



New Haven Section American Chemical Society Newsletter

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New Haven Section Chartered in 1912

www.newhaven.sites.acs.org

Chair 2015

Dr. Ken White

charles.ken.white@gmail.com

Chair-Elect 2015

Dr. Camille Solbrig

camsol@comcast.net

Immediate Past Chair 2015

Jefferson Chin

jrchin5@comcast.net

Treasurer 2015-2016

Dr. Max Reeve

maxreeve@comcast.net

Secretary 2014-2016

Jack Bennett

jbennettjr@compuserve.com

Councilor 2013-2015

Dr. Olivier Nicaise

olivier.nicaise@trincoll.edu

Councilor 2015-2017

Dr. Jerry Putterman

jerry_putterman@hotmail.com

Alternate Councilor 2015-2017

Dr. Kap-Sun Yeung

KapSun.Yeung@bms.com

Alternate Councilor 2015-2017

Dr. Steven Cantor

sdcantor@cox.net

Chemistry Olympiad

Dr. Olivier Nicaise

olivier.nicaise@trincoll.edu

Younger Chemists Committee

Kathryn Kuhr

katyak92@verizon.net

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Message from the Chair

Dr. Ken White

This is the second newsletter this year: a record for recent years. We have had four general meetings this year, not a record, but about normal.

Your Executive Board is in the midst of changes.

Jack Bennett, our secretary is leaving this summer for Laurence Livermore Lab in California. Quite a change for someone who has lived all of his life in Connecticut. Jack has been our Secretary for about two years. Besides keeping the minutes of the Executive Board meetings, he decided our meeting notices needed an overhaul, so he did it on his own. Those "Save the Date" notices you have been getting are his. Jack suggested several top-notch speakers: Dr. Jason White head of the CT Agricultural Station and Dr. Paul Anastas of

Yale. These speakers are indicative of the thoughtful and insightful contributions Jack has made to the Board. He will be sorely missed.

Ms. Katy Kuhr joined the Executive Board as Chairperson of the Younger Chemists Committee. When Jack leaves later this summer, she will take the additional position of Secretary. She works at PerkinElmer. While she was at UNH, she revitalized their undergraduate chapter of the ACS. She was on the NERM committee and lead the UNH undergraduates in an essential supporting role in the meeting. We are excited to have her on the governing Board of the New Haven Section of the ACS.

Message from the Chair-Elect Camille Solbrig

If you read the newsletter article describing our last few meetings you'll see we have had some interesting speakers. We have had on average between 30-35 members attend each event. However we would like to increase participation in meetings and in section activities altogether. In order to make this possible please take a few minutes to answer some of the questions below pertaining to section meetings and why you may or may not have participated in one recently. You can send your comments to me at newhaven.chemists417@gmail.com

1. What **most** influences whether you will attend a section meeting?
Where and when it is scheduled.
The topic being presented by the speaker.
Whether you are busy that day and can spare the time
2. Do you have suggestions on how to change the item you listed above so that you could more regularly attend section meetings?
3. In March we had a purely social event at a local brewery with no speaker (other than the brewmaster's tour). Would you be likely to attend these events if we had more of them?

4. Would you interested in getting involved in running the section and its events by being an officer or committee chair?

5. What other programming ideas might you have to increase participation?

Younger Chemists Committee

Kathryn Kuhr

The New Haven Local Section has recently introduced their very own Younger Chemists Committee! Younger Chemists Committees (YCC) have three main objectives: make ACS relevant to younger chemists (up to age 35), increase the involvement of YCCs and younger chemists at all levels of ACS, and assist in the integration of younger chemists into the profession. The New Haven LSYCC will be planning events focused on the professional development of its members as well as learning about local opportunities in the chemical profession. Interested in getting involved? Contact Kathryn Kuhr at katyak92@verizon.net.

Save the Date -September 21, 2015

"Postmortem Redistribution - Mechanisms, Consequences and Cases."

Who: Robert H. Powers, Ph.D., F-ABFT
Associate Professor
Department of Forensic Science
Henry C. Lee College of Criminal Justice
and Forensic Sciences
University of New Haven

When: September 21st, 2015

Where: Brazi's Restaurant
201 Food Terminal Plaza,
New Haven

ACS Section Meetings Winter/Spring Recap

Dr. Camille Solbrig

Section meetings are held throughout the year to present speakers on various topics that could be of interest to our members, to personally connect members throughout the section, and to keep members up to date on happenings within ACS. There have been 4 local section meetings so far

this year. The meetings for the New Year started off with the January meeting where Henry Auer addressed the topic of climate change. Dr. Auer presented the evidence for the effects of increasing greenhouse gases in the atmosphere and a lively discussion ensued.

In March, we came together to socialize and learn about the craft brewing industry that has blossomed in the New Haven region by listening to New England Brewery owner Rob Leonard talk the business of making beer. The event brought out many people who hadn't been to a meeting lately. Should we have one (or more) of these every year? The members concluded that New England Brewery beer goes great with pizza!

April is the time when we hear from the NH section's undergraduate research awardee. A stipend is awarded to a chemistry student on a rotational basis working with a professor at either UNH, Quinnipiac or SCSU. This year UNH student Stephen Zambrzycki enlightened us about his research work in Professor Eddie Lusik's lab creating biodiesel fuel from acorns harvested in New Haven. The event was held at Brazi's restaurant in New Haven.



Steven Zambrzycki speaking about his research on Biofuels from acorns.

In May we gathered at Eli's on Whitney in Hamden to hear from Dr. Robert Rafka, a speaker who is listed with the National ACS speaker's bureau. Dr. Rafka, an organic chemist and High School Physics teacher, provided us some timely information for gardeners in the crowd about his investigations into soil chemistry and the uses for compounds found in native plants. During our May meeting we also honored award winners from the

Chemistry Olympiad, our National Chemistry Week poster contest, Earth Day poster winners and 50+ year ACS members Dr. David Smudin and Dr. Jan William Francis Wasley. Meeting timing did not allow us to honor the special awardees from the 2015 New Haven Science Fair, but we hope to honor them later in the year.



Dr. Rafka speaking on Gardening Superstitions at our May section meeting.

Councilor Report

Gerald J. Putterman

The Section's Newsletter is being issued shortly before the ACS National Meeting to be held August 16-20. Thus I have chosen to provide a brief preview of Councilor activities for that week.

The upcoming National Meeting is somewhat unusual in that it is taking place closer to home (Boston). In addition the District I Council Caucus (which I described in our previous Newsletter), due to a scheduling conflict, is being held Sunday evening, August 16, rather than on the customary evening before the Council meeting. Furthermore, because the Northeast Regional Board (NERACS) met during NERM 2015, there won't be a NERACS Board meeting at this National Meeting, however, some NERACS committee meetings will be held during the week.

At the Council Meeting, reports will be presented by the Officers of ACS, Elected Committees of the Council, Society Committees, Council Standing Committees and other Committees.

Councilors will be asked to vote for candidates to serve on the Committee on Committees, Council Policy Committee and Committee on Nominations and Elections. It is that last named committee that prepares a slate of candidates for each committee election and provides biographies for each candidate to assist us in making our choices. Of particular interest to our Section are candidates: NERACS Board member Julianne Smist from the CT Valley Section and Doris Lewis from the Northeastern Section, who received the E. Anne Nalley Award at our NERM 2013 banquet.

Councilors will also be asked to approve a change in the Society bylaws as well as approve the charters of the following international chapters: United Arab Emirates, Peru, Nigeria, Brazil, and Australia. Final approval is contingent upon the approval of the ACS Board of Directors.

Other items requiring votes may occur at the Council meeting during New Business. For those of you who will be in Boston, feel free to attend the Council Meeting, which will be held at the Grand Ballroom of the Sheraton Hotel on August 19, starting at 8:00 AM.

Take-Aways from NERM 2015 Regional ACS Meeting held in Ithaca NY in June

Camille Solbrig

The New England Regional Meeting for 2015 was held June 10-13 at Ithaca College in Ithaca, NY and was hosted by the ACS Cornell Local Section. The overall theme of the meeting was "Go Green". Programs were passed out in green-colored plastic bags in keeping with the theme. The event provided ample parking and meeting room space. The food was catered by food services at the college which did not allow alcohol to be served.

A poster session/mixer was held the opening night (Wednesday). It was well attended and participation was so high that they had to change the poster-set up half way through the night to give everyone a chance to participate. Enough food was provided such that you could make a dinner out of the food and not have to leave the

event. Numerous undergraduate and graduate students participated. At least 3 members of the New Haven section participated in the poster session.

Plenary speaker Dr. Ester Takeuchi spoke about battery science, the connection between electrochemistry and materials science, and the role of batteries in the full utilization of renewable energy sources on Thursday. Dr. Takeuchi is affiliated with Stony Brook University and Brookhaven National Laboratory.

Symposiums were held in a dedicated building and took up 2 floors of the building. Vendor space was set up outside the classrooms where the different talks were taking place giving them high visibility. I primarily went to the Chemical Education seminars and the Green chemistry/Green Polymers seminars which were well attended. The lecture hall in this building was used for a workshop on Fulbright Scholarship in STEM Fields where several former Fulbright scholars talked about their experience in the program which allowed them to teach or do research in a foreign countries. The next Regional Meeting will be held in Binghamton, NY at Binghamton University in Oct. 5-8, 2016.

The 2015 New Haven Science Fair

David J. Smudin, Ph.D.

The 21st Annual New Haven Science Fair was held at Yale University Commons at Woolsey Hall, on May 11 to 13, 2015. A total of 235 projects exploring ideas in both the biological and physical sciences were entered in this year's fair. The entries were submitted by students in grades Pre K through grade 12 from schools in New Haven. Seventy mentors worked with the students as they developed their projects. One-hundred seventy judges from the region were involved in the evaluation of the projects.

The New Haven Section is proud to be a part of the event, and for the past several years has supported it both financially and professionally. In addition to providing monetary awards for *Excellence in a Chemistry Related Science Fair*

Project in the pre-K to 8, and 9 to 12 grade categories, the Section also provides judges for the event. Judges from the Section for this year's Science Fair were Dr. Yane-Shih Wang, Dr. Jerry Putterman, and Dr. David Smudin.

Each project of a chemical nature was judged with respect to the problem to be studied, the hypothesis, the application of the scientific method to test the hypothesis, the collection and interpretation of data, and the explanation and reporting of the results.

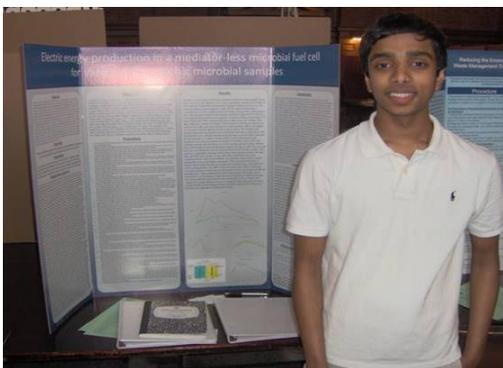
Because of the level of excellence of many of the projects submitted this year the Section's judges found it difficult to select only one best project from each of the grade categories presented earlier. For this reason they agreed to select two projects from each grade category, declare a tie, and award them equally.

One of the awards for *Excellence in a Chemistry Related Science Fair Project* from grades Pre-K through 8 was presented to Nicole Perez, Natasha Arvello, and Nashaly Idrovo from Laura Carroll-Koch's fifth grade class at the John S. Martinez School. The project, which was part of a unit of study, was entitled, *DNA in Fruit*. As part of the study the students learned what DNA is, where it is found, and why it is important. They used different color gummy bear candies to represent the four bases found in DNA. They learned about base pairing by attaching orange bear (guanine) to yellow bear (cytosine), and red bear (adenine) to green bear (thymine). The gummy bear base pairs were then fastened to strands of licorice with toothpicks to form the DNA ladder, which was carefully twisted into a double helix. Later the students developed a hypothesis about DNA in fruit and tested their hypothesis by analyzing many different fruits for DNA. The judges agreed this was a complex concept to be understood by 5th graders. The students did an excellent job presenting their project and it was evident from talking to them that they had a basic understanding of the concept. They will certainly expand their knowledge of this subject as their education continues.



Nicole Perez, Natasha Arvello, and Nashaly Idrovo display their project entitled DNA in Fruit at the 2015 New Haven Science Fair.

The other award for *Excellence in a Chemistry Related Science Fair Project* from grades Pre-K through 8 was presented to Sumanth Kondapalli, an 8th grader at Engineering, Science, University Magnet School, for his project entitled, *Electric Energy Production in a Mediator-Less Microbial Fuel Cell for Varying Electrogenic Microbial Samples*. Sumanth was concerned about the need for more sources of electricity to serve the billions of people who inhabit the earth. This concern led him to study microbial fuel cells which utilize bacteria to generate electricity. He envisioned that under the right conditions and with the proper selection of bacteria, municipal sewage treatment plants might be potential sources of electricity. For his science fair project Sumanth prepared a microbial fuel cell in which he tested common strains of microorganisms such as E. Coli and Saccharomyces Cerevisiae to determine if adding them to naturally found bacteria would increase the electrical output of the microbial fuel cell. Under certain conditions Sumanth found that his hypothesis was correct. A great amount of time was spent by Sumanth on his project which was excellently presented at the Science Fair.



Sumanth Kondapalli discusses his project entitled, Electric Energy Production in a Mediator-Less Microbial Fuel Cell for Varying Electrogenic Microbial Samples.

One of the awards for *Excellence in a Chemistry Related Science Fair Project* from grades 9 through 12 was presented to Maya Geradi, a 9th grade student in Julia Rodi's class at Wilbur Cross High School. The title of Maya's project was, *Exploring Strategies for Improved Calcium and Phosphate Compatibilities in Parenteral Nutrition*. Maya selected the topic of parental nutrition, which is provided to infants and adults with certain medical conditions when oral feeding is not possible, as her science fair problem. She chose to study the effect of pHs over the range of 5 to 9, and the additions of glutamate and aspartate compounds, and ascorbic acid with regard to preventing the unwanted crystallization and precipitation of calcium and phosphate compounds, which are important components of parenteral solutions. Maya observed that lower pH's improved the compatibilities of solution components and prevented crystallization. Aspartate and glutamate additions were also shown to prevent crystallization. The effect of ascorbic acid was unclear. The judges agreed that the problem of maintaining the solubilities and compatibilities of the several components of parenteral solutions is a many faceted one, but Maya chose a specific segment to explore and she did a good job with her selection. For this reason, and for the analysis and presentation of the data, she was selected to receive the award.



Maya Geradi was selected by the Section's judges for an award in the 9th through 12th grade category at the New Haven Science Fair for her project entitled, Exploring Strategies for Improved Calcium and Phosphate Compatibilities in Parenteral Nutrition.

Kelsey Blount, a senior in Ms. Arnini's class at the Cooperative Arts and Humanities Magnet School received the second award for *Excellence in a Chemistry Related Science Fair Project* from grades 9 through 12. The title of Kelsey's project was, *Glucose Production Based on Lactase*. Kelsey chose to explore the connection between lactase enzyme and the medical condition known as lactose intolerance. After gathering background information on the subject, Kelsey devised an experiment to test her hypothesis that increasing the concentration of lactase (Lactaid) in a lactose solution (Milk) would result in more glucose being produced. Her experimental design exhibited all the elements of a good scientific experiment. From her analysis of the data collected Kelsey concluded that her hypothesis was correct.

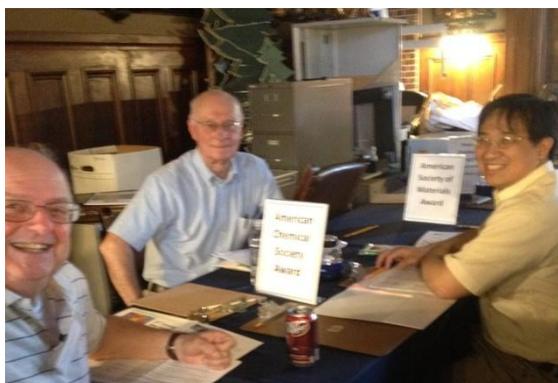


*Kelsey Blount's project entitled, **Glucose Production Based on lactase**, was selected to receive an award for Excellence in a Chemistry Related Science Fair Project from grades 9 through 12 at the 2015 New Haven Science Fair.*

This Year in Pictures



Max Reeve our master of ceremonies for New Haven Section Awards



New Haven Section judges (L to R) Jerry Puttermen, David Smudin, and Yane-Shih Wang take a break to discuss their selections for the Section's Awards at the 2015 New Haven Science Fair.



50+ year membership awards

Section members interested in mentoring New Haven students who will be participating in the 2016 Science fair should contact Soen Tien Wun, NHPS Science Fair Mentor Program Director by phone at (203) 491-6487, or by e-mail at nhsciencefair@gnhcc.com.



50+ year membership awards



National Chemistry Week Poster Awards



Honoring Kent Marshall for his involvement in the Chemistry Olympiad



Earth Day Posters Award Winners



Olivier Nicaise awarding Chemistry Olympiad recognition to Olympiad participants