

The Chemical Bulletin

<http://chicagoacs.org>

JUNE • 2015

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY MONTHLY MEETING THURSDAY, JUNE 18, 2015

Dr. Zafra Lerman on Science and Human Rights, Distinguished Service Award, 50- and 60-year member recognition, WCC Mix-and-Mingle with Iota Sigma Pi

Zhivago's Restaurant
9925 Gross Point Rd
Skokie, IL 60076

DIRECTIONS TO THE MEETING

From Chicago

Take I-94 West to Exit 35, Old Orchard Rd, and turn right to Gross Point Rd and take a right to Zhivago's Restaurant on the left.

From I-294 North/South

Take I-294 north or south to Golf Rd going east. Travel past I 94 to Gross Point Rd and turn left going north to the restaurant.

From I-88

Travel to 294 and follow instructions above.

PARKING: Free

**PRE-DINNER WCC
MIX-AND-MINGLE** 5:30 PM

SOCIAL HOUR 5:30 PM

DINNER 6:30 PM
Dinner reservations are required and can be obtained at our website (www.chicagoacs.org) or call the Chicago Section office at 847-391-9091.

GENERAL MEETING 7:30 PM

- Presentation of the 2015 **DISTINGUISHED SERVICE AWARD** to Richard Cornell (see page 3)
- 50- and 60-year member recognition (see page 2)
- After-Dinner Speaker

DINNER MENU:

- Choice of
- o Chicken Kiev
 - o Salmon
 - o Potato-stuffed Pierogies with a side of Vegetables

Cost: \$35



“Science Diplomacy in the Middle East: The Malta Conferences and Their Lasting Impact”

Dr. Zafra Lerman

President of the Malta Conferences Foundation

Abstract: Science is a potent force for promoting human rights. Science diplomats working with the American Chemical Society have successfully prevented executions, freed prisoners of conscience, and helped scientists escape persecution. Using scientific collaboration to help promote stability in the Middle East, the Malta Conferences bring together six Nobel laureates with scientists from Israel, Palestine, Iran, Iraq, Jordan, and many other Middle Eastern countries for scientific discussions on neutral territory. For ten years, the Malta Conferences Foundation has

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provided this multinational forum where scientists may safely and freely identify unique opportunities for collaboration to meet the scientific and technological challenges of the region. The conferences last for five days and deal with issues of science education, air and water quality, and alternative energy sources, among other topics of mutual interest. This work has the support of the Nobel prize-winning Organization for the Prohibition of Chemical Weapons (OPCW), the United Nations Education, Scientific and Cultural Organization (UNESCO), the Committee of Concerned Scientists, the American Physical Society (APS), the American Association for the Advancement of Science (AAAS), and, of course, the ACS. In this talk, we'll explore the enormous impact of science diplomacy, the ACS' support for human rights, and how the Malta Conferences have become a powerful force for peace on the world stage, resulting in lasting scientific and technical collaborations that establish peaceful ties across otherwise hostile borders.

CONGRATULATIONS TO OUR 50- AND 60-YEAR ACS MEMBERS!

As part of our June 18 meeting program, we will honor an elite group of our section members who have been ACS members for 50 or 60 years! A membership card entitling them to free attendance at all ACS meetings is sent to each of them from the ACS National office in grateful appreciation of their many years of service to the Society. At our meeting, each of them will be presented a handsome membership certificate to mark the occasion.

50-Year Members for 2015

James Ahlberg
Gregory Arzoumanidis
Chester Barszcz
Joseph Bartek
Man Ming Cheung
David Crumrine
Dayton Dailey
Jacob De Boer
Mary Fiebig
Edward Gamson
Michael Georgakis
Norbert Golchert
Paul Harris
Albert Herlinger
Menard Heydanek
Jeremy Hribar
Charles Hughes
Christopher Kalmus
Ferdinand Klamik
Joyce Kosman
George Kuhlmann
Richard Markuszewski
William Micheli
William Moll
Laszlo Pollak
G. Joseph Ray
James Richmond
Herbert Rosing
David Ruby
Richard Schultz
Ralph Schure
Bruce Smith
Richard Stauffer
Jui Sun
Wesley Whittington
Alan Wilks
Edmond Williams

60-Year Members for 2015

A. Gilbert Cook
Edwin Seidman
John Suerth
Fred Turner
William Roderick
Dimitri Gidaspow
Rafael Pedraja
Basil Mann
Gayle Webber
John Bergmann

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ZAFRA M. LERMAN

Zafra Lerman is the President of the Malta Conferences Foundation. She received a Ph.D. in Chemistry from the Weizmann Institute of Science in Israel. She conducted research on isotope effects at Cornell and Northwestern Universities in the US, and the ETH, Zurich, Switzerland. She developed an innovative approach of teaching science at all levels using the arts and cultural backgrounds, which received international recognition, and has lectured around the world.

For 25 years, she had chaired the committee on Scientific Freedom and Human Rights for the American Chemical Society (ACS). At great risk to her safety, she was successful in preventing executions, releasing prisoners of conscience from jail and bringing dissidents to freedom.

Since 2001, she has been using Science as a Bridge to Peace in the Middle East, through the Malta Conferences, which brings together scientists from 15 Middle East countries with six Nobel laureates to work for 5 days on solving regional problems, establishing cross-border collaborations, and forging relationships that bridge chasms of distrust and intolerance.

Dr. Lerman has received over 40 national and international awards for her work, among them the Presidential Award from President Clinton (1999); the World Cultural Council's World Award for Education in Johannesburg, South Africa (2000, the first international award in the new democratic South Africa); the ACS Parsons Award for outstanding public service to society through chemistry (2003); The Royal Society of Chemistry, England, Nyholm Education Award (2005); New York Academy of Sciences Pagels Human Rights for Scientists Award (2005); George Brown Award for International Scientific Cooperation from CRDF (2007); the ACS Pimentel Award for excellence in chemical education (2010); The International Conference on Chemistry for Mankind (India) Award for Stimulating Collaborations and Ensuring Human Rights (2011); the AAAS Award for Science Diplomacy (2015); and was honored by the U.S. Congress with a speech "Science Diplomacy in the Middle East" (2013), just to name a few. Her work was featured on many television stations and covered by newspapers and magazines around the globe.

DISTINGUISHED SERVICE AWARDEES

The Chicago Section American Chemical Society's Distinguished Service Awards were established in 1974 at the suggestion of Louis L. Lerner, then the Editor of the Chemical Bulletin. These Awards recognize members who provided exceptional service to the Section over, above and separate from any other achievements of the recipient, either in the profession or by the National ACS.

1974	Victor Conquest Roy C. Newton Otto Eisenschiml	1982	Bernard S. Friedman Paul Van Cleef	2001	Stanley W. Drigot
1975	Hoylande Young Failey Byron Riegel Ward Evans Carl S. Miner	1983	Clifford W. Crosby J. Fred Wilkes	2002	Cherlynlvaughn Bradley
1976	David Klein E.H. Volwiler M.H. Arveson P.N. Leech	1984	James J. Doheny	2003	Lawrence E. Thielen
1977	William A. Converse Benjamin B. Freud Robert J. Reinarts Helen Selin	1985	Roy H. Bible	2004	Lawrence U. Berman
1978	Walter S. Guthmann Charles DeWitt Hurd	1986	Carl E. Moore	2005	Seymour Patinkin
1979	Richard Maltoon Herbert E. Robinson	1987	Elaine R. Anderson	2006	L. Jewel Nichols
1980	Herman S. Bloch Julius D. Stieglitz	1988	Nellie M. Payne	2007	Barbara Moriarty Louis Lerner
1981	Vivian B. Biske Edward G. Rietz	1989	Louis J. Sacco	2008	Margaret Stowell Levenberg
		1990	Thomas J. Kucera	2009	Susan M. Shih
		1991	James P. Shoffner	2010	Russell Johnson
		1992	Margaret Lally Huston	2011	David Crumrine
		1993	Herbert S. Golinkin	2012	Sanford Angelos
		1994	Stephen Sichak, Sr.	2013	Milt Levenberg
		1995	Marie Ann Liskha Adele Rozek	2014	Frank Jarzembowski
		1996	Gayle E. O'Neill	2015	Richard Cornell
		1997	Fran Karen Kravitz		
		1998	Marilyn Kouba		
		1999	Charles E. Cannon Jay S. Curtice		
		2000	Ellis K. Fields		

**The Chicago Section's
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is
chicagoacs@ameritech.net**

SOMEONE YOU SHOULD KNOW

Phumvadee Wangtrakuldee, known as Beau, is the Chicago Section's co-chair of the Younger Chemist Committee. She has served on the Chicago Section board as a director and a co-chair of the Younger Chemist Committee from 2014 to 2015. Beau has been a very busy co-chair for the Section. She has organized career, professional development, and networking events for young chemists in the Chicagoland area. One of her events, which has been quite a success, was "Beers with Peers," a networking opportunity for young chemists held at a Chicagoland bar. Beau has also been active in various outreach opportunities such as Chemistry Week and the 2014 Marie S. Curie Girl Scout Chemistry Day lunch mentor. In 2015 Beau was appointed as an associate member of the national ACS Board-Council Committee on Younger Chemists. She is also active in the American Association for University Women becoming a facilitator of the StartSmart workshop which provides women with the knowledge and skills for negotiating salaries and benefits in order to receive fair and realistic compensation as they approach the job market. Beau was born in Phitsanulock, Thailand and has a younger brother

and sister. Both of her parents were architects. Beau was involved in a regional Chemistry Olympiad program during high school and was trained in chemistry by university faculty in Phitsanulok where she competed at the national level. She came to the United States as a foreign exchange student at Ann Arbor Huron High School in Ann Arbor, Michigan. After high school, she went back home but came back after receiving an athletic scholarship to Kalamazoo College. Beau started out as a biology major and spent many nights preparing for biology tests but never studied for chemistry exams. She found that she did academically better on chemistry exams as compared to biology. It was then that she chose to study chemistry.

Beau received her B.A. in 2010 from Kalamazoo College in chemistry with a biochemistry concentration and biology minor. She left Michigan and came to Illinois to study at Northern Illinois University. She received her M.S. in chemistry and in 2015 completed her Ph.D. in biochemistry from Northern Illinois University. She studied under Dr. James R. Horn and Dr. Timothy J. Hagen. The title of Beau's dissertation was "Methionine Aminopeptidase Enzyme Inhibitors as Promising Targets Toward Discovery of Novel Anti-infective Agents." She was looking for new treatments for deadly bacterial infections and malaria. Her expertise includes a medicinal chemistry background including multi-step organic synthesis of small molecules, develop-



ment of related biochemical assays, protein expression and purification, and structural based drug design. She is also pursuing a M.S degree in cosmetic science at the University of Cincinnati where she would like to use her knowledge of natural ingredients. Besides chemistry, Beau enjoys playing tennis and long distance running. Beau's companions are her dog, Butters and her fiancé, Craig W. Marlatt. Soon, Beau will be moving to Philadelphia to work as a postdoctoral associate for Dr. Trevor Penning at Perelman School of Medicine at the University of Pennsylvania. We will miss her energy and enthusiasm, but we all wish her well in her new position.

Fran Kravitz

"CHEM SHORTS" For Kids

Purple Cauliflower Indicator

Kids, did you know that cauliflower also comes in orange and purple colors? And that you can make designs using purple cauliflower and lemon juice? Make a quick trip to the grocery store with an adult partner and find out how!

First, a little science. The deep purple color of purple cauliflower comes from anthocyanins, the antioxidant that gives the purple color to the skins of grapes, plums, and eggplants. Anthocyanin is a harmless, water soluble pigment and so purple cauliflower is perfectly safe to eat.

pH is a measure of the strength of acids and bases used by chemists. Anthocyanins can be used as pH indicators because their color changes with pH; they are pink in acidic solutions ($\text{pH} < 7$), purple in neutral solutions ($\text{pH} \sim 7$), greenish-yellow in basic solutions ($\text{pH} > 7$), and colorless in very basic solutions. You may have heard of red cabbage as pH indicators because, not surprisingly, they also contain anthocyanins.

Have an adult partner steam some purple cauliflower in a steam basket on the stove, and collect the dark blue/purple water after it cools. Pour equal amounts of the cooled purple water into a few clear glasses. Add a teaspoon of cream of tartar (tartaric acid) to one glass and stir. Add a teaspoon of baking soda (sodium bicarbonate) to another glass and stir. Add some lemon juice (citric acid) to a glass and stir. What happens? Find other items around your home and test them using your cauliflower indicator to determine whether they are acids or bases.

To some uncooked, raw purple cauliflower, add some drops of lemon juice. What happens? Here is where you can get creative and make some interesting designs in your vegetables.

Heating the purple florets will also change their color from purple to gray or slate blue, especially if your water is hard or has an alkaline pH. You could add a bit of vinegar or cream of tartar to the water to minimize the color change.

Many thanks to Antonya Sanders of Los Alamos National Laboratory for the tip. <http://www.gardeningknowhow.com/edible/vegetables/cauliflower/purple-tint-on-cauliflower.htm>

Editor, DR. KATHLEEN CARRADO GREGAR, Argonne National Laboratory

To view all past "ChemShorts for Kids," go to: http://chicagoacs.org/articles.php?article_category=1

INAUGURATION OF "HIGHER EDUCATION INSTITUTION'S DAY AT THE ILLINOIS STATE FAIR 2015"

Earlier this year, invitations were emailed to Illinois 2- and 4-year post secondary institutions in search for representative teams to join the Illinois Sections Cooperative State Fair Project in Springfield during the 2015 Illinois State Fair run. For more than ten years, the Sections have engaged in doing chemistry at the fair in Conservation World. Volunteers from the cooperating Sections have been greeting and engaging the visitors in chemistry under the big tent in Conservation World. This year, we would like to formalize having organized representation from Illinois higher education institutions. The Fair dates are Thursday, August 13 through Sunday, August 23. Several institutions have already responded and selected dates when they will participate. If we missed your institution and you are interested, please contact me at: ccannon@colum.edu. During the Fair run in 2014, 20,628 visitors participated in the "Big Tent." Participating institutions are encouraged to bring information that may be distributed and make the venture a recruiting effort. Signs will be prepared to recognize institution teams each day. We are looking for at least one team of volunteers to participate daily over the 10-day period. A "team" may consist of two or more participants – hopefully more. Volunteers will be coached in taking active roles which include: Supervise the day's session and help out wherever needed; be a greeter at the entrance; answer questions and direct people to exhibits in the tent; perform pre-established science demonstrations for our guests; assist the students in performing pre-established "hands-on" experiments; and be a helper to run errands or fill in as needed. Committed teams will be sent a resource disk in June.

Charles Cannon

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VOLUNTEERS NEEDED FOR THE ILLINOIS STATE FAIR SCIENCE TENT

The 2015 Illinois State Fair is just around the corner and **WE NEED YOU!** The Chicago Section of the American Chemical Society, jointly with other Illinois Sections of the ACS will have a Chemistry Tent in Conservation World at the Illinois State Fair. This will be our 12th year for this community outreach project. The Illinois State Fair is scheduled from Friday, August 14 through Sunday, August 23.

Our tent provides information to the public on chemistry by way of demos, hands-on activities, literature and giveaways. Last year, we had over 20,000 people come through our tent. **WE CAN'T DO THIS WITHOUT YOU!**

We are looking for volunteers to help us at this year's fair. This is a very rewarding activity and a chance to meet new colleagues from other Sections while reaching out to the public. We need demonstrators, individuals willing to help with hands-on activities and individuals who are a "jack of all trades." Come for a shift or for the day or participate for several days. Parking and admission to the fair is FREE for volunteers who participate. There are nearby reasonably priced hotels, motels & campgrounds for accommodations during the fair.

Please contact the Chicago Section office at chicagoacs@ameritech.net or (847) 391-9091 if you are interested in more information on this fun, rewarding and challenging opportunity. You may also register soon directly on line at <http://chicagoacs.net/statefair/volunteers.html>. Registration opens mid-June for volunteers.

Thank you in advance for helping us make this program a continued success!!!

Fran Kravitz (fk1456@sbcglobal.net)
Milt Levenberg (milspec@comcast.net)
Co-Chairs of the Illinois Sections of the ACS State Fair Project

LOCAL STUDENTS WIN CHANCE TO QUALIFY FOR INTERNATIONAL CHEMISTRY OLYMPIAD

The Chicago section of the American Chemical Society has announced the names of 21 outstanding high school chemistry students. The students will take a national exam that may qualify them to become members of the US National Chemistry Olympiad team that will compete in the 47th International Chemistry Olympiad (IChO) in Baku, Azerbaijan, July 20-29, 2015.

A total of 91 students nominated from 33 area high schools (HS) took the local exam in March 2015. The following students qualified to take the National Exam: Rajan K. Aggarwal from the University of Chicago Lab School; Bajaj Ankush of Hinsdale Central HS, Bryce Cai of Barrington HS, Balashwethans Chockalingam of Munster IN HS, Samuel Detmer of Payton College Prep. HS, Theresa Do of Jacobs HS, Jiangao Fang of New Trier HS, Andy Chen of Munster IN HS, Krystian Ganko, of Naperville Central HS, Katherine Ho of New Trier HS, Taeyun Lee of Payton College Prep. HS, Soumyaa Mazumder of Fremd HS, Henry T. McDonald of Evanston Township HS, Walker Melton of University of Chicago Lab School, Michael S. Miller of Deerfield HS, Sarvasva Raghuvanshi of Neuqua Valley HS, Arjun Rawal of Oak Park River Forest HS, Jordan Rosenkapan of Evanston Township HS, John R Waldron of Barrington HS, Andy Xu of the Illinois Math and Science Academy, and Matthew Yeh of Hinsdale Central HS.

The IChO involves a series of theoretical exams, laboratory exercises, and other activities aimed at identifying the best chemistry students from participating nations from around the world. The US has participated in this event since 1984. In 2014, the US team won one gold and three silver medals. Where a total of 291 students represented 75 countries at the 46th IChO in Hanoi, Vietnam.

The 21 local nominees are among over 1,200 nationwide that took a national qualifying exam April 14-20, 2015 to select finalists. Twenty students will be identified and will undergo intensive training June 2-17, 2015 at the US Air Force Academy in Colorado. The top four will be chosen to represent the US in the 47th IChO competition. We are pleased to report that Bryce Cai of Barrington HS has qualified for the second time to attend the intensive training camp at the US Air Force Academy in Colorado.

Founded in 1876 and chartered by

Congress, the American Chemical Society is a nonprofit scientific and educational organization dedicated to the advancement of chemistry in the public interest. The Chicago section is one of 185 across the nation serving more than 160,000 members.

WCC COLUMN

WCC PRE-DINNER CAREER EVENT ON SEPTEMBER 18

On Friday, September 18, 2015, WCC will participate in a pre-dinner student poster session held at Loyola University in Chicago in conjunction with the monthly meeting. Chemists with alternative careers will talk to students and dinner attendees about alternative chemistry career paths and the educational requirements needed. The setting will be casual and will be in the same area as the posters. Come and join us to learn about what working chemists can do with their chemistry degrees. If you have an interesting career, let us know beforehand, and we would be pleased to have you join us and talk about it. If you plan on being a chemist, and you think that being a professor and a bench chemist are your only options, think again, and join us for an interesting evening! For more information, contact Margaret Levenberg at [mlievenberg@milspec3.org](mailto:mlevenberg@milspec3.org) or Ilana Lemberger.

**The Chicago Section's
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chicagoacs@ameritech.net**

CHEMISTRY MENTORS NEEDED IMMEDIATELY FOR BOY SCOUTS OF AMERICA CHEMISTRY MERIT BADGE PROGRAM

The Chicago Section of the American Chemical Society is currently seeking volunteers (preferably male) for its Boy Scout of America's Chemistry Merit Badge program. We need individuals to join us for lunch (noon to 1 p.m.) on either Saturday, September 26 at North Central College in Naperville; Saturday, October 10 at Oakton Community College in Des Plaines; and Saturday, October 17 at College of Lake County in Grayslake to discuss their chemistry career. We are seeking chemistry and chemical engineering volunteers, active or retired, from all sectors of the profession: industry, government, academic, and student/post-docs. Scouts will be divided into small groups of 4 to 5 scouts per table during lunch. Volunteers are asked to describe their career and general information about careers in chemistry including educational requirements. Lunch consisting of cheese pizza, dessert and beverage will be provided. We are seeking at least ten volunteers at each location. Additional information about each location will be sent to volunteers that sign up for this activity. Please contact Fran Kravitz immediately at fk1456@sbcglobal.net if you are available to help with this very valuable educational Chicago Section program. We need to make sure that we have enough volunteers at each location. Please put "BSA Chemistry Merit Badge Program" on the subject line.

Fran Kravitz

2015 AAUW'S \$START \$SMART WORKSHOP

The 2015 American Associations of University Women's (AAUW) \$start \$smart Workshop was held on Saturday, May 16 at Loyola University. This successful workshop was sponsored by the Employment, Women Chemists and Younger Chemists Committees. \$start \$smart is a three-hour workshop that provides women with the knowledge and skills for negotiating salaries and benefits in order to receive fair and realistic compensation as they approach the job market. Eight women were in attendance which included an undergraduate, several graduate students and a professional. The facilitators of this workshop were from the AAUW Wheaton-Glen Ellyn branch, Susan Hoover (retired) and Anne Hanley (Northern Illinois University History professor). Our host at Loyola University was David Crumrine, a member of the Chicago Section ACS board and faculty member of Loyola University. A working lunch with resume help from ACS Career Consultants (Fran Kravitz and Samina Azad) was provided after the \$start \$smart presentation. Volunteers also included Margy Levenberg, CoChair of the Women Chemist Committee and Beau Wangtrakuldee, Co-Chair of the Younger Chemists Committee.

Please watch for another \$start \$smart workshop coming soon to the Chicago Section.

Fran Kravitz

CALENDAR

June 14-16: The 19th Annual Green Chemistry & Engineering Conference (GC&E), Bethesda, MD. The theme is "Catalyzing Innovation – Smarter Research, Greener Design, Better World". For details, visit <http://www.gcande.org/>

June 18: Chicago Section Dinner Meeting honoring our 2015 Distinguished Service awardee and our 50- and 60-year members. Guest Speaker: Dr. Zafra Lerman, Malta Conferences Foundation. Additionally, a Women Chemists Committee (WCC) Mix and Mingle event with Iota Sigma Pi will take place. **See details in this issue.**

August 14-23: The Illinois State Fair in Springfield. Come volunteer at the ACS booth. **See details in this issue.** <http://chicagoacs.net/statefair/index.html>

August 16-20: The 250th National ACS Meeting in Boston. The theme will be "Innovation from Discovery to Application." See details at <http://www.acs.org/content/acs/en/meetings/fall-2015.html>

September 18 (note the date change): Chicago Section Dinner Meeting at Loyola University. Additionally, a Women Chemists Committee (WCC), Non-Traditional Chemical Careers event will take place. **See details in this issue.**

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Whether you spend your summer traveling, going to school, working or playing.... Have a wonderful summer and see you in the Fall with the September Issue!!!

---Editorial Staff

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