



New Haven Section American Chemical Society Bulletin

VOLUME 26, NUMBER 2, SEPTEMBER 2009
New Haven Section Chartered in 1912

Message from the Chair

Chair 2009

Dr. Dennis Jakiela
dennis.jakiela@hotmail.com

Chair-Elect 2009

Jefferson Chin
jrchin5@comcast.net

Immediate Past Chair 2009

Dr. David Smudin
dsmudin@aol.com

Treasurer 2009-2011

Dr. Max Reeve
maxreeve@comcast.net

Secretary 2008-2009

Dr. Walter Krol
walter.krol@po.state.ct.us

Councilor 2007-2009

William Cesario
wic@snet.net

Councilor 2009

Jennifer Larese
nildran@gmail.com

Alternate Councilor 2008-2010

Dr. Jerry Putterman
jerry_putterman@hotmail.com

Alternate Councilor 2009-2011

John Bayusik
jgbayusik@comcast.net

Chemistry Olympiad

Dr. Olivier Nicaise
olivier.nicaise@trincoll.edu

Bulletin Editor

Dr. Dennis J. Jakiela

The Section was very active this past Spring. Section high school students once again participated in the Chemistry Olympiad. The 14 top scorers were honored at an awards ceremony held June 3, 2009 at the Connecticut Agricultural Experiment Station in New Haven. Eleven of these students were selected to take the National Exam, and Alexander Siegenfeld of Hopkins School was selected to go to a study camp at the Air Force Academy and served as the first alternate to the team that represented the United States in the international Olympiad in Oxford. Eight winners of our 2008 National Chemistry Week poster contest were also honored at the awards ceremony. Three fourth graders were honored for their poster on household lead contamination in the Connecticut Science Fair as well. I want to congratulate these outstanding students again on their outstanding academic and artistic achievements!

The Section had a very interesting slate of topics for our general membership meetings last Spring. On March 16, Rob Leonard, President of New England Brewing Co, gave a talk and tour of his micro-brewery in Woodbridge and offered free samples to wash down the pizza provided. Attendees learned about the process of beer making from a master brewer. On April 23, members gathered at the Graduate Club in New Haven, to hear Dr. Andrew Hamilton, professor and Provost of Yale University, speak on molecular recognition and potential therapeutic applications. Prof. Hamilton will be moving to England in October to become Vice-Chancellor of Oxford University. Our student awards ceremony was held June 3 at the Connecticut Agricultural Experiment Station. Speaker for the event was Dr. Sarah Burke, Director of Bioscience Explorations (formerly BioBus), an organization that provides science education programs. Attendees were served strawberries. No, not to eat. Instructions were given for extracting DNA from the strawberries. Photos from the enthusiastic participants in the experiment are below. Also, read more about our Suitcase Science program, organized by Jeff Chin and Jennifer Larese, and about the hands on demonstration of Suitcase Science given by Jennifer at a New Haven Reads outreach event in New Haven on May 2.

We are very encouraged that our attendance at our general membership meetings has been up over previous years and fully expect that trend to continue.

Looking ahead, on Wednesday, September 23rd, Alex Siegenfeld, a junior at Hopkins School, will be the guest speaker. Alex is one of twenty national finalists in the 2009 U.S. Chemistry Olympiad, and will speak on his experiences at the Chemistry Olympiad training camp at the USAF Academy in Colorado this past summer. More meetings are planned for October and December. If you haven't in recent years, consider attending one of our events. It's a great way to meet colleagues in your field, and a good opportunity to network. Simply by attending, I have found out about many job opportunities in recent years. The cost of these events is very reasonable.

The Section will be very active in NERM, being held in Hartford this year on October 7-10. Jeff Chin has organized symposia on "Biotech in the Northeast" and "Topics in Analytical Research", and Jennifer Larese has organized a symposium on "Science Outreach: What Are People Doing?" I hope you will be able to attend one or more of these symposia.

As always, I encourage anyone interested to get involved in the Section. Even if not able to commit to an Officer position, we welcome anyone to join us to help out in any particular way you may be interested in. If you have school age children, why not borrow one of our Suitcase Science kits and present a hands-on Suitcase Science demonstration to their class or scouting group? Details are below.

We all look forward to seeing you soon!

Call for Nominations of Officers for 2010

The Executive Committee of the Section is issuing a call for nominations of members to run for offices, which will become vacant at the end of the 2009. Upon election, these officers become members of the local Section Executive Committee. If you are interested in seeking nomination please contact Dr. Dennis Jakiela at dennis.jakiela@hotmail.com or Jeff Chin at jrchin5@comcast.net. Offices that need to be filled for 2010 are:

Chairman-elect (Program Chairman):

This is a three-year position. In the first year the individual elected becomes familiar with the operation of the Section. With assistance from other members of the Executive Committee, this individual will arrange for

speakers and meeting locations for approximately six meetings of the general membership to be held in 2010. The first three meetings have usually been arranged by the outgoing Chairman-elect by the time the new Chairman-elect takes office. Attendance at a one-weekend New Leader's Conference, where contact and interaction with other new leaders, past Chairs of local sections, and ACS staff provide information on the operation of the ACS and the local section, is encouraged and supported by the Section. In the second year the Chair-elect assumes the Chairmanship of the Section, and is responsible for overseeing the activities of the Section, and presiding over the meetings of the general membership. In the third year, as Immediate Past Chairman, duties are to meet with the Executive Committee to plan and oversee the activities of the Section.

Councilor

The Councilor acts as liaison between the Section and the National ACS office. In particular, at least two of the Councilors and Alternate Councilors represent the Section at the Councilors' meetings at the Spring and Fall National Meetings. The Councilor's term of office is three years.

2009 Chemistry Olympiad

The New Haven Section once again participated in the U.S. National Chemistry Olympiad (USNCO), a program that is part of the International Chemistry Olympiad (IChO). USNCO, a multi-tiered competition sponsored by the American Chemical Society (ACS), celebrated its 25th anniversary this year. Dr. Olivier Nicaise (Trinity College) coordinated the first two installments of this competition, the Local Section Exam and the National Exam. The exams were hosted by the Department of Chemistry at Yale University. A total of 66 students, representing 9 high schools, first participated in the Local Section Exam that was administered on March 28, 2009. A group of 11 students (the maximum number allowed by the ACS), representing 6 high schools, then qualified for the National Exam that was given on April 25, 2009. These students are named in the table. They were honored for their outstanding achievement in high school chemistry on June 3, 2009, at an award ceremony organized by the

2009 Chemistry Olympiad

Local Section Students Qualifying for the National Exam in the 2009 Chemistry Olympiad

| Name | School | Teacher |
|----------------------|--|------------------------|
| Alexander Siegenfeld | Hopkins School, New Haven Class of 2011 | Mrs. Sarah Leite |
| Jonathan Chien | Hopkins School, New Haven Class of 2010 | Mrs. Sarah Leite |
| Andras Sagi | Cheshire High School, Cheshire Class of 2010 | Dr. Stephen Bertenshaw |
| Connor Clairmont | Cheshire High School, Cheshire Class of 2010 | Dr. Stephen Bertenshaw |
| Priya Sharma | Pomperaug High School, Southbury Class of 2010 | Mrs. Coleen Merritt |
| Daniel Fallahi | Choate Rosemary Hall, Wallingford Class of 2009 | Mr. William Morris |
| Divya Keerthy | Hamden High School, Hamden Class of 2009 | Dr. Nancy Graham |
| Sally Jo | Choate Rosemary Hall, Wallingford Class of 2009 | Mr. William Morris |
| Maria Soshea | Daniel Hand High School, Madison Class of 2010 | Mr. Stephen Sekula |
| Bradley Napier | Daniel Hand High School, Madison Class of 2010 | Mr. Stephen Sekula |
| Kenneth Westerman | Pomperaug High School, Southbury Class of 2010 | Mrs. Coleen Merritt |

Local Section Participants in Attendance at the June 3 Awards Ceremony.



First row, from left to right: Yawei Ge (Top Ten Scorer), Christina O'Hara, Rebecca Curtis, Akash Reddy, Zhaowei Ding, Maria Soshea (National Exam qualifier), Priya Sharma (National Exam qualifier). Second row, from left to right: Connor Clairmont (National Exam qualifier and Top Ten Scorer), Daniel Friedman (Top Ten Scorer), Andras Sagi (National Exam qualifier and Top Ten Scorer), Kenneth Westerman (National Exam qualifier), Divya Keerthy (National Exam qualifier, hidden), Brandon Bukowski, Bradley Napier, Dennis Jakiela, Local Section Chair, Oliver Nicaise, Chemistry Olympiad coordinator.

New Haven Section, and held at the Connecticut Agricultural Experiment Station, in New Haven. Each received a recognition pin commemorating the 25th anniversary of the U.S. National Chemistry Olympiad, and also a National Exam Participation Certificate. Some of the students who participated in the Local Section Exam also attended the event, and were also presented with a commemorative recognition pin. Attendees at the award ceremony are in the photo.

With a limit set by the USNCO National Office of no more than two students per school that can sit for the National Exam in order to promote broad participation, some top scoring students at the Local Section Exam were not allowed to compete at the National Exam, and that is why the New Haven Section has been systematically recognizing all the top scoring students at its Local Section Exam. This year, at the award ceremony, the top five scorers, Alexander Siegenfeld (Hopkins), Jonathan Chien (Hopkins), Yawei Ge (Cheshire HS), Adam Stasiw (Choate), and Andras Sagi (Cheshire HS), were each awarded a \$75 gift certificate, and the next five best students, Peter Fedak (Hopkins), David Fantarella (Hopkins), Connor Clairmont (Cheshire HS), Thomas Esty (Cheshire HS), and Daniel Friedman (Cheshire HS), were each awarded a \$50 gift certificate.

Whereas nearly 11,000 students participated nationwide in the Local Section Exam, nearly 1,000 students participated nationwide in the National Exam. The National Exam is a three-part, ca. 5-hour competition that consists of two written exams (a 60-question multiple-choice exam covering broad chemistry topics and an 8-question problem-solving, essay exam requiring in-depth knowledge of chemistry theories and models), and one laboratory practical. We proudly report that Alexander Siegenfeld (Hopkins) received High Honors (top 50) and Jonathan Chien (Hopkins) received Honors (top 51-150) for their exam scores. Alexander finished among the top twenty students in the nation and was therefore one of twenty finalists invited to attend the 2009 USNCO study camp in order to compete for a spot on the U.S. team at the International Chemistry Olympiad. The study camp was held at the U.S. Air Force Academy in Colorado, on June 3-18, 2009. Alexander was selected to serve as the first alternate of the Alpha Beta Team that represented the United States at the International Chemistry Olympiad

competition held in Cambridge, England, on July 18-29, 2009. In addition to the gift certificate that Alexander received, he was also awarded a digital camera, and speak on his USNCO experiences, especially his experiences at the study camp, at the general membership meeting on September 23.

The New Haven Section wishes to acknowledge the invaluable contribution of Dr. Jonathan Parr (Yale University) regarding the organization of the 2009 USNCO competition, especially with respect to providing lecture hall and laboratory space to administer both the Local Section and National Exams.

This has been the second year in a row that the New Haven Section has had a student make the National Team. Last year, Ms. Jenny Lu (Pomperaug High School) was indeed selected as one of the four members of the U.S. team, and she went on to win a Bronze Medal at the 40th International Chemistry Olympiad that was held in Budapest, Hungary. We are so very proud of this record of academic achievement for the high school students in our section, and we are looking forward to more successes of this nature in the years to come.

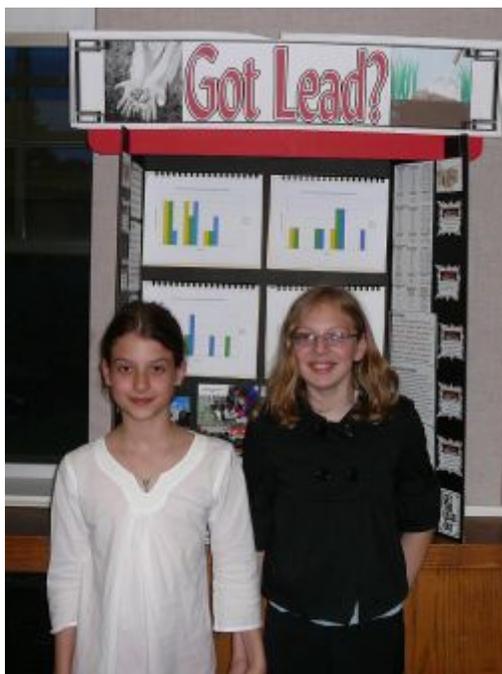
National Chemistry Week – October 18-24 “It’s Elemental”

Each year, the New Haven Section sponsors a poster contest as part of National Chemistry Week celebrations. In 2008 topic was “Having a Ball with Chemistry”. Students were asked to prepare posters on how and where chemistry is connected to sports materials, such as shoes, equipment, and clothing, and to the biological factors underlying performance, such as physiology, metabolism, and nutrition. A total of 568 students submitted posters from 16 different schools in the Section. The submissions were judged by National Chemistry Week coordinator, Dr. Walter Krol. Eight posters were selected as the best entries. Our winners were Masita Sunandar, Yekaterina Satanina, Keshia Woods, all Hamden High School students taught by Mrs. Nancy Graham; Ersela Dauta and Reyna Lin, North Branford Intermediate School students taught by Mrs. Kathleen Griffen Daley; Logan Pirruccio and Dylan Williams, Mary T. Murphy Elementary School (Branford) students taught by Nancy Ryan; and Andrew Rodriguez, a High School of the Community student taught by Mrs.

Joyce Harned. These students were honored by the New Haven Section on June 3, 2009 at an award ceremony held at the Connecticut Agricultural Experiment Station in New Haven, Conn. They were each given \$50 gift certificates.

National Chemistry Week for 2009 will be October 18-24. The New Haven Section will once again be holding a poster contest. This year's theme is "Chemistry – It's Elemental". The elements are the basis of the entire universe and of life on Earth. The elements are an important part of everyday life. They compose the graphite in pencils, the tungsten in light bulbs, neon lights, copper for cooling applications, the sodium in table salt—the list literally never ends! The year 2009 is the 140th anniversary of Mendeleev's Periodic Table of the Elements, and is a wonderful opportunity to investigate and appreciate the discovery and use of the elements in every aspect of our lives. You can have a "Festival of the Elements" for your class or your whole school! More information will be mailed to science teachers around September 15. The deadline for submitting posters is October 21, 2009. More information can be found by following the "Education" link at www.acs.org.

2009 New Haven Science Fair



Hannah Melchinger and Melissa Ernstberger proudly stand in front of their winning poster, "Get the Lead Out". Missing from the photo is Gleimy Rodriguez.

The University Commons at Woolsey Hall, Yale University, was the venue for the 15th Annual New Haven Science Fair, which was held May 12 – 14, 2009. The Section provided support for an award recognizing, *Excellence in a Chemistry Related Science Fair Project*. Section representatives, Drs. Gerald Putterman, and David Smudin, spent the better part of two days judging two hundred and thirty science fair projects submitted by students in grades PreK through 12, from schools in and around New Haven. The Section's award went to a team of 3 fourth graders from Heather O'Brien Treciokas' class at John Daniels School in New Haven. The team members were Hannah Melchinger, Melissa Ernstberger, and Gleimy Rodriguez, and the title of their project was, "Get the Lead Out." In carrying out their project, the young scientists learned much about the element lead; what it is, why it is toxic, how it gets into the environment, how to analyze for it once it gets there, and how to get rid of it.

Experimentally, the students gathered soil samples from several locations in the New Haven area, analyzed the samples for their lead content, and provided reasonable explanations for their findings. Upon completion, they took their project and knowledge and made presentations to other students in order to educate them about lead. It was the scope of the project, the use of the scientific method, the teams understanding of their subject, and their enthusiasm that convinced the judges that this project was a winner.

The New Haven Science Fair Program is administered by the Greater New Haven Chamber of Commerce. Any Section member interested in mentoring an individual or group of students as they prepare to participate in the 2010 New Haven Science Fair can contact Michelle Cirello at mcirello@gnhcc.com for information.

Extraction of DNA from Strawberries

Strawberries are in season in June, so after the awards, dinner, and a presentation, attendees of the student awards ceremony on June 3 were served strawberries for dessert. The first task was to smash them. No, not to make strawberry shortcake. Supplies and instructions for extracting DNA from the strawberries was provided by the featured speaker, Dr. Sarah Burke, Director of Bioscience Explorations, and our enthusiastic young scientists went to

work. Some of these researchers are pictured below. For many, it was a more enjoyable exercise than eating them!



Suitcase Science!

On May 2, Jennifer Larese did a hands-on demonstration of Suitcase Science as part of a New Haven Reads public outreach event at the Rose Center in New Haven. The photos were taken at the event.

So what is "Suitcase Science"? Suitcase Science is a New Haven Section ACS educational outreach program that will provide pre-made science kits to our members. These convenient kits will enable the volunteers to demonstrate science principles at a moment's notice. The science kits and associated labs are designed for grades (K-8). We will offer four science kits that will be available to local section members: Chromatography (grades K-4), Phases of Matter (grades K-4), Kitchen Chemistry (grades 5-8), and Polymers (grades 5-8). With Suitcase Science in their hands, ACS members can go into an organization, such as a local school, and demonstrate principles of science. The kits include all the necessary supplies as well as handouts for both the demonstrator and the students. By

participating in these hands-on demonstrations with the kits, the students are interacting with the ACS members who are demonstrating.

Each kit will provide supplies for 25 students: safety equipment, copies of the hand-outs, explanation of the chemistry and science behind the experiment, equipment such as glassware and test tubes, and any "chemicals" required.

Kit 1: Polymers with Insta-Snow, Super Absorbent Polymers in Diapers, Polyacrylamide Spikes, Gro-Creatures, and Enviro-Bond 403A.

Kit 2: Kitchen Chemistry with DNA extraction from peas, pH testing for household chemicals, silly putty, and making "chemical" applesauce.

Kit 3: Phases of Matter with Crystallization, Salt Volcano, and the Inflatable Hand.

Kit 4: Separating and Purifying with Solubility purification, Size exclusion, Magnetism, Column Chromatography, and Marker Chromatography.

These kits were funded by a grant from the national American Chemical Society through an Innovation Project Grant and the local section of the ACS. By preparing these kits, we hope to encourage our membership to get out and get involved. For more information, please contact Jennifer Larese (nildran@gmail.com) or Jeff Chin (jrchin5@comcast.net) Jennifer will be presenting a talk on Suitcase Science at the symposium she is organizing entitled "Science Outreach: What Are People Doing?". The symposium will be held October 7 – 10, 2009 at the Northeast Regional Meeting in Hartford.



Jennifer Larese, Suitcase Science organizer, at the Rose Center with the debut of her new outreach kits.



50- and 60-Year Members Feted April 23

Dr. Robert A. Gregg, Donald G. Rowland, and Dr. Gerry Putterman were honored at our general membership meeting at the Graduate Club, New Haven, on April 23.

Dr. Gregg was born in Dundee, Michigan in 1918. He received a B.A. degree, magna cum laude, from Adrian College in 1937, and M.S. (1940) and Ph.D. (1943) degrees in chemistry from the University of Michigan. In 1942 Dr. Gregg joined the General Laboratories of Uniroyal (then called the U.S. Rubber Co.) in Passaic, N.J. In 1957 he transferred to Uniroyal's Research Center in Wayne, N.J. From 1959 to 1963 he served as Manager of Research in Uniroyal's Textile Division. From 1964 to 1972 he served as Staff Scientist at Uniroyal's Wayne, N.J. Laboratories. In 1972 he transferred to Uniroyal's R.&D Laboratory in Middlebury, CT. Dr. Gregg retired from Uniroyal in 1984. It is for his work in improving rubber to steel wire adhesion, particularly as applied to improving the properties of steel belted automobile tires, and

contributions toward the development of cellular plastics, which find utility as flotation devices, and as impact absorbing and thermal insulation materials that Dr. Gregg was selected to receive the New Haven Local Section's Maurice R. Chamberland Award.

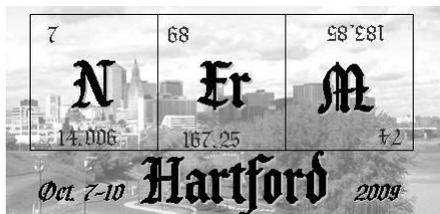
Throughout his career Dr. Gregg has been named as inventor on several patents, authored or co-authored a number of scientific papers, and written a chapter on Spandex and other Elastomeric Fibers for the Kirk-Othmer Encyclopedia of Chemical Technology.

Donald Rowland has been a member of the American Chemical Society for 60 years. After receiving his degree in Chemical Engineering from Cornell University, Donald became employed by Sponge Rubber Products Company in Shelton Connecticut. This company was eventually purchased by B. F. Goodrich. Donald remained with Sponge Rubber Products for 24 years before becoming employed by Uniroyal, Inc., from which he retired after 18 years of service. Donald is an expert in rubber chemicals technology, and as such has authored many papers and has received numerous patents for his inventions. This year Donald celebrated 50 years of active involvement with the Boy Scouts of America.

Dr. Gerald Putterman has been a member of ACS for 50 years and a member of the New Haven Section for the past 26 years. Jerry received his undergraduate degree from Johns Hopkins University, and a Ph.D. in Biochemistry from Yale University. Following employment in governmental and industrial laboratories in Illinois, Florida, and Maryland he returned to Connecticut as a member of the research faculty at Yale Medical School. In 1988 he joined the headquarters staff of Sigma Xi as its Program Officer. When that honor society's headquarters moved to North Carolina in 1989, Jerry accepted a position as Research Scientist and Senior Group Leader of the Metabolism Group at Uniroyal Chemical Company (now Chemtura), where he was responsible for plant and animal metabolism studies, including presentation and discussions of the results of these studies with governmental regulatory agencies. He was employed at Chemtura until his retirement five years ago. Jerry has been an active member of the New Haven Section having served as Councilor, Alternate Councilor, Chairman of the Nominating Committee and a member of the Selection Committee for the Kirkwood Award.

Other honorees not in attendance were Dr. Randolph H. Bretton (60 years), Dr. Edward L. Wheeler (60 years) and Mr. John Hupfer (50 years).

Northeast Regional Meeting



This year the Northeast Regional Meeting of the ACS (NERM) will be held October 7 -10, 2009 in Hartford. The Connecticut Valley Section is organizing the event this year. The New Haven Section is actively participating in the NERM this year. Jefferson Chin is organizing two symposia, "Biotech in the Northeast", and "Topics in Analytical Research". Jennifer Larese is organizing a symposium entitled "Science Outreach: What Are People Doing?" This symposium will be held on Wednesday, October 7, 2009. The presenters are:

- Deepti Pradhan: A cup of coffee to quench the thirst for science: science cafes as outreach tools.
- Peter Parker: Yale Physics Olympics
- Christine Broadbridge: Crisp Interdisciplinary Science Professional Development
- Ann M. Valentine: Caution! Oxygen can be hazardous

to your health!

- Mary DeRome: TBA
- Jennifer Larese: "Suitcase Science" and how to meet your neighbors

For more information, visit the NERM website at

<http://membership.acs.org/N/nerm/>.

Situation Wanted:

Chemical/Electronics Technician

Last employed at Perkin-Elmer Corp., Shelton, building/testing production Mass Spec. units. Previous experience at Cuno division of 3M, in Meriden – R&D on membrane and carbon media for liquid filtration and other applications.

Previous experience at Olin Corp – R&D on flexible and rigid urethanes in research labs and pilot plants in New Haven and Cheshire. Some time also spent on industrial surfactants. A co-inventor of 5 patents. Four on rigid urethane foam and polyols, and one on surfactants.

Received an A.A.S. degree in Materials Science from Norwalk State Technical College.

Volunteer and a past Director of the Vintage Radio & Communications Museum in Windsor, Ct.

John G. Bayusik

203-265-6521

jgbayusik@comcast.net