THE Indicator

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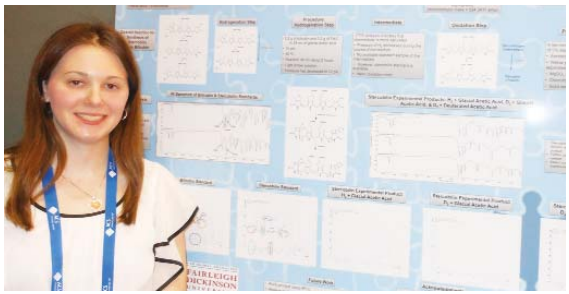
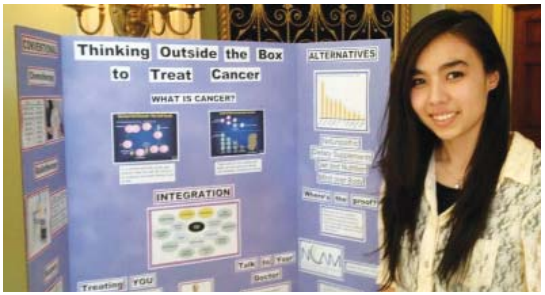
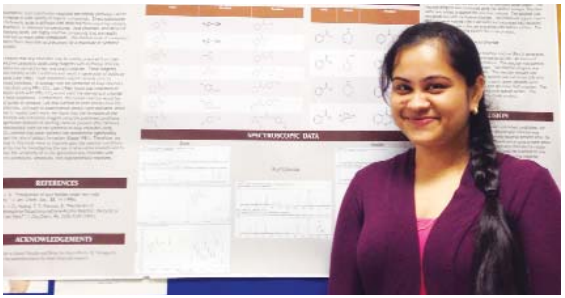
North Jersey Section

Undergraduate Travel Grant Recipients







(Top to bottom) Katelyn Lewis (FDU), Sana Mohayya (FDU), Unnati Shah (NJCU). (See article on page 16).

(Photos courtesy of Bettyann Howson)

RECYCLE THIS PAPER *PERIODICALS POSTAGE*

www.theindicator.org
www.njacs.org www.newyorkacs.org

Press Release

US LABOR DEPT. SEEKS PUBLIC COMMENT ON AGENCY STANDARDS TO IMPROVE CHEMICAL SAFETY

WASHINGTON – The U.S. Department of Labor's Occupational Safety and Health Administration today announced a request for information seeking public comment on potential revisions to its Process Safety Management standard and related standards, as well as other policy options to prevent major chemical incidents.

The RFI is in response to executive order 13650, which seeks to improve chemical facility safety and security, issued in the wake of the April 2013 West, Texas, tragedy that killed 15 in an ammonium nitrate explosion.

In addition to comments on its Process Safety Management standard, OSHA seeks input on potential updates to its Explosives and Blasting Agents, Flammable Liquids and Spray Finishing standards, as well as potential changes to PSM enforcement policies. The agency also asks for information and data on specific rulemaking and policy options, and the workplace hazards they address. OSHA will use the information received in response to this RFI to determine what actions, if any, it may take.

After publication of the RFI in the Federal Register, the public will have 90 days to submit written comments. Once the RFI is published in the Federal Register, interested parties may submit comments at **www.regulations.gov**, the Federal eRulemaking Portal. Comments may also be submitted by mail or facsimile. For more information, visit **www.osha.gov/chemicalexecutiveorder/index.html**.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit **www.osha.gov**.

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THE Indicator

The monthly newsletter of the New York & North Jersey Sections of the American Chemical Society. Published jointly by the two sections.

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

February Calendar

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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 March 2014 issue of *The Indicator* is
January 20, 2014

THIS MONTH IN CHEMICAL HISTORY

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

Another local used bookstore has recently closed. (for those who know Pasadena, CA it was Cliff's Books on Colorado Boulevard). I feel a slight twinge of guilt because, before the rise of the Internet, I used to haunt used bookstores searching for older science books.

I still enjoy browsing the musty shelves when I have the opportunity – mostly when I'm traveling these days – but most of my recent purchases of used books have been on line. Which brings me to the subject of this month's column: a recent purchase: "The Chemistry of Creation" by Robert Ellis F.L.S. The subtitle is "A sketch of the chemical phenomena of the earth, the air, the ocean" and the third edition before me was published in 1855 under the direction of The Committee of General Literature and Education appointed by The Society for Promoting Christian Knowledge (S.P.C.K.); clearly this Society saw no schism between science and religion. This volume was printed and published in England and includes 512 small format pages and a number of attractive engraved diagrams.

Robert Ellis was a physician and a devout Christian. He was widely published. In addition to being a Fellow of the Linnean Society (F.L.S.) he was also a Member of the Royal College of Surgeons (M.R.C.S.). His approach to medicine was sometimes controversial. In the 1860s he published several articles advocating anesthesia for childbirth and certain surgical procedures – a man ahead of his times. In 1848 he sent a proposal to the S.P.C.K. for a book on the chemical history of vegetation. The proposal was endorsed and the scope of the book was enlarged to become "The Chemistry of Creation". It was published in 1850. An interesting sidelight is that Ellis approached the photographic pioneer Fox Talbot for permission to use his process (Talbotype or Calotype) for the geological illustrations. The S.P.C.K. could not afford to use Talbotypes in the book, which was consequently illustrated with engravings and line drawings; just as well for me. If "Creation" had Talbotype plates of such an early date its current value would be at least ten times what I paid!

The success of "The Chemistry of Creation" in its several editions brought Ellis a new opportunity. (It is impressive that while being an active physician he managed to do so much writing and editing – typical of those hard working Victorian Brits.) The Royal Commissioners of the Great Exhibition of 1851 appointed him as the science editor of the Official Catalog of the exhibition, while he was still in his twenties. The Great Exhibition, sponsored by Queen Victoria's consort Prince Albert, was housed in a gigantic glass and steel construct built in Hyde Park. It was perhaps the first World's Fair. Ellis wrote the general introduction to the catalog based on information submitted by exhibitors. He believed that the catalog was in the tradition of the collaboration between science and industry typical of British mercantile history. "In the seventeenth century Robert Boyle perceived the important results likely to arise from the "naturalist's insight into trades". It is to be hoped that such results will not now fail of their accomplishment".

The catalog was not completed until almost the close of the Great Exhibition and Ellis wrote: "The first function of a Descriptive Catalog can therefore scarcely be fulfilled ere the great spectacle it illustrates will pass away". But he expected that its value as a permanent record of "these wonders of Art and Industry which Man, taught by God, has been enabled by Him to accomplish" would be appreciated for a long time to come. Work on the catalog, overseen by Ellis, was contributed by twenty five authors including thirteen fellows of the Royal Society. Two of the most notable were Baron Justus von Liebig, a name known to all chemists; and Professor Richard Owen, biologist, anatomist, and paleontologist, noted for his work on fossils, who coined the term dinosaur, and helped found the Natural History Museum in London.

In a succeeding column I will look at the book "The Chemistry of Creation".

Some of the material in this column was obtained from a review by David Cormack in the Internet Archive of the California Digital Library.

2014 WILLIAM H. NICHOLS MEDAL DISTINGUISHED SYMPOSIUM AND AWARD DINNER

Symposium: NEW STRATEGIES AND TACTICS FOR COMPLEX MOLECULE SYNTHESIS

Award Recipient: PROFESSOR AMOS B. SMITH, III
Rhodes-Thompson Professor of Chemistry, University of Pennsylvania

Date: **Friday, March 28, 2014**
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 Pamela K. Kerrigan, 2014 Chair, ACS, New York Section, The College of Mount Saint Vincent

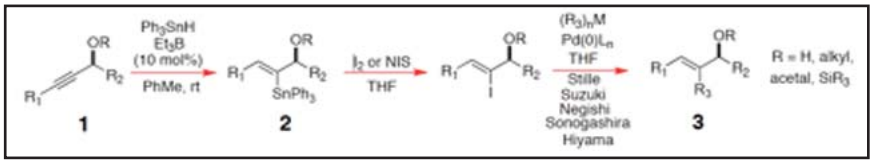
1:35 PM Opening of the Distinguished Symposium — Professor Paris Svoronos, 2014 Chair-elect, ACS, New York Section, CUNY – Queensborough Community College

1:45 PM Natural Product Synthesis — Professor Yoshito Kishi, Harvard University, Cambridge, MA

The halichondrins, originally isolated from the marine sponge Halichondria okadai by Hirata and Uemura, are polyether macrolides, which have received much attention due to their intriguing structure and extraordinary anti-tumor activity. In this presentation, we will discuss our recent efforts toward a unified total synthesis of the halichondrin class of natural products.

2:30 PM The O-Directed Free Radical Hydrostannation Reaction Mechanism and Applications in Complex Molecule Total Synthesis — Professor Karl J. Hale, Queens University Belfast, Northern Ireland, UK

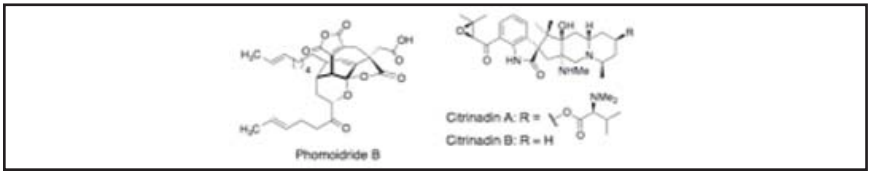
In 2005, our group reported the first truly reliable method for performing the O-directed free radical hydrostannation on propargylically-oxygenated alkylacetylenes 1. The protocol, which utilizes Ph3SnH and catalytic Et3B/O2 in PhMe at room temperature, generally affords vinyl triphenylstannanes of predominant structure 2 in high yield, with excellent levels of stereo- and regio-control. In this lecture, I will show the great utility of this new O-directed free radical hydrostannation process in trisubstituted olefin synthesis, and I will also discuss its highly complex reaction mechanism, which involves multiple reversible stannyl radical addition-elimination and vinylstannane isomerization events all occurring in unison to give 2 as the primary reaction product. I will then show how our group has recently used this methodology to synthesize the frog toxin, (+)-pumiliotoxin B, and the antitumor oxazole, (+)-inthomycin C. The application of this method to a projected synthesis of the antitumor macrolide, (+)-acutiphycin will also be discussed.



3:15 PM Coffee Break

3:45 PM Recent Progress in the Synthesis of Complex Natural Products — Professor John L. Wood, Baylor University, Waco, TX

Recent efforts in our laboratories have focused on the synthesis of several complex natural products. The evolution of synthetic strategies directed toward the phomoidrides and citrinadins will be discussed.



4:30 PM Evolution of Anion Relay Chemistry (ARC): Design, Synthesis and Validation — Professor Amos B. Smith, III NICHOLS MEDALIST

Anion Relay Chemistry (ARC), a robust multi-component synthetic tactic, permits rapid construction of complex natural and "natural-like" molecules for biomedical applications. By exploiting various anion (i.e., charge) relocation strategies via [1,n]-Brook Rearrangements, the controlled, sequential assembly of architecturally diverse structures can be achieved by virtue of the latent nucleophilicity of the designed bifunctional ARC linchpins, thus comprising a reaction sequence not dissimilar to "living polymerization." Importantly, the iterative ARC protocol can be carried out in a "single flask!"

Recent integration of Anion Relay Chemistry (ARC) with the Takeda and Hiyama reactions has revealed a "new ARC dimension," namely the validation of efficient palladium-catalyzed cross-coupling reactions (CCRs) of aryl and alkenyl organolithium agents with aryl and vinyl halides, that permits near quantitative recovery of the siloxane-based transfer agent. This tactic offers a practical protocol to circumvent undesired processes, such as lithium–halogen exchange.

5:45 PM Social Hour

6:45 PM William H. Nichols Medal Award Dinner — Professor Carl R. Johnson (Wayne State 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 through the New York Section website using Paypal.

********** **RESERVATION FORM** **********

2014 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & MEDAL AWARD BANQUET in honor of Professor Amos B. Smith III

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

Please reserve
_____ places for the symposium & banquet at $120/person, ACS member
_____ places for the symposium only at $40/person, ACS member
_____ places for the banquet only at $110/person, ACS member
_____ places for the symposium & banquet at $150/person, Non-member
_____ places for the symposium only at $60/person, Non-member
_____ places for the banquet only at $120/person, Non-member
_____ places for the symposium only at $25/person, Students, Unemployed
_____ places for the symposium only complimentary for 50 year + ACS members

(For table reservations of 8 or more, use the ACS member $120/person rate for combination tickets)

Reserve a table in the name of: _____

Names of guests are:_____
_____
_____
_____
_____
_____
_____
_____
_____

Indicate numbers in your group who choose:
Chicken _____
Filet Mignon _____
Salmon _____

Mail Tickets to:
Name: _____
Address: _____
_____
_____
_____

BANQUET RESERVATION DEADLINE: MARCH 18, 2014

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 2014

The dates for the Board Meetings of the ACS New York Section for 2014 were chosen and approved at the September 2013 Board Meeting. 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** or calling the office at (516) 883-7510.

The 2014 Board Meetings will be held on the following Fridays at 6:00 PM at the College of Mount Saint Vincent, Riverdale, NY. Dr. Pamela K. Kerrigan will chair the meetings.

Friday, February 28
Friday, May 2
Friday, June 13
Friday September 19
Friday November 21

Also, please mark your calendar with the dates of the following major events.

Friday, March 28, William H. Nichols Medal Award Symposium and Dinner

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

NY SECTION AND ST. JOSEPH'S COLLEGE —19TH ANNUAL HS POSTER SESSION

The New York Section of the American Chemical Society and St. Joseph's College present The 19th Annual High School Poster Session at St. Joseph's College, Brooklyn NY, Saturday, February 1, 2014 from 9:00 AM to 1:00 PM.

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

The program includes:

• Judging of posters by scientists working in industry and academia.

• Guest speaker: Cindie Kehlet, Ph.D., Associate Professor of Math and Science, Pratt Institute

• Certificates to all participants

• Prizes to the four winning presenters.

For more information or to register visit: **www.sjcny.edu/postersession** or contact Rhomesia Ramkellowan at **rramkellowan@sjcny.edu** or **sjchighschoolpostersession@gmail.com** (Include HS Poster Session in the subject line).

Sponsored by The New York Section of the American Chemical Society and St. Joseph's College 245 Clinton Avenue, Brooklyn, NY.

Portable Nuclear Magnetic Resonance for the Investigation of Artist Materials

Featured Keynote Speaker:
Cindie Kehlet, PhD
Associate Professor of Math and Science,
Pratt Institute,
Brooklyn

Dr. Kehlet was awarded the 2006 Danish Young NMR Researcher Prize for her work in biological solid-state Nuclear Magnetic Resonance spectroscopy. Also a studio-trained fine artist, she explores the applications of NMR techniques to the science of art conservation.

Pratt's Laboratory for Scientific Study of Art investigates artist materials and their degradation to enhance our ability to preserve art and cultural heritage. The laboratory specializes in non-invasive analysis and works primarily with unilateral Nuclear Magnetic Resonance (NMR). Conventional NMR has so far had limited use in analyzing works of art since it requires that samples to be placed inside the magnet. However, with the development of portable single-sided NMR instruments, measurements can now be performed in a non-invasive and non-destructive manner. With the Profile NMR MOUSE®, it is possible to obtain depth profiles of materials and thereby obtain information on, e.g., material composition and molecular mobility at different depths from the surface of the object.

Date: Saturday, February 1, 2014
Times: 9:00 AM - 1:00 PM

Place: St. Joseph's College
Brooklyn NY

For more information or to register visit: **www.sjcny.edu/postersession** or contact Rhomesia Ramkellowan at **rramkellowan@sjcny.edu** or **sjchighschoolpostersession@gmail.com** (Include HS Poster Session in the subject line).

LONG ISLAND SUBSECTION

Inorganic/Organic Hybrid Structures for Photovoltaics (Low Cost Roll to Roll Processing of Solar Cells)

Speaker: Dr. Wayne E. Jones, Jr.
Department of Chemistry
State University of New York
at Binghamton
Binghamton, NY

The preparation of competitive solar energy conversion technologies has been limited by the cost and efficiency of modern materials. We have been developing new approaches to layered inorganic/organic photovoltaic materials on flexible substrates. The flexible thin film solar cell is based on a combination of organic bulk heterojunction strategies with semi-conductor nanostructures. These hybrid inorganic/organic systems require development of new materials and processing technologies in order to make them suitable for low cost roll-to-roll manufacturing. Titanium dioxide nanoparticles, conducting polymer films such as polyethylenedioxythiophene (PEDOT) and polyaniline (PANI), and self-assembled layered materials of laponite have been prepared on polyethylene terephthalate (PET) substrates. We have also explored alternative transparent conducting electrode layers for flexible substrates including doped ZnO and CVD deposited conducting polymers. In this presentation, we will explore recent advances in the preparation, processing, and testing of these hybrid photovoltaic devices completed at the new Center for Autonomous Solar Power (CASP) and the Center for Advanced Microelectronics Manufacturing (CAMM) at Binghamton University's Center of Excellence.

Wayne Jones is Professor and Chair in the Department of Chemistry at Binghamton University (SUNY) where has served in numerous leadership roles on the faculty for 20 years including Interim Dean of Arts and Sciences in 2012/2013. He received his BS from St. Michael's College, his PhD in Inorganic Chemistry from the University of North Carolina at Chapel Hill, working with T. J. Meyer, and held a post-doctoral fellowship at the University of Texas at Austin. His research and scholarship has been recognized internationally in the area of molecular wires and devices including recognition as a Fellow of the American Chemical Society in 2010. He has published over 125 research articles, review chapters, and patents in the areas of photoinduced electron and energy transfer in macromolecular systems including molecular wires, electrically and thermally conducting nanomaterials, and photoinduced electron transfer dynamics in organic/inorganic hybrid conducting polymer materials, and fluorescent conjugated polymer sensors. His current collaborations include the Center for Autonomous Solar Power (CASP) and the Center for Advanced Microelectronics Manufacturing (CAMM) in NY State. Recipient of several teaching awards including the State University of New York Chancellor's Award for Excellence in Teaching in 2001, his teaching interests involve long-term curriculum development in chemistry, including more expanded use of technology. He was appointed founding Director of the Center for Learning and Teaching at Binghamton University and continues to work with faculty on innovative, student-centered approaches to learning. Since 2008 he has served as the Director of the Go Green Institute, a program designed to inspire middle school students to careers in Science and Engineering.

Date: **Thursday, February 6, 2014**
Times: Coffee/Social 5:30 PM
Seminar 6:00 PM
Place: Queensborough Community College
Science Building, S-112
Times: Dinner 7:00 PM
Place: Nearby Greek restaurant
Cost: Dinner $25.00 per person

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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.

NY NANOSCIENCE DISCUSSION GROUP

2013-2014 Sessions.

Hosted by the New York University Department of Chemistry

Speakers to be announced.

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.

Mark Your Calendars:

Dates: Tuesdays, February 11 and April 8, 2014
For more information, contact: James Canary (**james.canary@nyu.edu**)

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

WESTCHESTER CHEMICAL SOCIETY

Special Seminar – "VETI-GEL: A Novel and Biocompatible Hemostatic Agent that Stops Bleeding in Seconds"

Speaker: Joseph Landolina
Suneris

VETI-GEL is a novel hemostatic agent composed of plant-derived analogs of the extracellular matrix. When applied to a traumatically bleeding wound, the gel polymerizes into a mesh that replicates the local tissue, instantly activating the clotting cascade and causing hemostasis to occur. VETI-GEL has been evaluated in rigorous in vitro hemostasis models as well in small and large animals in vivo. The gel is currently in testing to be released for human use.

Joe is pursuing a BS in Chemical and Biomolecular Engineering and an MS in Biomedical Engineering and Biomaterials from the Polytechnic Institute of NYU. Joe co-founded Suneris and invented VETI-GEL at the age of 17. He has experience in biocompatible polymer design and completed research at Columbia University in tissue engineering prior to attending NYU. Joe is responsible for the technological development of the Suneris product line.

Date: Wednesday, February 12, 2014
Times: Refreshments 5:30 PM
Lecture 6:00 PM
Place: Westchester Community College
Gateway Building, Room 110
75 Grasslands Road
Valhalla, NY
Cost: Free and Open to the Public

*****

Next Meetings:

Special Seminar – "From the Death of an Icon to the Birth of a Physical Principle for Ultra-Sensitive Label-Free Biosensing"

Speaker: Stephen Arnold

Date: Wednesday, March 19, 2014
Times, place and cost same as February.

*****

Special Seminar – "Micro-Tools to Study Single-Cell Immunology"

Speaker: Qing Song

Date: Tuesday, April 8, 2014
Times, place and cost same as February.

Further Information: Paul Dillon
PaulWDillon2@hotmail.com
(914) 393-6940

BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMACOLOGY DISCUSSION GROUP

Strategies to Inhibit Graft-Versus-Host Disease While Sparing the Graft-Versus-Tumor Response: Finding the Sweet Spot

Organizers: Joshua Apgar, PhD
Boehringer Ingelheim Pharmaceuticals

Kelli Ryan, PhD
Boehringer Ingelheim Pharmaceuticals

Anthony Slavin, PhD
Boehringer Ingelheim Pharmaceuticals

Jennifer Henry, PhD
The New York Academy of Sciences

Speakers: John DiPersio, MD, PhD
Washington University School of Medicine

Robert J. Soiffer, MD
Dana-Farber Cancer Institute

Marcel R. M. van den Brink, MD, PhD
Memorial Sloan Kettering Cancer Center

Megan Sykes, MD
Columbia University

James Ferrara, MD, DSc
University of Michigan

David L. Porter, MD
University of Pennsylvania Medical Center

William R. Drobyski, MD
Medical College of Wisconsin

Mechanisms that cause graft-versus-host disease (GvHD), a major cause of mortality after stem cell transplants, must be inhibited while preserving the graft-versus-tumor (GvT) response. Explore recent advances in separating GvHD from GvT effects.

Date: **Tuesday, February 18, 2014**
Time: 8:30 AM – 4:30 PM
(reception to follow)
Place: The 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/GvHD**

To become a Member of the Academy, visit **www.nyas.org/benefits**

HIGH SCHOOL TEACHERS TOPICAL GROUP

Artificial Photosynthesis, An Excited State Acid-Base Process

Speaker: Harry Gafney
Department of Chemistry
Queens College

Artificial photosynthesis refers to the conversion of carbon dioxide to a hydrocarbon such as methane

$$CO_2 + 2H_2O \rightarrow CH_4 + 2O_2$$

The photocatalyzed conversion has been known to occur in different systems, including the system that will be described here, for more than a quarter of a century, yet there has been no significant improvement in the yield of methane, or on driving the conversion with visible light. This presentation will describe the current mechanistic models, and challenge these models with data that supports an alternative excited state acid base mechanism. The basic concepts of excited-state acid-base chemistry will be described as well as its capability to drive the eight electron, four proton reduction of CO_2 to CH_4 with sun light.

Date: **Friday, February 28, 2014**
Times: Social and Dinner — 5:45 PM
Place: M&G Pub
(Murphy and Gonzales
21 Waverly Place (at Green Street, North-east corner)
New York, NY
No reservations required
Place: New York University
Silver Center Room 207
32 Waverly Place (South-east corner Washington Sq. East)
New York, NY

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

Note: 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

On December 4, 2013 Dr. Nadrian C. (Ned) Seeman, Professor of Chemistry at New York University, gave a fascinating and informative presentation to the Westchester Chemical Society – "DNA: Not Merely the Secret of Life". The talk centered on the use of DNA as a structural, not informational, molecule. Dr. Seeman and his colleagues have built multiply-junctioned DNA molecules and, from these, one-, two- and three-dimensional nanostructures and even machines. These molecules are assembled using the information inherent in normal DNA base pairing. Further, these molecules are not only technologically interesting but really qualify as works of art. Those who may wish further information can check Dr. Seeman's laboratory home page (**http://Seemanlab4.chem.nyu.edu**). Dr. Seeman's talk, given at the Westchester Community College in Valhalla, N.Y., was followed by an interesting question and answer, and discussion, session. Several of us, including the speaker, then enjoyed a dinner together at a nearby restaurant. The photo below is of Dr. Seeman and the WCS board of directors.

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.

Joan Laredo-Liddell, Anthony Durante, Rolande Hodel, Ned Seeman, Paul Dillon, Peter Corfield, Jody Reifenberg and Jean Delfiner.

(Photo courtesy of Paul Dillon)

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. All ACS members are welcome to attend this meeting and to become more involved in section activities.

Date: Monday, February 17, 2014
Time: 6:00 PM
Place: Fairleigh Dickinson University
Hartman Lounge, The Mansion
285 Madison Avenue
Madison, NJ

Cost: $5.00 - pizza dinner

Directions can be found using map quest and the address above. A map of the campus can be found at **http://www.fdu.edu/fm.html**.
Parking is available in the Mansion Lot.

Reservations: call (973) 822-2575 or email **njacsoffice@aol.com** prior to **Wednesday, February 12, 2013**.

Dinner at the Section Meeting 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.

*****

Next Meetings:

Monday, March 17, 2014
Monday, April 23, 2014
Monday, May 22, 2014
Monday, June 18, 2014

The New Jersey Pharmaceutical Quality Control Association (NJPQCA) invites you to attend our Lunchtime (11:30 AM to 2:00 PM) Monthly Meetings for 2013-2014; the following dates have been set for the upcoming year. Please mark your calendars!

January through May 2014	Our QA Certification Training Course (evening weekly sessions)	Registration will begin in the Fall of 2013
January 21, 2014	CAPA and Investigations	Speaker: Karen McCullough
February 18, 2014	ICH Q3D Elemental Impurities (lunchtime meeting)	Speaker: Janeen Skutnik-Wilkinson
March 18, 2014	Monograph Harmonization: Throwing Down the Gauntlet	Speaker: Mark Wiggins
April 8, 2014	Rapid Micro Testing vs. Traditional Micro Testing (evening discussion panel)	Speakers: Dr. Daniel Prince, Dr. Scott Sutton, Dr. Michael Miller
May 21, 2014 FDA Conference	More details to follow	Speakers: details to follow

Future updates on meeting information can also be found on the website (topics and speakers):
www.NJPQCA.org

Residential School on Medicinal Chemistry and Biology in Drug Discovery
June 8-13, 2014
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

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

For more information and application forms:
www.drew.edu/resmed
e-mail: resmed@drew.edu
phone: 973/408-3787; fax: 973/408-3504

MID-ATLANTIC CHAPTER LABORATORY ROBOTICS INTEREST GROUP

Winter Scientific Meeting - Laboratory Automation - The View From the Bench

The LRIG winter meeting is designed so scientists active in laboratory automation and other advanced technologies can share their work. The meeting opens with a free buffet supper and vendor exposition. There is no charge to attend the meeting although pre-registration is requested. Please go to: http://my.lrig.org/Home/ and follow the links to the Mid-Atlantic Chapter page. (Note: If you have not done so already, you will need to create a free account before registering.)

The complete menu will be posted on the chapter web page once it is finalized.

Technical Program:

DNA: Not Merely the Secret of Life

Keynote Speaker: Ned Seeman
New York University

We build branched DNA species that can be joined using Watson-Crick base pairing to produce N-connected objects and lattices. We have used ligation to construct DNA topological targets, such as knots, polyhedral catenanes, Borromean rings and a Solomon's knot. Branched junctions with up to 12 arms have been made.

Nanorobotics is a key area of application. We have made robust 2-state and 3-state sequence-dependent devices and bipedal walkers. We have constructed a molecular assembly line using a DNA origami layer and three 2-state devices, so that there are eight different states represented by their arrangements. We have demonstrated that all eight products can be built from this system.

A central goal of DNA nanotechnology is the self-assembly of periodic matter. We have constructed 2-dimensional DNA arrays with designed patterns from many different motifs. We have used DNA scaffolding to organize active DNA components. We have used pairs of 2-state devices to capture a variety of different DNA targets.

Recently, we have self-assembled a 3D crystalline array and have solved its crystal structure to 4 Å resolution, using unbiased crystallographic methods, shown below. We can use crystals with two molecules in the crystallographic repeat to control the color of the crystals. Thus, structural DNA nanotechnology has fulfilled its initial goal of controlling the structure of DNA in three dimensions. A new era in nanoscale control awaits us.

AUTOMATION OF BLOOD SPOTTING:

Presentation #1: **Development & Validation of a LIMS Interface for a Semi-Automated Dried Sample Punch Instrument**

Speaker: Heidi Mangus
Bristol-Myers Squibb Co.

The use of dried blood spots (DBS) as a sampling technique for pharmacokinetic/toxicokinetic bioanalysis has been of recent interest in the pharmaceutical industry. Implementation of an automated or semi-automated punching device can greatly increase the throughput of DBS bioanalysis. To increase our DBS capabilities, two semi-automated punch instruments were acquired with the intention to validate the systems for use in a regulated environment. The instruments can accommodate two different punch head sizes and are equipped with light targeting, anti-static, punch confirmation and dust extraction systems, as well as an integrated barcode reader. The instrument software provides opportunities for sample distinction and identification; however, utilizing these features requires labor-intensive, sequence-specific method setup and results in a large volume of single-use files.

In parallel with the validation of the instruments' software, a LIMS interface was developed and implemented to more adequately couple the software's capabilities with our lab's existing workflows. The interface, EZDBS, converts a LIMS output file of the sample analysis sequence into a format compatible with the instrument software. EZDBS allows the analyst to create a unique punching order while maintaining the LIMS sequence order in the assay plate, avoiding potential carryover from the punch head. By coupling the use of EZDBS and the instrument's barcode reader, the resulting output files serve as a sampling audit trail which can be visualized in plate map format. Additionally, EZDBS reduces the amount of front-end time required for method setup, reduces the volume of generated files, and enhances the quality of information captured in the output files. The interface has been successfully used to support both non-clinical and clinical study sample analysis in

drug development. This presentation will discuss the workflow of automated DBS sample analysis using EZDBS, including advantages in throughput, sample chain-of-custody, and data quality..

Presentation #2: **Automating Dried Blood Spotting.**

Speaker: Sam Abdelhamid
Purdue Pharma L.P

No abstract available at press time.

THE FUTURE OF LABORATORY AUTOMATION:

Presentation #1: **Reflections on Automation in Drug Discovery: Thoughts on the Future**

Speaker: Timothy McGahan
Drug Discovery Scientist

Laboratory automation has advanced very far from what now seems like humble beginnings in 1980s. Keeping in mind laboratory automation's past, this talk will attempt to extrapolate current trends and make some predictions of the future. Considering our highly dynamic industry, such predictions will likely only be as accurate as a typical five-day weather forecast. However, the topics presented here could generate some interesting comment and perhaps lively debate about the future of our field.

Additional presentations will be scheduled as the meeting date approaches. Please check the chapter web site for updates.

Date: **Wednesday, February 5, 2014**
Time: Doors open at 6:00 PM
Place: Holiday Inn Somerset Bridgewater
195 Davidson Avenue
Somerset, NJ

Any questions about the meeting can be sent to Kevin Olsen at
Olsenk@Mail.Montclair.Edu

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

Date: **Monday, February 10, 2014**
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 **billsuits@earthlink.net**.

See **www.njacs.org** under the Career tab for Jobs hidden from sight and relevant blogs.

Learn more about the North Jersey Section at www.NJACS.org

YOUNGER CHEMISTS COMMITTEE

Scent and Fragrance Chemistry

The NJ Younger Chemists Committee (YCC) is hosting the upcoming National YCC webinar on Scent and Fragrance Chemistry on **Tuesday, February 11, 2014**. "Roses are red and violets are blue but why do we perceive scents the way that we do?" The webinar will be presented both at Rutgers (Busch Campus) in Piscataway NJ and Fairleigh Dickinson University in Madison, NJ. This webinar is open to any Younger Chemist (under 35 years old) in the area!

Date: **Tuesday, February 11, 2014**
Time: 7:00 PM
Place: Rutgers Busch Campus
Piscataway, NJ
and
Fairleigh Dickinson University
Madison, NJ

For more information check out our website: **http://www.njacs.org/ycc**

NMR TOPICAL GROUP

Exploring Protein Folding Rates and Routes with High Pressure NMR

Speaker: Prof. Catherine Royer
Rensselaer Polytechnic Institute
Troy, NY

Date: **Wednesday, February 19, 2014**
Times: Dinner 6:00 PM
Seminar 7:00 PM
Place: CABM at Rutgers University
Room 010
679 Hoes Lane West
Piscataway, NJ
Cost: Dinner $15 ($5 for students/ postdocs/retired/unemployed).
No charge for seminar only.

Directions: **http://www.mapquest.com** and enter depicted address.

Register online at
http://www.njacs.org/nmr.html
or via e-mail to **gvts@cabm.rutgers.edu**

UNDERGRADUATE TRAVEL GRANT

In 2013, the North Jersey Section established the Undergraduate Student Travel Grant program to financially aid four (4) students who will present research papers or posters at an ACS National Meeting. Selection of recipients depends upon the scientific merit of the paper, academic letters of support and membership in the North Jersey Section. The 2014 awardees are Katelyn Lewis (FDU), Sana Mohayya (FDU) and Unnati Shah (NJCU). They will be presenting their research posters at the 247th ACS National Meeting in Dallas, March 16-20, 2014.

Katelyn Lewis will present her research project entitled: "Synthesis of Stercobilin: A Potential Biomarker for Autism." According to her research advisor, "Katelyn is trustworthy, ambitious and eager to acquire knowledge, she brings a great deal of enthusiasm to the project. She is truly an outstanding candidate for the travel award."

Although organic chemistry focuses primarily on synthesis, spectroscopy is used to analyze the products. **Sana Mohayya** will present research on "An Analysis of the Importance of Spectroscopy: An Improved Approach to the Organic Chemistry Laboratory." Two procedures were used which confirmed expected results.

Unnati Shah represents New Jersey City University. Her research adviser states, "We have started a new synthetic methodology project that involves the synthesis of ketones from carboxylic acids in one pot, and Unnati has been the primary individual to investigate the parameters of the reaction including solvent, phosphine, and substrate." Unnati will present her findings on this topic at the meeting.

An additional travel grant is still available for an undergraduate presenting a paper at the fall national meeting in San Francisco. The application may be found at **http://www.njacs.org/ug-travel-grants**.

2013 LEO HENDRIK BAEKELAND AWARD AND SYMPOSIUM

The 2013 Leo Hendrik Baekeland Award was presented to Professor Christopher Chang of the University of California, Berkeley at a symposium held at the Center for Integrative Proteomics Research, Rutgers University in Piscataway, NJ on December 6th. More than 115 industrial chemists, students, and faculty from North Jersey and surrounding sections attended. Dr. Chang received the Baekeland Award for his "accomplishments in pure or industrial chemistry, as characterized by his initiative, creativeness, leadership and perseverance indicated by published or unpublished evidence."

In his keynote address, Professor Chang described his lab's cutting-edge research on molecular imaging approaches to mapping and studying chemistry in the brain. Other speakers included Kenneth N. Raymond, Professor of the Graduate School and Chancellor's Professor at the University of California, Berkeley, an expert in bioinorganic and coordination chemistry; JoAnne Stubbe, Novartis Professor of Chemistry and Professor of Biology, from Massachusetts Institute of Technology who is known for her groundbreaking experiments establishing the mechanisms of ribonucleotide reductases, polyester synthases, and natural product DNA cleavers; David MacMillan, Professor of Chemistry at Princeton University, known for pioneering a new method for creating organic molecules that have the capacity to bind to different sites in the body; and, Michelle Chang, Associate Professor of Chemistry, University of California at Berkeley whose research utilizes the approaches of mechanistic biochemistry, molecular and cell biology, metabolic engineering, and synthetic biology to address problems in energy and human health.

Dr. Monica Sekharan, Baekeland Award Chair and Chair-elect of the North Jersey Section, welcomed the guests and gave the history of the Baekeland Award. Dr. Jefferson Tilley presented the gold medal and honorarium to Professor Chang. During the presentation, Dr. Tilley described the similarities between Leo Baekeland's characteristics and accomplishments and Dr. Chang's. Dr. Ron Kong, NJ-ACS Awards Chair and 2015 North Jersey Section Chair gave the closing remarks and an invitation to attend the reception in honor of Dr. Chang where attendees enjoyed socializing and discussing research with the speakers.

The Section presents the Award biennially to commemorate the technical and industrial achievements of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example. Visit the North Jersey Section's website, **www.njacs.org**, for more details.

More photos on page 18.

Professor Christopher Chang, 2013 Baekeland Awardee, discusses his cutting-edge research.

Attendees enjoyed talking with Prof. Chang and the other symposium speakers at the reception.

(All photos compliments of Tom Krone)

More than 115 industrial chemists, students, and faculty attended the symposium.

2013 LEO HENDRIK BAEKELAND AWARD AND SYMPOSIUM

(continued from page 17)

During the reception Dr. Stubbe discusses her work with attendees.

Prof. David MacMillan, Prof. Ken Raymond, Prof. Michelle Chang, Prof. Christopher Chang (Baekeland Awardee), Prof. JoAnne Stubbe

2013 Baekeland Presenters and Organizers: Ron Kong, Prof. JoAnne Stubbe, Prof. David MacMillan, Prof. Michelle Change, Prof. Christopher Chang, Bill Suits, Prof. Ken Raymond, Alan Cooper, Diane Krone, Amber Charlebois, Monica Sekharan, Les McQuire, Jeff Tilley, Bettyann Howson.

Call for Grant Proposals

LSAC SUBCOMMITTEE ON GRANTS AND AWARDS

The **LSAC Subcommittee on Grants and Awards** is now accepting **Local Section Innovative Project Grant (IPG)** proposals.

What is the IPG program?

The purpose of the Local Section IPG Program is to initiate projects in local sections to increase member involvement, improve services to members, and increase the public's understanding of chemistry. Each local section IPG proposal can be funded up to $3,000. It is a requirement that local sections submit final reports for any previously funded IPGs in order to be considered for new proposals.

Before You Apply

Be sure to adhere to the IPG guidelines, procedures, and restrictions found on the Local Section IPG website to maximize chances for funding. In addition, carefully consider the Frequently Asked Questions (FAQs) section, where you can learn more about ways to be innovative, review recently funded IPGs, and read through several model proposals.

How to Apply

Once any outstanding final reports are received, your local section can apply for an IPG by completing this application form. Upon clicking "submit" on this online form, your application will automatically transmit to **lsac@acs.org**. The deadline for receipt of proposals is **Friday, January 31, 2014**.

We look forward to reviewing many competitive proposals this round!

Sincerely,
Martin Rudd, 2014 Chair
Committee on Local Section Activities

Stephanie Watson, Chair
LSAC Subcommittee on Grants and Awards

Call for Nominations

WCS DISTINGUISHED SCIENTIST AWARD 2014

The Westchester Chemical Society is accepting nominations for the “WCS Distinguished Scientist Award 2014”.

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, 2014** to Dr. Paul Dillon at **PaulWDillon2@hotmail.com** or 67 Matthes Road, Briarcliff Manor, NY 10510 or to Dr. Peter Corfield at **pwrc@earthlink.com**.

METRO WOMEN CHEMISTS

The Metro Women Chemists Committee is now accepting nominations for the **5th 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, 2014.**

The mentoring award will be presented at the MWCC event on May 14, 2014 at Farleigh Dickinson University in Madison. The event will start at 6:00 PM 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**).

Call for Volunteers

LIBERTY SCIENCE CENTER

FREE Community Evenings

Volunteers are needed to host a table or do a demo at this event. The dates selected are the prime dates for these events as they are near National Chemistry Week and Earth Day. If we have more volunteers, we can go more days.

Community Evenings are exclusive events hosted throughout the year for all students, teachers and families from NJ's 31 former Abbott Districts. Held from 5:30 PM until 9:00 PM, families are invited to explore the Science Center's themed exhibition galleries; experience the excitement of IMAX films* and RealD 3D shows*; and engage in special family programming, live demonstrations and hands-on activities – all at no cost.

Dates: February 19, 2014, March 19, 2014, April 30, 2014, May 21, 2014

To Volunteer or if you have questions contact Miriam Gulotta **mirjet2@yahoo.com** or Jeannette Brown **Jebrown@infionline.net**.

National

GIFT OF EDUCATION

Give the gift of free educational resources to a high school teacher you know. The American Chemical Society offers a wide variety of materials online at **www.acs.org/highschool**. Here are just a few:

ChemMatters is an educational magazine containing articles on popular topics for teenagers. By demystifying the chemistry behind a subject—be it barbecue, perfume, or nutrition labels—articles explain the connection between classroom topics and the real world. Each issue offers one free article online and an extensive free teacher's guide with activities, reading strategies, materials, background information and much more. Annual subscriptions for the hard-copy magazine cost $16, and bulk rates are available. (This would make a great gift for a high school chemistry teacher in your community.)

The **ACS ChemClub** program provides students with a unique opportunity to experience chemistry beyond the classroom. Students participate in after-school activities, get involved in community building, learn about chemistry careers, enjoy social events, and better understand how chemistry plays a role in our everyday lives. ChemClub advisors receive a handbook of information and resources for starting a club. Quarterly resource packets and occasional bonus items help with ongoing club activities.

Landmark Lesson Plans are high school lesson plans based on subjects in the history of chemistry. Topics include the discovery of fullerenes, development of baking powder, and Joseph Priestley's discovery of oxygen. Each lesson is complete with reading material, a video and activities for high school students. Lessons are written by high school chemistry teachers and reviewed by subject matter experts.

By sharing this message with high school chemistry teachers you know, you can be a **Chemistry Ambassador** and connect ACS's valuable educational resources to the audiences they're intended to serve. We're always interested in feedback, so after you've shared these resources let us know how they were received.

Professional/Product Directory

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