



ALI "QUOTES"

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Website <http://www.princeton.edu/~pacs/>

Summer Barbecue and Recognition of 50 & 60-Year Members

Thursday, July 19, 2007

Guest speakers will be

**Catherine R. Matsen and W. Chris Petersen,
Winterthur Museum's
Scientific Research and Analysis Laboratory**

**"Conservation Science: The Forensics of
Cultural Material"**

Time: 6:00 PM

Lecture: Frick Laboratory, Room 324

Dinner: Prospect House (following lecture)

Abstract:

Conservation science combines a variety of scientific disciplines in the study of cultural material. Museum scientists, typically chemists, work with conservators and curators to understand the materials chemistry of artifacts in order to aid their treatment and understanding. Scientists analyze artifacts to characterize materials and manufacturing techniques of various regions, time periods and artists, to aid in authenticity studies, to characterize previous repairs, alterations, or additions, and to evaluate new treatment materials and procedures. The Scientific Research and Analysis Laboratory (SRAL) at Winterthur Museum was founded in 1969 by retired DuPont physicist Dr. Victor Hanson, who was the first scientist to apply x-ray fluorescence spectroscopy (XRF) to the analysis of museum objects. Today there are approximately fifteen museums in the United States with science laboratories, and around sixty scientists working in the field. Winterthur's SRAL uses a range of analytical techniques

in the study of cultural material

Biography:

Catherine R. Matsen received a B.A. degree in chemistry from Bryn Mawr College. She worked for three years as a laboratory technician at the DuPont Company performing research on heterogeneous catalysis and drug synthesis. She then held a one-year position as a laboratory analyst in the Conservation Department at Winterthur Museum before receiving an M.S. in Historic Preservation from the University of Pennsylvania. One of Catherine's interests is the analysis of historic architectural finishes; she has completed work at the Corbit-Sharp House at Odessa, Delaware, with the Architectural Paint Conservation Project at Drayton Hall, a National Trust Site in Charleston, South Carolina, and the Architectural Research Department at Colonial Williamsburg. Catherine is currently the Associate Scientist at Winterthur Museum's Scientific Research and Analysis Laboratory.

W. Chris Petersen received a B.A. degree in chemistry from De Pauw University and a Ph.D. in physical organic chemistry from Northwestern University. He retired from the DuPont Company after 30 years of primarily synthetic organic chemistry research. Chris has volunteered at Winterthur Museum's Scientific Research and Analysis Laboratory since 2000, indulging his interests in both art history and chemistry.

Reservations:

The meeting will be held in room 324, Frick Laboratory, Princeton University (see www.princeton.edu/~pacs for more information). Seminar is at 6 PM followed immediately by dinner at Prospect House. The seminar is free and open to the public. Reservations are required for dinner, which is \$35 for full members, \$25 for retirees and \$15 for students. All reservations will be billed, for the section pays on the number of reservations, not the number of attendees. Please contact Denise D'Auria at (609) 258-5202 or denised@princeton.edu by Thursday, July 12 to make or cancel reservations.



AT

MARM 2007

The 2007 ACS Mid-Atlantic Regional Chemagination contest was held on Saturday, May 19, 2007 at Ursinus College, Collegeville, PA. Allene Johnson from the North Jersey section and Louise Lawter from the Princeton section, were the Chemagination contest coordinators. Chemagination is a contest in which high school students are asked to imagine that they are living 25 years in the future and have been invited to write an article for ChemMatters, a magazine for high school students that focuses on the role of chemistry in everyday life. The subject of the article is: "Describe a recent breakthrough or innovation in chemistry and/or its applications that has improved the quality of people's lives today." The article is written to fit in one of four categories (either Alternative Energy, Environment, Medicine/Health, or New Materials.)

Nine teams, totaling twenty-four students, from New York, North Jersey, Princeton and Trenton ACS local sections competed. The students were judged on the quality of their articles, their poster displays and their knowledge of the subject. Yingru Zhang and Subbarao Mantha from Bristol-Myers Squibb and Deborah Kilmartin from GeoTrans, Inc. generously gave their time to serve as judges. They had the difficult task of selecting the 1st and 2nd prize winners in each category among a strong field of contenders!

During the tabulation of the results and selection of the winners, Mark Ellison of Ursinus College entertained and educated students, parents and teachers with some memorable chemical demonstrations including exploding balloons!

FIRST PLACE WINNERS

First place winners received a certificate and \$100 savings bonds. They were:

Medicine/Health - "A New Hope: Nobel Prize Contender Creates Cure for Diabetes and a Potential Panacea for Patients Needing Tissue Transplants", **Katia Sherman, Lena Phalen, Samantha Musumeci**, *West Windsor – Plainsboro High School South*

Alternate Energy - "Antimatter: From Fiction to Function", **Emily Carlson, Christina Fan, Jessica Yan**, *West Windsor – Plainsboro High School South*

Environment - "Fish Bite Back", **Daphne Ezer, Kimberly Li, Lily Yu**, *West Windsor – Plainsboro High School South*

New Materials - "Rolistern: Saving Our Lives", **Mengsong Li, Ben Ro, Ethan Stern**, *West Windsor – Plainsboro High School South*

SECOND PLACE WINNERS

Second place winners received a certificate and a subscription to ChemMatters. They were:

Medicine/Health - "Cancer-Out", **Jai Cho, Jonathan Ochoa, Quendrin Molota**, *Ridgefield Park Junior Senior High School*

Alternate Energy - "A New Energy Source: Organics and the Seebeck Effect", **Tonya Long, Oliver Rich**, *Locust Valley High School*

Environment - "The Atmospheric Solution: Solar Powered Planes and CO2 Filters", **Jack Coyne, Bernard J. Glover, West Hubbard**, *Collegiate School*

New Materials - "3D TV", **Syed Saad, Ghotra Muskan**, *Division Avenue High School*

Thank you to all who helped make the event a success, including the faculty advisors Christine D. Iannucci, *Ridgefield Park Junior Senior High School*, Cindy Jaworsky, *West Windsor-Plainsboro High School South*, Cheryl Litman, *North Brunswick Township High School*, Renee Locker and Gerard Marzigliano, *Division Avenue High School*, Sara H. McCoy, *Collegiate School and Herbert Weiss, Locust Valley High School*, our judges, Mark Ellison and MARM representatives Tony Addison, Victor Tortorelli and Eric Williamsen.

2007 OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER AWARD

I am pleased to announce that **Julia Norato of West Windsor Plainsboro High School North** is this year's recipient of the Princeton/Trenton ACS sections' 2007 Outstanding High School Chemistry Teacher Award. A plaque and check was presented to her at our PACS meeting on Thursday, May 17.

The purpose of this award is to recognize, encourage and stimulate teachers of high school chemistry. Teaching quality, ability to challenge and inspire students, willingness to keep up to date in

the field, evidence of leadership, and extracurricular work in chemistry are criteria used to select the winner.

Julie attended Trenton State College and received a BA in Biology in 1978, followed by a BS in Chemistry in 1984. She went on to earn a MAEd from Central Michigan University in 2000. Julie started her career as a research scientist at FMC and switched to teaching in 1987, joining West Windsor-Plainsboro High School North. Over her twenty years at the school she has taught science at various levels and most recently, Honors and AP Chemistry. She is an inspiration to her students and encourages them to participate in academic activities beyond the classroom. She also supports teaching outside the classroom by being actively involved in a number of professional activities.

For her consistent contributions, she received the Governor's Award as High School North's Teacher of the Year in 1998. The Executive Boards of the Princeton and Trenton Sections extend our most sincere congratulations for this well deserved award!

2007 Hubert Alyea Award Winners

This award, sponsored by the Princeton section, is named after Hubert Alyea, a Professor of Chemistry at Princeton University who was world renowned for his scientific demonstrations, his enthusiasm, and his love of scientific discovery. It is given to students who have demonstrated an enthusiasm for and an excellence in the study of chemistry.

Congratulations to this year's winners:

David Azer, *Lawrence High School*
John Connolly, *Princeton High School*
Michael Gidding, *The Hun School*
Michael Gordon, *The Lawrenceville School*
Eleanor Hayes-Larson, *Stuart Country Day School*
Tiffany Huang, *West Windsor-Plainsboro H S South*
David Piech, *Montgomery High School*
Joseph Yellin, *Princeton Day School*

2007 CHEMISTRY OLYMPIAD

This program is jointly sponsored by the Trenton and Princeton ACS sections and chaired by Bruce Burnham of the Trenton Section. The U.S. National Olympiad (USNCO) is a multi-tiered competition designed to stimulate and promote achievement in high school chemistry. The first level is comprised of

a 60-item, 110-minute multiple-choice exam. Those receiving top scores go on to take the three-part USNCO national exam administered in late April by ACS local sections. Congratulations to the 2007 winners from the Princeton and Trenton Sections:

Daniel Becerra: *Lawrence Twp HS*
Tucker Chan: *Princeton High School*
Bruce Clarke: *The Hun School of Princeton*
Brian Cook: *Notre Dame High School*
Aaron Deutsch: *Princeton High School*
Bayard Gardineer: *The Pennington School*
Michael Gidding: *The Hun School of Princeton*
Sofia Izmailov: *W Windsor-Plainsboro HS South*
Christina Jaworsky: *Hopewell Valley Central HS*
Trevor Saunders: *Hopewell Valley Central HS*
Dena Stanley: *Nottingham High School*
Ying-Ying Tran: *W Windsor-Plainsboro HS South*

Based on her score in the local competition, Sofia Izmailov of West Windsor-Plainsboro High School South qualified to compete for a spot on the U.S. team in the 39th annual International Chemistry Olympiad in Moscow, July 15-24, 2007. Sixteen boys and four girls, representing eight states and chosen from a pool of more than 11,000 high school students nationwide, will spend June 3 -17 preparing at a study camp at the U.S. Air Force Academy in Colorado. During the camp, the students will receive college-level training, with an emphasis on organic chemistry, through a series of lectures, problem-solving exercises, lab work and testing. At the conclusion, a four-member U.S. team will be named to participate in the international contest with teams from more than 65 other countries. Each country sends four contestants and two coaches to the host country for seven to ten days of exams, lectures, recreation and tours.

ChemShorts for Kids

Dr. Kathleen A. Carrado

Please note: All chemicals and experiments can entail an element of risk, and no experiments should be performed without proper adult supervision.

The Elementary Education Committee of the ACS Chicago Section presents this column. They hope that it will reach young children and help increase their science literacy. Please share with children and local teachers.

Homemade Floam

Kids, what is like slime with polystyrene beads in it that can be molded into shapes? It's a really fun toy called Floam™. You can sculpt with this colorful goop or use it to coat other objects. You can store it to reuse it or allow it to dry, if you want permanent creations. It's a lot of fun, but not always easy to locate. So, you can make a type of

'Floam' yourself. Like slime, it is generally safe, though anything containing food coloring can stain surfaces (don't eat it though, because polystyrene beads simply aren't food!).

Here is what to do:

1. Dissolve 2 tsp. borax completely in 1/2 cup water. (If you want slimier, more flexible 'Floam', then try 1 tsp. borax instead)
2. In a separate container, mix 1/4 cup white glue and 1/4 cup water. Stir in food coloring.
3. Pour the glue solution and about 1 1/3 cup of polystyrene beads into a Ziploc® plastic bag. Add borax solution and knead it until it's well mixed. Use 1 tbsp. of the borax solution for a very fluid Floam, 3 tbsp for average Floam, and the entire amount for stiff Floam.
4. To keep your Floam, store it in a sealed bag in the refrigerator (this discourages mold). Otherwise, you can allow it to dry into whatever shape you chose.

How it works:

Borax reacts to crosslink the polyvinyl acetate molecules in the glue. This forms a flexible polymer.

Tips:

1. If you use a 4% solution of polyvinyl alcohol instead of glue, you will get a more transparent product that will hold shapes better.
2. Polystyrene beads can be found at craft stores (e.g., JoAnn Fabrics), usually as fillers for bean bags or dolls. Or, for more hands on fun, you can grind Styrofoam™ cups using a cheese grater.

Reference:

Anne Marie Helmenstine's "About Chemistry" at <http://chemistry.about.com/od/chemistryhowtoguide/ht/floam.html>.

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CALENDAR OF EVENTS

July 20: PACS Executive Committee meeting, 11:30AM – 1:30PM, Wyeth Research. Contact Lynne Greenblatt at greenbl@wyeth.com if you are interested in attending.

August 19-23: 234th ACS Fall National Meeting & Exposition, Boston, MA. Early registration and housing is available.

August 20: Symposia on Age Discrimination and Opportunities in Open Innovation at the ACS Fall Meeting. See chemistry.org for details.



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