THE Indicator

SEPTEMBER 2014 Vol. 95 • No. 7 ISSN0019-6924

North Jersey Section Sixty-Sixth Annual Undergraduate Research Conference Winners

Student winners with their mentors (from left) Alec Levine, Dr. Amber Charlebois, Katelyn Lewis, Dr. Ronald J. Doll and Randa Barsoom.

(Photo courtesy of Tom Krone)

Story on page 6; more pictures on page 7.

New York Section 62nd Annual URS

See story and pictures on pages 19-20.

RECYCLE THIS PAPER *PERIODICALS POSTAGE*

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

THIS MONTH IN CHEMICAL HISTORY

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

Kevlar, a synthetic fiber that has saved many lives, was discovered in the early 1960s by the subject of this column, Stephanie L. Kwolek. Ms. Kwolek was born in 1923 in a suburb of Pittsburgh, PA to Polish immigrant parents. Her father was a keen amateur naturalist. Though he died when she was only ten years old, Stephanie credited him with developing her interest in the natural world and in science. She originally hoped to go to medical school, but the family could not afford the tuition and so she enrolled in Margaret Morrison College of Carnegie Mellon University and graduated with a degree in chemistry in 1946. She still hoped to enter medical school and decided to take a temporary job in the chemical industry to earn the necessary funds. Jobs for women in chemistry were scarce but she was fortunate to be offered a position at DuPont's plant at Buffalo, NY. Her association with DuPont turned out to be anything but temporary. She was with the company for over 40 years!

Kwolek moved to the Wilmington, Delaware DuPont headquarters in 1950. There she worked with a polymer fiber group on researching new fibers and improving DuPont's established fibers. (Nylon was discovered by DuPont chemist Carothers in the 1930s). In 1959 the ACS recognized her popular publication on The Nylon Rope Trick by an award. I'm sure that most of my readers have either performed or seen a demonstration of this interfacial polymer-forming experiment to produce a nylon fiber. In the early 1960s, searching for strong but lightweight fibers to reinforce tire walls, Kovalek began investigating polybenzamide, poly-p-phenylene terephthalate (which could not be spun in the melt below 200 degrees C) and eventually the co-polymer poly-paraphenylene terephthalimide. The latter gave what was determined to be a liquid crystal in solution – cloudy, opalescent, and unpromising. Still she did have it tested by the spinnaret technician, and it produced a fiber that was not only stronger than nylon, but weight for weight was five times as strong as steel. Kevlar was born.

DuPont spent $500 million to develop this laboratory discovery into a marketable product. Initially designed as a tire reinforcement it soon became clear that there were many other potential, and profitable, applications for Kevlar. By 1975 fabrics made of the tough polymer were being used in vests for the protection of police – so-called bullet-proof vests. The military soon followed. Vests including many layers of Kevlar fabric plus ceramic plates are now standard military supplies. The polymer has myriad other uses including sports equipment, and musical and audio equipment.

Stephanie Kwolek's achievements have been recognized by many awards. The DuPont company awarded her the Lavoisier medal. She was the leader of DuPont's polymer research division until she retired in 1986. She was inducted into the National Inventors Hall of Fame, the National Women's Hall of Fame, and the Plastics Hall of Fame. Her inspiring story was the subject of a children's book by Edwin Brit Wykoff, published in 2013, entitled "The Woman Who Invented the Thread That Stops the Bullets: The Genius of Stephanie Kwolek." She is also one of the subjects of the Chemical Heritage Foundation's "Women in Chemistry" videos which you can access through the chemheritage.org website.

After her retirement Kwolek began tutoring high school students, encouraging more young women to seek careers in science. She died earlier this year in June 2014.

[I am a co-author with Cathy Cobb and Monty Fetterolf of a new book "The Chemistry of Alchemy: From Dragon's Blood to Donkey Dung; How Chemistry Was Forged" published by Prometheus Books in July 2014; it is available both as a hard-back and an ebook.]

THE INDICATOR
Manager / Editor - LINDA ATKINS
1 Milbark Court, 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.
JACQUELINE ERICKSON
GSK, 1500 Littleton Road, Parsippany, NJ 07054
973-889-2368
e-mail: jacqueline.a.erickson@gsk.com
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. PAMELA K. KERRIGAN
The College of Mount Saint Vincent, Division of Natural Sciences
6301 Riverdale Avenue, Riverdale, NY 10471
718-405-3402
pamela.kerrigan@mountsaintvincent.edu
Chair-Elect, DR. PARIS SVORONOS
Department of Chemistry
CUNY-Queensborough Community College
222-05 56th Avenue, Bayside, NY 11364
718-631-7695
psvoronos@qcc.cuny.edu
Secretary, DR. JOSEPH M. SERAFIN
Dept. of Chemistry, St. John's University
8000 Utopia Parkway, Jamaica, NY 11439
718-990-5226 • **serafinj@stjohns.edu**
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. MONICA SEKHARAN
Assistant Research Professor
RCSB Protein Data Bank
Center for Integrative Proteomics Research
Rutgers, The State University of New Jersey
174 Frelinghuysen Rd., Piscataway, NJ 08854-8087
monicasekharan@njacs.org
Chair-Elect, DR. RONALD KONG
212 Beech Drive N., River Edge, NJ 07661-1110
201-707-3899 • **rkong0605@gmail.com**
Secretary, BETTYANN HOWSON
49 Pippins Way, Morris Township, NJ 07960
973-822-2575 • **chemphun@gmail.com**
Section Office
49 Pippins Way, Morris Township, NJ 07960
973-822-2575 • **chemphun@gmail.com**

THE Indicator

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

CONTENTS

EDITORIAL DEADLINES

October	August 20
November	September 20
December	October 20
January 2015	November 20
February	December 20, 2014
March	January 20, 2015
April	February 20
May	March 20
June	April 20
September	July 20

Visit Us
www.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, 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/editmyprofile**.

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

September Calendar

NEW YORK SECTION

Friday, September 9, 2014
NY Board
See page 12.

Wednesday, September 10, 2014
Chemical Marketing & Economics Group
See page 12.

Friday, September 19, 2014
High School Teachers Topical Group
See page 13.

Saturday, September 20, 2014
Long Island Subsection
See page 13.

Tuesday, September 30, 2014
Biochemical Topical Group
See pages 13-14.

NORTH JERSEY SECTION

Monday, September 8, 2014
Careers in Transition Group
See page 5.

Tuesday, September 16, 2014
Mass Sectroscopy Topical Group
See page 5.

Monday, September 22, 2014
North Jersey Executive Meeting
See page 5.

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

Deadline for items to be included in the October 2014 issue of *The Indicator* is
August 20, 2014

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. Dinner is joint with Project SEED.

Date Monday, Sept 22, 2014
Times: Dinner 6:00. Meeting 7:30
Place: Univ. Center, Seton Hall Univ
Dinner: Main Lounge
Meeting: Univ Club (Room 201)
400 S. Orange Ave, S. Orange, NJ

For reservations please call (732) 463-7271 or email **chemphun@gmail.com** **prior to Wednesday, September 17, 2014**.

Dinner cost is payable at the door; however, if you are not able to attend and did not cancel your reservation, you are responsible for the price of your dinner. Cost $25.

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, September 8, 2014
Times: Meeting 5:30 - 9:00 PM
Pizza snack and soda 6:30 PM
Place: Students 2 Science, Inc.
66 Deforest Avenue
East Hanover, NJ
Cost: $5.00 for pizza and soda

Reservations: at **www.njacs.org/careers.html**

A job board and networking assistance is offered at most topical group meetings. Appointments with Bill can be arranged for personal assistance at (908) 875-9069 or **billsuits@earthlink.net**.

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

NORTH JERSEY MASS SPECTROMETRY DISCUSSION GROUP

Vendor Show and Vendor Sponsored Workshop

Speakers: Dr. Lucinda Cohen
Merck & Co.

and

Prof. Jonathan Sweedler
University of Illinois at Urbana-Champaign

There will also be a special celebration to recognize the 25 year anniversary of the NJMSDG. Additional details will be posted on our website at **http://www.njacs.org/topical-groups/mass-spectrometry**.

Date: Tuesday, September 16, 2014
Times: 2:30 - 8:00 PM
Place: Holiday Inn Somerset-Bridgewater
195 Davison Avenue
Somerset, NJ

DRUG METABOLISM DISCUSSION GROUP

Fall Symposium and Vendor Exhibition

Mark your calendars for the The North Jersey Drug Metabolism Discussion Group Fall Symposium and Vendor Exhibition, to be held at The Palace at Somerset Park, 333 Davidson Avenue, Somerset, NJ 08873, on Monday, October 13. Details will be posted at **http://www.njacs.org/topical-groups/drug-metabolism**.

Date: Monday, October 13, 2014
Place: The Palace at Somerset Park
333 Davidson Avenue
Somerset, NJ

NMR TOPICAL GROUP

Annual NMR Symposium

Invited Speakers: Yawen Bai
NIH

Robert Griffin
MIT

Teresa Fan
University of Louisville

Eric Munson
University of Kentucky

Date: Wednesday, October 22, 2014
Place: Rutgers Busch Campus
CABM

For more details and updates:
http://www.njacs.org/nmr-spectroscopy-topical-group

NORTH JERSEY CANDIDATES

The Nominating Committee of the North Jersey ACS Section is pleased to present the slate of candidates listed below in alphabetical order by category for election to offices to begin in 2015.

Ballots will be distributed to members in the fall.

Candidates for Chair-Elect
Luciano Mueller
Matthew Mongelli

Candidates for Councilor
Amy Balija
Alan Cooper
Ronald Doll
Jacqueline Erickson
Jonathan Ho
Matthew Mongelli

Donald Truss
Molly Warnke

NORTH JERSEY SECTION — SIXTY-SIXTH ANNUAL UNDERGRADUATE RESEARCH CONFERENCE

The Sixty-sixth Annual Undergraduate Research Conference was held on Friday April 25, 2014, at Kean University in the STEM Building's Jules Irving Schwartz Lecture Hall in Union, NJ. Five undergraduate students from three local universities (Fairleigh Dickinson University, Drew University, and William Paterson University) presented their research to an audience of students, faculty and scientists from the North Jersey area. The three judges, Ms. Diane Krone, a retired high school chemistry teacher, Dr. Alan Cooper a retired medicinal chemist from Merck/Schering Plough, and Dr. Ron Kong, the chair elect for the North Jersey Section of the ACS, had the unenviable task of choosing their top three undergraduate student presentations. Each presenter represented their institution and gave some insight into the research that is being accomplished at undergraduate institutions in the North Jersey Section of the ACS.

First place and the Jean Asell Duranna Award were given to Ms. Katelyn Lewis, a senior at Fairleigh Dickinson University, whose presentation was titled, "Synthesis of Stercobilin — A Potential Biomarker for Autism." Her research was conducted under the direction of Dr. Amber F. Charlebois. Ms. Lewis's research was presented with both skill and a bit of humor highlighting the emerging field of Autism biomarkers.

The second place award was given to Ms. Randa R. Barsoom, who is a senior at Drew University working with Dr. Ronald J. Doll on the topic, "Drug Discovery Efforts Targeting Mutant p53 for the Treatment of Glioblastoma." Ms. Barsoom expertly presented the details of research conducted in the group involving both the synthesis and biological studies of a class of potential drug molecules.

The third place award was given to Mr. Alec Levine, a senior at Fairleigh Dickinson University. His presentation was titled, "Kinetics of the Insertion of Cobalt into Tetraphenylporphyrin." His research was conducted under the direction of Dr. Ronald S. Strange. Mr. Levine confidently presented his research on the synthesis and kinetic studies of the complexes.

The award certificates were formally presented to the top three student presenters at the North Jersey Section's Annual Awards Dinner held on Tuesday, May 20, 2014 in Lenfell Hall on the Fairleigh Dickinson University campus in Madison, NJ.

Student winners and judges (front left), Dr. Amber Charlebois, Alec Levine, Dr. Alan Cooper, Katelyn Lewis, Dr. Ronald J. Doll, Randa Barsoom, Dr. Ron Kong, and Diane Krone.

Undergraduate Student Conference winners (from left) Alec Levine (FDU 3rd), Randa Barsoom (Drew 2nd) and Katelyn Lewis (FDU 1st).

(Photos courtesy of Tom Krone)

SETON HALL WINS 1ST PLACE

Undergraduate Competition for their Interactive Exhibit on Water Filtration

To celebrate **Earth Day 2014**, the North Jersey Section of ACS partnered with Turtle Back Zoo in an event called "Party for the Planet". On Sunday, April 27, 2014, undergraduate student chapters from five local institutions participated in a competition for the best interactive, hand-on demonstration on the topic "Wonders of Water". Students conveyed to the public the wonders of water in an energetic and enthusiastic manner in carefully planned demonstrations. There were additional interactive presentations by groups including NJACS Ambassadors and Alpha Chi Sigma. These delighted and educated the zoo visitors on water surface tension and refractive index, water purity, and polymer clean up. A total of 4,100 people visited the zoo on that day and were able to participate in the demonstrations. One of the student presenters, Craig Waitt from Montclair State University, described his experience: "Everyone who came to visit our stand had a great time. My favorite part was watching the expression of the kids and parents as they touched the 'oobleck'. It was an unfamiliar texture to them so they couldn't determine how to categorize it. It was a fun experience and I would enjoy doing it again next year."

The volunteer judges based their scores on items including clarity, degree of interaction, enthusiasm, and safety. The final point totals were very close, but Seton Hall took first place for their superb demonstration titled "Water Filtration"; congratulations!!! Seton Hall was awarded the title "CCED Undergraduate Student Chapter 2014" and the grand prize of $175 for their educational, fun and interactive activity, which fascinated both kids and adults. The winners exhibited water filtration in action, demonstrating the effect of particle and pore sizes and the power of carbon powder in binding and removing impurities. Fairleigh Dickinson University was awarded second place and a $75 award for their well-loved demonstration titled "Turning water into wine/blood, hydrophobic sand, & paper chromatography". Congratulations FDU! Visitors learned about capillary action while making beautiful butterflies out of filter paper and about hydrophobic interactions while playing with silica coated sand and hydroscopic polymer snow. The other student groups who participated in this competition were Drew University with "Washed Down the Drain: A Study of pH in the Suburbs", Ramapo College with "Density and Pressure of Water", and Montclair State University with "The Mystery of Cornstarch and Water". Congratulations to all Undergraduate Students who participated! NJACS CCED would like to thank all students and judges and is looking forward to returning to Turtle Back Zoo in 2015.

Pictured here 1st place winners: Seton Hall (left) and the CCED Undergraduate Student Chapter 2014 (below).

(More pictures on page 9)


Pictured above: Fairleigh Dickinson University (left), Drew (right).

(All photos courtesy of Nina Goodey)

Pictured above: Ramapo College (left), Montclair State University (right),


Pictured above: Alpha Chi Sigma (left), and NJACS Ambassadors (right).

NORTH JERSEY SECTION CHEMAGINATION CONTEST

On April 10th, the North Jersey Section sponsored the Chemagination Contest for local high school students. Parsippany Hills High School hosted the event. Students were asked to "Describe a recent breakthrough or innovation in chemistry (and/or its applications) that has improved the quality of people's lives today" by writing an article for *ChemMatters*, an educational magazine published by ACS that focuses on the role of chemistry in everyday life. The article was written as if the student was living in the year 2039, looking back at innovations that have occurred since 2014. In addition to the article, students were asked to design a cover for the magazine. Contestants were evaluated for their article, their poster presentation, and interviews with judges. Awards were presented in the following categories: Alternate Energy Sources, Environment, Medicine/Health, and New Materials.

2014 1st Place Award Recipients are:

Category: Alternate Energy Sources
Title: "Going Green" One Watt at a Time
Team Members: Alex Jiang, Sagar Shah
Teacher: Dr. Susanne Iobst
School: Passaic Valley HS

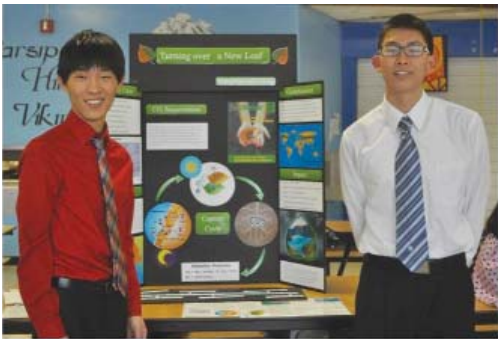
Category: Environment
Title: Turning Over a New Leaf
Team Members: ChangWon Lee, Joon Seok Seo
Teacher: Mrs. Carrie Jacobus
School: River Dell Regional HS

Category: Medicine/Health
Title: The Implantable Body Chip
Team Members: Andrea Berman, Priya Thakar
Teacher: Mrs. Christine Nagel
School: Parsippany Hills HS

Category: New Materials
Title: The Energy Dri-Fit
Team Members: Yasmine Ashour, Ellen Ren
Teacher: Mrs. Christine Nagel
School: Parsippany Hills HS

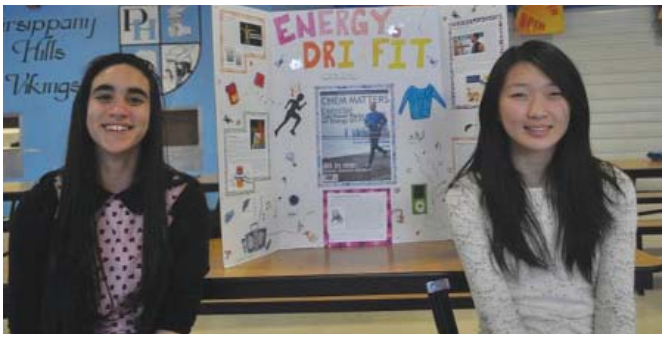
The 1st Place Awardees were eligible to compete at the MARM Competition held at Princeton University in May. ChangWon Lee and Joon Seok Seo (Environment) earned 1st Place Honors, Alex Jiang and Sagar Shah earned 2nd Place (Alternate Energy Sources) and, Yasmine Ashour and Ellen Ren earned 2nd Place Honors (New Materials).

Alex Jiang and Sagar Shah with judge Kelly Chladil. Alex and Sagar earned 1st Place in Alternate Energy Sources at the North Jersey contest and 2nd Place at MARM.



ChangWon Lee and Joon Seok Seo placed 1st at both the North Jersey Section and MARM Chemagination contests — Environment Category with their entry "Turning Over a New Leaf."

Andrea Berman discusses her innovation with Dr. Amber Charlebois. Andrea and her partner, Priya Thakar earned 1st Place — Medicine/Health at the NJACS contest.



In the New Materials category, Yasmine Ashour and Ellen Ren earned 1st Place at the North Jersey contest and 2nd Place at MARM.

Cathy Jo Speidel and Christine Nagel, Parsippany Hills High School, were hosts for the contest.

(All photos courtesy of Diane Krone)

New York Meetings

www.newyorkacs.org

NEW YORK SECTION BOARD MEETING DATES FOR 2014

The dates for the Board Meetings of the ACS New York Section for 2014 were chosen and approved at the September 2013 Board Meeting. The meetings are open meetings – all are welcome. If non board members would like to attend the meeting, please let the New York Section office know by emailing Mrs. Marilyn Jespersen at **njesper1@optonline.net** or calling the office at (516) 883-7510.

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

Friday, September 19
Friday, November 21

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

Evonik: Capturing Growth in Specialty Chemicals

Speaker: John Rolando
President
Evonik North America

How are Evonik's specialty chemicals products and technologies addressing some of the world's most critical issues, such as globalization, and health and nutrition?

What Evonik core chemistries are expanding around the world?

What markets are being addressed in North America?

Essen, Germany-based Evonik Industries AG is one of the world's leading specialty chemicals companies. Around 80 percent of sales come from market-leading positions, which the company is systematically expanding. Evonik concentrates on high-growth megatrends, especially health, nutrition, resource efficiency and globalization.

With more than €12.5 billion in sales in 2012, Evonik is in the midst of an ambitious €6 billion investment program squarely focused to grow its specialty chemicals businesses around the world. Although you won't find the company's products on store shelves, they are present in everyday items that support modern life, from super-absorbent materials that keep babies and parents happier, to structural foams that allow aircraft to fly lighter.

Cars consume less fuel thanks to tires that are made more fuel efficient by Evonik silica and biofuels enabled by Evonik catalysts. Cars are beautiful longer thanks to Evonik technology to make them more scratch-resistant. Living healthier lives is aided by pharmaceutical polymers from Evonik that protect tablets and capsules as they pass through our bodies, precisely controlling when and where a drug is released.

Join us on September 10 to hear from John Rolando, president, Evonik North America to learn more about Evonik's specialty chemicals portfolio and its investments for growth.

Date: **Wednesday, September 10, 2014**
Time: 11:30 AM - 2:00 PM
Place: The Penn Club
30 West 44th Street
New York, NY

CM&E website: **www.cmeacs.org**

HIGH SCHOOL TEACHERS TOPICAL GROUP

Safety Policy and Procedure in the Science Classroom and Laboratory

Speaker: Lew Malchick
bt_quant@yahoo.com

The incident at the Beacon School in January 2014 has stimulated a greater emphasis on what materials and procedures are used in science classes. This session will cover some things that are often overlooked or covered perfunctorily during annual RTK (Right To Know) training sessions. Our intent is to help teachers to choose safer alternative materials and/or procedures for demonstrations and laboratory exercises. We seek a balance between those who would eliminate "hands on" experience and those who would take significant risks to motivate our students.

We expect to be joined by David Kazansky, United Federation of Teachers, director of office of health and safety.

You are invited to submit questions and suggestions, in advance, about demonstrations and lab procedures that should be discussed at this session.

Date: **Friday, September 19, 2014**
Time: Social and Dinner — 5:45 PM
Place: No reservations required
George's
89 Greenwich Street (at Rector Street, South-east corner)
New York, NY
Time Meeting — 7:15 PM
Place: United Federation of Teachers
52 Broadway
New York, NY
Check with security for room. This is just South of Exchange Place and the Wall Street Station on the #4 & #5 subway lines. It is a short walk from the several other subway stations.

Security at UFT 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: Street parking is free after 7:00 PM. Off street, garage parking is available in the area.

There is a "park and lock" garage on Greenwich Street at Edgar Street.

Public transportation is strongly recommended.

LONG ISLAND SUBSECTION

Learn the Chemistry of Wine Making

The Long Island Subsection of the New York American Chemical Society is sponsoring a very special and interesting event open to all New York ACS members. A trip to Palmer Vineyards in Riverhead Long Island, NY on Saturday, September 20, 2014 from 1:00 PM to 3:00 PM.

- Winemaker Miguel Martin will explain the science behind the wine, discuss different grapes and viticulture practices, and explain the wine making process from grapes to bottling.
- Participants will be treated to a vineyard tour and wine tastings.
- Participants must be age 21 or older.
- The event will cost $20 per person.
- There are only 30 spaces available, so participants will be selected on a first come first serve basis. Reserve your spot ASAP!

Date: **Saturday, September 20, 2014**
Times: 1:00 - 3:00 PM
Place: Palmer Vineyards
Riverhead, Long Island, NY
Cost: $20 per person

To register go to
http://www.newyorkacs.org/meetings/LI/Winery.php

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

Elucidating GPCR Functional Selectivity: Novel Opportunities for Drug Development

Organizers: John Allen, PhD
Pfizer

Mercedes Beyna, MS
Pfizer

Jennifer Henry, PhD
The New York Academy of Sciences

Bryan Roth, MD, PhD
University of North Carolina at Chapel Hill School of Medicine

(continued on page 14)

BIOCHEMICAL TOPICAL GROUP

(continued from page 13)

Speakers: Robert J. Lefkowitz, MD
Duke University Medical Center

Laura Bohn, PhD
The Scripps Research Institute

Marc G. Caron, PhD
Duke University Medical Center

Michael Ehlers, MD, PhD
Pfizer

Terry Kenakin, PhD
University of North Carolina at Chapel Hill School of Medicine

Bryan Roth, MD, PhD
University of North Carolina at Chapel Hill School of Medicine

JoAnn Trejo, PhD
University of California-San Diego

Jonathan Violin, PhD
Trevena, Inc.

Hear academic, industry, basic and translational researchers, including Nobel Laureate Robert Lefkowitz (Duke University Medical Center) and discuss the development of functionally selective GPCR-biased ligands for CV and CNS disease drug discovery.

Date: **Tuesday, September 30, 2014**
Time: 8:30 AM – 4:30 PM
(reception to follow)
Place: The New York Academy of Sciences
7 World Trade Center
250 Greenwich Street – 40th Floor
New York, NY 10007
Cost: This event is has reduced-rate registration for ACS and NYAS members, at $30 or $15 (for students and post-docs). Please select the appropriate non-member Registration Category and use the Priority Code ACS. Non-members may attend for a fee of $85 (corporate), $65 (non-profit or academic) or $45 (students and post-docs).

For more information and to register for the event, go to: **www.nyas.org/GPCRs2014**

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

EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/experience background required to **hessytaft@hotmail.com**.

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

LONG ISLAND SUBSECTION

From Molecules to Macromolecules to Materials: Controlling Structure through Synthesis

Speaker: Robert B. Grubbs
Stony Brook University

The control over structure facilitated by modern synthetic techniques enables control over the assembly of molecules and macromolecules in functional materials. We have designed and synthesized several classes of block and star-block copolymers with stimulus-responsive components. These polymers form assemblies with shapes and sizes that are dependent upon specific conditions. For example, we have investigated a range of synthetic systems that are designed to assemble in water into smaller micellar aggregates at low temperatures and larger vesicles at higher temperatures. The structural shifts in these systems under specific conditions will be discussed. A number of factors, including block size and extent of interblock interactions, appear to be important in controlling transformation rate. We will describe the design of these and other systems and our efforts to better understand the behavior of the resulting materials.

Date: **Thursday, October 2, 2014**
Times: Social 5:30 PM
(Light refreshments)
Seminar Start 6:00 PM
Place: Queensborough Community College
Science Building, Room S-112

* * * * *

Surface Crystal Growth and Stabilization of Amorphous Pharmaceutical Solids

Speaker: Daniele Musumeci
York College - CUNY.

Glasses are amorphous materials that combine the mechanical stability of solids with the microscopic spatial uniformity of liquids, making them ideal for many applications, including electronics, bio-preservation and drug delivery. Amorphous solids, however, are inherently unstable, and can crystallize over time, sometimes surprisingly fast. Recent studies have discovered that as organic liquids are cooled to become glasses, crystal growth at the free surface can be substantially faster than in the interior. This phenomenon is uncommon for inorganic materials and it is generally terminated as the glasses are heated to become liquids. We have applied scanning electron microscopy (SEM) and real-time atomic force microscopy (AFM) to investigate the surface crystal growth on glassy indomethacin (IMC), an anti-inflammatory drug, in the alpha and gamma polymorphs. The high-resolution microscopies provided complete micro-structural details of surface crystal growth. We observed that surface crystals rise hundreds of nano-meters above the amorphous surface as they grow laterally, and are surrounded by depletion zones. Upon heating above the glass transition temperature, the onset of liquid flow embeds upward-growing surface crystals and terminates their growth, but this effect is remarkably mild for the gamma polymorph of IMC. This effect arises because the velocity of liquid flow exceeds the growth front velocity, causing the wetting and embedding of upward-growing surface crystals. These findings are important for understanding and predicting the stability of amorphous drugs.

During the seminar, we will discuss the educational pathways and the career opportunities provided by the B.S. degree program in Pharmaceutical Science at York College.

Date: Thursday, November 6, 2014
Times: Social 5:30 PM
(Light refreshments)
Seminar Start 6:00 PM
Place: Queensborough Community College
Science Building, Room S-112

CHEMICAL MARKETING & ECONOMICS GROUP

Speaker: James H. Huntsman
Division President
Huntsman Advanced Materials

What propels the business of advanced materials?

Why is global functional alignment critical to competitiveness?

What is the future of advanced material solutions?

With annual sales over $1.3 billion and the heritage of pioneering epoxy and polyurethane-based polymer products, the Huntsman Advanced Materials Division is committed to driving a culture of growth and sector leadership.

Huntsman's rapid innovation has been key in the commercialization of products with superior performance and durability. In the case of structural adhesives for composites, the weight reduction, energy savings and lower environmental footprint gains are enabling the next generation of aircraft, automobiles, advanced structures and electronic devices.

However, tepid economic growth, rising fixed costs and volatility in the cost of raw materials have driven Huntsman to implement a bold transformational program that increases the alignment of global resources with attractive higher-growth markets. By accelerating the development of solutions, improving manufacturing efficiencies and enhancing commercial effectiveness, the company expects benefits in excess of $70 million annually by seizing opportunities in aerospace, adhesives, high-performance coatings, power generation, green electronics and large-scale engineering projects.

Join us on October 2 to hear the unique vision and insights of James Huntsman on the fascinating world of light, durable and highly efficient materials.

Date: Thursday, October 2, 2014
Times: 11:30 AM - 2:00 PM
Place: The Yale Club
50 Vanderbilt Avenue
New York, NY

CM&E website: **www.cmeacs.org**

WESTCHESTER CHEMICAL SOCIETY

Tentative fall, 2014 schedule

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

Speaker: Qing Song
Department of Chemical and Biomolecular Engineering
Polytechnic Institute of New York University

Single-Cell Immunology:

The frequencies of antigen-specific CD4+ T cells in samples of human tissue have been difficult to determine accurately *ex vivo*, particularly for autoimmune diseases such as multiple sclerosis or type 1 diabetes. Conventional approaches involve the expansion of primary T cells *in vitro* to increase the numbers of cells, and a subsequent assessment of the frequencies of antigen-specific T cells in the expanded population by limiting dilution or by using fluorescently labeled tetramers of peptide-loaded major histocompatibility complex (MHC) receptors. Here we describe an alternative approach that uses arrays of subnanoliter wells coated with recombinant peptide loaded MHC class II monomers to isolate and stimulate individual CD4+ T cells in an antigen-specific manner. In these experiments, activation was monitored using microengraving to capture two cytokines (IFNγ and IL-17) released from single cells. This new method should enable direct enumeration of antigen-specific CD4+ T cells *ex vivo* from clinical samples. This method will be applied to identify, quantify and characterize the cancer stem cells.

Concurrent Detections of Multiple Proteins on the Single-cells to Reveal Cell-Cell Heterogeneity

Single biological measurements are not capable of truly characterizing even the simplest systems. Proteins constitutively function within networks, pathways, complexes and families. The activity of an individual protein depends not only on its quantity but also on the interacting networks. To understand complex molecular outcomes, it is necessary to determine how individual parts are integrated in time and space to perform complex, dynamic cellular functions. The level of complexity, with numerous variables acting at the same time, requires multi-parametric and dynamic investigation of a large number of single cells. We applied multispectral imaging and achieved concurrent multiple protein detection (up to ten proteins simultaneously). Gaussian distributions were found to fit the histograms of expression levels of proteins of interest. Noise and noise strength of histograms were influenced by the inflammatory stimulation conditions. Quantitative measurements of noise, noise strength and correlation coefficients revealed the cell-cell heterogeneity.

Qing Song is an Industry Assistant Professor of Department of Chemical and Biomolecular Engineering at NYU-POLY. She received her Ph.D. in Chemical Engineering at City College of New York, City University of New York in 2004. She conducted her postdoctoral trainings with Professor Martin Yarmush at Massachusetts General Hospital and Professor J. Christopher Love at MIT prior to joining the University of New Hampshire in 2009. Dr. Song's current research focus on using microtools to characterize secretomic immune profiles of single cancer stem cells collaborated with Professors George Miller and Iannis Aifantis at NYU Medical Center.

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

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

***** Additional Lectures *****

Special Seminar – TBD

Speaker: TBD

Date: TBD (Early November, 2014)

****

Special Seminar – "What's Beyond the Lithium-Ion Battery"

Speaker: Lin-Feng Li, Ph.D.
Bettergy Corp.
Peekskill, NY

Date: TBD (Early December, 2014)
Times: Refreshments 5:30 PM
Lecture 6:00 PM
Place: Westchester Community College
Gateway Building, Room 110
75 Grasslands Road
Valhalla, NY
Cost: Free and Open to the Public
Further Information: Paul Dillon
PaulWDillon2@hotmail.com
(914) 393-6940

NEW YORK NANOSCIENCE DISCUSSION GROUP

2014-2015 Sessions

Speakers to be announced

Hosted by: New York University
Department of Chemistry

The NYNDG is an ACS Topical Group that meets in the New York University Department of Chemistry. Sessions feature three 30-minute presentations on nano-science, one each with strong orientation in biology, chemistry, and physics/applied mathematics. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Mark your Calendars!

Dates: **Tuesday, October 7, 2014**
Tuesday, November 11, 2014
Tuesday, February 3, 2015
Tuesday, April 7, 2015
Times: Refreshments at 7:00 PM
Science at 7:30 p.m.
Place: NYU Silver Center
Room 1003 (10th floor)
31 Washington Place
(between Washington Square East and Greene Street)
New York, NY

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

Topical Group History: **ttp://www.nyu.edu/projects/nanoscience**

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

The Division of the History of Chemistry of the American Chemical Society sponsors the Citations for Chemical Breakthrough Awards, which honors publications, patents and books that have made breakthroughs in chemistry and the molecular sciences that have been revolutionary in concept, broad in scope, and long-term in impact. On June 4th, former Rockefeller University scientists Oswald Avery, Colin MacLeod and Maclyn McCarty were honored for their paper "Studies on the Chemical Nature of the Substance Inducing Transformation of Pneumoccal Types", which was published in Proceedings of the Journal of Experimental Medicine, 1944, 79, 137. The research in this paper showed that DNA and DNA alone was the material with genetic properties. This finding was a direct challenge to the then-current dogma that only proteins existed in the multitude of forms needed to store the genetic blueprint for an entire organism.

Members of the Committee on the History of the New York Section participated in this event.

Further information on the Citations for Chemical Breakthrough Awards may be found on the ACS Division of the History of Chemistry website.

Left to right: Marc Tessier-Lavigne, President of The Rockefeller University; Barry S. Collier, Physician in Chief, The Rockefeller University Hospital and Vice President for Medical Affairs, The Rockefeller University; Jean Delfiner, New York Section Board and Committee member; Marge MacCarty, wife of Maclyn MacCarty; and John B. Sharkey, representing ACS HIST.

(Photo courtesy of Zach Veilleux, The Rockefeller University)

QUEENSBOROUGH COMMUNITY COLLEGE HOSTS THE 14TH ANNUAL CHEMISTRY CHALLENGE

The 14th Annual LI-ACS Chemistry Challenge was held on Friday, April 25, 2014 at Queensborough Community College. The event was attended by students from both two- and four-year institutions including: Hofstra University, Nassau Community College, St. John's University, Kingsborough Community College, Queens College, Adelphi University, Long Island University Post, York College, and Queensborough Community College. The event began with a "social hour" that included dinner and dessert. After dinner, 22 student teams representing the various universities participated in the Chemistry Challenge. The Challenge itself consisted of forty-five multiple choice questions testing concepts from General and Organic Chemistry.

Awards were given to the top three teams in each student category (2- and 4-year teams were created based on students' standing). The prizes included medals and USB flash drives. The top teams in the 4-year category were: Hofstra University (First Place), Queens College (Second Place), and York College (Third Place). The top teams in the 2-year category were: Kingsborough Community College (First Place), Queens College (Second Place), and Queensborough Community College (Third Place). The moderators for the event were Paul Sideris and Sujun Wei. The event was sponsored by the LI-ACS and cosponsored by Island Powersports and the following Queensborough Community College (QCC) Student Clubs: Chemistry Club, STEM Academy, STEM Research, Science Research Alliance, Biology Club, Motor Club, ASAP, College Discovery, Phi Theta Kappa, International Student Club, CSTEP, Newman Club, Muslim Student Association, and Future Teacher's Society. The Chemistry Challenge could not have been possible without the assistance of the QCC Chemistry Department and specifically the following people: Luis Vargas, Pete Irigoyen, Andrew Xu, Frank Romano, and Paris Svoronos.

For more pictures, please visit: **http://www.qcc.cuny.edu/chemistry/chemchallenge2014.html**

WESTCHESTER CHEMICAL SOCIETY

Peter Corfield Presentation

The treasurer and long-time board member of the Westchester Chemical Society, Peter W. R. Corfield presented a poster, "The Search for New Polymeric CuI/CuII Cyanide Complexes," based on his research along with colleagues, Michael A. Chernichaw, Emma M. Cleary, Julie H. Thoubboron and Joseph F. Michalski at the Department of Chemistry, Fordham University, Bronx, NY at the meeting of the American Crystallographic Association in Albuquerque, NM in May.

§

NEW YORK ACS STUDENT ACTIVITIES COMMITTEE

2014 Annual Undergraduate Research Symposium (62nd URS)

The Student Activities Committee of the New York Section held its 62nd Annual URS on Saturday, May 3, 2014, at St. John's University, Queens, NY. Around 152 papers, 146 oral and 6 posters, from 31 different colleges and universities were presented in 28 concurrent sessions. The areas covered were analytical, biochemistry, environmental/green, inorganic, organic, nano- and surface chemistry, physical and polymer chemistry.

Opening remarks were given by Robert Mangione, Pamela Kerrigan, Alison Hyslop and Sharon Lall-Ramnarine to begin the program. Joseph Serafin then introduced the keynote speaker, Dr. Tina Iverson from Vanderbilt University and a St. John's University alumnus. Dr. Iverson's keynote address was titled – Structure-facilitated bioengineering of antivirals and antibiotics to combat global health threats.

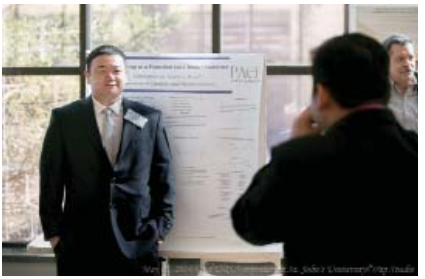
The lunch speaker, Dr. Issa Salame of City College of New York, discussed the benefits to students and faculty of online homework solutions. Sponsors, ACS, PEPSIco, Louis Stokes Alliance for Minority Participation (LSAMP), St. John's University, Pearson Education, Anasazi, Royal Society of Chemistry, On Assignment, Cengage Learning, McGraw Hill Education, Wiley Publishing, and Kaplan, were represented and additionally supported a raffle of Wiley, McGraw Hill textbooks and a free Kaplan MCAT/GRE prep course.

(See next page for more photos.)

Keynote speaker, Tina Iverson, and 2014 URS Committee (left to right: Paul Sideris, Yolanda Small, Tina Iverson, Joseph Serafin, Sharon Lall-Ramnarine)

(Photos courtesy of Arpi Pap of Pap Studio)

62ND URS STUDENT HIGHLIGHTS (photos 1-6)

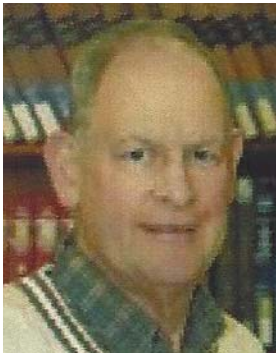



PRESENTATION HIGHLIGHTS (photos 7-9)



WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARD

On Thursday, May 1, 2014, at Pace University in Pleasantville, NY, the Westchester Chemical Society presented its Distinguished Scientist Award to James J. Wynne, PhD for "discovering excimer laser surgery, the foundation for LASIK and PRK surgery, and for leadership in enhancing the science education of Westchester County students." Dr. Wynne is the Program Manager, Local Education Outreach (LEO) at the IBM T. J. Watson Research Center in Yorktown Heights, NY. Dr. Wynne obtained his AB, MA and PhD, all in Physics, from Harvard University. His thesis work, on nonlinear optics, was done under the supervision of Professor Nicolaas Bloembergen. He started work on nonlinear spectroscopy using lasers while still at Harvard and continued this type of work after joining IBM. His research has covered different aspects of using lasers to explore novel phenomena (e.g., resonantly-enhanced ionization), to analyze matter (e.g., atomic spectroscopy), and to process materials (e.g., laser etching of biological specimens). More specifically, he has investigated nonlinear optics of semiconductors and insulators, coherent infrared and vacuum ultraviolet generation in atomic vapors, multiphoton ionization spectroscopy of atomic vapors, nonlinear optical measurements of atomic oscillator strengths, applications of multichannel quantum defect theory, novel laser systems, excimer laser etching of biological tissue, laser-induced-fluorescence detection of arterial lesions, and cluster science. Since 1990, he has been Program Manager, Local Education Outreach – **http://www.watson.ibm.com/leo**, at the IBM Thomas J. Watson Research Laboratory. In this capacity, he marshals the resources of the IBM Research Center to enhance science and mathematics education in our local schools. He serves as a leader, originator, communicator, catalyst, matchmaker, organizer, and facilitator, opening up pathways of communication between the employees of his laboratory and the educational community. Furthermore, he keeps traffic flowing in both directions along these pathways. To further his objective of helping all young Americans to become technically literate through improved science and mathematics education, he has become involved in national education reform activities through his membership and activities on the Education Committee and Forum on Education of the American Physical Society, the Education Council of the Optical Society of America, the Mathematics Sciences Education Board of the National Research Council, the Advisory Board to the US Physics Team, the American Association of Physics Teachers and the National Council of Teachers of Mathematics. Since 2004, he has served as global coordinator for IBM's participation in Engineers Week (recently renamed DiscoverE - **http://www.discovere.org**), an international promotion of the engineering professions. IBM's primary focus for Engineers Week is to interact with pre-college school students to introduce them to the opportunities of careers in engineering, technology and science. For the 2012 EWeek campaign, more than 5400 technical professionals were sent into classrooms around the world, where they engaged over 200,000 students. These numbers were exceptional, although they were exceeded during the 2008 EWeek campaign, when IBM served as Corporate co-chair for EWeek, and more than 6500 IBM technical professionals engaged over 250,000 students. Dr. Wynne has won numerous awards including the Eastern New York Intellectual Property Law Association Award 2001 Inventor of the Year, the Optical Society of America 2004 R.W. Wood Prize, the New York Intellectual Property Law Association 2009 Inventor of the Year, the 2010 Rank Prize for Opto-Electronics, the 2011 National Medal of Technology and Innovation (for the pioneering discovery of excimer laser ablative photodecomposition of human and animal tissue, laying the foundation for PRK and LASIK, laser refractive surgical techniques that have revolutionized vision enhancement), the National Academy of Engineering 2013 Fritz J. and Dolores H.



Dr. James J. Wynne

(Photo courtesy of Dr. Wynne)

(continued on page 22)

WESTCHESTER CHEMICAL SOCIETY

(continued from page 21)

Russ Prize (for the development of laser ablative photodecomposition, enabling LASIK and PRK eye surgery), as well as at least five internal IBM awards. In 2002 he was inducted into the National Inventors Hall of Fame. He has more than 75 publications and more that 15 patents (issued or applied for).

Dr, Wynne gave an interesting awards lecture entitled "Excimer Laser Surgery - The Foundation for Laser Refractive Surgery and Future Applications." Dr. Wynne is the discoverer, in 1981, of excimer laser surgery, the foundation for the laser refractive surgical procedures, LASIK and PRK, procedures which more than 25 million people have undergone to correct myopia, astigmatism, and hyperopia. He discussed the physico-chemical basis of these procedures, which utilize far ultraviolet radiation from an argon fluoride (ArF) excimer laser, This radiation fails to remove (ablate) tissue after bleeding commences. This is because the ArF laser radiation is strongly absorbed by an aqueous salt solutions, such as found in blood, through the process of electron photodetachment from hydrated chloride ions. Such an electronic excitation does not produce heat. Thus, such radiation can be used to debride necrotic tissue associated with burns, decubitus, venous stasis, and neuropathic ulcers, without causing collateral damage to adjacent and underlying viable tissue allowing the development of a "smart scalpel," enabled by the intrinsic advantage afforded by non-thermal absorption of ArF laser light by aqueous chloride ions.

In addition to the Distinguished Scientist Award, the Westchester Chemical Society also presented the following thirteen undergraduate Student Awards:

Carolyn Allain, Fordham University
(Faculty: Diana Bray)

Rolande Hodel Presenting Awards to James Wynne (left) and Jody Reifenberg (center), and with Helga Weisburger (right). Below: The Student Awardees with Rolande Hodel and Peter Corfield.

(Photos courtesy of Rolande Hodel)

Rafat Basheer, Bronx Community College (Faculty: Anthony Durante)

Sue Ellen Evangelista, Iona College (Faculty: Louis Campisi)

Amy Guzman, Westchester Community College (Faculty: Jody Reifenberg)

Ronika Jacobs, College of New Rochelle (Faculty: Elvira Longordo)

Megan Jenesky, Ramapo College of NJ (Faculty: Sarah Bolton)

Shadi Khayyo, College of Mount St. Vincent (Faculty: Andrea Minei)

Joseph Mozdzierz , Manhattan College (Faculty: John Regan)

Linh Nguyen, Pace University, Pleasantville (Faculty: Ellen Weiser)

Wilman Orellana, Purchase College, SUNY (Faculty: Elizabeth Middleton)

Leguci Prena, Mercy College (Faculty: Carl Embola)

Alexander Swan, New York University (Faculty: Mike Ward)

Isaac Vargas, Manhattanville College (Faculty: Sangamithra Chingapalli)

We thank Dr. Peter Corfield of our board and Fordham University for his considerable efforts in the selection of the student awardees.

Additionally, Dr. Rolande Hodel, chairman of the Westchester Chemical Society Board of Directors, presented our Service Award, A Salute to Excellence to Dr. Jody Reifenberg "in recognition of Outstanding Service and Extraordinary Commitment to the New York Section of the American Chemical Society." Dr. Reifenberg is a long-time board member and our program liaison with Westchester Community College, where we hold most of our meetings.

Finally, and quite importantly, this year's Distinguished Scientist Award is being granted in memory of John H. Weisburger, PhD (1921-2014). Dr. Weisburger was research professor of pathology in the Graduate School of Basic Medical Sciences at New York Medical College, in Valhalla, NY. His research focused on cancer, particularly carcinogenesis and chemoprevention. He was a long-time supporter of the Westchester Chemical Society and a former (1995) Distinguished Scientist awardee. He passed away February 17, 2014. His widow, Mrs. Helga Weisburger attended the awards presentation and dinner.

Almost sixty attendees enjoyed the awards presentations, Dr. Wynne's lecture, a delicious dinner, and socializing with each other.

The awards dinner is cosponsored by WCS and the Department of Chemistry & Physical Sciences of Dyson College of Arts and Sciences, Pace University (with thanks to their Dr. Ellen Weiser). We gratefully acknowledge financial support for this event from the Departments of Chemistry at Bronx Community College, Fordham University, Mercy College, and Manhattan College.

§

GLOBAL CLIMATE CHANGE

November 1, 2014, Global Climate Change Symposium at St. John's University.

Program and details will be forthcoming.

USMMA CELEBRATES GREEN EARTH DAY 2014 WITH HANDS-ON ACTIVITIES

For the third year in a row, the U.S. Merchant Marine Academy (USMMA) celebrated 2014 Green Earth Day with fun-filled and "green" focused science demonstrations, displays, and hands-on experiments on Saturday, April 26 and Sunday, April 27. The program, free and open to the public, took place at Great Neck Library, Parkville Library and USMMA Chemistry Laboratory and engaged more than 150 boy scouts, students in grades K-11, their parents, and their troop leaders with twenty earth-friendly activities. Forty-eight USMMA faculty, staff and midshipmen and Great Neck Library staff contributed to the program. The events, hosted by the USMMA Math & Science Department, the Great Neck Library (GNL), and the New York Section of the American Chemical Society (ACS), were well received by all who were involved. The USMMA Academic Dean, Shashi N. Kumar, attended the event and took photos with the volunteers.

USMMA faculty and midshipmen demonstrate how a toy car can be made to run with sea water, a lightbulb light up with ocean wind energy and a toy boat move with solar power. The event provides students with an opportunity to learn about the importance of searching for and using alternative energies to help preserve the Earth.

"Watch how I make my message appear then disappear!", one student exclaims. Through a number of colorful and action-filled water activities, students get to see how chemistry and science are used to convert the ocean water to drinkable and usable water. The event promotes an appreciation of our blue planet, encourages its sustainabilty, and educates the local youth about the importance of taking care of the environment.

"It's a wonderful feeling to see kids' eyes light up with excitement and to hear parents express their gratitude for the things they learn from us at the event", one midshipman volunteer expresses. Children, parents, and the presenters alike obviously enjoy their time spent together exploring topics relating to the oceans, one of our Earth's most valuable natural resources. Participants are also awarded Green Earth Day Everyday Challenge Certificates for expressing their resolution to "turn off the sink when not using it when brushing teeth", "turn off lightbulbs and computer when not using them", "ride bike more often", "save paper", "recycle", and "install solar panels", for instance. The Green Earth Day event is held to promote the concepts of *recycle, reuse, reduce and restore*.

Others

SINO-AMERICAN PHARMACEUTICAL PROFESSIONALS ASSOCIATION (SAPA)

22nd Annual Conference — "Shaping the Medicine of Tomorrow"

Keynote Lecture: "Adventures with Molecular Beams: from Chemical Dynamics to Weighing Proteins"

Keynote Speaker: Dudley Herschbach
Nobel Laureate
in Chemistry
Harvard University

Other confirmed speakers include Cathryn Clary (Chief Scientific Officer, Novartis), Joe Camardo (Senior Vice President, Celgene), Nic Dracopoli (Global Biomarker Head, JNJ), and Stu Peltz (CEO, PTC Therapeutics).

Date: **Saturday, September 13, 2014**
Times: 8:30 AM - 5:00 PM
Place: McDonnell Hall
Princeton University
Cost: Registration fee is $35 which includes conference material, breakfast, lunch, and refreshments.

Please sign up at **www.sapaweb.org**.

ASSOCIATION OF CONSULTING CHEMISTS & CHEMICAL ENGINEERS (ACCCE)

The Importance of Science and Engineering to Agriculture and Now Feeding 9.5 Billion People

Speaker: Dr. Richard L. Schauer
Independent Consultant

By 2050, the world population is projected to be 9.5 billion people. To feed all of these people, current crop production levels must double. So, a major challenge is to double today's food "availability" while simultaneously minimizing any environmental harm caused by agriculture. Compounding the problem are the loss of farmland to expanding cities to house people migrating from rural areas, the public's fear of genetically modified crops, legal challenges by environmental groups to restrict new technologies and increasing government regulations.

Topics to be discussed include:
- Where will population growth occur?
- 5 steps to solve the world's food dilemma
- Impact of climate change on agriculture
- Having enough irrigation water
- Creating new technologies
- Overcoming public's fear of "Frankenfoods"
- Convincing consumers that their food supply is safe
- Moving foods from areas of abundance to areas of starvation
- Curbing overzealous environmentalists
- Enacting common sense regulations
- American farmers are excellent environmental stewards

Dr. Richard L. Schauer has been working in the chemical industry for 50 years. He has been an employee of two major chemical companies working in the chemical regulatory area. Dr. Schauer has been a consultant since 1992 as a chemical regulatory specialist and is an ACCCE member. He has traveled to 45 countries and currently represents many domestic and overseas clients.

Having been reared on a farm in central New Jersey and working on developing new pesticides for many years, Dr Schauer remains keenly interested in agriculture throughout the world. As a scientist, he is deeply disturbed by the lack of knowledge possessed by the general public as to what is required to get food to their tables.

Date: **Thursday, September 18, 2014**
Times: Council meeting 5:00 PM
Dinner and speaker 6:00 PM
Place: Top Hat Tavern
Grand Summit Hotel
Springfield Avenue
(near Morris Avenue)
Summit, NJ
Cost: Registration: $35 for members and non-members

Please contact Dr. John Bonacci at ACC&CE: email: **accce@chemconsult.org**, phone or fax: (908) 464-3182 or regular mail: P.O. Box 902, Murray Hill, NJ 07974-0902. **Please register by September 15.**

Learn more about the American Chemical Society at www.acs.org

Call for Volunteers

ChemExpo 2014

Date: Saturday, October 18, 2014

On Saturday October 18th, the North Jersey Section of ACS will be holding its 20th ChemExpo in celebration of National Chemistry Week at Liberty Science Center, Jersey City, New Jersey. Please help us make a difference!

The theme for this year is "The Sweet Side of Chemistry- Candy". Join us to make this event a fun-filled day of hands-on science chemistry activities that will engage visitors in exploring the positive impacts of chemistry. The activities should be geared for 6 to 12 year olds. Check out the National Chemistry Week web page at http://portal.acs.org/ to get some ideas for hands-on activities that you might be interested to present.

To minimize duplication of the presentations, please email us the list of activities that you/your team would like to present preferably by September 15th, 2014. Individuals contacting us first with their idea(s) will be given priority. We would like the students to be able to redo these experiments at home and/or at school so please be thorough in your presentation and explanations.

Thanks very much for all of your help. The Section is most appreciative of your efforts.

Mita Chaki - **mitachaki@gmail.com**

Monica Sekharan - **monicasekharan@njacs.org**

Volunteer Form

Please fill out the following form and return to Bobbi Gorman at **roselleram s@yahoo.com**.

Count me in to volunteer at Liberty Science Center, Jersey City, New Jersey.

My name is: _____

I am volunteering to work on **Saturday, October 18** (Check appropriate box)

- O 10:00 AM –11:30 AM,
- O 11:30 AM – 2:00 PM,
- O 10:00 AM – 2:00 PM

I can be reached at: (work phone number)

_____

My complete address is: _____

_____

_____

_____

I am an employee at: _____

_____

The activities at my table will be: _____

_____

_____

I will need additional tables: (Circle)

2 3 4 5 6

I will be bringing handouts on activities: (Circle) Yes No

I will be joined at my table by the following volunteers:

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

Last Name_____

First Name _____

Institution: _____

Contact Information (email) _____

_____

EMAIL TO: Bobbi Gorman at **roselleram s@yahoo.com**

Call for Sponsorship

ChemExpo 2014

Date: Saturday, October 18, 2014

On Saturday, October 18, the North Jersey Section of ACS will be holding its 20th ChemExpo in celebration of NCW (National Chemistry Week) at Liberty Science Center, Jersey City, New Jersey. Please help us make a difference! The theme for this year is "The Sweet Side of Chemistry- Candy".

We are looking forward to financial support to help cover many of the expenses associated with the Section's NCW activities. A donation of $500.00 indicates Gold Sponsorship, a $250.00 gift indicates Silver Sponsorship and a $100.00 gift indicates a Bronze Sponsorship. We would appreciate it if you would forward this information to the appropriate representatives within your company.

Checks should be made out to:
"NJACS" (The North Jersey Section of American Chemical Society) with a memo of "NCW".

Sent to:
Jacqueline Erickson
33 Ronald Road
Lake Hiawatha, NJ, 07034-1121.

Thanks very much for all of your help. The Section is most appreciative of your efforts.

Mita Chaki and Monica Sekharan

Please fill out the information below and return the form to Bobbi Gorman at **rosellerams@yahoo.com**.

Sponsorship Form

My company would like to support these efforts at the _____ (indicate gold, silver, or bronze) level.

Name of the Company: _____

The following company/individuals are willing to help defray the costs of these events:

_____

_____

_____

_____

_____

An acknowledgement letter for this contribution should be sent to:

Name: _____

Email: _____

Full address: _____

_____

_____

Call for Nominations

2015 LEO HENDRIK BAEKELAND AWARD

The North Jersey Section of the American Chemical Society is soliciting nominations for the 2015 Leo Hendrik Baekeland Award. The Award consists of a gold medal and a $5,000 honorarium. The Section presents the Award biannually to commemorate the technical and industrial achievements of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example.

The Award is given in recognition of accomplishments in pure or applied chemistry to an American chemist as characterized by the initiative, creativeness, leadership, and perseverance of the individual (indicated by published or unpublished evidence) and who will be under the age of 40 as of January 1, 2015.

Nominations for the Award should include a letter describing the nominee's achievements, a brief biography, and a list of the nominee's more important publications. Successful nomination packets include two to three recommendation letters supporting the candidate.

Re-nominations are encouraged, provided the age requirement is still met.

Please submit materials by **December. 31, 2014**, to:

Dr. Les McQuire
ACS North Jersey Section Awards Chair
17 Crown Drive,
Warren NJ 07059

Learn how you could get involved in ACS by e-mailing Volunteer@TheIndicator.org

ChemExpo 2014

National Chemistry Week

Saturday, October 18th, 2014
10 a.m. – 2 p.m.

"The Sweet Side of Chemistry - Candy"

Join us for a fun-filled day
at **Liberty Science Center, Jersey City, NewJersey**
and enjoy this additional family-friendly event for all ages
included with general admission to the Center.
(visit www.lsc.org for more information)

A lot of hands-on science activities will be presented by chemists, college and high school teachers and students.

Coordinated by
North Jersey Section of the **American Chemical Society**

ACS Chemistry for Life™

For further information go to www.njacs.org

or email mitachaki@gmail.com; monicasekharan@njacs.org

Call for Presentations

LABORATORY ROBOTICS INTEREST GROUP — MID ATLANTIC CHAPTER

Date: November 2014 Meeting

The View From the Bench

The Mid Atlantic Chapter of the Laboratory Robotics Interest Group is seeking presentations for their November meeting. Presentations about new and innovative laboratory technologies are being sought especially those involving some aspect of automation or robotics. Other topics of interest include informatics, nanomaterials, pharmaceutical dosage form testing, autonomous data collection using, and novel analytical procedures. We expect approximately 100 persons to attend the November meeting and a student poster event will be held in conjunction with the technical program.

At press time, the meeting date and location have not been set.

To submit a presentation abstract, please contact Kevin Olsen at Montclair State University, **OlsenK@Mail.Montclair.Edu**

The chapter web site is: **http://my.lrig.org/LRIGChapterMidAtlantic/home/**

Press Releases

MR SOLUTIONS OVERWHELMED BY INTEREST IN THEIR CRYOGEN FREE, 7T PRECLINICAL MRI SCANNER AT MEETINGS IN EUROPE AND THE US

Delegates from academia and industry flocked to see the world's first commercial, cryogen free, 7.0T, preclinical MRI imaging system, which went on display for the first time at the recent joint ISMRM/ESMRMB* meeting in Milan, Italy and the SNMMI* meeting in St Louis, United States.

The meetings were a huge success for MR Solutions who not only showcased the brand new 7.0T scanner to hundreds of visitors from across the world. Visitors to the shows were also surprised to learn that soon one machine could undertake a variety of imaging techniques, including MRI, SPECT, and PET with MR Solutions accessing its imaging systems with in line or 'in the bone' modalities.

*ISMRM is the International Society for Magnetic Resonance; ESMRMB is the European Society for Magnetic Resonance in Medicine and Biology; SNMMI is the Society of Nuclear Medicine and Molecular Imaging.

Contact Information:
MR Solutions Ltd.
VP, Global Sales & Marketing
www.mrsolutions.com

THREE GLOBAL WARMING SKEPTICS WIN AWARDS

Recipients were recognized at the 9th International Conference on Climate Change for Speaking Truth to Power, Whistleblowing, and the Defense of Science, July 7-9 at Mandalay Bay in Las Vegas (ICCC9).

The award winners:

Speaks Truth to Power Award: *Patrick Moore*, co-founder of Greenpeace

Presented by the EarthFree Institute

Patrick Moore, Ph.D. is an internationally renowned ecologist and environmentalist. Beginning his career as an activist/leader in the Greenpeace movement, he now concentrates on collaborative efforts aimed at finding environmental solutions. He speaks and lectures frequently at universities, community meetings, and conferences.

Through books such as *Green Spirit - Trees Are the Answer* and *Confessions of a Greenpeace Dropout*, Dr. Moore is known around the world as an eloquent voice for sensible environmentalism.

Climate Science Whistleblower Award: *Alan Carlin*, EPA economist (retired)

Presented by the Don't Tread on My Business Foundation

Alan Carlin, Ph.D., now retired, was a career environmental economist at EPA when the Competitive Enterprise Institute broke the story of his negative report on the agency's

(continued on page 30)

PRESS RELEASES

(continued from page 29)

proposal to regulate greenhouse gases in June 2009. Dr. Carlin's supervisor had ordered him to keep quiet about the report and stop working on the global warming issue.

EPA's attempt to silence Dr. Carlin became a highly publicized embarrassment to the agency, especially given Administrator Lisa Jackson's and President Obama's announced commitment to transparency and scientific integrity. Since 2009, Dr. Carlin has been an active and influential writer and speaker on the climate change issue.

In response to the award, Dr. Carlin expressed his great appreciation and said how important it is to oppose EPA's new proposed power plant regulations resulting from the 2009 Endangerment Finding since they would have adverse economic and environmental effects and are based on invalid science and an attempt by EPA to rewrite the Clean Air Act itself.

Courage in Defense of Science Award: *Willie Soon*

Presented by the George C. Marshall Institute

Willie Soon, Ph.D., an astrophysicist and geoscientist, is a leading authority on the relationship between solar phenomena and global climate. His discoveries challenge computer modelers and advocates who consistently underestimate solar influences on cloud formation, ocean currents, and wind that cause climate to change.

Dr. Soon has faced and risen above unethical and often libelous attacks on his research and his character, becoming one of the world's most respected and influential voices for climate realism.

"Science and its practice are no longer free and willing today but instead are constantly terrorized by research funding gravy trains and group thinking," Soon said. "This is why science needs defending and it takes courage to cleanse science from those cancerous elements and to bring her forward in its rightful place again. I am humbled and honored by this recognition."

For more information about The Heartland Institute and the 9th International Conference on Climate Change, contact Director of Communications Jim Lakely at **jlakely@heartland.org** or (312) 377-4000.

UH CHEMIST'S WORK COULD IMPACT DISEASE MANAGEMENT, TREATMENTS

Chemical Reactivity Research Receives $600,000 NSF CAREER Award

A University of Houston (UH) chemist hopes his work will one day impact the treatment of such diseases as cancer and malaria by better understanding how molecules react and how atoms come together to form bonds.

Jeremy May, an assistant professor of chemistry at UH, received a five-year, $600,000 National Science Foundation (NSF) CAREER Award to develop synthetic strategies to increase the efficiency and yields of chemical reactions. Often requiring a sequence of 30 to 40 different reactions, the process of complex chemical syntheses can be slow, with plenty of waste and not much yield.

"If we can develop chemical transformations that do more in each individual step, then that allows us to use a lot fewer reactions to make the end product," said May, who specializes in synthetic organic chemistry at UH's College of Natural Sciences and Mathematics. "I see similarities between my work and other increases in efficiency. In auto manufacturing, for instance, if you can do three welds at once, it's going to be faster than if you do one weld at a time on a car frame."

The grant covers the development of a reaction strategy that can form multiple molecular rings within a single transformation. This leads to more complex compounds in less time with greater yield.

"If they are looking to block the actions that help a cancer cell replicate, they can screen all the chemical compounds in the library to see if one shuts down the mode of action," May said. "Our work won't go directly into a clinic or directly tackle a disease, but we will kick off the chain of events."

To receive UH science news via email, sign up for UH-SciNews at **http://www.uh.edu/news-events/mailing-lists/sciencelistserv/index.php**.

BRAIN OF WORLD'S FIRST KNOWN PREDATORS DISCOVERED

TUCSON, Arizona – An international team of paleontologists has identified the exquisitely preserved brain in the fossil of one of the world's first known predators that lived in the Lower Cambrian, about 520 million years ago. The discovery revealed a brain that is surprisingly simple and less complex than those known from fossils of some of the animal's prey.

The find for the first time identifies the fossilized brain of what are considered the top predators of their time, a group of animals known as anomalocaridids, which translates to "abnormal shrimp." Long extinct, these fierce-looking arthropods were first discovered as fossils in the late 19th century but not properly identified until the early 1980s. They still have scientists arguing over where they belong in the tree of life.

"Our discovery helps to clarify this debate," said Nicholas Strausfeld, director of the University of Arizona's Center for Insect Science. "It turns out the top predator of the Cambrian had a brain that was much less complex than that of some of its possible prey and that looked surprisingly similar to a modern group of rather modest worm-like animals."

Strausfeld, a Regents' Professor in the Department of Neuroscience in the UA College of Science is senior author on a paper about the findings, which appear in the July 17 issue of *Nature*.

The brain in the fossil, a new species given the name Lyrarapax unguispinus – Latin for "spiny-clawed lyre-shaped predator" – suggests its relationship to a branch of animals whose living descendants are known as onychophorans or velvet worms. These wormlike animals are equipped with stubby unjointed legs that end in a pair of tiny claws.

Onychophorans, which are also exclusively predators, grow to no more than a few inches in length and are mostly found in the Southern Hemisphere, where they roam the undergrowth and leaf litter in search of beetles and other small insects, their preferred prey. Two long feelers extend from the head, attached in front of a pair of small eyes.

The anomalocaridid fossil resembles the neuroanatomy of today's onychophorans in several ways, according to Strausfeld and his collaborators. Onychophorans have a simple brain located in front of the mouth and a pair of ganglia – a collection of nerve cells – located in the front of the optic nerve and at the base of their long feelers.

"And – surprise, surprise – that is what we also found in our fossil," Strausfeld said, pointing out that anomalocaridids had a pair of clawlike grasping appendages in front of the eyes.

The fact that the brain of the earliest known predator appears much simpler in shape than the previously unearthed brains of its contemporaries begs intriguing questions, according to Strausfeld, one of which is whether it is possible that predators drove the evolution of more complex brains.

Professional/Product Directory

God Bless America

WANT MORE ARTICLES

When you tell our advertisers that you saw their ads here they have more confidence in our newsletter's viability as an advertising medium. They advertise more. This supports our many activities.

SEARCHING FOR THAT SPECIAL JOB?

There are many companies and organizations searching for chemical and biochemical personnel to fill important jobs in their organizations.

- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

There are several web sites that may help you search for these open positions.

- www.mboservices.net
- http://newyorkacs.org/jobs.html
- http://njacs.org/jobs.html

Ad Index