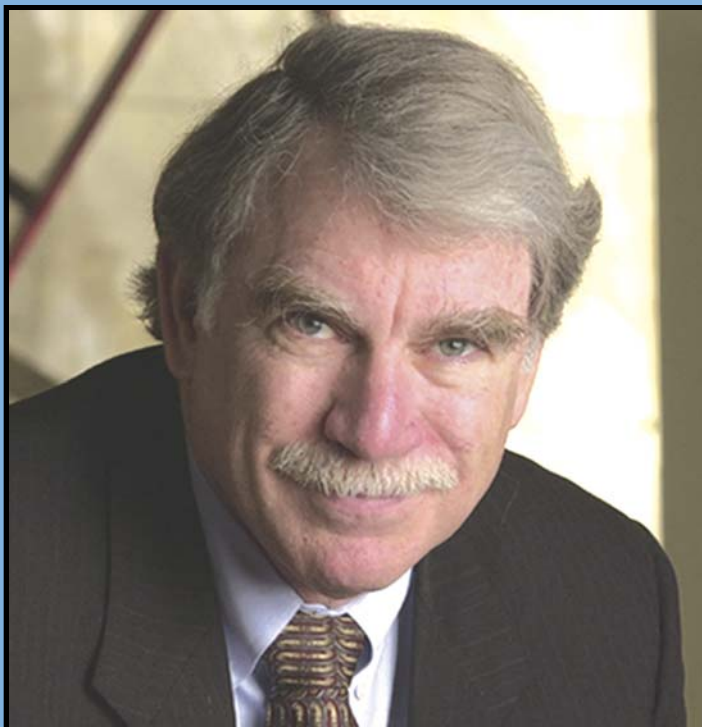


THE Indicator

FEBRUARY 2012

Vol. 93 • No. 2

ISSN0019-6924



Dr. Alan G. Marshall **2012 Nichols Medalist**

*See Biography on page 7
and Program on pages 8 and 9.*

RECYCLE THIS PAPER

PERIODICALS POSTAGE

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

STOP WASTING \$\$\$ on vacuum pumps!!

Rebuilding is smart.

A new pump costs **four times** what rebuilding costs.

Rebuilding is easy.

Just call 978 667 2393 for service second-to-none.

Mass-Vac does the job right.

- Factory trained technicians.
- Rebuilt and new pumps in stock.
- No-hassle parts and labor guarantee.
- Complete line of filtration and trap systems.

Because a really old, really healthy vacuum pump is a beautiful thing!



Mass-Vac, Inc.

247 Rangeway Road ■ PO Box 359 ■ North Billerica, MA 01862
978 667 2393 Fax 978 671 0014 sales@massvac.com www.massvac.com

www.emdchemicals.com/analytcs

Does EMD know anything
about ACS Reagents?

You might say we're
in tune with your needs.

EMD offers a diverse range
of ACS products that perform.

The quality of our solvents
plays second fiddle to no one.

That's what's in it for you. EMD Chemicals



THE INDICATOR**Manager / Editor** - LINDA ATKINS

1 Milbark Court West, Homosassa, FL 34446

973-981-4383; Fax 352-503-7613

linatkins@tampabay.rr.com**Advertising Manager** - VINCENT GALE

MBO Services, PO Box 1150

Marshfield, MA 02050-1150 • 781-837-0424

vincegale@mboservices.net**INDICATOR COMMITTEE****Chair, DR. LES MCQUIRE**

17 Crown Drive, Warren, NJ 07059

908-334-5473, Les@LesMcQuire.org**New York Section Rep.****DR. NEIL JESPERSEN**

Chemistry Dept., St. John's University

8000 Utopia Parkway, Jamaica, NY 11439

718-990-5221

jespersn@stjohns.edu**North Jersey Section Rep.****DR. ANITA BRANDOLINI**

TAS, Ramapo College, 505 Ramapo Valley Rd.,

Mahwah, NJ 07430 • 201-684-7753

abrandol@ramapo.edu**Web Masters**

NY Section - DR. BRIAN GIBNEY

postmaster@newyorkacs.org

NoJ Section - PAUL TUKEY

tukey@verizon.net**NEW YORK SECTION**<http://newyorkacs.org>**Chair, DR. JAIMELEE IOLANI RIZZO**

Department of Chemistry and Physical Science

Pace University, 1 Pace Plaza, New York, NY 10038

212-346-1761; Fax 212-346-1256

jrizzo@pace.edu**Chair-Elect, DR. PHILIP H. MARK**

1522 Luddington Road, East Meadow, NY 11554

516-489-7920

philip.mark@ncc.edu**Secretary, DR. BRIAN R. GIBNEY**

Dept. of Chemistry, Brooklyn College - CUNY

2900 Bedford Avenue, Brooklyn, NY 11210

718-951-5000 x6636; Fax 718-951-4607

brg33@newyorkacs.org**Section Office**

St. John's University, Chemistry Dept.

8000 Utopia Parkway, Jamaica, NY 11439

516-883-7510; Fax 516-883-4003

njesper1@optonline.net**NORTH JERSEY SECTION**<http://www.njacs.org>**Chair, DR. AMBER CHARLEBOIS**

Fairleigh Dickinson University

285 Madison Ave., M-SB1-01, Madison, NJ 07940

973-443-8761

charleb@fd.edu**Chair-Elect, DR. JEFFERSON TILLEY**

19 Evergreen Drive, North Caldwell, NJ 07006

973-723-6330

tilleyjk@optonline.net • tilleyjk@FDU.edu**Secretary, BETTYANN HOWSON**

49 Hillside Avenue, Madison, NJ 07940-2612

973-822-2575

chemphun@optonline.net**Section Office**

49 Hillside Avenue, Madison, NJ 07940-2612

973-822-2575

chemphun@optonline.net**THE Indicator** 

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

CONTENTS

Advertisers Index	20
Call for Entries	18
Call for Nominations	17-18
Call for Volunteers	18
Education	16 and 19
New York Meetings	10-13
Nichols Medalist Biography	7
Nichols Symposium	8-9
North Jersey Meetings	15-16
Others	19
Professional/Product Directory	20

EDITORIAL DEADLINES

March	January 20, 2012
April	February 20
May	March 20
June	April 20
September	July 20
October	August 20
November	September 20
December	October 20
January 2013	November 20, 2012
February	December 20, 2011

Visit Uswww.TheIndicator.org

The Indicator (ISSN0019-6924) is published monthly except July and August by the New York and North Jersey Sections of the American Chemical Society, Office of Publication, 1 Milbark Court West, Homosassa, FL 34446. **Periodicals Postage Paid at Homosassa, Florida and at additional mailing offices.**

POSTMASTER: Send address changes to American Chemical Society, Department of Member and Subscriber Services, *THE INDICATOR*, P.O. Box 3337, Columbus, OH 43210, or e-mail: service@acs.org.

All views expressed are those of the editor and contributors and do not necessarily represent the official position of the New York and North Jersey Sections of the American Chemical Society unless so stated. **Subscription price included in dues paid by New York and North Jersey Section members. Distributed electronically to members through the website www.TheIndicator.org and monthly emailings. Non-members are invited to read it online. Members should register their email addresses at www.acs.org/update.**

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

February Calendar

NEW YORK SECTION

Thursday, February 2, 2012

Chemical Marketing & Economics Group
See page 10.

Saturday, February 4, 2012

17th Annual High School Poster Session at
St. Joseph's College
See page 13.

Tuesday, February 7, 2012

Nanoscience Discussion Group
See page 10.

Thursday, February 9, 2012

Long Island Subsection
See page 11.

Thursday, February 9, 2012

Chemical Biology Discussion Group
See pages 11-12.

Friday, February 10, 2012

New York Section Board Meeting
See page 10.

Friday, February 10, 2012

High School Teachers Topical Group
See page 12.

Friday, February 10, 2012

Hudson-Bergen Chemical Society
See pages 12-13.

Tuesday, February 28, 2012

Biochemical Topical Group
See page 13.

Please Note:

The Deadline Date for Submitting Articles and/or Pictures for Publication in *The Indicator* Has Been Extended to the 20th of the Month, Two Months Prior to the Publication Date, in an Effort to Accommodate More Complete Meeting Information. Deadline for items to be included in the March 2012 issue of *The Indicator* is **January 20, 2012.**

NORTH JERSEY SECTION

Sunday, February 5, 2012

Jeannette Brown Book Signing at Science Café
See page 15.

Mondays, February 6 and 20, 2012

Careers in Transition Group
See page 15.

Wednesday, February 8, 2012

MetroWomen Chemists Committee
See page 16.

Wednesday, February 22, 2012

Chromatography Topical Group
See www.njacs.org.

Monday, February 27, 2012

NoJ Executive Committee Meeting
See page 15.

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

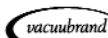
Scratch & Hear!

Can you hear the vacuum pump?

Scratch the circle below, and you'll hear a sound just a little quieter than VACUUBRAND oil-free pumps in operation. These whisper-quiet, ultra-low maintenance pumps are welcome partners for lab use and OEM applications.



VACUUBRAND® MZ2C NT



888-882-6730

www.vacuubrand.com

info@vacuubrand.net

THIS MONTH IN CHEMICAL HISTORY

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

I get inspiration (?) for my columns from all kinds of sources, some of them quite unexpected. I have recently moved into a new, but windowless, office, and I decided to put up some pictures and posters to relieve the blankness of the walls. I found at home a beautiful poster of an 18th. century painting, "An Iron Forge", by Joseph Wight of Derby, who happens to be a favorite artist of mine. Wright was primarily a portrait painter, but he also painted scenes of technology, like this one of the forge, and several marvelous paintings of scenes representing science. One of his master works, "An Experiment with the Air Pump" is in the National Gallery in London. So, how does this lead to this month's column?

Looking at the poster of Wright's painting I recollected a visit to Derby some years ago which included viewing the Wrights in that city's art museum, and visiting the cathedral which, in the 18th. and 19th. centuries was the Church of All Saints. In a family vault in that church are interred the remains of Henry Cavendish, one of the greatest natural philosophers of the 18th. century, and an important figure in the history of chemistry. And so, finally, I get to the subject of this and my next column.

There are excellent accounts of Cavendish's work and life. The early "standard" biography by George Wilson ("The Life of the Honorable Henry Cavendish", London, 1851) is a propaganda piece, written in part to support Cavendish's claim to have established the composition of water. I have relied on "Cavendish: The Experimental Life" by Christa Jungnickel and Russell McCormach, Bucknell, 1999, for these columns. So why the "Honorable" as a title for Henry Cavendish? This was a courtesy designation since Henry's uncle was the 3rd. Duke of Devonshire and his father was Lord Charles Cavendish. Henry was born in Nice, France, in October 1731 where his parents were staying to avoid the English winter weather. Henry's mother was never very strong and she died at the age of 27.

The Cavendish family was wealthy; a later Cavendish helped found the famous laboratory in Cambridge which bears the Cavendish name. Henry Cavendish was initially taught by tutors and by his father, a man well versed in the sciences of the time. He was sent to Hackney Academy, run by "a family of teachers, Anglican clergy, and Cambridge graduates with an interest in science" when he was 11. At age 18 he went to Peterhouse College in Cambridge where he studied for four years including work in mathematics, astronomy, and pneumatic chemistry (the chemistry of gases), but he left without bothering to take the qualifying examinations for a degree; this was not unusual for Cambridge students who did not intend to enter the Church.

After he left Cambridge Henry Cavendish was taken as a guest of his father's to many meetings of the Royal Society where he became acquainted with the leading British natural philosophers. He became a member in 1760. He became a regular attendee at the Society's dinner meetings and all his published scientific works appear in the Society's journal, *Philosophical Transactions of the Royal Society*. He began doing scientific research at his home laboratory, which was clearly equipped with a wide range of current equipment. Some of Cavendish's equipment is held in the collections of the Science Museum in London. As befits the wealthy amateur who commissioned the apparatus it is all of the highest quality and beautifully finished. In my next column I will turn my attention to Cavendish's chemical experiments, with a passing reference or two to his work in physics.

FEBRUARY HISTORICAL EVENTS IN CHEMISTRY

By Leopold May, The Catholic University of America, Washington, DC

February 1, 1905

Seventy-five years ago, Emilio Segré with C. Perrier discovered technetium (Tc, 43). With D. R. Corson and K. R. MacKenzie he codiscovered astatine (At, 85) in 1940 and demonstrated the antiproton with others in 1955. He shared the Nobel Prize in Physics (1959) with Owen Chamberlain for their discovery of the antiproton.

February 7, 1905

Ulf von Euler, who was born on this date, shared the Nobel Prize in Medicine or Physiology in 1970 with J. Axelrod and B. Katz for discoveries concerning humoral transmitters in the nerve terminals and the mechanism for their storage, release and inactivation.

February 9, 1871

Edward C. C. Baly, who showed that sugar and other organic compounds are formed from water, carbon dioxide, and ammonia under the influence of light, was born on this date.

February 9, 1950

Californium was discovered by ion exchange chromatography on this date at the University of California, Berkeley.

February 11, 1914

Alwin Mittasch and Christian Schneider filed application resulting in US patent 1,201,850, describing catalytic production of methanol from carbon monoxide & hydrogen.

February 14, 1878

Father Julius Nieuland, who was known as the "Father of Acetylene Chemistry", was born on this date. He is a discoverer of neoprene and was the first PhD in Chemistry from Catholic University in 1905.

February 15, 1873

Hans K. A. S. von Euler Chelplin, a researcher on enzymes and fermentation, was born on this day. He shared the Nobel Prize in 1929 with Arthur Harden for their investigations on the fermentation of sugar and fermentative enzymes.

February 19, 1955

One atom of mendelevium (Md, 101) was produced by the bombardment of one billion atoms of 253Es on this date.

February 20, 1937

Seventy-five years ago, Robert Huber, researcher on the three-dimensional structure of proteins involved in photosynthesis, was born on this date. In 1988, he shared the Nobel Prize in Chemistry with Johann Deisenhofer and Hartmut Michel for the determination of the three-dimensional structure of a photosynthetic reaction centre.

February 25, 1898

Seventy-five years ago, William Thomas Astbury used x-ray diffraction patterns to study the structures of nucleic acids and wool in both the stretched and unstretched forms. He was born on this date.

February 27, 1901

Fifty years ago, Linus C. Pauling was awarded The Nobel Peace Prize. He was born on this date. He was a researcher on structure of molecules, valency, and resonance. He received the Nobel Prize in Chemistry in 1954 for his research into the nature of the chemical bond and its application to the elucidation of the structure of complex substances.

Additional historical events can be found at Dr. May's website, faculty.cua.edu/may/history.htm.

Alan G. Marshall, 2012 Nichols Medalist

The ACS New York Section congratulates and extends its best wishes to Professor Alan G. Marshall, the Robert O. Lawton Professor of Chemistry and Biochemistry, Ion Cyclotron Resonance Program, National High Magnetic Field Laboratory, Florida State University, who will receive the William H. Nichols Medal Award on March 16, 2012 at the Crowne Plaza Hotel in White Plains, New York. Professor Marshall's medal citation reads: "For Advances in Fourier Transform Ion Cyclotron Resonance Mass Spectrometry." The Nichols Medal is presented at an award dinner following the Nichols Distinguished Symposium that will feature 4 internationally known chemists – Professors Richard N. Zare, Michael L. Gross, R. Graham Cooks and our Medalist. Former medalist Professor John D. Baldeschwieler will introduce his good friend and colleague to the guests. Professor Alan Marshall is the 106th recipient of the Nichols Medal Award.



Professor Alan G. Marshall completed his B.A. degree with Honors in Chemistry at Northwestern University in 1965, and his Ph.D. in Physical Chemistry from Stanford U. in 1970. He joined the Chemistry faculty at the University of British Columbia (Vancouver, Canada) in 1969. He moved to Ohio State University in 1980 as Professor of Chemistry and Biochemistry and Director of the Campus Chemical Instrument Center. In 1993, he moved to Florida State University, where he is Robert O. Lawton Professor of Chemistry and Biochemistry and Director of the Ion Cyclotron Resonance (ICR) Program, an NSF national user facility for mass spectrometry.

Professor Marshall co-invented and leads the continuing development of Fourier transform ICR mass spectrometry. His current research spans FT-ICR instrumentation development, fossil fuels and environmental analysis, and mapping the primary and higher-order structures of biological macromolecules and their complexes.

His major recognitions include: Fellow, American Physical Society; Fellow, American Association for the Advancement of Science; Fellow, Society for Applied Spectroscopy; three American Chemical Society national awards (Chemical Instrumentation, Field-Franklin Award, and Analytical Chemistry Award); three Spectroscopy Society of Pittsburgh Awards (Hasler Award, Spectroscopy Award, and Analytical Chemistry Award); American Society for Mass Spectrometry Distinguished Contribution Award; International Society for Mass Spectrometry Thomson Medal; Chemical Pioneer Award from American Institute of Chemists, Eni Frontiers in Hydrocarbon Research Award, and Fellow of the American Chemical Society.

Professor Marshall is a former President of the American Society for Mass Spectrometry, and serves on several editorial boards. He has published 4 books, 5 patents, and 534 refereed journal articles, and has presented more than 1,700 talks/posters at conferences, universities, government labs, and industry. His papers have been cited more than 21,000 times. Of his 113 former Ph.D.'s and postdocs, 33 have gone on to academic positions.


**WILLIAM H. NICHOLS MEDAL — DISTINGUISHED
SYMPOSIUM AND AWARD BANQUET**

Symposium: Mass Spectrometry: New Ways to Probe Molecular Structure and Reactivity

Award Recipient: **PROFESSOR ALAN G. MARSHALL**
 Ion Cyclotron Resonance Program
 National High Magnetic Field Laboratory
 Florida State University, Tallahassee, FL

PROGRAM

1:30 PM **Welcome** Professor JaimeLee Iolani Rizzo
 2012 Chair, ACS, New York Section
 Pace University, NYC

1:35 PM **Opening of the Distinguished Symposium** Professor Philip H. Mark
 2012 Chair-elect, ACS, New York Section
 Nassau Community College - SUNY

1:45 PM **Accelerated Chemical Reactivity Implemented Using Mass Spectrometry** Professor R. Graham Cooks
 Purdue University

This presentation deals with studies of chemical reactions in solution and at surfaces that are facilitated by the new ambient ionization methods of mass spectrometry. These analytical methods like desorption electrospray ionization (DESI) and paper spray ionization (PS-MS) have facilitated experiments based on reactions occurring outside the mass spectrometer at atmospheric pressure. This talk covers reactions occurring (i) in charged microdroplets generated by spray ionization, (ii) between dry organic ions and reagents on surfaces and (iii) between compounds on paper and surrounding gaseous ions. These unusual media are shown to be effective in driving and accelerating organic reactions. Bimolecular solution phase and heterogeneous reactions are a recent component of the subject, and the possibility of scaling up reactions under these conditions is noteworthy.

2:30 PM **Searching for Short-Lived Intermediates in Liquid Chemical Reactions** Professor Richard N. Zare
 Stanford University

Without measurement we cannot have science, and nothing so much stimulates new measurements as inventing and perfecting new measurement devices. In this presentation I wish to describe some new directions being developed in my laboratory for the use of desorption electrospray ionization (DESI), an ambient ionization technique for mass spectrometry, which was first introduced by Prof. R. Graham Cooks and co-workers, Department of Chemistry, Purdue University. I will stress the use of DESI to record transient intermediates of solution-phase chemical reactions on the millisecond time scale. I will also describe some uses of DESI imaging to examine healthy and diseased tissue. This work has been primarily carried out by Dr. Richard H. Perry and Dr. Ali Ismail under the support of the Air Force Office of Scientific Research.

3:15 PM **Coffee Break**

3:45 PM **Mass Spectrometry Enables Chemical Footprinting and New Understanding about Proteins** Professor Michael L. Gross
 Washington University

Our goal is a rapid, sensitive, and specific means of determining protein interactions, folding, and unfolding by using chemical footprinting coupled with MS. Driving this approach is the wide availability of mass spectrometers for analytical proteomics; these should also be applicable to protein footprinting. To this end, we are developing fast photochemical oxidation of proteins (FPOP) and hydrogen/deuterium exchange to interrogate protein interactions, interfaces, and dynamics of folding/unfolding. We will illustrate the potential of H/DX and FPOP with applications to the ApoE family of proteins, a family with important implications in Alzheimers and other diseases.

4:30 PM **Mass: The Universal Chemical Currency** **Professor Alan G. Marshall**
NICHOLS MEDALIST

It is now possible to produce, intact, a gas-phase ion, often under ambient conditions, from almost any molecule, including many not isolable or stable in solution. Ultrahigh resolution and mass accuracy enable determination of elemental composition (C_xH_yN_zO_wS_v...) for mixtures as complex as petroleum crude oil, peptide amino acid composition and sequence for protein identification, nature and site(s) of protein post-translational modification(s), and mapping of binding surfaces in bio-macromolecular complexes. Recent advances in high-end instrumentation will be described, and applied to problems ranging from the Deepwater Horizon oil spill to identification of drug targets in protein assemblies. Work supported by NSF NIH (R01 GM78359), NSF Division of Materials Research through DMR-06-54118, NSF CHE-10-49753, NSF CHE-1016942, and the State of Florida.

5:45 PM **Social Hour**

6:45 PM **William H. Nichols Medal Award Dinner**

Date: Friday, March 16, 2012

Times: Registration 1:00 PM

Symposium 1:30 PM – 5:30 PM

Reception 5:45 PM

Award Dinner 6:45 PM

Place: Crowne Plaza Hotel, White Plains, NY

More information on the 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.

Please reserve _____ places for the symposium & banquet at \$120/person, ACS member
 _____ places for the symposium & banquet at \$150/person, Non-member
 _____ places for the banquet only at \$110/person, ACS member
 _____ places for the banquet only at \$120/person, Non-member
 _____ places for the symposium only at \$40/person, ACS member
 _____ places for the symposium only at \$60/person, Non-member
 _____ places for the symposium only at \$25/person, Students and
 Unemployed

(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 _____

Prime Rib _____

Salmon _____

Mail Tickets to:

Name: _____

Address: _____

BANQUET RESERVATION DEADLINE: MARCH 5, 2012

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 2012

The dates for the Board Meetings of the ACS New York Section for 2012 were chosen and approved at the September 2011 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 2012 Board Meetings will be held on the following Fridays at 6:00 PM at St. Johns University, Writing Center, Jamaica, NY. Dr. JaimeLee lolani Rizzo will chair the meetings.

Friday, February 10

Friday, April 13

Friday, June 8

Friday September 14

Friday November 16

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

Friday, March 16, 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>.



CHEMICAL MARKETING & ECONOMICS GROUP

Shale Gas: Promise or Pitfall?

Speaker: Andrew D. Weissman
Editor-in-Chief and Publisher
Energy Business Watch

The impact of shale gas to the future competitiveness of the USA is transcendental. Learn what a renowned expert has to say about this exciting field that is reshaping the chemical industry. The event sponsor is Houlihan Lokey. CM&E thanks each of you for helping us increase membership fivefold in the last two years to 242. In the same period, CM&E's growth has been rapid in other ways: double attendance, quintuple sponsorships and triple the email list. CM&E

today is recognized as the preeminent multidisciplinary group of ACS New York Section where technology, business and investment intersect and we are committed to excellence in programming. Please visit our website www.cmeacs.org

Date: Thursday, February 2, 2012

Times: Luncheon 11:15 AM

Webcast Available 1:00-2:00 PM

Place: TBA

More information at: www.cmeacs.org



NANOSCIENCE DISCUSSION GROUP

Hosted by the Department of Chemistry, New York University

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. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Date: Tuesday, February 7, 2012.

Time: 7:00 PM

Place: New York University

Silver Center

31 Washington Place

New York, NY

Cost: FREE. No RSVP necessary

Speakers to be announced on <http://chemistry.fas.nyu.edu/page/home> or <http://www.nyu.edu/projects/nanoscience>

Mark your calendars for the next meeting, on **Tuesday, April 3.**

For more information, contact: James

Canary (james.canary@nyu.edu)

<http://www.nyu.edu/projects/nanoscience>

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

LONG ISLAND SUBSECTION

Protein Polymer Hybrids and Curcumin Derivatives for Biomedical Applications

Speaker: Raja Krishnaswami
Department of Chemistry
College of Staten Island -
City University of New York

Bioconjugates with proteins is a multibillion dollar industry. The current technology of producing polymer bioconjugates is limited to a few monomers; the number of dyes/drugs that can be conjugated per protein without loss of bioactivity is limited. A general synthetic methodology to produce a range of living copolymer protein conjugates with an amplified loading of dyes/drug will be presented. Over 7500 research papers and 18 clinical trials support the potential of Curcumin (the active ingredient in the spice Turmeric) to treat a range of pathological conditions. Curcumin is poorly absorbed by the body thereby severely limiting its potential as a drug candidate. A comprehensive strategy towards drug candidates with enhanced bioactivity based on Curcumin will also be presented.

Before joining CSI in 1995, Dr. Raja was a Skaggs Postdoctoral Fellow with Dr. M.G. Finn at The Scripps Research Institute, and Principal Scientist in the Biopharmaceutical Development Division of Dynavax Technologies. Professor Raja's interests include the development of protein based drugs, bioconjugates, biomaterials and green drug development.

Date: Thursday, February 9, 2012

Time: Social 6:00 PM, Seminar 6:30 PM

Place: Hofstra University

Breslin Hall, Room 106

(please note that this is a new location)

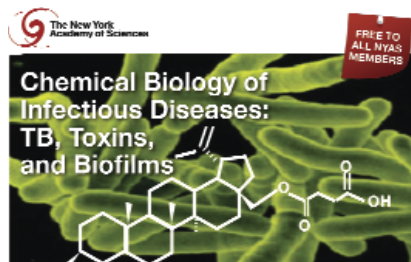
Cost: Seminar is free and open to all. Dinner following the seminar at a nearby restaurant (\$25.00)

Please visit the LI-ACS webpage at http://www.newyorkacs.org/sub_island.php for details, updates, and directions.

SURPRISE

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

CHEMICAL BIOLOGY DISCUSSION GROUP – JOINT MEETING WITH THE EMERGING INFECTIOUS DISEASES & MICROBIOLOGY DISCUSSION GROUP OF THE NEW YORK ACADEMY OF SCIENCES, AND NYACS



Chemical Biology of Infectious Diseases: TB, Toxins, and Biofilms

Organizers: Elizabeth Boon, PhD
Stony Brook University
Lorrence H. Green, PhD
Westbury Diagnostics
Jennifer Henry, PhD
The New York Academy of Sciences

Speakers: Elizabeth Boon, PhD
Stony Brook University
Kim Janda, PhD
Scripps Research Institute
Kyu Rhee, MD, PhD
Weill Cornell Medical College

The Chemical Biology Discussion Group brings together chemists and biologists interested in learning about the latest ideas in this rapidly growing field. It provides a forum for lively discussion and for establishing collaborations between chemists armed with novel technologies and biologists receptive to using these techniques for answering complex research questions. This symposium will cover topics important in infectious disease, discussed on a molecular level. We will examine mechanisms by which bacteria coordinate group behavior, including biofilm formation and virulence, using small molecule signal transduction pathways; strategies for detecting pathogens, including as weapons of biological warfare; and structure- and function-based

(continued on page 12)

CHEMICAL BIOLOGY DISCUSSION GROUP

(continued from page 11)

approaches to the development of practical new medical treatments.

Date: Thursday, February 9, 2012

Time: 5:00 – 7:30 PM

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

Cost: This event is FREE 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 \$30, or \$15 for students and post-docs.

For more information, go to:
customerservice@nyas.org or call
1-800-843-6927



HIGH SCHOOL TEACHERS TOPICAL GROUP

The Sound of the Beginning: Echoes of the Big Bang in the Night Sky

Speaker: Prof. Liam McAllister
Department of Physics
Cornell University

Spectacular progress in experimental cosmology has revolutionized our understanding of how the universe began. This presentation will explain how the cosmic microwave background radiation – the afterglow of the Big Bang – and the pattern of galaxies on the sky provide windows onto the physical laws that governed the first

moments.

Date: Friday, February 10, 2012

Time: 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

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

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 AM and 2 PM to verify that meeting is still on; (516) 385-4698 for other info.

Note: Street parking is free after 6:00 PM. 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.



HUDSON-BERGEN CHEMICAL SOCIETY – JOINT MEETING WITH THE RAMAPO CHAPTER OF SIGMA XI

The Science of Beer

The meeting will include a lecture and dinner.

Date: Friday, February 17, 2012

Time: 5:00 PM



Robertson Microlit Laboratories

Where speed and accuracy are elemental

Elemental CHN, S, X, Analysis (same day service)

Metals by ICP-OES, ICP-MS, A/A

FTIR, UV/VIS Spectroscopy

Ion Chromatography

Bioavailability

Polarimetry

DSC, TGA, melting point

KF Aquametry, Titrimetry

1705 U.S. Highway 46 • Suite 1D • Ledgewood, NJ 07852 • 973.966.6668 • F 973.966.0136

www.robertson-microlit.com • email: results@robertson-microlit.com

Rapid Results • Quality • Accuracy • Competitive Pricing

Place: Ramapo College of New Jersey
Mahwah, NJ

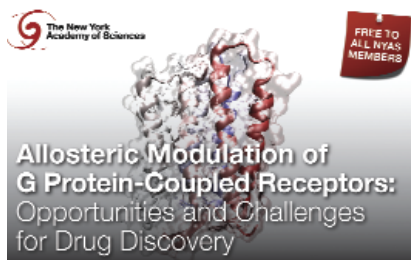
The Annual Distinguished Lecture

Date: Wednesday, March 7, 2012

For details and directions or to RSVP for either event please contact Sarah Carberry at sbolton@ramapo.edu.



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



Allosteric Modulation of G Protein-Coupled Receptors: Opportunities and Challenges for Drug Discovery

Organizers: Andrew Alt, PhD
Bristol-Myers Squibb

Jennifer Henry, PhD
The New York Academy of
Sciences

Speakers: P. Jeffrey Conn, PhD
Vanderbilt University

Christian Felder, PhD
Eli Lilly and Company

Adam Hendricson, PhD
Bristol-Myers Squibb

Celine Valant, PhD
Monash University
Victoria, Australia

Allosteric modulation of GPCRs as a therapeutic strategy offers improved selectivity and safety. This symposium discusses emerging screening strategies for allosteric modulators and in vitro assessment of allosteric modulator activity.

Date: Tuesday, February 28, 2012

Time: 1:00 – 5:00 PM

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

Cost: This event is FREE 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 \$30, or \$15 for students and post-docs.

For more information and to register for the event, go to: www.nyas.org/GPCRs

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



17TH ANNUAL HIGH SCHOOL POSTER SESSION AT ST. JOSEPH'S COLLEGE

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

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

The program includes:

- Judging of posters by scientists working in industry and academia.
- Guest speaker
- Certificates to all participants
- Cash prizes to the four winning presenters.

Date: Saturday, February 4, 2012

Times: Arrival and set-up 9:00 - 9:30 AM
Judging 9:30 - 11:30 AM
Guest speaker 11:30 AM - 12:30 PM
Awards 12:30 - 1:00 PM

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

For more information about this annual event and registration information visit: www.sjcnj.edu/postersession

Or contact Dr. Jill Rehmann (email: jrehmann@sjcnj.edu). Include HS Poster Session in the subject line).

ACS NY SECTION—60TH ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM (URS)



60th ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM

The New York Chemistry Students' Association
Student Affiliate Committee – New York Section
American Chemical Society

Saturday, May 5th, 2012 at SUNY College at Old Westbury

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

Prof. Louis Brus

Columbia University, New York

The right is of a speaker appointment to the Keynote Address to be delivered by Prof. Louis Brus of Columbia University, New York.

The Keynote Address will be followed by original research presentations given by students from colleges and universities throughout the tri-state area.



Nanocrystals, Carbon Nanotubes and Graphene

Keynote Speaker: Prof. Louis E. Brus
Dept. of Chemistry
Columbia University

The Keynote Address will be followed by original research presentations given by students from colleges and universities throughout the tri-state area.

Date: Saturday, May 5, 2012.

Times: 8:00 AM - 3:00 PM

Place: SUNY College at Old Westbury
Old Westbury, NY

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

Conference Registration Window:
February 22, 2012 to March 7, 2012

E-mail questions to:
nyacsurs2012@gmail.com

2012 URS Committee

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.



WESTCHESTER CHEMICAL SOCIETY

The Westchester Chemical Society met December 7th to listen to Dr. Alexander Greer speak on two topics: the interaction of chemistry and human rights activism, especially for other scientists whose rights are at risk, and an experimental system for delivering singlet oxygen to tumors. Dr. Greer discussed human rights programs for chemistry students including his at Brooklyn College. We enjoyed Dr. Greer's most interesting talk and the lively discussion afterward.

**Peter Corfield,
Richard Goodman,
Alexander Greer,
Rolande Hodel,
Jody Reifenberg,
Paul Dillon, and
Elvira Longordo, at
the Westchester
Chemical Society
December 7, 2011
meeting.**

*(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 27, 2012

Time: 6:00 PM

Place: Rutgers University
Wright-Rieman Labs, Room 260
Busch Campus, 610 Taylor Road
Piscataway, NJ 08854

Cost: \$5.00 - pizza dinner

Directions can be found using mapquest and the address above. A map of the campus can be found at

<http://maps.rutgers.edu/maps/default.aspx?campus=4>.

Reservations: call (732) 463-7271 or email njacsoffice@aol.com prior to **Wednesday, February 22, 2012**.

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.

CAREERS IN TRANSITION MEETINGS

Job Hunting??

Are you aware that the North Jersey Section holds bi-monthly meetings at Students 2 Science, Inc. in East Hanover, NJ to help ACS members? Topics covered at these cost-free workshops are:

- The latest techniques in resume preparation
- Ways for improving a resume
- Answers to frequently asked interview question
- Conducting an effective job search
- Networking to discover hidden jobs

Dates: Mondays, February 6 & 20, 2012

Times: Meeting 5:30 - 9:00 PM

Pizza snack and soda 6:30 PM

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

Cost: \$5.00

Reservations: at njacs.org/careers.html

A job board and networking assistance will be offered at all topical groups meetings. Confirm at billsuits@earthlink.net (908) 875-9069 to meet 1 hr. before.

See http://njacs.org/jobs_ifr.html for local jobs and career assistance blogs.



Micron Analytical Services

**COMPLETE MATERIALS CHARACTERIZATION
MORPHOLOGY CHEMISTRY STRUCTURE**

SEM/EDXA • EPA/WDXA • XRD XRF • ESCA • AUGER • FTIR • DSC/TGA

Registered with FDA • DEA GMP/GLP Compliant

3815 Lancaster Pike Wilmington DE, 19805

F-Mail micronanalytical@compuserve.com

Voice 302-998-1184, Fax 302-998-1836

Web Page: www.micronanalytical.com

METRO WOMEN CHEMISTS COMMITTEE

The Chemistry of Chocolate

Speaker: Susan Fine

The Chocolate Path



Ms. Fine will give a talk on the chemistry of chocolate and attendees will be treated to an evening of chocolate decadence — come learn about chocolate, where it comes from, and how it is made all while tasting 7 courses of chocolate.

Date: Wednesday, February 8, 2012

Place: Fairleigh Dickinson University
Hartman Lounge
Hennessy Hall Mansion
Madison, NJ

Please RSVP to Sarah Carberry at sbolton@ramapo.edu by February 1, 2012.

Education

(see article on page 19)

Residential School on Medicinal Chemistry:
Biology and Chemistry of Drug Discovery
June 4-8, 2012
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 Chemistry	DMPK
Receptor Binding Assays	Toxic Metabolites
Lead Identification	GPCRs
Lead Optimization	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

CHROMATOGRAPHY TOPICAL GROUP

Date: Wednesday, February 22, 2012

See www.njacs.org for more information.



CHEMISTRY AS A LIFE SCIENCE — SYMPOSIUM XV

The fifteenth in a series of CAALS biennial symposia.

Distinguished Invited Speakers:

Laura Kiessling
University of Wisconsin-Madison
Marisa Kozlowski
University of Pennsylvania
Kevan Shokat
University of California
San Francisco
Erik Sorensen
Princeton University
Brian Stoltz
California Institute of Technology
Jin-Quan Yu
The Scripps Research Institute

Date: Friday, March 16, 2012

Place: The Paul Robeson Campus Center
Rutgers, The State University of
New Jersey
Newark, NJ

Cost: Free and open to the public.

Further information regarding the symposium will be added to the website for the North Jersey Section of the American Chemical Society as it becomes available. Due to limited seating, advance registration is required. <http://www.njacs.org/caals>

Organizing Committee: V. Lombardo (The Chipperson Law Group), Shawn Erickson (Hoffman-La Roche), Stan Hall (Rutgers), Darren Hansen (Rutgers), Dave Hughes (Merck), Joseph Kozlowski (Merck), William Metz (Sanofi), Michael Miller (Bristol-Myers Squibb), Wen Shieh (Novartis)

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

Call for Nominations

EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2011

Now is the time to begin thinking about nominations for the Edward J. Merrill Award, North Jersey Section, for Outstanding High School Chemistry Teacher for the year 2012.

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

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

Any questions or help needed contact Bettyann Howson,
chemphun@optonline.net.



ACS FELLOWS PROGRAM NOMINATIONS (2012)

Nominations for the American Chemical Society Fellows Program are being requested from NY-ACS section members. The Fellows Program was created to recognize members of ACS for outstanding achievements in and contributions to Science, the Profession, and the Society.

Significant contributions to both science and the profession and to the American Chemical Society are required (see <http://www.acs.org> for further information).

The name and e-mail address of the nominee should be sent to Fellows@NewYorkACS.org. From those nominated, nine will be selected as the NY Section's nominees.

The deadline for submitting nominations is **February 1, 2012**.

SOCIETY FOR APPLIED SPECTROSCOPY— NEW YORK SECTION

Gold Medal Award

Nominations are being sought for the 2012 Gold Medal Award of the New York Section of the Society for Applied Spectroscopy. This coveted award was established in 1952 to recognize outstanding contributions to the field of Applied Spectroscopy. The Gold Medal will be presented at a special award symposium, arranged in honor of the awardee, at the 2012 Eastern Analytical Symposium. A nominating letter describing the nominee's specific accomplishments should be submitted along with a biographical sketch and list of publications by **January 31, 2012**. Please send all materials to Deborah A. Peru, Colgate Palmolive Co., 909 River Road, Piscataway, NJ 08855.

For further information, call (732) 878-7295 or email Debbie_Peru@colpal.com.

(continued on page 18)

Nacal USA
Innovations for Life Sciences.



COSMOSIL HPLC Columns

- Since 1979

New Phases Now Available!

HILIC (Triazole bonded)
- Unique stationary phase for highly polar compounds

piNAP (Naphthylethyl group bonded)
- Enhanced π - π interactions for unsaturated compounds

Cholester (Cholesteryl group bonded)
- New stationary phase for structural isomers



Nacal USA, Inc. 6640 Lusk Blvd. Suite #200 San Diego CA 92121
Tel: 858-404-0403 Email: info@nacalaiusa.com
www.nacalaiusa.com

CALL FOR NOMINATIONS

(continued from page 17)

WCS DISTINGUISHED SCIENTIST AWARD 2012

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2012". Scientists who live or work in Westchester qualify. Please send a resume **by January 31, 2012** to Dr. Richard Goodman, 38 Aspinwall Road, Briarcliff Manor, NY 10510.



METRO WOMEN CHEMISTS COMMITTEE

The Metro Women Chemists Committee is accepting nominations for the 2012 Mentorship 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. **The deadline is March 31, 2012.** The The Gift of Mentoring meeting and award ceremony will be held on April 12, 2012, at the Rutgers Busch Campus. This meeting will be so-sponsored by AWIS (www.awisnj.org).

Call for Volunteers

To Mentor 6-12 Grade Students STUDENTS2SCIENCE

A Great Opportunity for Retired and Those in Transition to Serve



Students 2 Science is a new non-profit organization operating a large, modern analytical chemistry laboratory for the sole purpose of hosting Middle and High School students. Students work with local scientists and operate sophisticated laboratory instruments like spectrophotometers and chromatographs. The students solve real-life business puzzles and acquire an increased excitement and enthusiasm for studying science (STEM). We make science less intimidating, resulting in more students choosing to pursue STEM related careers. We are looking for volunteers to serve as Mentors, Instructors and Teaching Assistants. Hours are 8:30 to 2:30 on days

when students are present.

To register, visit our website at www.students2science.org, and click REGISTER, or call (908) 334-8435. Thank you in advance for your support!

Call for Entries

ODEBRECHT AWARD FOR SUSTAINABLE DEVELOPMENT NOW ACCEPTING ENTRIES

U.S. Students, Faculty and Universities Compete for \$65,000 for Most Innovative Ideas

The Odebrecht Award for Sustainable Development is accepting entries beginning Jan. 2, 2012 from students of all engineering fields, architecture, building and construction management, and chemistry. By submitting a paper that outlines contributions to sustainability, students have an opportunity to engage in a challenging exercise to develop engineering and chemical solutions and win \$65,000 in cash prizes for themselves, their faculty advisors and their universities. **All entries are due by May 31, 2012.**

The award is open to any undergraduate enrolled at a U.S.-accredited university, with at least one student seeking a degree in engineering, architecture, building and construction management, or chemistry. **Entries will be accepted from January 2, 2012 through May 31, 2012** at www.odebrechtaward.com. Meanwhile, participants are encouraged to engage on Facebook and Twitter.

Prizes* will be awarded as follows:

First Prize:

\$20,000 to the student(s), \$10,000 to the advising professor and \$10,000 to their university

Second Prize:

\$7,000 to the student(s), \$4,000 to the advising professor and \$4,000 to their university

Third Prize:

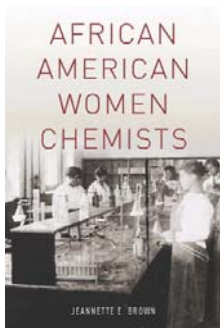
\$5,000 to the student(s), \$2,500 to the advising professor and \$2,500 to their university

Additionally, participants of all shortlisted entries will be invited to participate in the process to become an Odebrecht Young Partner or a Braskem Associate. These are trainee and internship programs where young talents will experience first hand what it is like to work for a global leader in the fields of engineering and construction and chemicals and petrochemicals.

*All cash prizes currently listed before taxation in accordance with state and federal law.

Others

Jeannette Brown's Book, African American Women Chemists, to be featured at Science Café and Book Signing on Sunday, February 5



Come and enjoy wine and cheese and listen to a reading of Jeannette's book *African American Women Chemists*.

Jeannette Brown has finally published her first book, *African American Women Chemists*. It is published by

Oxford University Press and is available at most book stores now, either on the shelf or by special order. It can be ordered on Amazon.com as well. It is available in print form or kindle or nook. She is trying to get it on books on tapes because she has two cousins who are legally blind and she would like to have them read it.

The book is about the lives of 25 African American women chemists whose work was hiding in plain sight! Do you know that an African American woman holds the patent on a Nitrate explosive detector which is used by Homeland Security at the air port? Her name is Betty Harris and her life is in the book. Did you know that a young woman developed a medicine for leprosy that scientists with more experience could not do? Her name is Alice Ball and her story is in the book and also in Chem Matters. The life of Allene Johnson, a North Jersey ACS member and award winning high school teacher is also detailed in the book

She will also be signing books **February 18, 2012** during the Marian Thompson Wright Lecture at Rutgers Newark. The topic of the lecture is "**Health and History in the African American Community**" which fits in with some of the women in her book.

There will also be a book signing on **March 27, 2012**, at the American Chemical Society National Meeting San Diego California.

She is working on other book signings

nationwide to be held at the ACS Regional Meetings.

Date: Sunday, February 5, 2012

Time: 2:00-3:00 PM

Place: Watchung Booksellers

Watchung Plaza

54 Fairfield Street, Montclair, NJ

Education

DREW UNIVERSITY MADISON, NJ

Residential School on Medicinal Chemistry: Biology and Chemistry of Drug Discovery

Date: Monday-Friday, June 4-8, 2012

The Residential School offers an intensive weeklong 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.

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.

See ad on page 16.

Deadline for items to be included in the March 2012 issue of *The Indicator* is **January 20, 2012. Please adhere to the new schedule posted on page 3.**

Professional/Product Directory

NJIT

New Jersey's Science & Technology University

MATERIAL CHARACTERIZATION LABORATORY • A Unique Combination of State-of-the-Art Analytical Instruments and Expertise

GC/MS • HPLC • NMR • FTIR • TOC • AA
ICP-MS • XRD • XRF • AFM • SEM

York Center for Environmental Engineering & Science
www.ycees.njit.edu/labs

138 Warren Street
Newark, NJ 07102

Tel: (973)-596-5858
Fax: (973)-642-7170



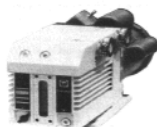
Eastern Scientific

www.easternsci.com

781-826-3456

Vacuum Pump Problems?

Eastern Scientific specializes in the repair and precision rebuilding of all makes of mechanical vacuum pumps.



Free pick-up & delivery
Restrictions apply

NMR_{Service} 500MHz

*Mass

*Elemental Analysis

NuMega Resonance Labs

numegalabs.com P- 858-793-6057

Elemental Analysis

CHNOS ash
ICP • AA • ICP/MS
TOC • TOX • BTU
Problem Solving

HUFFMAN

LABORATORIES, INC.
Quality Analytical Services Since 1936

Phone: (303) 278-4455

FAX: (303) 278-7012

chemistry@huffmanlabs.com
www.huffmanlabs.com



PROMOTE YOUR PRODUCTS AND SERVICES • ADVERTISE IN THE INDICATOR

The Indicator readership is New York and Northern New Jersey's largest source for chemical and biochemical buyers. *The Indicator* reaches more than 12,000 readers each month. It has been estimated that these buyers annually purchase more than \$6,000,000 of:

- EQUIPMENT
- SUPPLIES
- CONSULTING SERVICES

Placing an advertisement in *The Indicator* is the lowest cost method of reaching this select audience.

For further information and other options for promoting your company's products and services visit:

www.mboservices.net

TELL OUR ADVERTISERS

Membership surveys show that you want more articles in our newsletter. If you tell our advertisers that you saw their ad here, they will provide more financial support and this will allow us to add more articles.

Ad Index

ANALYTICAL

EMD Chemicals	2
Huffman Laboratories, Inc.	20
Micron Inc.	15
Nacalai USA Inc.	17
New Jersey Institute of Technology	20
NuMega Resonance Labs.	20
Robertson Microlit Labs	12
Vacuubrand, Inc.	4

EDUCATION

Drew University	16
-----------------	----

EQUIPMENT

Eastern Scientific Co.	20
Mass Vac, Inc.	2

GENERAL

ACS-NY/NoJ Sections	11
ACS-NY/NoJ Sections	20
ACS-NY/NoJ Sections	20