

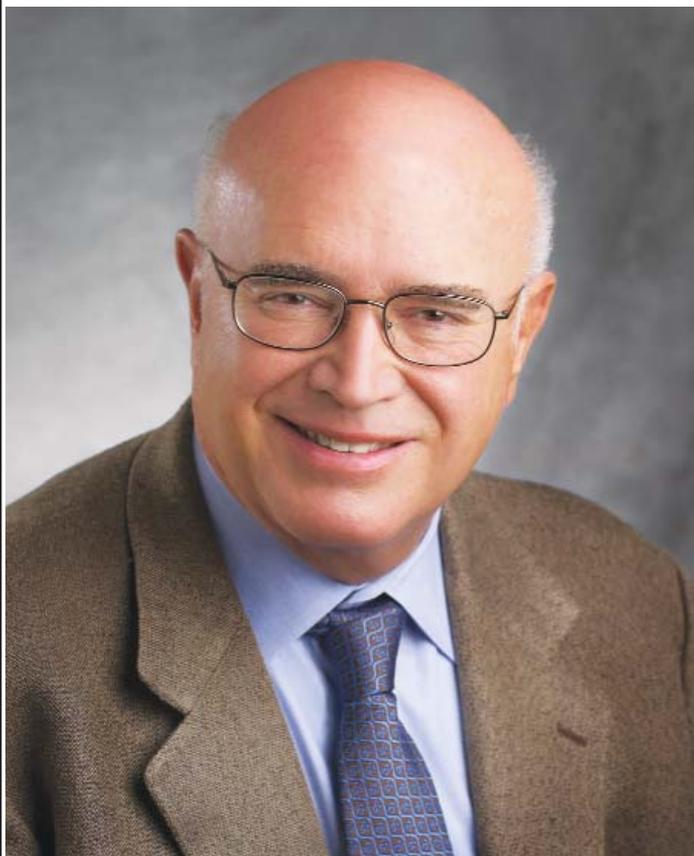
THE Indicator

MARCH 2015

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Prof. Gabor A. Somorjai
University of California, Berkeley
2015 Nichols Medal Awardee



See Biography on page 7.
Symposium Schedule on pages 8-9.

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THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

A few years ago I obtained a number of volumes of a series "The Mallinckrodt Collection of Food Classics" published by that manufacturer in the mid-1960s. Most of the books are facsimile reprints of early classic cookbooks, but Volume II is different. It is a facsimile of an 1820 Philadelphia publication reprinting rapidly an English publication of the same year. This influential book, by the chemist Fredrick Accum, deserves to have its complete title, in the early 19th. century style given here: "A Treatise on Adulterations of Food and Culinary Poisons. Exhibiting The Fraudulent Sophistications of BREAD, BEER, WINE, SPIRITUOUS LIQUORS, TEA, COFFEE, CREAM, CONFECTIONERY, VINEGAR, MUSTARD, PEPPER, CHEESE, OLIVE OIL, PICKLES. And other articles employed in domestic economy. And METHODS OF DETECTING THEM."

So who was Frerick Accum, and why this book? For the following biographical sketch I am greatly indebted to a substantial article on Accum by Lawson Cockcroft which appears on the website of the Royal Society of Chemistry's Library and Information Service. Accum was born in Germany on March 29, 1769. His father was a merchant and soap-maker. After beginning his education at the local gymnasium Fredrick was apprenticed to a local pharmacist and became acquainted with the family of William Brande, who provided medicines to the court of George III in London. Accum moved to London in 1793, worked in Brande's laboratory, and extended his education by attending lectures. He got to know William Nicholson who edited a well-respected chemical journal (Nicholson's Journal) and helped to translate foreign articles for inclusion. In 1798 Accum began to contribute a series of articles to the journal on adulteration of medical preparations.

Accum set up his own establishment in 1800 as a supplier of chemicals and equipment and developed considerable expertise in analytical chemistry to ensure the quality of his products. For a year he assisted Humphry Davy as a demonstrator at the Royal Institution. Accum's first book, "System of Theoretical and Practical Chemistry" was published in 1803 and was well subscribed, and he began to offer the only laboratory course in experimental chemistry available in London at that time. Accum's American pupils included James Dana, the famous mineralogist, and Benjamin Silliman, first Professor of Chemistry at Yale. Not surprisingly Accum's equipment and chemicals found their way to the initial Chemistry Departments established in the United States.

Accum became interested in the novel prospect of providing coal gas commercially for heating and lighting and testified to government committees on the subject. By 1815 some fifteen miles of London streets were gas-lit, and Accum, always alert to new opportunities, published a book on coal gas manufacture. In 1817 he published a book "Chemical Amusement" describing experiments suitable for the drawing room, and created "Chests of Chemical Amusement" containing the necessary chemicals and equipment and selling for ten to eighteen guineas, a lot of money at the time.

By 1820 Accum was ready to publish his magnum opus mentioned above and concerned with adulterations of food products. It was reviewed in all the leading journals – not the chemical journals but the popular literary magazines such as Blackwood's and the Edinburgh Review. The first thousand copies sold out in under a month and a second edition appeared immediately. The book, and Accum, were vigorously attacked by food and drink manufacturers who alleged that they were unfairly smeared by the work. Meanwhile Accum was accused of mutilating books in the collection of the Royal Institution, and a warrant for a search of his rooms led to the discovery of some 30 pages removed from books in the Royal Institution's library. Accum was released on bail but never came to trial. Badly depressed he left England, forfeited his bail, and returned to Germany.

He soon obtained two posts related to applied chemistry in Berlin. He published in 1826 his only book in German on the properties of building materials. While he continued to publish in the journal of the Berlin Royal Academy of Sciences his articles were submitted either anonymously or under the rather transparent pseudonym of Mucca. New editions of his treatise on adulteration appeared in England without his name on the title page. And it was not until 1860 that food regulation was written into law in England in the Adulteration Act. But Accum had died in Berlin in June 1838.

In my next column I will look at the contents of Accum's Treatise.

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THE Indicator

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Address advertising correspondence to Advertising Manager. Other correspondence to the Editor.

March Calendar

NEW YORK SECTION

Thursday, March 5, 2015

Long Island Subsection
See page 10.

Friday, March 20, 2015

High School Teachers Topical Group
See page 11.

Tuesday, March 24, 2015

Biochemical Topical Group
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Thursday, March 26, 2015

Westchester Chemical Society
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also

Thurs., April 2, and Fri., April 24, 2015

Long Island Subsection
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Thursday, April 2, 2015

MetroWomen Chemists Committee
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Tuesday, April 7, 2015

NY Nanoscience Discussion Group
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Wednesday, April 8, 2015

Adelphi University - Dakin Lecture
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Friday, April 17, 2015

William H. Nichols Symposium
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Friday, April 24, 2015

New York Section Board Meeting
See page 10.

Saturday, April 25, 2015

Earth Day Celebration
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Saturday, May 9, 2015

63rd Annual URS
See page 16.

Early October and Early November 2015

Westchester Chemical Society
See page 17.

NORTH JERSEY SECTION

Monday, March 9, 2015

Careers in Transition
See page 5.

Tuesday, March 17, 2015

North Jersey Executive Committee
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Tuesday, March 17, 2015

Mass Spectrometry Topical Group
See page 6.

Thursday, March 19, 2015

NoJ Chromatography Group
See page 6.

Wednesday, March 25, 2015

NMR Topical Group
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also

Monday, April 27, 2015

Drug Metabolism Discussion Group
Spring Symposium and Vendor Exposition
See page 6.

Sunday-Friday, June 7-12, 2015

Drew University Res-Med Seminar
See page 6.

**The Indicator is posted to
the web on the 15th of the
previous month at
www.TheIndicator.org**

**Deadline for items to be
included in the
April 2015 issue of
The Indicator is
February 20, 2015**



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North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. The March meeting will be held in conjunction with the Mass Spectrometry Topical Group. All ACS members are welcome to attend this meeting and to become more involved in section activities.

Date: Tuesday, March 17, 2015

Times: Dinner 6:15 PM
Executive Meeting 7:00 PM

Place: Holiday Inn Hotel
195 Davidson Avenue
Somerset, NJ

For reservations please call (732) 463-7271 or email chemphun@gmail.com prior to **Wednesday, March 11, 2015**.

Dinner cost is payable at the door; however, if you are not able to attend and did not cancel your reservation, you are responsible for the price of your dinner.



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, March 9, 2015

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

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 bill suits@earthlink.net.

See 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 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.

MASS SPECTROMETRY TOPICAL GROUP

Date: Tuesday, March 17, 2015
Times: Dinner 6:15 PM
 Meeting 7:00 PM
Place: Holiday Inn Hotel
 195 Davidson Avenue
 Somerset, NJ



NORTH JERSEY CHROMATOGRAPHY GROUP

Date: Thursday, March 19, 2015



NMR TOPICAL GROUP

Date: Wednesday, March 25, 2015

For speakers, location and updates, please check our website:

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



NORTH JERSEY DRUG METABOLISM DISCUSSION GROUP

Spring Symposium and Vendor Exhibition

Details will be posted at <http://www.njacs.org/topical-groups/drug-metabolism>.

Date: Monday, April 27, 2015

Times: 8:00 AM to 4:00 PM

Place: The Palace at Somerset Park
 333 Davidson Avenue
 Somerset, NJ



DETECTING AND COMBATING HIV IN 3

A Video Challenge for High School Students

RCSB PDB invites high school students to create short videos that promote understanding of HIV/AIDS at the molecular level. Videos should incorporate structures from the PDB in order to tell a story related to the global efforts of defeating, combating, and controlling the HIV pandemic. The video submission is underway and will conclude on **May 31, 2015**.

Visit rcsb.org/pdb-101 and use the Video Challenge tab for more information, resources, HIV related curriculum, and more. A PDF flyer describing this challenge is available for download and distribution at education. rcsb.org/events/HIV-flyer.pdf

RES MED: RESIDENTIAL SCHOOL ON MEDICINAL CHEMISTRY AND BIOLOGY IN DRUG DISCOVERY

The ResMed School offers an intensive week long graduate-level course organized to provide an accelerated program for medicinal chemists, biologists and other industrial and academic scientists who wish to broaden their knowledge of drug discovery and development. The aim of the school is to concentrate on the fundamentals that are useful in drug discovery spanning initial target assay evaluation through clinical development. Several case histories of recent successful drug development programs will also be presented. The five-day program consists of lectures, seminars and case histories.

Date: Sunday-Friday, June 7-12, 2015

Place: Drew University
 Madison, NJ

For more information and application forms visit our website, www.drew.edu/resmed, email resmed@drew.edu, phone (973) 408-3787 or fax 973/408-3504.

ResMed: Residential School on Medicinal
Chemistry and Biology in Drug Discovery
June 7-12, 2015
Drew University, Madison, NJ

This graduate level course concentrates on the fundamentals that are useful in drug discovery spanning initial target assay evaluation through clinical development. Several case histories of recent successful drug development programs will also be presented. The five-day program covers:

Principles of Med Chem	DMPK
Chemoinformatics	Toxicophores
Lead ID & Optimization	GPCRs
Epigenetics	Kinase Inhibitors
Fragment-based Drug Design	Ion Channels
Structure-based Drug Design	Enzyme Inhibitors
Drug-like Properties	Bioisosteres
Plasma Protein Binding	Preclinical Tox
Molecular Modeling	Clinical Dev
Protein-Protein Interactions	Case Histories

W. Greenlee, V. Gullo and R. Doll –Co-organizers

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Biography of Prof. Gabor A. Somorjai

The ACS New York Section congratulates and extends its best wishes to Professor Gabor A. Somorjai of the University of California, Berkeley, who will receive the William H. Nichols Medal Award on April 17, 2015 in White Plains, New York. The Nichols Medal is presented at an award dinner following the Nichols Distinguished Symposium. The title of the Distinguished Symposium is "Molecular Surface Science and its Applications: Nanomaterials, the Surface Chemical Bond, Biointerfaces, and Catalysis." Professor Somorjai will receive the Nichols Gold Medal Award for "his outstanding contribution to the elucidation of novel highly selective nanocatalysis."

Professor Gabor A. Somorjai received a B.S. in Chemical Engineering from the Technical University, Budapest in 1956 and a Ph.D. in Chemistry from the University of California, Berkeley in 1960. He was a staff scientist with IBM for a four-year period until his appointment as an Assistant Professor at the University of California Berkeley in 1964, where he was promoted to Associate Professor in 1968 and became a Full Professor in 1972. In 2002 he was appointed University Professor, the highest honor bestowed to a faculty member in the UC System. He is also a Faculty Senior Scientist at the Lawrence Berkeley National Laboratory.

Professor Somorjai is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. He received the NAS Award in Chemical Sciences in 2013, the Eni New Frontiers of Hydrocarbons Prize, the BBVA Foundation Frontiers of Knowledge Awards and the Honda Prize in 2011. He has received several awards from the American Chemical Society (ACS), including the Priestley Medal (2008), the Award for Creative Research in Homogeneous and Heterogeneous Catalysis (2000), the Adamson Award in Surface Chemistry (1994), and the Peter Debye Award in Physical Chemistry (1989). He received the National Medal of Sciences in 2002, the Langmuir Award from the American Physical Society (2007), the Wolf Prize (1998), and the von Hippel Award of the Materials Research Society (1997). Professor Somorjai holds 10 honorary degrees from universities around the world. He has educated about 400 graduate students and postdoctoral fellows and is the author of over 1100 scientific publications and four books.



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2015 WILLIAM H. NICHOLS MEDAL DISTINGUISHED SYMPOSIUM AND AWARD DINNER



Symposium: MOLECULAR SURFACE SCIENCE AND ITS APPLICATIONS. NANOMATERIALS, THE SURFACE CHEMICAL BOND, BIOINTERFACES, AND CATALYSIS

Award Recipient: **PROFESSOR GABOR A. SOMORJAI**
University of California - Berkeley

Date: Friday, April 17, 2015

Time: 1:00 PM Registration 1:30 PM – 5:30 PM Symposium
5:45 PM Reception 6:45 PM Award Dinner

Place: Crowne Plaza Hotel, White Plains, NY

PROGRAM

- 1:30 PM Welcome Professor Paris Svoronos
2015 Chair, ACS, New York Section
CUNY - Queensborough Community College
- 1:35 PM Opening of the Distinguished Symposium Professor Alison G. Hyslop
2015 Chair-elect, ACS, New York Section
St. John's University
- 1:45 PM Metal-organic Frameworks Professor Omar M. Yaghi
University of California-Berkeley

Metal-organic frameworks (MOFs) represent an extensive class of porous crystals in which organic 'struts' are linked by metal oxide units to make open networks. The flexibility with which their building units can be varied and their ultra-high porosity (up to 10,000 m²/g) have led to many applications in gas storage and separations for clean energy. This presentation will focus on (1) how one can design porosity within MOFs to affect highly selective separations (carbon dioxide), storage (hydrogen and methane) and catalysis, and (2) a new concept involving the design of heterogeneity within crystalline MOFs to yield sequences that code for specific separations and chemical transformations.

- 2:30 PM Exploring the Interactions of Ions, Peptides, and Proteins with Lipid Membranes Professor Paul Cremer
Pennsylvania State University

Biological membranes often contain negatively charged lipids such as phosphatidylserine, phosphatidylglycerol, phosphatidic acid, and gangliosides. The groups of these lipids can strongly interact with positively charged aminoacids from peptides and (i.e. Arg and Lys residues), metal cation from the extracellular solution as well as positively charged drug molecules. These negatively charged lipids are highly regulated within cells and are highly abundant in certain organelles while almost completely absent in others. Moreover, their concentration within a particular leaflet of a given membrane is often tightly regulated. Despite the high degree of control of lipid composition within cells, little is often known about the reason for it or even the specific nature of ligand-receptor binding interaction with such moieties. To remedy this, we have employed a combination of spectroscopic techniques, microfluidic platforms, monolayer and planar supported bilayer architectures to explore the specific biophysical chemistries of these interactions. This includes the development of a novel analytical tool that employs a pH sensitive fluorophore to probe subtle changes in the surface potential of lipid bilayers upon ligand or ion binding. Both thermodynamic and molecular level details of these systems have been obtained. The results reveal that binding can be highly dependent on the concentration of specific lipids within the membrane. Moreover, the presence or absence of various uncharged lipids can also greatly influence the binding properties. Interestingly, specific interactions involving hydrogen bonding, charge transfer, and hydrophobic interactions often dominate over simple electrostatic effects.

- 3:15 PM Coffee Break

- 3:45 PM The Surface Chemical Bond: Explorations of Structure and Dynamics Professor Steven L. Bernasek
Princeton University

The tools of molecular surface science developed over the past fifty years have enabled the examination of the nature of the surface chemical bond and its dynamic behavior in unprecedented molecular detail. In my lecture I will discuss two examples of this sort of work. I will comment on the insights that have been gained in the basic understanding of surface chemical processes using this approach, which has been pioneered by this year's recipient of the Nichols Award. This understanding provides important foundations for the range of applications described in this symposium.

The first example focuses on the process of molecular self-assembly at characterized surfaces. The use of molecular beam scattering as well as scanning probe microscopy, coupled with electron spectroscopic and microscopic methods, provides information about the formation and energetics of chiral and achiral organic monolayers and designed nanostructured surfaces. Implications for the understanding of homochirality in biological systems, and applications in organic electronic device design will be mentioned.

The second example uses the tools of surface science, coupled with optical pulse shaping methods, to address the quantum control of surface chemical dynamics. Carefully designed self-assembled monolayer samples along with surface sum frequency generation as a feedback signal, have been used to optimize selective bond manipulation at the surface. Possible applications to heterogeneous catalysis and electronic device preparation will be presented.

4:30 PM The Genesis and Integration of Heterogeneous, Homogeneous, and Enzyme Catalysis on the Nanoscale Professor Gabor A. Somorjai
NICHOLS MEDALIST

The synthesis of metal and bimetallic nanoparticles in the 1-10 nm range, and mesoporous high surface area oxides, were utilized as heterogeneous catalysts. The rates and chemical selectivity of multi-path reactions were dependent on the nanoparticle size and the oxide-metal nanoparticle interface composition. Instruments including laser spectroscopy (sum frequency generation vibrational spectroscopy) and synchrotron based x-ray spectroscopies and scanning tunneling microscopy reveal the mobility and dynamic restructuring of adsorbed and reacting molecules and catalyst surfaces under reaction conditions. The formation of covalent bonds between the adsorbed molecules and the diverse structures of the catalyst surfaces are one important ingredient of catalytic selectivity. The charge transfer of oxide-metal interfaces to the reacting molecules (acid-base catalysis) is the other important property of catalytic reactivity. Metal nanoparticles at 1 nm size (40 atoms) and below behave as single metal-ion transition metal homogeneous catalysts. Studies of adsorbing enzyme catalysts on oxide surfaces explore how their rates and chemical selectivities are altered in progress.

5:45 PM Social Hour

6:45 PM William H. Nichols Medal Award Dinner Professor Kenneth B. Eisenthal (Columbia University) will introduce the Medalist

More information on the William H. Nichols Medal Events is available on the New York Section's website at <http://www.NewYorkACS.org>.

Tickets may be reserved using the following form, or preferably through the New York Section website that accepts credit cards or Paypal. <http://www.NewYorkACS.org>.

***** RESERVATION FORM *****
2015 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & MEDAL AWARD BANQUET in honor of Gabor A. Somorjai

Return to: ACS, New York Section, c/o Dr. Neil D. Jespersen, Department of Chemistry, St. John's University, 8000 Utopia Parkway, Queens, NY 11439 (516) 883-7510

- Please reserve _____ places for the symposium & banquet at \$120/person, ACS member
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BANQUET RESERVATION DEADLINE: APRIL 7, 2015

Please make checks payable to: ACS, NEW YORK SECTION Check for \$_____ enclosed

New York Meetings

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@optonline.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, 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:

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

"Spice Tales": Rapid Detection and Quantification of Synthetic Cannabinoids

Speaker: Ling Huang, PhD
Department of Chemistry
Hofstra University

Since 2008, Designer drugs such as synthetic cannabinoids mixed with herbal products, also known as "Spice" have been sold as herbal incenses in smoke shops and online. Many synthetic cannabinoids have been outlawed as Schedule I controlled substance. New and "legal" compounds are still being sold around the world, which creates challenges to forensic analysts and law enforcement agencies and causes great harm to unaware users. Our lab successfully utilizes NMR as an alternative to conventional GC-MS method to rapidly identify and quantify emerging cannabinoids. We have also optimized simple extraction technique for these designer herbal drugs prior to optimized HPLC separation and quantification. Our methods can be utilized to accelerate the accurate screening of designer drugs and to reduce evidence backlog in the battle with emerging "Spice" products.

Date: Thursday, March 5, 2015

Times: Social – 5:30 PM

Seminar – 6:00 PM

Place: CUNY Queensborough

Community College

Science Building, S-112

Directions: <http://www.qcc.cuny.edu/about/driving.html>

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HIGH SCHOOL TEACHERS TOPICAL GROUP

A Ray of Light in a Sea of Dark Matter

Speaker: Charles R. Keeton II
Rutgers University
keeton@physics.rutgers.edu

What's in the dark? That question has been asked by generations of children and cosmologists alike. The answer, in our universe, turns out to be surprising and rich. The space between stars is filled with an exotic substance called "dark matter" that exerts gravity but does not emit, absorb, or reflect light. The space between galaxies is rife with "dark energy" that creates a sort of cosmic anti-gravity causing the expansion of the universe to accelerate. Together, dark matter and dark energy account for 95% of the content of the universe. This talk presents an accessible description of how gravity affects light and how astronomers use it to prove dark matter. Gravitational lensing is now a key part of the international quest to understand the invisible substance that surrounds us, penetrates us, and binds the universe together.

Date: Friday, March 20, 2015

Time: Social and Dinner — 5:45 PM

Place: White Oak Tavern
21 Waverly Place
NE corner at Greene Street
(site of the former M&G Pub)
New York, NY

Time: Meeting — 7:15 PM

Place: New York University
Silver Center Room 207
32 Waverly Place (South-east
corner Washington Sq. East)
New York, NY 3

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

Positive Allosteric Modulators for Challenging GPCRs: Identification and Optimization

Organizers: Mercedes Beyna, MS
Pfizer
Phil Carpino, PhD
Pfizer
Esther Lee, PhD
Pfizer
David Price, PhD
Pfizer
Sonya Dougal, PhD
The New York Academy of
Sciences

Speakers: P. Jeffrey Conn, PhD
Vanderbilt University
Ron Dror, PhD
Stanford University
Christopher Fotsch, PhD
Amgen
Corey Hopkins, PhD
Vanderbilt University
Whitney Nolte, PhD
Pfizer

GPCRs are key targets for drug development. Positive allosteric modulators (PAMs) of GPCRs potentiate the activity of endogenous GPCR ligands at a topographically distinct site from the orthosteric ligand binding site. The therapeutic benefits of PAMs include increased functional selectivity, reduced side-effects, and fine-tuned pharmacological responses. In this symposium, academic and industry scientists will describe the identification, characterization, and development of PAMs for challenging GPCRs.

Date: Tuesday, March 24, 2015

Time: 11:45 AM — 4:00 PM
(reception to follow)

Place: The New York Academy of Sciences
7 World Trade Center
250 Greenwich Street — 40th Floor
New York, NY 10007

(continued on page 12)

BIOCHEMICAL TOPICAL GROUP

(continued from page 11)

Cost: This event has free registration for ACS and NYAS members. Please select the appropriate non-member Registration Category and use the Priority Code ACS. Non-members may attend for a fee of \$60 (corporate), \$40 (non-profit or academic) or \$20 (students and post-docs).

For more information and to register for the event, go to: www.nyas.org/GPCRs2015. To become a Member of the Academy, visit www.nyas.org/benefits.



WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “Nanoscience of Graphene and Other Two-dimensional Materials”

Speaker: Phaedon Avouris, PhD
IBM Fellow
Manager, Nanometer Scale
Science & Technology
IBM Research Division
T.J. Watson Research Center
Yorktown Heights, NY

Graphene is a single atomic layer of a graphite crystal. Despite the fact that graphite was a known material since early antiquity, a single graphene layer was not isolated and characterized until 2014. Since then, numerous studies have shown that graphene possesses very unique electrical, optical, mechanical and thermal properties. These findings created strong interest in taking advantage of these properties for technological applications, and in searching for other single-layer structures (two-dimensional materials).

Graphite is not unique in its layered van der Waals bonded structure. There are numerous other van der Waals solids, such as chalcogenide crystals and black phosphorus, whose single layer properties had not been studied until recently.

In my talk I will discuss briefly the electronic structure and methods of preparation of such single atomic layers and then focus on their electrical, optical and plasmonic properties and their strong interactions with their

environment. With respect to potential technological applications, I will consider applications in nanoelectronics, e.g. ultrafast high frequency transistors, and in optoelectronics, e.g. ultrafast photodetectors, detection in the far-infrared and terahertz ranges and plasmonic enhancement of optical absorption.

Dr. Avouris earned his BSc in chemistry from Aristotelian University, Athens, Greece in 1968 and did post-graduate studies at the Nuclear Research Center “Demokritos” in Greece. He completed a PhD in physical chemistry at Michigan State University in 1974, following this with a post-doc at UCLA. Since 1978 he has been associated with the IBM Corporation, quickly rising from being a staff researcher to research management. Over the years, his research has included a wide variety of subjects: laser spectroscopy, surface physics/chemistry, scanning tunneling microscopy, atom manipulation and nanoelectronics. His current research focuses on experimental and theoretical studies of the electrical, optical and optoelectronic properties of 2D and 1D nanostructures. The work includes basic science studies and also the design, fabrication and study of nanoelectronic and optoelectronic devices. He has also served as adjunct research professor in chemistry at Columbia (2003) and of electrical engineering at the University of Illinois, Urbana-Champaign (2004). He has 500 publications and has won numerous awards including the Langmuir Prize from the American Physical Society, the Nanotechnology Pioneer Award from IEEE, the Feynman Prize for Nanotechnology from the Foresight Institute, the Smalley Prize from the Electrochemical Society, numerous internal IBM awards, and an honorary doctorate from the International Hellenic University.

Date: Thursday, March 26, 2015

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
(914) 393-6940

Or:

Anthony Durante
anthony.durante@bcc.cuny.edu

(718) 289-5542 or 5569

Note: Inclement Weather: Cancellation Due to Inclement Weather

Should Westchester Community College's Valhalla campus close due to inclement weather (or has delayed opening or closes early) the meeting will be cancelled. Decisions about delay/closure are made around 6:00 AM for day courses and 3:00 PM for evening courses. The college will communicate delays, closings or early dismissals on their website (www.sunywcc.edu), Facebook, Twitter, and the (914) 606-6900 phone line.



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.

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



LONG ISLAND SUBSECTION

Upcoming Meetings

Electrophilic Cyclizations of Alkynes—Facile Approaches to Heterocyclic and Carbocyclic Molecules

Speaker: Yu Chen, PhD
Department of Chemistry
Queens College

Palladium and gold-catalyzed as well as iodine monochloride-induced intramolecular electrophilic cyclizations of functionally substituted alkynes will be discussed. These regioselective annulations represent new and efficient synthetic approaches to carbocyclic and heterocyclic molecules, including isoxazoles, isoquinolines, indenones, and dibenzoannulen-5-ones. These approaches

utilize palladium or gold catalyzed reactions as the key steps towards the production of the final target molecules or intermediate compounds. The new methods start from readily available starting materials and only consist of facile and user-friendly synthetic conditions, while they will serve as valuable tools for the preparation of compounds covering a broad spectrum of fields including synthetic and medicinal chemistry, and the material sciences.

Date: Thursday, April 2, 2015

Times: Social – 5:30 PM

Seminar – 6:00 PM

Place: CUNY Queensborough
Community College
Science Building, S-112

Directions: <http://www.qcc.cuny.edu/about/driving.html>

The 15th Annual LI-ACS Chemistry Challenge

The Long Island subsection of the NY-ACS invites you to participate in the 15th Annual Chemistry Challenge, to be held at CUNY Queensborough Community College. The Chemistry Challenge is a fun, fast-paced “Jeopardy-style” competition between Chemistry students of local colleges. Timed, multiple choice questions (~75% General and 25% Organic Chemistry) will be asked during the competition. Students will discuss the questions with their team members and select a final answer using electronic “Clickers.” Medals and prizes will be awarded to the top student teams. The atmosphere is exciting and brings both students and mentors together!

To register a student team or obtain more information, please contact Paul Sideris at psideris@qcc.cuny.edu. To view photographs from prior Chemistry Challenge events, please visit: <http://www.qcc.cuny.edu/chemistry/chemchallwinner.html>

Date: Friday, April 24, 2015

Times: Dinner – 5:00 PM

Chemistry Challenge – 6:00 PM

Place: CUNY Queensborough
Community College
Science Building, S-111

Directions: <http://www.qcc.cuny.edu/about/driving.html>

METRO WOMEN CHEMISTS

Drug of Abuse Bioanalysis During Pregnancy: Recent Advances and Novel Sampling Strategies

Speaker: Dr. Marta Concheiro
Assistant Professor of
Forensic Toxicology
John Jay College of
Criminal Justice
City University of New York

Abstract:

Consumption of drugs of abuse, tobacco and alcohol throughout pregnancy is a serious public health problem and results in an important economic cost to the health system. Drug and/or metabolites determination in biological matrices from mother and newborn is an objective measure of in utero drug exposure. Biological samples from the mother (urine, hair), from the newborn (urine, hair, meconium), and those collected at delivery (placenta, umbilical cord) are studied, showing their main advantages and disadvantages (window of detection, amount of sample normally available, collection procedure). Accurate bioanalytical procedures are essential to obtain high quality data to perform interventions and to establish correlations between analytical measures and clinical outcomes. We include a brief overview of clinical implications of in utero drug exposure to better understand the importance of this serious health issue.

About the Speaker:

Dr. Marta Concheiro is Assistant Professor of Forensic Toxicology at John Jay College of Criminal Justice, City University of New York. She received her Ph.D. in Toxicology in 2006 from the University of Santiago de Compostela, Spain. During her Ph.D., she trained at the Institute de Médecine Légale et de Médecine Sociale in Strasbourg (France) and the Instituto Nacional de Medicina Legal in Lisbon (Portugal). From 2008-2009, she was a Postdoctoral Research Fellow at the National Institute on Drug Abuse (NIDA), NIH, in Baltimore, MD. She subsequently returned to the University of Santiago de Compostela as a Researcher and Teaching Assistant of Forensic Toxicology. From 2012 to 2014, Dr. Concheiro was a Research Scientist at NIDA. Dr. Concheiro has actively participated in Drugs and Driving Research Projects, including the ROSITA (Road Side Testing Assessment) and

DRUID (Driving Under the Influence of Drugs) European Projects, and in Clinical Protocols at NIDA. Dr. Concheiro has more than 40 publications in peer-reviewed journals, and she has participated presenting her work at more than 30 professional toxicology meetings.

Date: Thursday, April 2, 2015

Times: 3:30 PM – 4:30 PM

Place: Pace University
Lecture Hall North (2nd Floor)
One Pace Plaza
New York, NY

Please contact Dr. Rita K. Upmacis (Chair of the Metro Women Chemists' Committee (rupmacis@pace.edu) if you plan to attend.



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, 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)

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

ADELPHI UNIVERSITY

2015 Henry Drysdale Dakin Memorial
Lecture — “GFP: Lighting Up Life”



Speaker: Prof. Martin Chalfie
The William R. Kenan Jr. Professor of
Biological Sciences, Columbia University
2008 Nobel Laureate in Chemistry

Yankee great Yogi Berra once said, “You can observe a lot by watching.” Unfortunately, before the early 1990s observations in the biological sciences were usually done on dead specimens that were specially prepared and permeabilized to allow entry of reagents to stain cell components. These methods allowed a glimpse of what cells were doing, but they gave a necessarily static view of life, just snapshots in time. GFP and other fluorescent proteins revolutionized the biological sciences because these proteins allowed scientists to look at the inner workings of living cells. GFP can be used to tell where genes are turned on, where proteins are located within tissues, and how cell activities change over time. Once a cell can be seen, it can be studied and manipulated. The story of the discovery and development of GFP also provides a very nice example of how scientific progress is often made: through accidental discoveries, the willingness to ignore previous assumptions and take chances, and the combined efforts of many people. The story of GFP also shows the importance of basic research on non-traditional organisms.

Date: Wednesday, April 8, 2015

Time: 7:00 PM

Place: Thomas Dixon Lovely Ballroom
University Center

Cost: Free and open to the public

Travel Directions: <http://www.adelphi.edu/visitors/directions.php>

Additional Information: Contact Professor
Stephen Z. Goldberg, (516) 877-4147 or
goldberg@adelphi.edu

**COME AND JOIN US
CELEBRATE EARTH DAY**

With Our 4th Annual “Walk the Brooklyn
Bridge”!



Keynote address: “99 is not 100: A Call
to Action”

Speaker: Prof. Spiro Alexandratos
Hunter College, CUNY

We will meet at Pace University at 10:00 AM
and begin our celebratory “Earth Day
Parade” across the iconic Brooklyn Bridge at
12:00 Noon.



Participants will be provided with breakfast,
healthy snacks, and Earth Day gifts.

Date: Saturday, April 25, 2015

Times: 10:00 AM - 12:00 Noon

Place: Pace University

To register and for more information go to:
[http://www.newyorkacs.org/meetings/
EarthDay/CCED.php](http://www.newyorkacs.org/meetings/EarthDay/CCED.php)

Contact: Prof. JaimeLee Rizzo, CCED
Chair, jrizzo@pace.edu

Learn more about the

New York Section at

www.NewYorkACS.org



ACS
Chemistry for Life®

63rd

ANNUAL UNDERGRADUATE
RESEARCH SYMPOSIUM

The Student Activities Committee of the New York Section of the American Chemical Society

Saturday, May 9th, 2015 at Queensborough Community College

8:00 am – 3:00 pm (breakfast, luncheon and award reception included)

Sign up as an attendee at <http://www.newyorkacs.org/meetings/urs/urs.php>

Keynote Speaker: Dr. JaimeLee Rizzo

Department of Chemistry and Physical Sciences, Pace University
JaimeLee Iolani Rizzo is a Professor of Chemistry in the Department of Chemistry and Physical Sciences at Pace University, NYC campus. A native of Honolulu, Hawai'i, Dr. Rizzo received her associate's degree from Queensborough Community College followed by a bachelor's and a master's degree in Chemistry from Queens College, CUNY. She completed her graduate studies under the tutelage of Robert Ralph Engel at Queens College, CUNY, where she developed an interest in organic synthesis particularly polyammonium compounds. A series of these compounds were covalently bound to macromolecules where host/guest binding interactions were investigated. In 2001, Dr. Rizzo joined the faculty at Pace University, where her laboratory co-developed a method to bind polycationic organic compounds to carbohydrate-based surfaces which exhibits antimicrobial activity. This work has led to the acquisition of 14 patents and 5 publications. Johnson & Johnson Wound Management Division and Prismatic Dyeing and Finishing Company have supported this endeavor and are collaborators on some patents.



Keynote Address

Constructing Killer Surfaces

Our laboratory has been developing an array of new surfaces that kill bacteria and fungi on contact. We have successfully synthesized antimicrobial surfaces that destroy bacteria and fungi where the mode of action is through an electrostatic disruption of the cell wall. The antimicrobial activity of the surface is continual with regard to the agent that is covalently bound to the surface because it is not consumed in the process of invasion and disruption of the cell wall. This makes it unlikely that microorganisms could become resistant to this type of attack as it would involve a major modification of their cell-wall structure. Surfaces which have been prepared include carbohydrate-based materials as in wood, cotton cloth, paper; proteinaceous-based as in wool and silk; chitosan; agarose; gelatin β . The agents that are covalently bound to a given surface are a series of quaternary ammonium salts. The salts are then attached via a simple two-step procedure that involves activation of the surface followed by an SN₂ reaction of the salt with the activated surface. The synthesis, characterization, and bacteriological results will be presented.

SIGNIFICANT DATES FOR 63rd URS

Deadline for Abstract Submission - **March 20, 2015** Abstract acceptance notification – April 6, 2015
Deadline for Symposium Advanced Registration – April 10, 2015

2015 Co-chair
Dr. Justyna Widera
Adelphi University
widera@adelphi.edu

2015 Co-chair
Dr. Yolanda Small
York College - CUNY
ysmall@york.cuny.edu

2015 Co-chair
Dr. Paul Sideris
Queensborough CC - CUNY
psideris@qcc.cuny.edu

2015 Co-chair
Dr. Sharon Lall-Ramnarine
Queensborough CC - CUNY
slallramnarine@qcc.cuny.edu

FREE Registration for student members of the National ACS, faculty mentors who register in advance and sponsors. For non-ACS members and guests, the registration is \$35 in advance. All on-site registration is \$45 for faculty, staff and guests. Checks for the registration fee should be made out to: "NY ACS URS" and sent to: Prof. Justyna Widera, Adelphi University, Department of Chemistry, Science 201, 1 South Avenue, Garden City, NY 11530.

See Call for Papers, page 18.

**Learn more about the New York Section at
www.NewYorkACS.org**

WESTCHESTER CHEMICAL SOCIETY

FUTURE MEETINGS

Special Seminar – “How Your Grandmother’s Diet May Have Changed Your Life”

Speaker: Hailey Clancy, PhD
Lieutenant Colonel, US Army
Assistant Professor
Department of Chemistry
and Life Science
United States Military Academy
West Point, NY

Abstract will be supplied in a later issue.

Lieutenant Colonel Hailey Clancy graduated from Westminster College in Fulton, Missouri with a double major in Biology and Spanish and was commissioned into the US Army in 1992. While on active duty with the US Army, she earned a MS Degree in Environmental Toxicology from Cornell University where she developed a biosensor to detect the bacterium that causes Anthrax. In 2012 she earned a PhD in Molecular Toxicology and Carcinogenesis from New York University, where she conducted research on the effects of human exposure to nickel and its role in lung cancer. LTC Clancy's military assignments include service as a Transportation and Logistics officer in Germany (Nürnberg, Kaiserslautern, Wiesbaden, and Baumholder), Bosnia-Herzegovina, Iraq (Balad, Diyala, Baghdad), and Fort Drum, NY. She is currently assigned as an Assistant Professor in the Department of Chemistry and Life Science at West Point, NY, where she teaches General Chemistry and Biology. Her military awards include the Bronze Star (with oak leaf cluster), Meritorious Service Medal (with two oak leaf clusters), Joint Service Commendation Medal, Army Commendation Medal (with oak leaf cluster), Army Achievement Medal (with oak leaf cluster) and the Meritorious Unit Citation.

Tentative Date: Early October, 2015
Times, Place, Cost and Further Information:
See information on page 12.

Special Seminar – “Hydrogen Bonding in Redox and Nanoparticle Construction”

Speaker: Marc A. Walters, PhD
Department of Chemistry
New York University
New York, NY

Abstract and CV will be supplied in a later issue.

**Tentative Date:
Early November 2015**

Times, Place, Cost and Further Information:
See information on page 12.

Call for Presentations

LABORATORY ROBOTICS INTEREST GROUP

21st Annual Technology Event

Laboratory automation users and technology vendors are invited to submit poster and podium presentation abstracts for this meeting. It is scheduled for **Thursday, May 14, 2015**. At press time, the meeting venue has not been established but it will be held in the Somerset, New Jersey, area. Presentations will begin approximately 6:00 PM. Each presentation should be 15 to 20 minutes long.

The Laboratory Robotics Interest Group is dedicated to educating our membership about new and advanced laboratory technologies. We encourage the sharing of information through regular meetings and informal networking. Our membership is primarily drawn from the pharmaceutical, life science, chemical, and food industries. Each meeting begins with a free buffet dinner, followed by presentations, and capped off with desserts.

For more information or to submit abstracts please contact:

Kevin Olsen
Montclair State University
OlsenK@Mail.Montclair.Edu
(973) 655-4076

Call for Papers

 ACS Chemistry for Life®	63rd	ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM
<p>Call for Papers for the 63rd ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM sponsored by the Student Activities Committee of the New York Section of the American Chemical Society. The symposium provides an excellent opportunity for undergraduate chemistry students in the NY metropolitan area to present the results of their research. The program includes a keynote address by Dr. JaimeLee Rizzo, Department of Chemistry and Physical Sciences, Pace University, presentation of student papers, followed by a luncheon.</p>		
<p>Date: Saturday, May 9th, 2015 Place: Queensborough Community College, Queens, NY</p>		
<p>To:</p> <ol style="list-style-type: none"> 1. Submit an abstract on-line (Please follow the abstract template form and included instructions) 2. Print a flyer for posting - Click "Download Flyer" in the blue frame 3. Obtain directions to Queensborough Community College <p>Go To: http://www.newyorkacs.org/meetings/urs/urs.php</p>		
<p>SIGNIFICANT DATES FOR 63rd URS Abstract submission and online registration opens - February 2, 2015 Deadline for abstract submission - March 20, 2015 Notification of the abstract acceptance – April 6, 2015 Deadline for early registration – April 10, 2015</p>		
<p>FREE Registration for student members of the National ACS, faculty mentors who register in advance and sponsors. For non-ACS members and guests, the registration is \$35 in advance. All on-site registration is \$45 for faculty, staff and guests. Students can obtain a discounted 1-yr membership to the ACS for \$25 by visiting http://undergrad.acs.org/</p>		
<p>Checks for the registration fee should be made out to: "NY ACS URS" and sent to: Prof. Justyna Widera, Adelphi University, Department of Chemistry, 1 South Avenue, Garden City, NY 11530</p>		
<p>If you have any questions please contact: nyacsurs2015@gmail.com</p>		

2015 Co-chair Dr. Justyna Widera Adelphi University widera@adelphi.edu	2015 Co-chair Dr. Yolanda Small York College - CUNY ysmall@york.cuny.edu	2015 Co-chair Dr. Paul Sideris Queensborough CC - CUNY psideris@qcc.cuny.edu	2015 Co-chair Dr. Sharon Lal-Ramnarine Queensborough CC - CUNY sialramnarine@qcc.cuny.edu
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Call for Volunteers

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
or
Daniel.amarante@mountsaintvincent.edu

Call for Nominations

THE WILLIAM H. NICHOLS MEDAL AWARD FOR 2016

The New York Section is accepting nominations for the William H. Nichols Medal Award for the year 2016. This distinguished award, established in 1902 by Dr. William H. Nichols, for the purpose of encouraging original research in chemistry, is the first award authorized by the American Chemical Society. The New York Section presents this award annually in recognition of an outstanding contribution in the field of chemistry. The award consists of a gold medal, a bronze replica and \$5000. The medals are presented at the William H. Nichols Meeting that involves the Distinguished Symposium, related to the medalist's field of expertise, and a Medal Award Dinner. The event is attended by members of the Nichols Family and officers of the American Chemical Society.

Investigators who have published a significant and original contribution in any field of chemistry during the five calendar years preceding the presentation meeting are eligible for consideration by the Nichols Medal Jury. The New York Section encourages nominations from academia, government and industry.

Each nomination requires a completed nomination form, biographical and professional data, and three supporting letters. The nomination process goes through the New York Section website where the nomination form and instructions appear at <http://www.newyorkacs.org/meetings/Nominations/Nichols.php>

Nominations must be received by May 31, 2015. The Nichols Medal Award Jury will meet in June 2015 to select the Nichols Medalist for 2016.

Questions regarding the nomination procedure should be directed to the ACS, New York Section Office at njesper1@optonline.net.



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CALL FOR NOMINATIONS

(continued from page 19)

METRO WOMEN CHEMISTS COMMITTEE

The Metro Women Chemists Committee is now accepting nominations for the 6th annual Gift of Mentoring Award. Please share your stories with us if you have benefited from mentorship or you have had positive influence over other people's lives or careers. Please write your stories with no more than 300 words and send them to Sarah Carberry at sbolton@ramapo.edu. **Deadline: April 1, 2015.**

The mentoring award will be presented at the MWCC event on May 12th at Farleigh Dickinson University in Madison. The event will start at 6:00pm and include dinner. For further details as the event approaches please check our website (<http://njacs.org/metrowomen.html>) or email Sarah Carberry (sbolton@ramapo.edu).

Pittcon

2015 TECHNICAL PROGRAM

Pittcon is pleased to announce the **2015 Technical Program** that includes over 2,000 technical presentations offered in symposia, oral sessions, workshops, awards, and posters. This year's program covers a wide range of applications such as, but not limited to, biotechnology, biomedical, drug discovery, environmental, food science, fuels/energy, genomics, lab management, materials science, nanotechnology, polymers/plastics, proteomics and water/ wastewater. The Technical Program begins on **Sunday, March 8 and runs through Thursday, March 12, 2015.**

To help celebrate the International Year of Light, there will be two special symposia:

"Fundamental Science-driven Infrared Spectroscopic Imaging for Clinical Diagnostic Systems" will be presented by the SAS (Society of Applied Spectroscopy), March 9, at 9:45 AM.

"The Early Days of Modern Infrared Spectroscopy: The First Three Years of FT-IR." The Coblenz Society/SAS will present a "60 Year Celebration of the Coblenz Society" organized by Peter Griffiths, March 9, 8:35 AM.

We will once again be co-programming with the ACS Division of Analytical Chemistry with a Monday afternoon poster session and eight

symposia on analytical methods and advancements in areas such as environmental science, food science, life science and nanotechnology.

See a complete list of all co-programming and technical sessions at pittcon.org.



THIRD ANNUAL FOOD LABS CONFERENCE

The Pittcon Organizing Committee is pleased to announce the third annual Food Labs Conference, the only food conference focused on the food laboratory, will be held in **conjunction with Pittcon 2015, in New Orleans, Louisiana.** The co-location of the two conferences provides that the registration fee to attend the two-day Food Lab Conference, **March, 9-10**, will also include unlimited week long admission to the Pittcon exposition floor and technical program.

The Food Labs Conference is unique in that it is not just focused on one discipline such as microbiology or chemistry, but takes a more holistic approach to best practices in managing food testing and analyses needs

Rick Biros, publisher of Food Safety Tech and Food Labs Conference organizer commented, "It is a win-win for the attendee. Conferees will take away practical hands-on information that will help them to not only run their food lab in compliance with new regulations, but with increased efficiency, as well." He added, "With registration, they will also have access to Pittcon's dynamic exposition with hundreds of laboratory equipment vendors and the diverse technical program offering a wide selection of food related technical sessions."

Palmer A. Orlandi, Ph.D., CAPT, U.S. Public Health Service, Sr. Science Advisor, Office of Foods and Veterinary Medicine, U.S. Food & Drug Administration, will deliver the plenary presentation, "Partnerships and Innovations."

Other presentation topics include:

Pathogen Testing Update: Salmonella, STEC, Listeria

GMO & Pesticide Residue Analysis

Training & Development of Lab Personnel

Water Testing

Method Validation

Food Fraud/Economically Motivated Adulteration

Flavor Profiling

"Ask the Experts" discussion groups

Go to <http://www.FoodLabsConference.com> for agenda, speakers and more info.

National

ON-LINE SURVEY

Greetings -

I am pleased to announce that the ACS Committee on Local Section Activities (LSAC) will be convening a strategic planning session later this year to identify major initiatives to be taken during the next three years. In preparation for the strategic planning session, we are seeking the opinion of members like you.

This online survey will take just a little of your time to complete, but will influence the outcome of the new strategic plan and shape the course of this committee through the coming years.

<http://surveys.acs.org/se.ashx?s=04BD76CC48CBAE2D08D20535B1094E0F7C>

Thanks in advance for your time and contributions.

Sincerely,
Martin Rudd, Chair, ACS Committee on Local Section Activities (LSAC)



DISCOVERY — THE RIGHT CHEMISTRY

NSF-funded researcher mixes mentoring and materials science — From freshmen year, students work with Sunghee Lee, doing hands-on soft materials research.

September 17, 2014

During the week leading up to the American Chemistry Society national meeting, Sunghee Lee pulled two all-nighters in her lab.

She wasn't a college student who had procrastinated. She wasn't on a deadline, exactly. She didn't need these data for an imminent poster or presentation at the conference. And, if left to her own devices, she might not have spent all those hours in her lab, instead spending more time with her aging mother who lives with her.

No, this was the result of her success at instilling the value of research perseverance in her students. They were determined that their research shouldn't suffer because they were attending the upcoming conference. While readers of this story might assume her students are graduate students or even postdocs, they're not. Sunghee Lee is an NSF-funded chemistry professor who has spent the past 10 years mentoring undergraduate students by having them actively work in her lab at Iona College.

"A lot of people talk about integrating research and education, but I wanted to show it really was possible," Lee said. "My students may not have gotten into MIT or Harvard, but that doesn't measure what they can or cannot do. It's my job to awaken their potential."

Frontier of science and education

Like so many chemists, Lee had initially intended to pursue a career involving pure chemistry research. "I was thinking it would be at the frontier of science where I'd leave my mark--my name--on some chemistry advance or discovery," she said. "Then I did a postdoc at Duke University where I first taught undergrad classes. I could see the incredible potential I had with these students. Even if it meant I published a few fewer papers each year, I actively looked for a research position that would include teaching."

And, in fact, Lee hasn't left her chemistry research behind. She studies soft materials and how molecules organize around soft surfaces, such as at a liquid interface.

"Oil and water actually do mix," she laughs, but then quickly explains. "We use micropipettes to create a water droplet in an oil that contains some sort of lipid or surfactant. We quickly see how a crystal develops as water leaves from its droplet into oil, and we are able to control what is left behind (crystal) by changing the chemistry of the soft interface."

Using water droplets and an array of biological molecules, she and her students create a membrane mimic, using droplet interface bilayers, and study the fundamental properties of biological membranes. Additionally, she and her students look at temperature changes and other variables to see how they affect membrane permeability--what the molecule's membrane will allow in and keep out. Understanding this soft interface means finding more effective drug delivery systems, safer cosmetics and learning how our biological systems metabolize different foods.

"Nature, our bodies--all the cells are soft materials," she said. "And this is all fundamental research. I always volunteer to teach general chemistry because it is the first taste of science, and it covers so much. From my students' freshmen year, I am teaching these fundamental concepts."

The power of motivating students

"Negative results are just what I want. They're just as valuable to me as positive results. I can never find the thing that does the job best until I find the ones that don't." Attributed to Thomas A. Edison, this quote was one of many that Lee and her students periodically put on the white board in the lab to motivate one another. For Lee, the quote is a way to show her students that being a scientist doesn't mean having a

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DISCOVERY — THE RIGHT CHEMISTRY

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series of uninterrupted successful discoveries, but that failure is part of the process.

But Lee has had undeniable success in motivating students. Out of 20 students who have gone through her NSF-funded mentoring program, 14 are now enrolled in doctorate programs and four in masters programs. When NSF first funded Lee's work, her lab added one or two new students each year, making for a five-person team. Today, it has grown to a 15-person team. Some students also get stipends to work during winter and summer breaks there. Iona College students come from diverse backgrounds, and Lee is fostering an interest in science among some students who have not been exposed to it much before college.

As she talks about her program's growth, it's apparent she's most proud of the enthusiasm for science she's instilled in her students.

"Research is exciting," she said. "We place a very high emphasis on research, and the students think this is something fun. But they take it very seriously too. We've had snow days where students call me, asking how I can help them get access to the lab so they can continue their work. And with the NSF funding, I have been able to bring them to conferences and buy things to help them do their research in the lab. It makes a difference in what kind of experience I can share with them."

From the first day of Intro to Chemistry, she tells students about her lab, inviting them to visit. Not everyone stops by, but for those who do, she shows them a personal connection between the data they discuss in class and the student lab assistants who have accrued that data.

"This research program and other mentoring programs are critical to filling the career pipeline with new scientists," said Timothy Patten, an NSF program officer in the chemistry division. "Here is an environment where real, relevant research is taking place, and these students are integral to the process. That's not only a confidence builder; it's a great experience for them to see what it is really like to be a scientist. It's a great opportunity Sunghae has provided to these students."

Contributions and limitations

Lee recognizes that not every student that she works with is going to become a chemist. She's had a student graduate and move on to work at a Napa Valley winery. Others have honed in on more tangential aspects of the work, ultimately choosing to explore software development or engineering careers as a result of their roles in her lab.

For example, one student knew he didn't want

to work on the lab's experiments, but he was good at writing computer code. He ended up developing a computer program that would transfer data to video -- a process that had previously been done manually but could now be automated, saving a significant amount of time for his student colleague experimentalists. He is currently a junior and plans to go on to a graduate program in computer science.

Lee's outreach at New Rochelle High School brought a high school freshman to work with her three years ago. He showed initiative and interest, and she knew she could work with him. He continues in her lab today as he begins his senior year in high school with plans to major in chemistry in college.

And while she admits that the challenge of having an all-undergrad lab means she needs to be there whenever her students are, she is quick to explain that it's not because she doesn't trust them.

"It's not because they can't handle it--that's not it at all," she said. "It just defeats the purpose of what I'm doing here. If it's going to be a meaningful, enjoyable educational experience, then they need to always have access to on-site mentoring."

That's what it's all about. As Lee says, she wants to see the "seed she plants in them" grow.

These days, Iona College, a liberal arts institution, has noticed Lee's impact, making her the school's first endowed professor. And NSF funding continues to advance Lee's mission of motivating and mentoring science students.

"I recognize that science may not be a major focus for a liberal arts institution, so I feel like I have had a unique opportunity to grow this program," she said. "What I am most proud of is that I feel I transform students. I awaken the possibility in them. And sometimes I am the one who helps them realize how much they are able to do."

— Ivy F. Kupec, (703) 292-8796
ikupec@nsf.gov

Investigators
Sunghae Lee

Related Institutions/Organizations
Iona College

Locations
Iona College, New York

Related Programs
Nano

Related Awards
#1212967 RUI: Microdroplet Interface Chemistry-Fundamental Studies of Self-Assembled Structures at the Liquid/Liquid Interface

Years Research Conducted
2012 - 2016

Total Grants
\$192,000

Related Websites
Soft Materials Laboratory of Sunghye Lee at Iona College:
<http://www2.iona.edu/faculty/slee/index.htm>

Others

ACC&CE – JOINT MEETING WITH THE NORTH JERSEY SECTION, AMERICAN INSTITUTE OF CHEMICAL ENGINEER

Grid-Scale Electricity Storage and Dispatch Carbon Capture With Power Generation

Speakers: Bernard Ennis, P.E.
President, EGT Enterprises, Inc.
Cedar Grove, NJ
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and

Jacinta Schultz
Senior Process Engineer
Process Group
Thielsch Engineering, Inc.
Cranston, RI
www.thielsch.com

Abstract

Bernard Ennis and Jacinta Schultz will describe the requirements and techno-economic issues at play in meeting the challenges presented as increasing amounts of renewable electricity entering the power grid. Grid stability i.e., maintaining voltage and frequency and avoiding blackouts, has emerged as a global issue as the percentage of renewables to the grid from all sources has increased. Wind and solar power systems are being deployed aggressively due to improving economics and public policy. These power sources are intermittent generators and rapid compensating capacity adjustments must be made in real time from other power generators. Electricity storage systems are set to play an essential role.

The speakers will present the European and U.S.A. experiences, assess the future risk, review current electricity storage technologies, and propose a novel solution.

Biographical Information

Bernard Ennis, P.E. has consulted on insurance, legal, technical and management matters in oil & gas, refining, petrochemical, chlor-alkali, and power generation. He has authored patents on oxy-combustion, electric chemical reactors and power generation systems. He understands the significant issues relating to new chemical technology development.

Jacinta Schultz has supervisory experience

providing process, technical and project management advisory services to industry, governments and investment houses. She is an expert in fertilizers, syngas processing and power generation. Additional experience includes project construction and plant operations problem solving as well as advising on 500+MM\$ projects in Africa, Asia-Pacific, Indian Subcontinent, and the Middle East.

Bernard Ennis, P.E. is President at EGT Enterprises, Inc. of Cedar Grove, New Jersey. He has consulted to industry, attorneys and insurance companies regarding ammonia-urea, ethylene, chlor-alkali, and power generation since 1993. Prior he worked in executive management and technical positions at CB&I, Inc. and KBR, Inc. He earned his B.S. and M.S. in Chemical Engineering at Villanova University. He has authored over 25 chemical technology patents. Member American Institute of Chemical Engineers, Association of Consulting Chemists and Chemical Engineers, Sigma-Xi Research Society of America. ennis@egtgroup.com and www.egtgroup.com.

Jacinta Schultz is a Senior Process Engineer in the Process Group at Thielsch Engineering, Inc. of Cranston, Rhode Island. She is responsible for process design and project interfaces with clients and other Divisions for all aspects of projects concerned with process and design engineering, and project management services regarding ammonia-urea, methanol, gasification, Fischer Tropsch, power generation, and other chemical processes. She earned her B.S. in Chemical Engineering at the University of Rhode Island and is member of the American Institute of Chemical Engineers. jschultz@thielsch.com and www.thielsch.com.

Date: Tuesday, March 24, 2015

Times: Registration and Networking
6:00 PM

Dinner and Presentation 7:00 PM

Place: New Jersey Institute of Technology
Campus Center
Faculty and Staff Dining Room
Third Floor

The registration fee is \$25 for members and non-members, complementary for students. Please contact Thomas B. Borne, (908) 233-6854, tslbrn@verizon.com, Joseph V. Porcelli, (917) 912-9804, jvpil@porcelli.com; or Andy Soos, phone: 908-604-2670. **Please register by March 16.**

Referring to NJIT Campus Map (<http://www.njacs.org/wp-content/uploads/NJIT-revised-campus-map-2012-12-03a.pdf>), please park in building "1. Student Mall/Parking Deck", and proceed to building "24. Campus Center".

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