

THE Indicator

DECEMBER 2016

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Dr. Brian R. Gibney **2017 New York Section Chair**



See Chair's Message on page 5.

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THIS MONTH IN CHEMICAL HISTORY

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

In a recent column I drew to your attention a splendid new coffee table book about the history of chemistry. The book is called "The Chemistry Book" by Derek B. Lowe, published by Sterling in 2016. The title does not describe the book adequately; it could better be called "The History of Chemistry Book in 250 one page summaries arranged in chronological order from 500,000 BCE to 2030(!)". The subtitle is "From gunpowder to graphene; 250 milestones in the history of chemistry". One of the book's most attractive features is that each one page article is accompanied by a full page illustration, mostly in color, relevant to the milestone described. In that column I covered topics from pre-history to the 7th. century. I will now review a few more entries in chronological order.

I recently co-authored a book on "The Chemistry of Alchemy" and so the entry for ca.800 on the philosopher's stone caught my eye. It discusses the work of a celebrated Islamic alchemist, probably working in what is today called Iraq. Abu Musa Jabir ibn Hayyan is usually referred to simply as Jabir, and in earlier times his name was Latinized to Geber. There are hundreds of alchemical treatises bearing his name, following an alchemical tradition of attributing works to famous authors. It is difficult to untangle which are genuine Jabirian works, and which are by other hands. The internal evidence suggests that Jabir was an experimentalist interested in transmutation (the perfection of base metals into gold) by the agency of what was later called the philosopher's stone. To learn more about this topic I refer you to the book I mentioned. And to a Youtube video entitled "The Real Sorcerer's Stone".

The earliest mention of gunpowder seems to date from about 850 in a Chinese Taoist text. There is little doubt that its inventors and early utilizers were developing weapons and not pyrotechnics- those came later. The classic mixture of charcoal, sulfur, and saltpeter (potassium nitrate) could be varied in many ways and with different explosive powers. Knowledge of gunpowder spread from China during the Mongol invasions, reaching India, the Middle East, and Europe. From about the 12th. century recipes for gunpowder were being written down in manuscripts; the shape of warfare was being changed forever.

A fundamental technique of both pharmacy and alchemy is distillation, and the earliest written description of fractional distillation is in a manuscript of about 1280 by an alchemist from Florence named Taddeo Alderotti. He was recognized in his time as a preparer of medical remedies, and he used a meter long column to isolate 90% ethanol from wine. Earlier workers around 1100 had prepared less concentrated ethanol, and the monk John of Rupescissa in the 12th. century had ascribed marvelous healing powers (!) to the "spirit of wine". Alderotti isolated the purest ethanol prepared to his time and used it in experiments and remedies.

No account of the history of chemistry can be complete unless it includes Paracelsus (1493 – 1541). "The Chemistry Book" picks 1538 and the topic of toxicology for its discussion of this remarkable person. He was a physician and an alchemist; his wanderings took him all over Europe; and he wrote extensively. Many of his works were published posthumously by his followers. In his work with the sicknesses of miners, who at that time worked under the most appalling conditions, he was one of the first to suggest that external conditions such as breathing in dust and fumes, could be the cause of lung disease. In that respect he can be recognized as a father of industrial toxicology.

"The Chemistry Book" is informative, engaging, well-written, and attractive. It would be a nice gift for anyone interested in chemistry and its history. I will be telling you more about it in the run-up to Christmas!

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EDITORIAL DEADLINES

January 2017	November 28, 2016
February 2017	December 28, 2016
March	January 28, 2017
April	February 28
May	March 28
June	April 28
September	July 28
October	August 28
November	September 28
December	October 28

Visit Us**www.TheIndicator.org***The Indicator* (ISSN0019-6924) is published on-line monthly except July and August by the New York and North Jersey Sections of the American Chemical Society, Office of Publication, 1 Milbark Court, Homosassa, FL 34446.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. Distributed electronically to members through the website www.TheIndicator.org. Non-members are invited to read it online. Members should register their email addresses at www.acs.org/editmyprofile.

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

December Calendar

NEW YORK SECTION

Thursday, December 1, 2016

LI Subsection Holiday Seminar & Election
See page 11.

Tuesday, December 6, 2016

Chemical Marketing and Economics Group
See pages 11-12.

Thursday, December 8, 2016

Westchester Chemical Society
See page 13.

Friday, December 16, 2016

High School Teachers Topical Group
See pages 13-14.

also

Wednesday, January 18, 2017

Friday, February 10, 2017,

Friday, March 17, 2017,

Friday, April 21, 2017,

Friday, May 19, 2017

High School Teachers Topical Group
See page 14.

Saturday, January 21, 2017

New York Section Sectionwide Meeting
See page 10.

Early February, 2017,

Wednesday, April 12, 2017

Westchester Chemical Society
See page 15.

Tuesdays, February 7 and June 6, 2017

New York Nanoscience Discussion Group
See page 15.

NORTH JERSEY SECTION

Monday, December 12, 2016

Careers in Transition
See page 6.



**Deadline for items to
be included in the
January 2017 issue of
The Indicator is
November 28, 2016**

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

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2017 New York Section Chair's Message

Dear Members:

I write to thank you for your support in my election and request your continued support of the New York Local Section with your time, treasure and talent. I am humbled to have the honor and pleasure of serving as Chair of the New York Local Section of the American Chemical Society at the inauguration of its second 125 years. Shakespeare wrote, "What's past is prologue". The bright future foretold by our first 125 years reflects the hard work and dedicated service of countless volunteers who continue to strive to include all of our increasingly diverse membership.

We must congratulate Alison Hyslop on the wonderful year-long celebration of the 125th Anniversary of the New York Section that she led. She and all the previous Chairs of the Section, Committees, Topical Groups and Subsections have set the highest standard of integrity, selflessness, and steadfast leadership that we all aim to meet. Our efforts in the next year will continue the New York Section's tradition of excellence in improving people's lives through the transforming power of chemistry.

We will be honoring Prof. Chad Mirkin of Northwestern University with the William H. Nichols Medal, walking the Brooklyn Bridge as Chemists Celebrating Earth Day, listening to talks at the Undergraduate Research Symposium, and engaging the public during National Chemistry Week. We will also be engaging our members with new programs. We will also be building on our success and launching programs to honor Community College and Four-Year College Faculty. We will also be working to enhance the programming for the Senior Chemists with an event titled 'Flunking Retirement'.

We welcome you to join us, in fact, all members are needed in our endeavors. We strive to fulfill the vision of those chemists who met at the College of Pharmacy of the City of New York back in 1876 to improve people's lives through the transforming power of chemistry. Never believe that a few caring people can't change the world. For, as Margaret Mead taught us, that's all who ever have.

Sincerely,

Brian R. Gibney

2017 Chair, New York Local Section



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North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

There will be no Executive Committee Meeting in December.



CAREERS IN TRANSITION MEETINGS

Job Hunting??

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

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

Date: Monday, December 12, 2016

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

Times: Meeting 2:30 - 5:00 PM

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

Cost: No charge

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.



NJACS PARTNERS WITH STUDENTS2SCIENCE

Members are encouraged to volunteer at their East Hanover facility and explore their website at www.students2science.org to learn more about this innovative program.

S2S continues to expand their exciting labo-

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

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

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

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



NY AND NoJ PROJECT SEED

See article and photo under NY Section, page 17.



NORTH JERSEY SECTION ELECTION RESULTS

CHAIR-ELECT (2017)

Miriam Gulotta

TREASURER (2017-2019)

Jackie Erickson

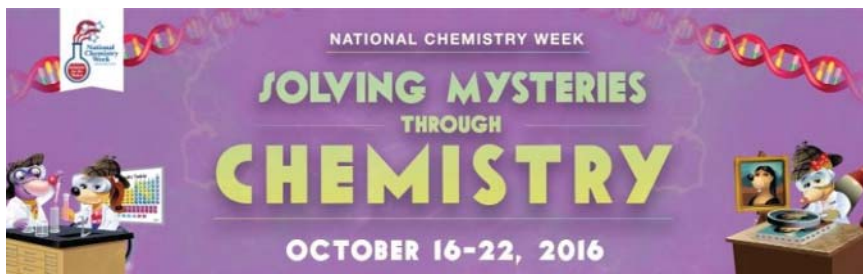
COUNCILORS (2017-2019)

Jeannette Brown	Les McQuire
Bettyann Howson	Mirlinda Biba

ALTERNATE COUNCILORS

Jasmine Lu	Amjad Ali
Bill Suits	

SOLVING MYSTERIES THROUGH CHEMISTRY WITH THE NORTH JERSEY SECTION



The National Chemistry Week 2016 theme was **"Solving Mysteries Through Chemistry"**, focusing on the chemistry of forensics and more. In celebration of National Chemistry Week at Liberty Science Center, Jersey City, New Jersey, on Saturday, October 22, 2016, the concerted effort of more than 275 volunteers from academia and industry, and students at local colleges, universities, middle and high schools in North Jersey made the 22nd celebration of ChemExpo a huge success. Approximately 800 visitors solved hands-on chemistry mysteries including secret messages with acid base indicators, mystery chromatography, chemiluminescence, ink chromatography, powder analysis, GC/IR Pattern matching, fingerprint analysis, UV fabric experiments, emulsion making, and making DNA models with candy.



Sister Marian José Smith Undergraduate Public Outreach Award

For the seventh year in a row, Chemistry Chapters from local institutions competed for the Sister Marian José Smith Undergraduate Public Outreach Award. The group of students from Drew University was awarded the first place for their highly interactive and enthusiastic presentations at ChemExpo with the students from Fairleigh Dickinson University earning second place and the third place winner were presenters from New Jersey City University. J.P. Stevens High School from Edison was given a certificate for their outstanding presentation and Linden High School was recognized



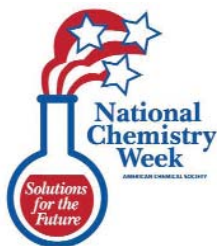
for their consistent participation in ChemExpo. The seventh grade students from Elisabeth Morrow School in Englewood were recognized as the youngest group of presenters. The teachers from these pre-college groups were each given a chemistry wall clock. These gifts and awards are funded by the North Jersey Section. Our gratitude goes to judges Keisha Stephen, Nidhal Marashi, Luci O'Reilly, Debra Sweet, Tomeka Saxon, Donovan Thompson, who selected winners in our competitions.

(continued on pages 8 and 9)

SOLVING MYSTERIES THROUGH CHEMISTRY WITH THE NORTH JERSEY SECTION

(continued from page 7)

Generous donations from three corporations, Infineum USA L.P., SPEX CertiPrep, and BASF helped defray the costs of holding such a large event. The North Jersey Section is indebted to members of the NJACS Executive Board, the ChemExpo 2016 Steering Committee, retired chemists, chemistry teachers at the participating universities, colleges, middle and high schools, and representatives from various chemical companies for making this event highly successful.



**ChemExpo 2016
Steering
Committee**
Monica Sekharan
Mita Chaki
Marilyn Gorman
Miriam Gulotta
Sandra Keyser



(All photos courtesy of Sandra Keyser, Luciano Mueller, and Siva Prasad)





NEW YORK SECTION – 2017 SECTION-WIDE CONFERENCE

Please register at: <http://www.newyorkacs.org/meetings/sectionwide/sectionwide2017.php>

Date: Saturday, January 21, 2017

Times: 9:30AM – 1:00PM

Place: Queensborough Community College - CUNY, 222-05 56th St., Bayside, NY Oakland Bldg.

Directions: <http://www.qcc.cuny.edu/about/getting-here.html>

Map of Campus: <http://www.qcc.cuny.edu/about/campus-map.html>

Cost: FREE TO ALL

PROGRAM

9:30 AM **Arrival and Refreshments**

10:00 AM **Greetings from the New York ACS 2017 Chair** Dr. Brian R. Gibney

10:10 AM **Award Presentations**

Service Plaque and Pin to the 2016 New York Section Chair Dr. Alison G. Hyslop

New York Section Outstanding Service Award for 2016 Dr. Paris Svoronos

Nichols Foundation H.S. Chemistry Teacher Award for 2016 Ms. Kristyn Pluchino
Stuyvesant High School
NYC

10:30 AM **Presentation of Candidates for the 2017 Elections** Dr. Joseph M. Serafin
2017 Chair-elect
ACS New York Section

10:45 AM **Keynote Speaker** Professor Rein Ulijn
Director, ASRC Nanoscience Initiative
City University of New York
New York, NY

Title: Peptide Nanotechnology: Building on the Building Blocks of Life

11:45 AM **Coffee Break** — Poster presentations by the New York Section Project SEED Students.

12:00 PM **ACS, New York Section Committee Planning Sessions for 2017**

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

Chair: Dr. Alison G. Hyslop

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

Chair: Dr. Ralph Stephani

Program Review: (Subsection and Topical Discussion Group Chairs)

Chair: Dr. Anne T. O'Brien

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

Chair: Dr. Robert P. Nolan

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

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

To inquire about the Section-wide Conference, please call the New York Section Office at (516) 883-7510 or e-mail Marilyn Jespersen, New York ACS Office Administrator, at:

njesper1@optonline.net

New York Meetings

www.newyorkacs.org

NEW YORK SECTION BOARD MEETING DATES FOR 2017

The dates for the Board Meetings of the ACS New York Section for 2017 have been selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any of the meetings should inform the New York Section office by emailing Mrs. Marilyn Jespersen at njesper1@optonline.net or by calling the Section office at (516) 883-7510.

All 2017 Board Meetings will be held at The Graduate Center, Science Center, Room 4102, 365 Fifth Avenue, New York, NY 10016, except for the January 21 Section-wide Conference and March 24 Nichols Symposium. Prof. Brian Gibney will chair all meetings. Refreshments will be available starting at 6:00 PM while the actual meeting will start at exactly 6:30 PM.

The board meetings dates for 2017 will be Saturday, January 21, 2017 – January Sectionwide Conference at Queensborough Community College - CUNY, 222-05 56th Street, Bayside, NY, Oakland Building..

Friday, February 10, 2017

Friday, March 24, 2017 – William H. Nichols Symposium and Medal Award Dinner at the Crowne Plaza Hotel, White Plains, NY.

Friday, April 28, 2017

Friday, June 9, 2017

Friday, September 15, 2017

Friday, November 17, 2017

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



LONG ISLAND SUBSECTION

Holiday seminar and election

Date: Thursday, December 1, 2016

Time: 5:30 PM

Place: Nassau Community College



CHEMICAL MARKETING & ECONOMICS GROUP

CM&E Leadership Awards

Awardees: Len Blavatnik, Jean-Pierre Clamadieu, David Cote, Charles Bolden

Date: Tuesday, December 6, 2016

Time: 11:30 AM - 2:30 PM

Place: Metropolitan Club

See flyers on page 12.



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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.



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PROGRAM

REGISTRATION

LUNCHEON

INTRODUCTION

CME Chair – Charles Brumlik

ACS Executive Director & CEO - Thomas Connelly

AWARDS PRESENTATION

CME Host – George Rodriguez

Historic Industrial Investment – **Len Blavatnik**

Extraordinary Innovation – **Jean-Pierre Clamadieu**

Lifetime Achievement – **David Cote**

Science Involvement – **Charles Bolden**

CLOSING REMARKS

ACS 2016 President – Donna Nelson

ANNUAL STEM AWARDS

Inspiring leadership has been the hallmark of the Chemical Marketing and Economic Group (CME) of ACS NY, a topical group founded in 1954. Established in 2012, the Leadership Awards™ are the highest honors given by CME to leaders of industry, investments, and other sectors, for their contributions to science, technology, engineering and mathematics initiatives.

CME organizes monthly luncheons and webcasts in Manhattan where industry leaders present cutting-edge outlooks on energy, materials & life science.

Founded in 1876 and Chartered by the U.S. Congress, ACS is the world's largest scientific society with 158,000 members. This ACS ChemLuminary award-winning event is a fundraiser to help advance STEM programs.

2016 HONOREES



Historic Industrial Investment

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Blavatnik**

Access Industries
Founder and
Chairman. American
Industrialist and
Philanthropist.



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**David M.
Cote**

Chairman and CEO
of Honeywell.
Director to the
Federal Reserve
Bank of New York.



Science Involvement

**Major Gen. Charles
F. Bolden, Jr.**

NASA Administrator.
Former Astronaut and
Deputy Commanding
General of the US
Forces in Japan.



Extraordinary Innovation

**Jean-Pierre
Clamadieu**

Solvay CEO and
Board Member.
European Chemical
Industry Council
President

WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “Effects of Overhanging Analyte Oligo Tails in Model DNA and Morpholino Arrays”

Speaker: Ursula Koniges
Tandon School of Engineering,
New York University
Brooklyn, NY

Hybridization of in-solution nucleic acid targets to surface-immobilized probes is a common mechanism employed in genetic analysis methods, for example DNA microarrays. In such applications, in-solution targets can be imperfect length matches to surface probes, with the resulting possibility of nucleic acid tails extending toward the surface, toward solution, or with overhangs of both orientations. We report the impact of surface- and solution-oriented tails on hybridization thermodynamics at a surface, and compare these results to a perfectly size-matched target and to solution hybridization thermodynamics. Several different probe coverages and solution ionic strengths are investigated. In addition to a DNA probe, a probe comprised of an uncharged DNA analogue, morpholino, is used to investigate the electrostatic contribution to the tail-orientation dependent biases. The reported results indicate that a surface-oriented tail markedly increases the hybridization energy penalty, whereas a solution-oriented tail has a significantly lower energy penalty effect. These results also help explain observations from a comparative study of the performance of DNA and morpholino microarrays.

Ursula Koniges is completing her Ph.D. in chemical engineering at New York University's Tandon School of Engineering in the Department of Chemical and Biomolecular Engineering. Her doctoral work is supervised by Dr. Rastislav Levicky, and focuses on the development of DNA-based biosensors. Ursula's undergraduate work at the University of Washington in Seattle earned her dual bachelor's degrees in biochemistry and chemical engineering, and a minor in international studies.

Date: Thursday, December 8, 2016

Times: Refreshments 5:30 PM
Lecture 6:00 PM

Place: Westchester Community College
Gateway Building, Room 110
5 Grasslands Road
Valhalla, NY

Cost: Free and Open to the Public

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

Or:

Anthony Durante
anthony.durante@bcc.cuny.edu
(718) 289-5542 or 5569

Note: Inclement Weather: Cancellation Due to Inclement Weather

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



HIGH SCHOOL TEACHERS TOPICAL GROUP

Communicating Science in Action: Fruit Flies are People Too

Speaker: Kimberly Bell
Alan Alda Center for Science
Communication

Even though fruit flies are small insects, seeming vastly different from humans, they in fact share many features of their DNA with us. Studying fruit fly genetics can help us to understand how and why things go wrong early in cell development, which can lead to a better understanding of common diseases, such as cancer and alcoholism. Kimberly's talk will focus on her work with fruit fly DNA, as well as the initiatives put forth by the Alan Alda Center for Communicating Science. The Alda Center courses and workshops have helped thousands of students, scientists, and medical professionals better communicate their work to the public, patients, and peers.

Date: Friday, December 16, 2016

Times: Social and Dinner — 5:45 PM
Meeting — 7:15 PM

Place: Social & Dinner — DoJo Restaurant
14 West 4th St. (@Mercer Street)
New York, NY
Meeting — New York University
Silver Center for Arts and
Sciences, Room 207
Enter from 32 Waverly Place
South-east corner Washington
Sq. East or Washington Place
New York, NY

(continued on page 14)

HIGH SCHOOL TEACHERS TOPICAL GROUP

(continued from page 13)

Security at NYU requires that you show a picture ID to enter the building.

In case of unexpected severe weather, call John Roeder, (212) 497-6500, between 9:00 AM and 2:00 PM to verify that meeting is still on; (516) 385-4698 for other info.

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



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.



HIGH SCHOOL TEACHERS TOPICAL GROUP

FUTURE MEETINGS:

How You Can Cover the Regents Chemistry Curriculum with Significant Time Constraints

Speaker: Tehilla P. Rieser
SAR High School
503 West 259th Street
Riverdale, NY

*** NOTE: DIFFERENT DAY –
WEDNESDAY ***

Date: Wednesday, January 18, 2017
Time: Social and Dinner — 5:45 PM
Meeting — 7:15 PM
Place: Social and Dinner — See below.
Meeting — SAR High School
503 West 259th Street
Riverdale, NY

The Feynman Picture of Quantum Confinement of Small Molecules

Speaker: Joseph Gendagorta
and

Computational Chemistry Methods for Crystal Structure Prediction

Speaker: Dr. Leslie Vogt
NYU.

Date: Friday, February 10, 2017

Times: Social and Dinner — 5:45 PM
Meeting — 7:15 PM

Place: Social & Dinner — DoJo Restaurant
14 West 4th St. (@Mercer Street)
New York, NY
Meeting — New York University
Silver Center for Arts and
Sciences, Room 207
Enter from 32 Waverly Place
South-east corner Washington
Sq. East or Washington Place
New York, NY

Preparing an Application for the Math for America Master Teacher Fellowship

Speaker: Lena Douris
[<lenadouris@gmail.com>](mailto:lenadouris@gmail.com)

I will share information about my experience in the MfA Master Teacher program. The details of the application process and the benefits of being involved in the wonderful MfA community. Note: MfA covers the Chemistry program in New York City.

Date: Friday, March 17, 2017

For times and place, see under February meeting, above.

“Demo Derby II”

Date: Friday, April 21, 2017

For times and place, see under February meeting, above.

The Development of Carolacton-derived Macrolactones for the Perturbation of Bacterial Biofilms

Speaker: Dr. Americo J. Fabroni
Department of Chemistry
Temple University
Philadelphia, PA.

Date: Friday, May 19, 2017

For times and place, see under February meeting, above.

WESTCHESTER CHEMICAL SOCIETY

FUTURE MEETINGS

Special Seminar – “Yes, But Why Sulfuric Acid? - Young William H Nichols Entry into 19th Century Chemical Industry”

Speaker: Peter Corfield, PhD
Department of Chemistry
Fordham University
Bronx, NY

William H Nichols was a remarkable man who had great influence on the young New York chemical industry. He and his friend Charles Waters started manufacturing mineral acids when he was only eighteen. He eventually founded the General Chemical Company, which after many mergers and acquisitions became the Allied Chemical Corporation. He was noted for his entrepreneurial spirit, for bringing scientific principles into manufacturing, and for high ethical standards. As a mature industrial chemist, Nichols funded the gold medal for the New York Section's new annual research award in 1902. This became the first national award of the American Chemical Society, now known as the William H. Nichols Medal Award. The presentation will explore Nichols' contributions in the context of the state of chemical industry in New York during the latter part of the nineteenth century.

Tentative

Date: Early February, 2017

Times: Refreshments 5:30 PM
Lecture 6:00 PM

Place: Westchester Community College
Gateway Building, Room 110
75 Grasslands Road
Valhalla, NY

Cost: Free and Open to the Public

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

Or:

Anthony Durante
anthony.durante@bcc.cuny.edu
(718) 289-5542 or 5569

Note: Inclement Weather: Cancellation Due to Inclement Weather

Should Westchester Community College's Valhalla campus close due to inclement weather (or has delayed opening or closes early) the meeting will be cancelled.

Decisions about delay/closure are made around 6:00 AM for day courses and 3:00 PM for evening courses. The college will communicate delays, closings or early dismissals on their website (www.sunywcc.edu), Facebook, Twitter, and the (914) 606-6900 phone line.

Special Seminar – “Cutting and Pasting with DNA: Genome Editing”

Speaker: Evan Merkhofer, PhD
Assistant Professor (Biology)
Mount Saint Mary College

Tentative

Date: Wednesday, April 12, 2017

Times, Place, Cost and Further Information:
See under February meeting.



NEW YORK NANOSCIENCE DISCUSSION GROUP

2016-2017 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. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Mark Your Calendars

Dates: Tuesdays, February 7 and
June 6, 2017

Times: Refreshments at 7:00 PM
Science at 7:30 PM

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

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

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

WESTCHESTER CHEMICAL SOCIETY

On October 11, 2016 Dr. Paul Dillon, our co-chair and co-program director spoke on "Clinical Diagnostics: An Overview". Dr. Dillon's talk contrasted clinical diagnostics with "classic" analytical chemistry. Although analytical chemistry is at the heart of much of clinical diagnostics, there are some important differences, including:

- Clinical diagnostics are very highly regulated, in the US by FDA.
- Clinical diagnostics use a limited range of sample types, especially those based on blood and urine.
- Clinical diagnostics are highly automated, have high throughput (up to 2000+ assays/hour, in a random order), use very small sample sizes (one to several hundred μL), and measure analytes with very low concentrations (down to $\text{pg}/\mu\text{L}$ range).
- Because not all analytes are well-defined molecular species, assay standardization is important.
- Analysis reactions are not often driven to completion; most are kinetic and require calibration with materials of known concentration.
- In addition to analytical sensitivity and specificity, clinical sensitivity and specificity and predictive values can be crucial. A positive result for an analyte truly present may still be a false positive, depending on the disease in question, if other diseases

may also elevate that analyte.

- Indices computed from multiple analyses are often used to ensure clinical relevance.

Dr. Dillon's talk was an expanded version of his talk at the Clinical Diagnostics Session of the 44th Middle Atlantic Regional Meeting, Bronx, NY, June 9, 2016. He added several interesting concrete examples from recent diagnostics literature. There was interesting discussion with the audience during and after Dr. Dillon's talk, given at the Westchester Community College in Valhalla, N.Y. This continued for several attendees and the speaker, as they enjoyed a dinner together at a nearby restaurant. In addition to being co-chair of the Westchester Chemical Society, Dr. Dillon is also a director at large for the NY Section. He has worked for more than thirty years in the diagnostics industry and retired from Siemens Healthineers in 2012, but continues to consult for them (through Randstad Sourceright). He notes that the opinions expressed in his talk are his own and not necessarily those of Randstad Sourceright or Siemens Healthineers. Dr. Dillon obtained his B.S. degree in chemistry at the Polytechnic Institute of Brooklyn (now the Tandon School of Engineering of New York University), and his M.S. and Ph.D. degrees in chemistry at New York University. The photo below is of Dr. Dillon and the other WCS board of directors who attended the meeting.



**Jody Reifenberg,
Paul Dillon,
Rolande Hodel and
Peter Corfield**

*(Photo courtesy of
Paul Dillon)*

NY AND NoJ PROJECT SEED

On August 22, 18 Project SEED 2 students from the NY and NJ delegations boarded a bus and headed to Philadelphia to present the results of their research project at Sci-Mix.

Thirteen students from the NY Section and 5 from the NoJ Section presented at the 252nd National ACS meeting that was attended by over 15,000 scientists from all over the world.

The students were accompanied by Nadia Makar, NY Section Project SEED Coordinator and Susan Fahrenholtz, North Jersey Section Project SEED Coordinator. Other chaperones were Marie Aloia, Juana Vanderhorst, Bobbi Gorman, Nina Lavlinskaia and Jack Saturen.

Nadia Makar
STEM Supervisor
UCHS/AEA
NY Section ACS SEED Coordinator



WILLIAM H. NICHOLS MEDALIST FOR 2017 IS CHOSEN

Professor Chad Mirkin of Northwestern University is the William H. Nichols Medalist for 2017.

The New York Section is pleased to announce that the Nichols Jury has chosen Dr. Chad A. Mirkin of Northwestern University to be the William H. Nichols Medalist for 2017. Dr. Mirkin is being honored for his "Seminal Contributions to Practical Applications of Nanochemistry."

The Nichols Distinguished Symposium and Medal Award Dinner will be held on Friday, March 24, 2017 at the Crowne Plaza Hotel, 66 Hale Avenue, White Plains, NY.

The Nichols Symposium, titled "Improving Life Through Advances in Chemistry and Nanoscience", will feature five international-

ly known chemists: Medalist Dr. Mirkin, Dr. Christopher J. Chang, University of California, Berkeley, Dr. Nathan Gianneschi, University of California, San Diego, Dr. Harry B. Gray, California Institute of Technology and Dr. Timothy M. Swager, Massachusetts Institute of Technology.

Dr. Joseph M. Serafin, Chair-elect of the New York Section for 2017, will conduct the Distinguished Symposium. Dr. Brian R. Gibney, Chair of the New York Section for 2017, will host the Medal Award Banquet and present the Nichols Gold Medal Award to Dr. Mirkin at the dinner.

The entire program with abstracts and a reservation form will appear in the January, February and March issues of *The Indicator* and on the New York Section website at <http://www.NewYorkACS.org>

Congratulations Dr. Mirkin!

NEW YORK SECTION HONORS 50 AND 60 YEAR ACS MEMBERS

Congratulations to our ACS New York Section members who have reached 50 and 60 years of membership and service in 2016! For those awardees able to attend, an awards luncheon was held on Sunday, November 6, 2016 at Petrossian's Restaurant in New York City. Mr. Frank Romano, Co-chair of the Senior Chemists Group of the New York Section, organized this much appreciated and enjoyable event. Dr. Alison Hyslop, 2016 Chair of the Section and Mr. Romano presented the ACS awards, while family and friends joined them in celebrating this occasion. A highlight of the event were the interesting and humorous anecdotes from the honorees about their life experiences in chemistry. Each year the honorees express their gratitude for having had the opportunity to visit with colleagues and for being acknowledged in such a special way.

Additional photos on page 19.

60 Year Members

Dr. Jay Donald Albright
Ms. Ethel Berkowitz
Dr. Olga O. Blumenfeld
Dr. Jack Fajer
Dr. Stewart Karp
Dr. Thomas Medwick
Ms. Sarah Mook
Dr. George G. Odian
Dr. Roland P. F. Scharrer
Dr. David Israel Schuster

50 Year Members

Dr. John Keith Addy
Dr. Marvin Bishop
Dr. Fitzgerald Burton Bramwell
Dr. Nithiananda Chatterjie
Mr. Chung Chi Chou
Mr. Aris Christodoulou
Dr. Peter William R. Corfield
Dr. Ronald Philip D'Amelia
Mr. James Critser Davis
Mr. Leonard Glass
Dr. Robert Mikell Hoyte
Dr. Charles R. Iden
Mr. Peter John Kaufmann
Dr. Richard Martin Kirchner
Mr. David Hamilton Koch



Group Photo — Top row: Frank Romano (Awards Co-Chair), Nithiananda Chatterjie, Charles R. Iden, Fitzgerald B. Bramwell, Richard M. Kirchner, Alison G. Hyslop (2016 ACS New York Section Chair); Bottom Row: Ching Chi Chou, Ronald P. D'Amelia, Jack Fajer, Peter W. R. C. Corfield.

(Photos courtesy of Marilyn Jespersen)

Dr. Jacqueline Irene Kroschwitz
Dr. Michael J. Malin
Dr. Kathlyn Ann Parker
Dr. Foster L. Pigott
Mr. Bruce Erwin Riede
Dr. Herbert N. Rose

Mr. Robert Anthony Rossi
Mr. Peter Roy Santo
Dr. Horst H. H. Schulz
Dr. Alvin Siegel
Dr. George Slavin



NOMINATING COMMITTEE MEETS IN DECEMBER

The Nominating Committee of the New York Section will meet in December to select candidates for the 2017 elections.

Positions available are:

Chair-elect for 2018

Treasurer for 2018 – 2019

Directors-at-Large for 2018

Councilors and Alternate Councilors for 2018 – 2020

If a member of the New York Section wishes to run for office or to suggest a member for consideration by the Nominating Committee, please write to the American Chemical Society, New York Section, Inc., St. John's University, Department of Chemistry, 8000 Utopia Parkway, Queens, NY 11439 or send an e-mail to the New York Section office at njesper1@optonline.net by November 30. Thank you.



NATIONAL CHEMISTRY WEEK – HUDSON-BERGEN CHEMICAL SOCIETY

Forensic Toxicology and Excited Delirium

Speaker: Mr. Sorin Diaconescu
New Jersey State
Toxicology Laboratory

This presentation was in celebration of National Chemistry Week. It took place on October 27 at Fairleigh Dickinson University, Metropolitan Campus.



Mr Thomas Drwiega (2016 Chair of the Hudson-Bergen Chemical Society, Mr. Sorin Diaconescu, Dr. Mihaela Leonida.



Students attending the talk (~60).

(Photos courtesy of Dr. Mihaela Leonida)

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on the NY Section Home Page at newyorkacs.org, under the Committee on the History of the NY Section. These landmark programs recognize achievements in the chemical sciences and related areas, in order to enhance public appreciation for the contributions of the chemical sciences to modern life.

Please consider making a nomination for an historic chemical landmark. The Committee on the History of the NY Section will consider all nominations. In addition to a particular achievement, an historic library, building or association may be worthy of this distinction.

Please send your nomination, with supporting documentation, to the Chair of the Committee, Dr. John B. Sharkey, at johnbsharkey@me.com.



WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARD 2017

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2017". Scientists who live or work in Westchester or the Bronx qualify. The awardee is expected to attend the Awards Dinner (April/May timeframe) and to present aspects of his or her work. Self-nominations are acceptable. Nominations are not carried over from previous years. New and possibly updated nominations should be submitted. Please send a cover letter stating why your nominee should receive the award along with the nominee's resume **by January 31, 2017** to:

Dr. Paul Dillon at
PaulWDillon2@hotmail.com or
 67 Matthes Road, Briarcliff Manor, NY
 10510

or to: Dr. Peter Corfield at
pwc@earthlink.com.

THE SOCIETY FOR APPLIED SPECTROSCOPY – NEW YORK SECTION

2017 Gold Medal Award

Nominations are being sought for the 2017 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 2017 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 10th, 2017. Please email all materials to Kathryn.lee@rap-iD.com or mail to Kathryn Lee, Rap-ID Inc., 11 Deer Park Drive, Suite 201, Monmouth Junction, NJ 08852.

This announcement and contact information is also available on our website www.nysas.org

If you have any questions or require more information, you may contact Kathryn Lee at (732) 823-1567.

Call for Applications

WILLIAM H. NICHOLS FELLOWSHIP

The New York Local Section of the American Chemical Society is proud to announce the continuation of a summer research opportunity for undergraduates, the William H. Nichols Fellowship. The Nichols Fellowship is open to all college students majoring in chemistry (broadly defined) who will perform research over the summer before graduation at an institution in the NY Local Section geographic area. Each Nichols Fellow receives a stipend of \$5,000 to support them as they perform their research, and is expected to submit a two-page written report at the end of the summer and present their work at the 2018 Undergraduate Research Symposium. In addition, each Nichols Fellow and their mentor will be invited as honored guests to the 2018 William H. Nichols Award Banquet.

Applications are available online at www.newyorkacs.org/NicholsFellowship.php and are **due December 15, 2016**. All applicants will be notified **by March 1, 2017**.

(continued on page 22)

CALL FOR APPLICATIONS

(continued from page 21)

FREDDIE AND ADA BROWN AWARD

This Award recognizes and encourages high achieving middle- and high-school students, of African American and Native American heritage, to further develop their academic skills, with views on careers in the chemical sciences

Award Amounts

Middle School \$100.00 Check and \$50.00 gift certificate : High School \$200.00 Check and \$100.00 gift certificate

Who is Eligible

Middle School students enrolled in a science class : High School students who have completed a chemistry course

Grades

Middle School B Average or better in Science, B Average overall : High School B Average in Chemistry, B Average overall

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

Middle School "Why I Like Science" : High School "Why I Like Chemistry"

Selection Criteria

Applicants must be African American (Black) or Native American (including Pacific Islander) or of mixed race.

Transcript

Official transcript required.

Financial Need

Not Required.

Applications available on the web: www.njacs.org/freddieadabrown

or from your school guidance office.

Return Application To

Freddie and Ada Brown Award, NJACS Section Office, 49 Pippens Way, Morristown, NJ 07960

Due Date

Completed Applications must be post-marked no later than **March 31 Annually**

Questions: Contact Jeannette Brown Jebrown@infionline.net or (908) 239-1515

Call for Volunteers

OPPORTUNITY FOR ACS MEMBERS TO AID STUDENTS 2 SCIENCE IN A HYBRID VIRTUAL LAB PROGRAM

Can you spare a few hours of your time? Do you like working with students and would you like the opportunity to share your science knowledge in a classroom? Students 2 Science is seeking volunteers to aid in our Virtual Lab program. We have a series of elementary, middle, and high school experiments that we will be running in various schools across New Jersey. Members are especially needed to help with the North Jersey section's IPG funded project to bring hands-on science to South Jersey. We need professionals to help in the classroom with the students. It's great fun, a wonderful way to give back, and only requires a few hours of your time. Opportunities begin in November. For more information, contact Fran Nelson, frannelson@students2science.org and visit our website at Students2Science.org

National

LEADERSHIP INSTITUTE 2017

Dear Local Section Officer:

The 2017 ACS Leadership Institute, which will include local section and division officer training, is planned for **January 27-29 in Dallas, Texas**. The Institute will be held at the Dallas InterContinental Hotel beginning Friday at 1:30 PM and conclude at 11:00 AM on Sunday. Lunch will also be available for those who arrive by noon on Friday.

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

On Saturday, participants will have the opportunity to take ACS Leadership Development System courses that will help to develop core leadership skills important in ACS leadership roles, as well as in the work-

place. To preview the courses that will be offered, visit the ACS Leadership Development System website.

The 2017 Leadership Institute is intended for those who will be local section or division chairs in 2018 and are now chair-elects. However, if the chair-elect is unavailable, please consider sending another officer from your group to join us at this acclaimed training event. **Registration opens on November 14, 2016 when full details will be available.**

Highlights of the conference are:

- Registration opens November 14. You will receive another announcement prior to the opening.
- The registration fee is \$425.00 per person which covers meals, conference materials, and two nights lodging.
- Local sections may send more than one delegate. Cost for the second and any additional participants is \$800.00 per person which covers meals, conference materials, and two nights lodging.
- Should you need to arrive earlier or extend your stay, you may request that when completing the registration form, but you or your local section will be responsible for the cost of additional room nights.
- Cost of the additional room night(s) is \$179.00 plus 6% tax for each night.
- Please arrange for your own transportation to the Intercontinental Hotel upon your arrival in Dallas. Past experience has shown us that pre-arranged airport shuttles for the Leadership Institute attendees are not efficient and cause significant arrival delays.
- ACS will cover the cost of your transportation from the Intercontinental Hotel to the airport on Sunday.

For additional information, please contact Debbie Fillinich at d_fillinich@acs.org.

We hope to see your local section represented.

Debbie Fillinich
Assistant Director
Member Communities
1155 Sixteenth St., NW
Washington, DC 20036
d_fillinich@acs.org • (t) (202) 872.4369

Others

FROM WASTE TO RESOURCE: HIGHLY EFFICIENT AND COST- EFFECTIVE CO₂ UTILIZATION WILL SPARK A REVOLUTION — WHAT CAN WE EXPECT FROM POLICY?

Nova-Institute is proud to host the “5th Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers” in Cologne, Germany, on 6-7 December 2016. More than 250 participants from 30 countries and 20 exhibitors are expected.

Carbon Capture and Utilization (CCU) is a new technology to produce sustainable fuels and chemicals from CO₂ and renewable energies. Although first commercial plants have recently started to operate, most of the activities are still on pilot and demonstration level. Support from policy is strongly needed to speed up the implementation. This also requires visions about which role this new technology can play in the renewable energy system, for sustainable chemistry and for climate protection.

The first session will be: **Policy and Visions**

The conference will start with opening words from the Ministry of Innovation, Science and Research of the Federal State of North Rhine-Westphalia (MIWF) (DE) and is followed by a short overview on the future of mobility by the EnergyAgency.NRW (DE). The comprehensive session on “Policy and Visions” represents a variety of top-class speakers and presentations. Visionaries, representatives from political bodies and the industry as well as world-renowned experts on CCU will be on hand at the event to present and discuss the latest European, national and regional policies, strategies and visions.

The first two talks deal with initiatives for speeding up worldwide CO₂ utilization: Dr. Issam Dairanieh, CEO of CO₂ Sciences, Inc. (USA) will present a big idea: The Global CO₂ Initiative which is taking on the grand challenge of the planet by developing innovative approaches to transform CO₂ into commercial products while at the same time contributing to sustainability and climate protection.

Climate-KIC (EU) and Covestro (DE) will introduce the flagship programme EnCO₂re, an innovation and market development programme for CO₂ re-use with a focus on polymers and chemical intermediates. Climate-KIC is Europe's largest public-private innovation partnership focused on climate innovation that

(continued on page 22)

FROM WASTE TO RESOURCE...

(continued from page 21)

will contribute to mitigation of and adaptation to climate change.

Representatives of the European Commission – represented by DG Growth and DG Research & Innovation – will give a talk on the role of Carbon Capture and Utilization in the European framework and recent research activities.

The German Federal Ministry of Education and Research (BMBF) will report on new developments in German CCU research and innovation.

Prof. Dr. Peter Styring from the University of Sheffield (UK) is one of the world's experts in CCU with excellent expertise in CCU policy. He will give an introduction and overview of the vision to use CO₂ as a resource and a valuable building block for the chemical industry.

The University of Sheffield / SCOT (UK) will present major milestones of the SCOT project, including policy recommendations on how to include CO₂-based aviation fuels in the Emission Trading System (ETS).

Michael Carus, Managing Director of nova-Institut GmbH (DE) and Christian Schweitzer, CEO of bse engineering (DE) will present CCU in the framework of the coming reform of the Renewable Energy Directive (RED). They will present the recently published "Petition for Integration of renewable CCU in the RED" and the feedback from policy makers to the proposals.

Jan Theulen, HeidelbergCement (BE) – HeidelbergCement is a world leader in the energy-intensive cement production and produces a lot of CO₂ every day. To reduce their greenhouse gas emissions they are active in several projects of carbon dioxide utilization and storage.

Marcel Keiffenheim, Greenpeace Energy eG (DE) – Greenpeace is one of the biggest, best-known and most active NGO's focusing on environmental issues including climate change and anthropogenic pollution. At the conference, Mr. Keiffenheim will provide a deeper look at CCU from this perspective.

The session will end with a panel discussion. Speakers and participants are invited to join and discuss visions, political frameworks and latest activities to overcome hurdles in the field of CCU.

The full programme and detailed information can be found at www.co2-chemistry.eu/programme

The conference is under the patronage of Svenja Schulze, Minister of Innovation, Science and Research of the German State of North Rhine-Westphalia. The conference is cooperatively supported by the premium partner EnergyAgency.NRW. It is sponsored by

Silver Sponsor Covestro (DE), a world-leading manufacturer of high-tech polymer materials for key industries, and Bronze Sponsor Pythonix, developer of photosynthetic microbial cell factories.

Our participants

The international conference provides the ideal opportunity to present and discuss latest developments and strategies between the major players from the fields of sustainable fuels, chemicals and polymers based on CO₂.

The participants include interested experts from industry, associations, policy and civil society who wish to get a full picture of how this new and exciting scenario is unfolding. The conference is the opportunity to meet the right partners for future alliances.

The latest participants list is online!

Free booths for the first ten exhibitors

Take the extraordinary opportunity to present your company and your innovative products at the conference with an exhibition booth! Only a two-days' conference entrance ticket is needed to get one of the ten free booths – five are still available. More information here.

Contact: Dominik Vogt,
dominik.vogt@nova-institut.de



NEW TECH IS NEXT GENERATION IN SAFETY FOR MOBILE WORKERS

Companies that dispatch employees into unknown environments have come to rely on the use of cell phones to keep contact with their workers. Unfortunately, cell phones are not always able to tell employers information such as location of their employee or if they are in an emergency situation. But, SecuraTrac, a leading provider of mobile health and safety solutions focused on senior safety, employee wellbeing and the healthcare industry, is announcing their new mobile emergency pendant, the Mobile Defender Model S.


From real estate agents and home healthcare workers meeting with clients to construction workers and engineers alone in the field, the Model S has a variety of useful applications. The device has state-of-the-art location technologies and the ability to detect when someone falls. The technology can detect horizontal and vertical movement and in the event a worker is unable to move or reach a phone, the Model S will trigger automatically, calling emergency responders.

Would you be interested in learning more about the Mobile Defender Mobile S and how it can help better the safety of mobile workers? Contact Liz Kowalsky, Asylum Public Relations O: (480) 264 5133 • C: (908) 967 3643

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