many others I have mentioned, as an ebook.

While some things in chemistry change rapidly, others seem to remain for decades – and even longer. My copy of "Qualitative Chemical Analysis" by Arthur A. Noyes was published in Boston in 1895 and explains the laboratory scheme for separating a range of metal cations into groups and identifying them. It's a brief book and my copy bears the signs of having been on the benchtop during a student's manipulations. Noyes was a distinguished American chemist, and served on the faculty of California Institute of Technology from 1919 to 1936. Qualitative analysis of inorganic ions was a significant part of beginning laboratory work in chemistry from the 19th. into the 20th. century and when I was in high school in the 1940s I was taken through a rigorous course of that kind.

My final book in these discussions is "Chemistry" by John Howard Appleton, published in Providence in 1884. The text is sound, but there is little in it to distinguish it from other introductory chemistry books of the period. What is special, however, are the plates. Color lithography was introduced into commercial printing in the 19th. century, but few if any chemistry texts used it as profusely as Appleton's book. It is fun to read because of the pictures! And if you "Google" you can see many of Appleton's images.

## NEW YORK SECTION CHAIR'S MESSAGE

Greeting•

I hope everyone had a Happy and Festive Thanksgiving Holiday. I also would like to wish everyone a Happy December Holiday Season and a Happy New Year for 2013. Let us hope that in 2013 the economy improves and more recent Chemistry Graduates and others are able to find jobs in their chosen area.

I feel much honored that so many members supported me to be Chair of the New York Section of the ACS for 2013. My first assignment was to contact in 2011, the 2012 Nichols Medalist, Dr. Alan Marshall, and help organize the 2012 Nichols Symposium. The Symposium was slightly stressful, because a speaker's flight was delayed and he didn't arrive until after Dr. Marshall had given his presentation. He arrived after 5PM and gave a shortened but very good talk. So, in the end, it was a very enjoyable Symposium and Banquet. If you did not attend, I would recommend that you try to come to the 2013 Symposium. Remember, many of the Medalists have become Nobel Laureates.

In December of 2010, I retired from my full time position as Chair of the Chemistry Department at Nassau community College. I guess I thought I might get bored, so when JaimeLee said she needed another candidate, I thought why not, I have the time now. So, here I am. Now, I do not know how I had time for a full-time job. If one wants to keep active, there are many opportunities. Unfortunately, with the weak economy, many employers are expecting more productivity from their employees. One of the Section's largest challenges is to get young Chemists involved in the Section. Try to encourage some of your new colleagues to come to meetings. If they come a few times we can usually get them more involved. Our core groups of dedicated leaders are getting older and we need younger leaders to continue the Section in the future. On a positive note, the Section's investment funds have increased so far in 2012, as compared to the decreases in recent years. But, we still have to be frugal, so that the Section will have the resources to continue during future hard time.

The Section will sponsor many events in 2013 and we invite you to attend them.

- Annual Sectionwide Conference in January. At this meeting we make plans for the year and success of the Section.
- William H. Nichols Symposium and Awards Banquet, Friday March 15, 2013, Crowne Plaza Hotel, White Plains, N.Y. This year's Awardee is Professor Richard Eisenberg, Tracy H. Harris Professor of Chemistry, University of Rochester. You might remember that he introduced Professor Harry Gray at the 2003 Nichols Banquet. The 2013 Chair-Elect, Pamela K. Kerrigan, has done an outstanding job, with Professor Eisenberg's help to organize this event. Not only will you definitely want to be there, but you will want to bring your colleagues along as well. Please order your tickets early so that you will not be disappointed.
- Chemistry Olympiad, March 2013.
- Chemagination for High School Chemistry Students, March 2013, St. John's University.
- Undergraduate Research Symposium, May 2013.
- National Chemistry Week, October 2013, the New York Hall of Science.

The Section Webmaster, Brian R. Gibney does an excellent job in keeping our website up-to-date. Please check the website in January for the specific dates, times and place for the above events.

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

The American Chemical Society is the worlds' largest membership organization. The New York Section is one of the largest sections in the Society. Without the dedicated work of the Board Members, Committee Chairs and members, Subsection Officers and members, Topical group leaders and members and all the other members, the Section would not have been as successful and received so many awards. I would like to thank them all for their dedication. JaimeLee Iolanni Rizzo has done an excellent job as 2012 Chair. Congratulations to Vijaya L. Korlipara, 2004 Chair, on her selection as an ACS Fellow in 2012.

I look forward to serving you as Chair in 2013 and seeing you at the January Sectionwide Conference.

Philip H. Mark  
2013 Chair, New York Section



## New York Meetings

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

### NEW YORK SECTION BOARD MEETING DATES FOR 2013

There will be no board meeting in December. The dates for the Board Meetings of the ACS New York Section for 2013 are scheduled to be posted in the January issue of *The Indicator*. The meetings are open meetings – all are welcome. If non board members would like to attend the meeting, please let the New York Section office know by emailing Mrs. Marilyn Jespersen at [njesper1@optonline.net](mailto:njesper1@optonline.net) or calling the office at (516) 883-7510.

The 2013 Board Meetings will be held at 6:30 PM at St. Johns University in the D'Angelo Center, Jamaica, NY. Dr. Philip Mark will preside over the meetings.

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

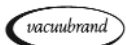
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## WESTCHESTER CHEMICAL SOCIETY

**Special Seminar – Vitamin D:  
Understanding the Technical Challenges  
in Testing**

*Speaker:* James Freeman  
Director, Assay Development  
Siemens Healthcare Diagnostics  
Tarrytown, NY

Vitamin D, specifically 25(OH)-vitamin D, has been challenging to accurately measure. In this talk James Freeman, the Director of Assay Development for the ADVIA Centaur<sup>®</sup> Vitamin D Total assay, provides insight into why vitamin D is such a complex test and discusses considerations to keep in mind when comparing different assays and methodologies. He will explore the challenges Vitamin D measurements present to assay standardization, to manufacturer to manufacturer variation, and to the variation of results within a single manufacturer's assay.

**Date:** Wednesday, December 5, 2012

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

For more information, contact Paul Dillon:

E-Mail [PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com)

Phone (914) 393-6940

[http://www.newyorkacs.org/sub\\_west.php](http://www.newyorkacs.org/sub_west.php)

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## SURPRISE

our editor by calling and saying you appreciate the quality and content of our newsletter. Our editor works hard to maintain a publication of interest to our membership. Oh, and by the way, you could also give credit to our advertisers who financially support us.

## CHEMICAL MARKETING AND ECONOMICS GROUP

### Third Annual M&A Outlook Meeting and First Awards for Leadership in Three Different Fields.

#### Celebrating CM&E's 58th Anniversary

Featuring – Awards for Leadership Presentation:

Juan Pablo del Valle, Mexichem

Peter McCausland, Airgas

John Televantos, Arsenal Capital

Featuring – Recognition of Chris Hillenbrand,  
US Gold Medalist at 2012 Chemistry Olympiad

Featuring – M&A Panel Discussion,  
Moderated by Chris Cerimele, Director, Head of Chemicals  
Houlihan Lokey

M&A transactions are an indicator of the industry trends in growth and market value. Given the upheavals and uncertainties of 2012, this discussion will focus on the outlook and opportunities for the year ahead. Panelists are “Players in the Field,” and can speak first-hand about daily experiences in the world of M&A.

Featuring – STEM Education fundraiser to help strengthen our education systems

**Date: Thursday, December 6, 2012**

Times: Registration and Networking 11:00 AM

Luncheon 12:00 Noon

Introduction 12:45 PM

M&A Panel Discussion 1:50 PM

Q\*A and Post-Event Networking 2:30 PM

Meeting Adjourned 3:00 PM

Place: Yale Club Ballroom  
50 Vanderbilt Avenue  
New York, NY

Costs: Luncheon Fee \$250 for CM&E members and non-members for STEM support. (as an option, supporter's name and company can be listed in the program).

\$150 for non-members

\$110 for CM&E members or Media Sponsor's members

Early-Bird discount of \$40 applicable if you register by Thursday, October 11

Early-Bird discount of \$20 applicable if you register between October 11 and November 8, 2012

Webcast fees: \$70 for STEM support. \$40 for all others. Available as a Webcast recording for post-event viewing.

Early-Bird discount of \$20 applicable if you register by Thursday, November 8

No webcast registrations the day of the event.

Special Offer: Webcast recording at no charge for ACS members

(Must provide membership number next to Job Title).

Cancellations are subject to fees. Prices may change without notice.

Register online at: <https://events.r20.constantcontact.com/register/eventReg?llr=jwbx7pcab&oeidk=a07e65ovarc6f3c5817>

For further information, contact

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Chemical Marketing & Economics Group - ACS NY Section

[contact@cmeacs.org](mailto:contact@cmeacs.org)

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## BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMA- COLOGY DISCUSSION GROUP



### Systems Biology Approaches to Drug Discovery: Single Gene Targeting is Not Enough

**Organizers:** Manuel Duval, PhD  
Enumeral Biomedical Corp.  
Thomas B. Freeman, MS  
Boehringer-Ingelheim  
Jennifer Henry, PhD  
New York Academy of Sciences

**Speakers:** Albert-László Barabási, PhD  
Northeastern University  
Alessandra Cesano, MD, PhD  
Nodality  
Manuel Duval, PhD  
Enumeral Biomedical Corp.  
Alison O'Mahony, PhD  
Bioseek  
Tony Pawson, PhD  
Samuel Lunenfeld Research  
Institute  
Mount Sinai Hospital, Canada  
Eric Schadt, PhD  
Mount Sinai School of Medicine

The most pressing medical needs correspond to syndromes that are determined by both genetic and environmental factors. This symposium discusses the use of biological assays that feature multiple target approaches during the primary discovery steps.

**Date:** Tuesday, December 11, 2012  
**Time:** 8:30 AM – 5:30 PM  
**Place:** New York Academy of Sciences  
7 World Trade Center  
250 Greenwich Street – 40th Floor  
New York, NY 10007

**Cost:** This event is has reduced-rate registration 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/SystemsDrugDiscovery](http://www.nyas.org/SystemsDrugDiscovery)

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



## HIGH SCHOOL TEACHERS TOPICAL GROUP

### The Usefulness of Science at Consumer Reports

**Speaker:** Robert Karpel  
Consumer Reports

At the core of *Consumer Reports* publications is the testing of everyday consumer products. A science-based comparative approach has spearheaded the organization's testing program for over 75 years. Using multiple visual examples, this presentation will show how testing principles (ranging from simple temperature and weight measurements, to complex Chebyshev polynomials) are the basis for an exciting approach to understanding the real-life applications of science that are relevant to everyday students' lives.

**Date:** Friday, December 14, 2012  
**Times:** Social and Dinner 5:45 PM  
**Place:** M&G Pub (Murphy and Gonzales)  
21 Waverly Place  
(at Green St., North-east corner)  
New York, NY  
**Times:** Meeting 7:15 PM  
**Place:** New York University  
Silver Center Room 207  
32 Waverly Place (South-east  
corner Washington Sq. East)  
New York, NY 10003

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: For those who prefer indoor attended parking, it is available at the Melro/Romar Garages. The entrance is on the west side of Broadway just south of 8th Street, directly across from Astor Place. It is a short, easy walk from the garage to the restaurant or meeting room.

## WESTCHESTER CHEMICAL SOCIETY

The Westchester Chemical Society met October 3, 2012 to hear a presentation by Toby Rossman, Professor of Environmental Medicine, NYU Langone School of Medicine and CEO of Rossman Toxicology Consultants. Dr. Rossman's interesting talk, entitled Arsenic and Human Health, dealt mainly with the detection and mechanisms of co-carcinogenesis by arsenic compounds and with the mutual inhibition of the deleterious effects of arsenic and selenium compounds, as well as touching on the traditional acute toxicity, and therapeutic value, of arsenicals. Dr. Rossman also touched on several "in the news" topics dealing with arsenic in the environment. We greatly enjoyed her most informative talk and the lively discussion that followed.

## 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.



The speaker and Board of Directors of the Westchester Chemical Society (left to right): Peter Corfield, Paul Dillon, Toby Rossman, Jody Reifenberg, Rolande Hodel, Joan Laredo-Liddell and Jean Delfiner.

(Photo courtesy of Paul Dillon)



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## North Jersey Meetings

<http://www.njacs.org>

### NORTH JERSEY EXECUTIVE COMMITTEE MEETING

There will be no North Jersey Executive Committee Meeting in December.



### ASSOCIATION OF CONSULTING CHEMISTS & CHEMICAL ENGINEERS

#### Politics and Technology – A Mix Not Made in Heaven

*Speaker:* John Bonacci

Ever wonder why there aren't more technically trained people in politics? For those of us who are technically trained, interactions with politicians can range from simply frustrating to totally exasperating. This reality may dissuade anyone who is technically trained from entering into public service. Dr. Bonacci has managed to address this issue personally and will share his experiences with other scientists and engineers. Specific examples will be given of some of the things that give technical people headaches when dealing with the typical politician. The discussion will also offer challenges and advice to the technical person considering entering into public service. This will enable a distinction to be made between public service and politics as they are commonly perceived.

Dr. John C. Bonacci (fibonaccij@aol.com) was a Councilman for 4 years in Berkeley Heights, NJ. He has Chemical Engineering degrees from Clarkson University and the University of Pennsylvania. He is a registered Engineer in New York State and a United States Patent Agent. John is a Fellow of the AIChE and received the Golden Knight Award from Clarkson for both college and professional service. He currently operates Fibonacci Consulting LLC and is Executive Director and Member of the ACCCE. He worked for the USAF, DUPONT, MOBIL OIL and Engelhard as a VP. He is a co-inventor on 101 global patents.

**Date:** Tuesday, December 4, 2012

**Times:** Council meeting 1:00 PM  
Lunch 1:30 PM  
Presentation 2:30 PM

**Place:** Snuffy's  
Park and Mountain Avenues  
Scotch Plains, NJ  
**Cost:** Lunch is \$30 for members and \$35 for non-members.

Contact John Bonacci at 908-464-3182 or [acce@chemconsult.org](mailto:acce@chemconsult.org).



### CAREERS IN TRANSITION MEETINGS

#### Job Hunting??

We 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

**Dates:** Monday, December 10, 2012

**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:** [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 [billherits@earthlink.net](mailto:billherits@earthlink.net).

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



### SISTER MARIAN JOSE SMITH UNDERGRADUATE OUTREACH COMPETITION

#### The College of St. Elizabeth's and Ramapo College Tie for First Place

The Executive Committee of the North Jersey Section of the American Chemical Society was very pleased with the undergraduate participation during the ChemExpo held at the Liberty Science Center on Saturday October 20th in celebration of National Chemistry Week. The third annual

(continued on page 12)

## SISTER MARIAN JOSE SMITH AWARD

(continued from page 11)

undergraduate competition has appropriately been named in memory of our huge supporter and the Master of Outreach, Sister Marian of St. Elizabeth's. The judges had a difficult time this year in deciding which of the seven undergraduate groups had the best interactive demonstration that applied to the 2012 theme of "Nanotechnology: the Smallest BIG Idea in Science."

Almost 70 undergraduate students with 12 of their advisors from seven different undergraduate institutions created displays and presented demonstrations to the many excited young "future" scientists in attendance. This year there was a tie for first place between The College of St. Elizabeth's and Ramapo College. Judges commented the both groups were very effective in making their informative demonstration very much "hands on" for the attendees. The Fairleigh Dickinson University Chemistry Club placed third in the competition. The other student groups in attendance were Kean University, The College of New Jersey, Saint Peter's College and The New Jersey City University. Each year this competition grows in size and this year it was amazing to see so many undergraduates participate in this long standing event of the North Jersey Section of the ACS. All of the groups did a wonderful job demonstrating the chemistry of Nanotechnology! The section would like to thank each group very much for their participation in this year's Celebration of National Chemistry Week!

The section has awarded both, The College of Saint Elizabeth's and Ramapo College Chemistry Clubs, with the title "Sister Marian José Smith Undergraduate Outreach Champion for 2012," as well as the grand prize of \$175/each for their outstanding demonstrations. In addition the FDU student chapter will be awarded the third place prize of \$100. Congratulations to all of our Undergraduate Students and Chemistry Chapter Advisors!!!!!!



See you all next year at the Chem. Expo!

## NoJ CHEM EXPO

### Megasize Event...Nanosize Theme

Excitement ran high among the nearly 1500 visitors at the North Jersey Section-sponsored ChemExpo 2012 held at Liberty Science Center on Saturday, October 20th, carrying out the theme of Nanotechnology: the Smallest BIG Idea in Science. Over 240 volunteers worked at 50 stations to offer activities while a 20-min. show was repeated in the auditorium featuring videos comparing nanosize to the sizes of everyday items and showing applications of nanosize in our lives and the patterns in nature.



Ah, Chemical Change



Dry Ice Observations



Dr. Luigi Di Costanzo with Video Show



For the third year a competition was held among college student chemical groups. This contest is now named the Sister Marian José Smith Undergraduate Outreach Competition in honor of this esteemed North Jersey Section member, Fellow of the ACS, and active participant of ChemExpos continually through 2011 who died October 2 at the age of 96. This award is funded by the North Jersey Section.

In addition to our corporate Gold Sponsors, Infineum USA L.P. and SPEX CertiPrep, we

are indebted to Educational Innovations (supplies), Alpha Aesar (periodic tables) and the RCSB Protein Data Bank at Rutgers (virus models and tattoos).

Thanks to members of the NJACS Executive Board; the Teacher Affiliate group; retired chemists and chemistry teachers; students and teachers from middle and high schools; and representatives from various chemical companies and colleges who volunteered in the planning and carrying out of this venture.



**College of St. Elizabeth**



**Fairleigh Dickinson**



**St. Peter's College**



**New Jersey City University**



**The College of New Jersey**



**Kean University**



**Ramapo College**

*(Photos of ChemExpo courtesy of Bobbi Gorman)*

*(Photos of Outreach Competition courtesy of Amber Charlebois)*

## ACS News

### ACS EVENT AT NJIT

I am pleased to announce that there will be an American Chemical Society on Campus event co-sponsored by NJIT on Wednesday December 5 from 12 noon to 6 PM in GITC 3710. You can read about it in the Chemical and Engineering News and on their web site at <http://acsoncampus.acs.org/>. Similar events have been held at prestigious universities including Cornell, Penn State and Harvard. The agenda for the NJIT event may be found at <http://acsoncampus.acs.org/events/newark-nj/>. More details will be announced later.

Participants may attend any or all of the following 3 modules:

- Basics in Scholarly Publishing: From the Editors Themselves and Ethics in Scholarly Communication: What You Need to Know
- The SciFinder® Advantage for Your Career
- Working in Industry: Preparing a Resume

More details will be coming in a few weeks. Please feel free to contact:

Bruce Slutsky  
New Jersey Institute of Technology  
Robert Van Houten Library  
323 Martin Luther King Blvd  
Newark, NJ 07102  
[slutsky@njit.edu](mailto:slutsky@njit.edu)  
(voice) 973-642-4950 (fax) 973-642-7862  
Twitter NJITREF

**Date: Wednesday, December 5, 2012**

Times: 12:00 Noon - 6:00 PM

Place: NJIT - GITC 3710

### 2013 LEADERSHIP INSTITUTE

The 2013 Leadership Institute, which will include local section and division officer training, is planned for **January 25-27, 2013** in Dallas, Texas. The goal of the Leadership Institute is to provide vital training to lead with great success. This jam-packed weekend includes track time where the participant will gain an understanding of the essential elements of being an effective leader and an opportunity to interact and exchange ideas with other local section and division officers and ACS governance.

The Institute will be held at the Dallas Hotel InterContinental and begin on Friday afternoon and end by Noon on Sunday. Participants will 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 get a preview of the courses that will be offered, visit the ACS Leadership Development System website.

We invite all 2014 local section and division chairs (2013 Chair-elects) to attend. If the chair-elect is unavailable, consider sending another officer from your group to join us for this powerful Leadership Institute. Details about registration and costs will follow in the upcoming weeks. For additional information, please contact Cheryl Brown at [c\\_brown@acs.org](mailto:c_brown@acs.org).



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## Call for Nominations

### EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2013

Now is the time to begin thinking about nominations for the Edward J. Merrill Award, North Jersey Section, for Outstanding High School Chemistry Teacher for the year 2013.

Go to the web site, [njacs.org](http://njacs.org) under education and obtain your preliminary nomination form and guidelines. The full packet takes time to do a good job!

We all know an outstanding high school chemistry teacher. Perhaps one from your town, your son's or daughter's teacher or just one that you have heard about or worked with at some point. The award carries \$500 for the teacher, \$500 in supplies for the teacher's classroom and a plaque to display at home or in the classroom.

Any questions or help needed contact Bettyann Howson, [chemphun@gmail.com](mailto:chemphun@gmail.com).



### LOCAL SECTION OUTREACH VOLUNTEER OF THE YEAR

Dear Local Section Officers and Councilors,

In an effort to recognize the immeasurable outreach efforts made by local section volunteers, the Committee of Community Activities (CCA) has established a new recognition program entitled *Local Section Outreach Volunteer of the Year*. If you have an individual who has demonstrated extraordinary outreach volunteer service to your local section, we encourage you to take advantage of this program.

You may do so by completing the [online form by December 14, 2012](#). The ACS will provide you with a certificate to present to the awardee during a section meeting or other local section event in the spring of 2013. An announcement for all of the awardees will be made annually by spring 2013 in C&E News, on the ACS Network, and on the *Get Involved, Stay Involved* [acs.org](http://acs.org) webpage. We also ask you to submit a photograph of the individual receiving the certificate to [outreach@acs.org](mailto:outreach@acs.org); it will later be included in the *Volunteer Support and Engagement Network Group* on the ACS Network.

Note: Only local section Chairs may submit names of individuals to be recognized. If you have any questions, please feel free to contact [outreach@acs.org](mailto:outreach@acs.org).

Sincerely yours,  
Christine Jaworek-Lopes and Kim Morehouse  
Co-Chairs of the Subcommittee on Volunteer Engagement & Recognition  
Committee on Community Activities (CCA)



### 2013 BAEKELAND AWARD

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

The North Jersey Section of the American Chemical Society is soliciting nominations for the 2013 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, creativity, 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, 2013.

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, 2012**, to:

Dr. Michael M. Miller  
NJ ACS Section Awards Chair  
Baekeland Award Committee  
Bristol-Myers Squibb Company  
Route 206 & Province Line Road  
Princeton, NJ 08543



### WCS DISTINGUISHED SCIENTIST AWARD 2013

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2013". 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 31, 2013** to Dr. Paul Dillon at [PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com) or 67 Matthes Road, Briarcliff Manor, NY 10510.

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## Call for Abstracts

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### IMMUNOGENICITY AND IMMUNOTOXICITY CONFERENCE

The inaugural Immunogenicity and Immunotoxicity conference will be held on Jan 31 - Feb 1, 2013 in San Diego, CA. The conference will cover important topics such as Protein Aggregation Biological Activity, Immunogenicity Prediction, Causes, Mitigation and Strategies, Evaluation of Novel Drug Candidates, Mucosal Homeostasis and Inflammation.

The Immunotoxicity & Immunogenicity conference is part of the 2nd Novel Immunotherapeutics Summit, which consists of this and three other tracks:

5th Immunotherapeutics & Immunomonitoring

11th Cytokines & Inflammation

2nd Allergy Research & Drug Discovery

To be considered for an oral presentation, please submit an abstract **by December 30, 2012**. Selected presentations will be based on quality of abstract and availability. Presentation slots fill up fast so please submit your abstract ASAP.

[http://www.gtcbio.com/index.php?option=com\\_submittanabstract&cn=Immunotoxicity%20&cid=109](http://www.gtcbio.com/index.php?option=com_submittanabstract&cn=Immunotoxicity%20&cid=109)

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## Others

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### NJIT – OTTO H. YORK DEPARTMENT OF CHEMICAL, BIOLOGICAL AND PHARMACEUTICAL ENGINEERING

#### Graduate Seminar Series – Fall 2012

*Sponsors:* Infineum USA L.P. and ConocoPhillips Bayway Refinery

#### Monday, December 3

TBA

*Professor Paul Takhistov*  
Rutgers University  
New Brunswick

#### Monday, December 10

“Towards Sustainable Energy: Carbon Capture, Utilization & Storage”

*Professor Ah-Hyung Alissa Parks*  
Lenfest Junior Professor in Applied Climate

Science & Associate Director  
Lenfest Center for Sustainable Energy  
Columbia University NY

OPEN TO PUBLIC

Times: Refreshments @ 2:30 PM  
Seminars 2:45 PM ---

Place: NJIT  
Room 210, Kupfrian Hall

Seminar Coordinator: Professor Reginald P.T. Tomkins, 973-596-5656,  
[tomkinsr@njit.edu](mailto:tomkinsr@njit.edu)



### ALTERNATIVE FUELS POWER TEAM TO VICTORY AT CHEM-E-CAR COMPETITION

The American Institute of Chemical Engineers (AIChE) recently announced that Cornell University won first place in the 14th Annual Chem-E-Car competition, an international, collegiate competition featuring 35 cars — ranging in size from shoeboxes to fire hydrants — running on creative alternative fuels. The winning car, called Zapdos, runs on a zinc air battery.

The competition, held in conjunction with AIChE's Annual Meeting, highlights the important role chemical engineers have played in the creation of today's existing fuels and the role they will continue to play in developing alternative fuels in the future. The ultimate goal of the competition is to teach students — our future scientists -- to think creatively about alternative fuel technology.

“The Chem-E-Car competition is a great way for our future engineers to apply chemical engineering principles in a creative way, in a team setting — much as they will in the ‘real world’ once they graduate,” said David Rosenthal, AIChE president. “These students show real creativity and promise, and some day, these technologies could be used commercially.”

In the competition, students create load-carrying cars using a variety of materials and fueling methods. The designs showcase the teams' creativity, ranging from a car made of LEGO® components powered by hand warmers and dry ice to a hydrogen fuel cell powered vehicle modeled after a MarioKart car. Teams qualify by placing at regional competitions throughout the year.

The student engineers do not know the size and weight of the load their car has to carry

or the distance it must travel until the competition begins. The students then scramble to calculate how to get their car as close to the distance goal as possible. This year, the cars had to carry 300 milliliters of water for 21 meters, and Cornell University was dead-on the finish line, managing to carry the load for 21 meters exactly and taking the \$2,000 first place prize.

This is the third time Cornell placed first in the National Chem-E-Car competition. They also won in 2008 and 2010.

The second place award went to the University of Puerto Rico, Mayaguez for their car using a motor powered by a hydrogen peroxide reaction. They also won the Spirit of Competition award. Oklahoma State University took third with a car using a baking soda and vinegar reaction. The Inherent Safety in Design Award (SACHE) went to the University of Tennessee – Chattanooga. The University of Washington won honors for the most creative drive system, chosen by the judges, and the Golden Tire Award, which is the most innovative design as chosen by the Chem-E-Car teams.

Images of the cars may be obtained by contacting Danielle Gross at (717) 418-9001 or [gross@thebravogroup.com](mailto:gross@thebravogroup.com).



## VISUALIZING OUR AIR

The Chemical Heritage Foundation (CHF) has received a \$50,000 grant from Public Health Fund for a project titled: “**Visualizing Our Air, Connecting Citizens to Information about Air Quality in Philadelphia.**”

The “Visualizing Our Air” project features an installation entitled Particle Falls, a public art

piece by digital media artist Andrea Polli. Particle Falls is a visually arresting large scale projection of air quality data, showing a giant stream of color – blue, red, and fiery orange – that provides a representation of particulate matter detected by a companion air monitor. The projection updates in real-time, dramatically visualizing the largely unseen matter existing in polluted air and helping to create a correlation between our urban environment and public health.

“This grant provides crucial support for a project that brings together the three great strengths of CHF: our collections, our museum, and our research on the history of science and technology,” said Jody Roberts, Director of the Center for Contemporary History and Policy. “More broadly, the project reaches beyond CHF to create partnerships with organizations around Philadelphia to create innovative educational and outreach programming about the connections between our environment and our health.”

The Particle Falls installation, as well as the larger “Visualizing Our Air” project, provides an important offsite public engagement component to Sensing Change, the CHF initiative exploring the role of art in science communication. The initiative includes an exhibit which is scheduled to run July 2013 – May 2014 at CHF and exhibit-based public programming, in addition to other elements. Project partnerships include the Franklin Institute, Air Management Services, and the Clean Air Council. In addition, in partnership with the Delaware Valley Green Building Council (DVGBC), Particle Falls is scheduled to run September 2013 – November 2013 and will be on display during the U.S. Green Building Council’s annual Greenbuild conference in November 2013. For more information about the Greenbuild conference and DVGBC’s role as host, visit [www.dvgbc.org](http://www.dvgbc.org).



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## PressRelease

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### **Antioxidant Could Prevent or Cure Cataracts, etc.**

Researchers at Missouri University of Science and Technology are working with an antioxidant that could prevent or cure cataracts, macular degeneration and other degenerative eye disorders.

The research group, headed by Dr. Nuran Ercal, the Richard K. Vitek/Foundation for Chemical Research Endowed Chair in Biochemistry and professor of chemistry at Missouri S&T, is studying eye drops prepared with the antioxidant N-acetylcysteine amide (NACA) as a treatment for these eye conditions.

Ercal says NACA is an improvement over another experimental treatment, the antioxidant N-acetylcysteine (NAC), because it passes more easily across cell membranes, allowing the medication to be used in lower doses.

Contact: Linda Fulps, 573-341-7541, [fulpsl@mst.edu](mailto:fulpsl@mst.edu)

Visit Missouri S&T public relations online: [news.mst.edu](http://news.mst.edu)



### **Cintas Launches Flame Resistant Clothing Webpage**

#### **New online resource provides educational tools and product information**

Every year, thousands of workers are involved in electrical arc accidents, molten metal splashes, flash fires and combustible dust explosions on the job. To educate companies about these risks, as well as what they can do to comply with new industry standards, Cintas has launched a new website dedicated to its Flame Resistant Clothing line.

Not only does Cintas provide personal protective apparel, but it also now provides employers with an online resource to stay updated regarding standards and guidelines for safety compliance in the workplace.

Two separate lines of flame resistant clothing are offered, one for everyday tasks and one for working in greater risk environments, and their protective apparel specialists can help companies design and implement customized programs to meet every need.

To learn more, visit the new Cintas Flame Resistant Clothing website at:

<http://www.cintas.com/FlameResistantClothing/>.

### **Expansion of Shale Gas Market Bolstering Outlook for U.S. Chemicals Industry, According to PwC US**

#### **Expansion of Shale Gas Market Could Decrease Both Raw Material and Energy Costs**

The expansion of the shale gas market could potentially drive significant benefits to the U.S. chemicals industry, including decreased raw material and energy costs, according to a new report released today by PwC US titled, *Shale Gas: Reshaping the U.S. Chemicals Industry*. In fact, another recent PwC report estimated that the potential impact of shale gas on U.S. manufacturing could enable U.S. manufacturers to lower their raw materials and energy costs as much as \$11.6 billion annually by 2025.

Before natural gas from shale can be transported efficiently and sold commercially, impurities must be extracted. The by-products of this process, known as natural gas liquids (NGL), include hydrocarbons such as ethane, butane and propane. The chemical industry uses NGL's to produce a variety of derivative products that ultimately become raw materials for multiple manufacturing sectors. In the case of ethane, they convert it to ethylene — the most significant single chemical in terms of volume and value — and then a range of downstream products. A sampling of manufacturing sectors that ultimately benefit from greater capacity and more attractive pricing of NGLs spans apparel and accessories, computers and electronics, machinery, textile and fabrics and transportation equipment, among others.

As manufacturers replace petroleum-based raw materials with products based on ethylene, their cost structures should also change significantly, as well as supply and demand for certain products. This pattern may be repeated for other petroleum-based raw materials, many of which are used in building, construction, adhesives, paint, coatings, plastics, packaging and carpeting. If the changes brought about by shale gas take hold in the chemicals industry, they will also create a need for specialty steels, reactors, pumps, valves, fittings, control systems, storage tanks, and other equipment, as well as the services of engineering and construction firms. Another possible outcome is that chemical products will increasingly become a substitute for more expensive materials, such as metals, glass, wood, leather and textiles.

For more information please visit: [www.pwc.com/us/en/industrial-products](http://www.pwc.com/us/en/industrial-products)

## ***Five Essentials to Empower Your Organization for Business Success***

*By Mark Bashrum, ViP, Corporate Marketing and Strategic Intelligence, ESI International*

Advancing the organization and achieving business success require developing new products, finding new markets, and building enabling systems and infrastructure. Keeping execution aligned with the strategy to accomplish these objectives has always been one of the most difficult challenges in running a business. In the current environment the task seems more daunting than ever due to the following:

Harsh economic realities and the resulting environment of scarcity have often meant that those individuals once responsible for championing programs to implement and sustain process improvement, change management, and project management competencies are no longer with the firm or are dispersed across a newly reorganized and often fragmented organization.

Along with organizational improvement efforts, many of the support structures meant to reinforce a culture of execution have also been disbanded or diminished. This has left the development, training, and reinforcement of project management best practices, methodologies, and systems floundering.

With few exceptions, most industries are experiencing the aging of their workforce and the inevitable loss of critical human capital.

Tough regulatory requirements associated with new legislation are impacting many industries. Healthcare, pharma, and financial services have all seen a barrage of compliance mandates over the past few years, which are diverting their best and brightest resources to meet hard deadlines to avoid punitive consequences for non-compliance.

As with most challenges, meeting them comes down to ensuring the basics are in place. Delivering desired outcomes depends on project-focused competencies and a culture of execution. The key professionals in your organization who are responsible for advancing your strategy through new products, new markets, and new systems must have a solid foundation of competencies and be supported by a culture and structure that drives execution.

1. **Tried and true—start with people.** Determine the skills and competencies required to execute effectively in your environment and assess your people to understand how they measure up. Pay particular attention to those project-focused employees who shoulder a majority of the responsibility for executing key initiatives.
2. **Bring the organization up to a base level of competence.** Creating a foundation of understanding is essential to ensuring that individuals share a common platform from which to build skills. Data shows that establishing even fundamental competencies in project-related skills can have an immediate and measurable impact on the business.
3. **Create coaching and mentoring programs.** Once talent walks out the door, it is gone forever. Leverage highly skilled resources while you still have them by establishing a formal coaching and mentoring program that is focused on building the next generation of leadership. Ensure that mentoring programs are integrated into your on-boarding efforts so new hires have a coach from day one.
4. **Rebuild and re-engage your execution support structure.** Organizational structures such as project management offices (PMOs) and business analysis centers of excellence play a critical role in ensuring that execution is supported by a culture of discipline and rigor. Start with inventorying and assessing your current support structure and look for ways to enhance and empower these organizations
5. **Focus on the business impact of development.** Since the end game is to impact the bottom line, it is critical that development efforts focus on measuring business outcomes rather than on the quality of the program. While this may be intuitive for business leaders, it may require a change in mindset for those responsible for delivering development initiatives.

These five essentials are included in a new research study by ESI International, the world's leading project management training company. Download a free copy of "Powerless: Why Businesses Can't Execute" for a closer examination of the widening gap between strategy and execution, and what organizations should do about it at <http://www.esi-intl.com/resources/industry-research/viewpoints/powerless-why-businesses-cannot-execute>

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